



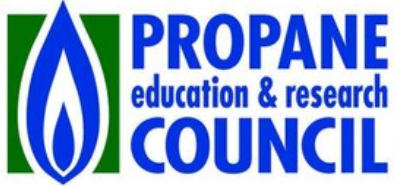
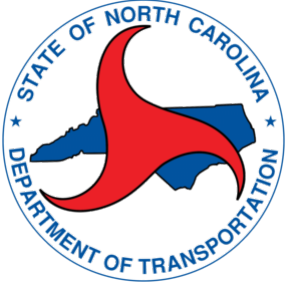
Session #15: Idle Reduction an Easy Win

December 02, 2020



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Next Series Dates & Topics:

December 09: The Green Garage Winners

December 16: Change Management to Remove Resistance & Roadblocks

Format

- **Q&A at the end**
- **Submit questions and comments to “Panelists”**
- **Scheduled for 2:00p-3:30p**
- **Handout**
- **Recording**



Rick Sapienza

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- **Clean Transportation Program Director NC Clean Energy Technology Center at NC State University**
- **8 years with NC State**
- **30+ years experience including General Motors, Draper Lab and Great Lakes Pulp & Fibre in both engineering and business management roles**



Idle Reduction and Easy Wing December 02, 2020

- 2:00-2:05 **Rick Sapienza, NCCETC**--Introduction and Welcome
- 2:05-2:20 **Patricia Weikersheimer, Argonne National Lab**--Idle Reduction Overview & Strategies
- 2:20-2:24 **Neeraj Chirmulay, Viatec**--SmartPTO Idle Reduction Technology
- 2:24-2:28 **Eric Neumann, Town of Apex NC**--Viatec Application Story
- 2:28-2:38 **John Ferguson, City of Durham NC**--City of Durham Idle Reduction Strategies/Deployments
- 2:38-2:46 **Mike MacComiskey, Advantage Asset Tracking**--Using Telematics in Idle Reduction
- 2:46-2:54 **Charlie Mahoney, Derive Systems**--Derive Efficiency for Idle Reduction & Fuel Savings
- 2:54-3:02 **Yake Klat, IdelAir/eNow**--TRU Application Case Study
- 3:02-3:12 **Keith Kerman, NYC DCAS**--NYC Idle Reduction Strategies/Deployments
- 3:12-3:30 Q&A





Patricia Weikershimer
PWeikersheimer@anl.gov
630-252-3124

- Communications writer and editor for Argonne National Laboratory
- Area of expertise is idling and idle reduction technologies
- Researched and wrote *National Idling Reduction Network News*, a monthly newsletter of the Department of Energy's Vehicle Technologies Office (2009-2017)
- Key member of the team that developed Clean Cities IdleBox

IDLE REDUCTION BASICS AND AN INTRODUCTION TO IDLEBOX



PATRICIA WEIKERSHEIMER
Argonne National Laboratory
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December 2, 2020

ARGONNE SUPPORTS THE U.S. DOE CLEAN CITIES PROGRAM

Argonne National Laboratory supports the U.S. Department of Energy's Clean Cities program with

- Technical expertise
- Analysis and case studies
- Development of data-based tools (e.g., life-cycle analysis)
- Training and outreach
- Workforce development

to help Clean Cities coordinators—and stakeholders—make sense of the wide array of potential fleet solutions.

SO, WHAT'S THE BIG DEAL ABOUT IDLING?

- **Individually:** Idling slashes fuel efficiency—idling vehicles consume from 0.2 to 1+ gallons of fuel per hour.
- **Nationally:** Idling in the U.S. consumes more than 6 *billion* gallons of fuel at a cost of \$15+ billion each year.



SO, WHAT'S THE BIG DEAL ABOUT IDLING? *CONT.*



- Each gallon of fuel burned produces about 20 pounds of CO₂
- Idling vehicles emit and contribute to the formation of pollutants that degrade air quality
- Idling not only wastes fuel, but idling may count as “engine hours”—more idling means more-frequent maintenance
 - Higher annual costs = higher cost of ownership

IDLING MYTHS

- *“Doesn’t restarting my engine use more fuel than idling?”*
- *“Isn’t idling good for my engine?”*



WHY DO DRIVERS IDLE?

- **Habit**
- **Need for stationary power**

Some vehicles need power while stopped for:

- Climate control
- Communications
- Emergency lights
- Hotel load (for long-haul truck drivers hoteling in their sleeper bunks during rest periods)
- Performing nonpropulsion work (e.g., diggers, bucket trucks)



TECHNICAL SOLUTIONS TO REDUCE OR ELIMINATE IDLING

Solutions depend on the needs of the stationary vehicle

- **Idle timer/limiter**
- **Automatic engine shut-down/start-up system**
- **Auxiliary power units (APUs)**
 - Fuel- or battery-powered
- **Heaters and air conditioners**
- **Electrification/hybridization**
 - Powertrain
 - Power take-off (PTO)
 - Wayside power (also called “shore power” or electrified parking spaces)
- **Telematics**



Auxiliary battery in a police cruiser (Courtesy of ZeroRPM).

IDLEBOX HOME PAGE

Core Resources →

Specialty Resources →

cleancities.energy.gov/idlebox

IdleBox: A Toolkit for Idling Reduction Education and Outreach

IdleBox is an electronic education and outreach toolkit on vehicle idling reduction. The low-hanging fruit of fuel economy, idling reduction is a simple way to use less fuel and minimize engine wear, reducing costs along with pollution and greenhouse gas emissions.



What Is Idling?

Idling is running a vehicle's propulsion engine when the vehicle isn't moving. Idling wastes fuel and creates harmful emissions.

Use IdleBox to:

- Learn more about the benefits of idling reduction for your organization, fleet, or community.
- Engage and educate others—including drivers, fleet managers, policymakers, sustainability managers, and others—on the value of idling reduction.
- Launch an idling reduction campaign for your organization, fleet, or community.

Core Resources

Messaging Materials	Letters & Pledge Forms	Technical Resources
Fact Card	Outreach Letter	Idle Reduction Savings Calculator: Excel or PDF
Fact Card Template	Press Release	Database of Idling Regulations
Tip Sheet	Organization Pledge Form	Compendium of Idling Reduction Equipment for Class 1-8 Vehicles
Stop Idling: Start Saving Graphic	Driver or Employee Pledge Form	
Stickers		
Sign Template		
Poster Template: 11" x 17" or 22" x 34"		
Bumper Sticker Template: Bleed or No Bleed		
tips		



College students help conduct an IdleBox campaign at New Hope Middle School in Columbus, Mississippi.

"IdleBox tools have been a tremendous support to our initiatives with area schools. We have prepared a comprehensive kit with high-quality, ready-to-use information featuring IdleBox materials and EPA lesson plans that we present to schools to encourage and support their interest in developing idling reduction and air quality [initiatives](#) for our coalition's educational outreach efforts."

Lauren Lambert-Tompkins,
Louisiana Clean Fuels

Specialty Resources

Personal Vehicles	Light- and Medium-Duty Fleet Vehicles
Idling Reduction for Personal Vehicles (Fact Sheet)	Idling Reduction Basics for Fleets (Presentation)
Which Is Greener: Idle, or Stop and Restart? Comparing Fuel Use and Emissions for Short Passenger-Car Stops (Fact Sheet)	Technology Solutions (Presentation)
Reducing Personal Vehicle Idling (Presentation)	
Stop and Restart Effects on Modern Vehicle Starting System Components—Longevity and Economic Factors (Technical Report)	

Heavy-Duty Vehicles	Emergency & Other Service Vehicles
Long-Haul Truck Idling Burns Up Profits (Fact Sheet)	Idling Reduction for Emergency and Other Service Vehicles (Fact Sheet)
Economics of Idling Reduction Options for Long-Haul Trucks (Fact Sheet)	Idling Reduction for Emergency Vehicles: A Case Study (Fact Sheet)
Idling Reduction for Long-Haul, Heavy-Duty Trucks (Presentation)	Case Study—Idling Reduction Technologies for Emergency Service Vehicles (Technical Report)
Emissions from Idling Heavy-Duty Trucks and Idling-Reduction Equipment (Technical Report)	Work Trucks
Idling Reduction for Long-Haul Trucks: An Economic Comparison on On-Board and Wayside Technologies (Technical Report)	Work Truck Idling Reduction (Fact Sheet)

Are You a Clean Cities Coordinator?

IdleBox has additional resources for Clean Cities coalitions. Go to the [Coalition IdleBox Resources](#).

IDLEBOX: CORE RESOURCES




Core Resources

Messaging Materials

Fact Card 

Fact Card Template 

Tip Sheet 

Stop Idling. Start Saving
Graphic 

Stickers 

Sign Template 

Poster Template: 11" x
17"  or 22" x 34" 


Bumper Sticker
Template: Bleed  or
No Bleed 
tips 

Letters & Pledge Forms

Outreach Letter 


Press Release 

Organization Pledge
Form 

Driver or Employee
Pledge Form 

Technical Resources

Idle Reduction Savings
Calculator: Excel or PDF

Database of Idling
Regulations 

Compendium of Idling
Reduction Equipment for
Class 1-8 Vehicles

BASIC MESSAGING PRODUCTS

- Sticker
- Fact card
- Tip sheet
- Poster
- Sign



Sticker ▲



Fact card ▲



Tip sheet ▲



▲ Sign with space for logo




▲ Poster



▲ Modifiable poster

IDLING REDUCTION SAVINGS CALCULATOR

The **Idling Reduction Savings Calculator** helps fleet managers and others estimate how much they can save with idling reduction.



Idling Reduction Savings Calculator



For an interactive Excel version of this calculator, please go to http://www.transportation.anl.gov/downloads/idling_worksheet.xls

Calculate Costs for Avoidable Idling					
1	How much fuel is used for idling? (If you don't know, see reference table on reverse.)	Realistically, how many hours each year might you use idling reduction (IR) devices instead of idling?	=	What is the price of fuel?	Avoidable Idling Fuel Costs
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	x	<input type="text"/> \$/gallon	= \$ <input type="text"/> /year +
2				What is your average fuel economy?	
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	x	<input type="text"/> miles/gallon	= <input type="text"/> miles/year
3	How much does an oil change cost?	How many miles between oil changes?	=	"Miles of idling"	Preventive Maintenance Cost*
	\$ <input type="text"/> /oil change	<input type="text"/> miles/oil change	÷	<input type="text"/> miles/year	= \$ <input type="text"/> /year +
4	How much does an engine overhaul or new vehicle cost?	How many miles between overhauls or vehicle replacement?	=	"Miles of idling"	Overhaul or Replacement Cost*
	\$ <input type="text"/> /overhaul or replacement	<input type="text"/> miles/overhaul or replacement	÷	<input type="text"/> miles/year	= \$ <input type="text"/> /year
5	Add values in right-hand column =				Total Avoidable Idling Costs
					= \$ <input type="text"/> /year
Calculate Costs for Idling Reduction (IR) – Device and/or Electrified Parking Space (EPS)					
6	How much fuel is used by the IR device?	How many hours each year could you use IR devices instead of idling?*	=	Price of fuel (same as price listed in line 1)	Fuel cost for IR device
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	x	<input type="text"/> \$/gallon	= \$ <input type="text"/> /year
7				Maintenance cost for IR device	Operating Cost for On-board IR Device
				\$ <input type="text"/> /year	+ \$ <input type="text"/> /year = \$ <input type="text"/> /year
8	Cost per hour to plug into EPS	How many hours each year could you use EPSs instead of idling?*	=	Cost to plug in	Total Operating Costs for IR
	\$ <input type="text"/> /hour	<input type="text"/> hours/year	x	\$ <input type="text"/> /year	+ \$ <input type="text"/> /year = \$ <input type="text"/> /year
Calculate Savings from IR					
9				Capital cost of on-board IR device	SAVINGS Line 5 – Line 8
				\$ <input type="text"/> /year	÷ \$ <input type="text"/> /year saved = <input type="text"/> years
10	<input type="text"/>	-	<input type="text"/>	=	<input type="text"/> gallons saved/year

* Total number of hours from lines 6 and 8 should equal the number of hours in line 1.
* TMC Recommended Practice 1108, "Analysis of Costs from Idling and Parasitic Devices for Heavy Duty Trucks" (2003), Technology & Maintenance Council, American Trucking Associations (TMCA/ATA).

www.anl.gov/es/reference/vehicle-idle-reduction-savings-worksheet-pdf
www.anl.gov/es/reference/vehicle-idle-reduction-savings-worksheet-excel

IDLING REDUCTION SAVINGS CALCULATOR

Idling Reduction Savings Calculator

For an interactive Excel version of this calculator, please go to http://www.transportation.anl.gov/downloads/idling_worksheet.xls

Calculate Costs for Avoidable Idling

1 How much fuel is used for idling? (If you don't know, see reference table on reverse.) Realistically, how many hours per year might you use IR devices?

2 How much does an oil change cost? How many miles between oil changes?

3 How much does an engine overhaul or new vehicle cost? How many miles between overhauls or replacements?

Calculate Costs for Idling Reduction

4 How much fuel is used by the IR device? How many hours per year do you use IR devices?

5 Cost per hour to plug into EPS How many hours per year do you use EPS?

Calculate Savings from IR

6 A - B

How Much Fuel Is Used for Idling?

Vehicle Type	Class	Fuel Type	Size Indicator		Idling Fuel Use (gal/h)		Source
			Engine Size (l)	GVWR (lb)	No load	With load	
Passenger Car (Ford Focus)	1	G	2	—	0.16	0.29	ANL 1
Passenger Car (Volkswagen Jetta)	1	D	2	—	0.17	0.39	ANL 1
Passenger Car (Ford Crown Victoria)	1	G	4.6	—	0.39	0.59	ANL 1 & 2
Medium Heavy Truck	6	G	5-7	19,700-26,000	0.84	—	WVU
Delivery Truck	5	D	—	19,500	0.84	1.1 ¹	NREL
Tow Truck	6	D	—	26,000	0.59	1.14 ²	ORNL
Medium Heavy Truck	6-7	D	6-10	23,000-33,000	0.44	—	WVU
Transit Bus	7	D	—	30,000	0.97	—	ORNL
Combination Truck	7	D	—	32,000	0.49	—	ORNL
Bucket Truck	8	D	—	37,000	0.90	1.50 ³	ORNL
Tractor-Semitrailer	8	D	—	80,000	0.64	1.15 ^{1,1}	TMC

D = diesel, G = gasoline, Gal = gallons(s), GVWR = gross vehicle weight rating, h = hour(s), l = liter(s), lb = pound(s), PTO = power take-off.
¹ High idle.
² PTO on.
³ Air conditioning on.

Sources

ANL 1: Shuterberg, K., and Lohse-Busch, H. "APRF [Advanced Powertrain Research Facility at Argonne National Laboratory] Conventional Vehicles Snapshot Study" Presentation to U.S. DOE, December 2, 2012.

ANL 2: Flak, E.; Keller, G.; Lohse-Busch, H., et al. (2013). "Final Report: Police Cruiser Fuel Consumption Characterization." Work performed by Argonne National Laboratory for the Illinois Tollway Authority.

NREL: National Renewable Energy Laboratory Project Draft Final Report for the Period August 1, 2012, through March 31, 2014, "Data Collection, Testing and Analysis of Hybrid Electric Trucks and Buses Operating in California Fleets." ARB Agreement Number 11-600, NREL Contract Number FIA-12-1763, April 15, 2014.

ORNL: Lascunari, M.B.; Franzese, O.; Capps, G., et al. (2012). *Medium Truck Duty Cycle Data from Real-World Driving Environments: Project Final Report* (ORNL/TM-2012/240). Work performed by Oak Ridge National Laboratory for the U.S. DOE.

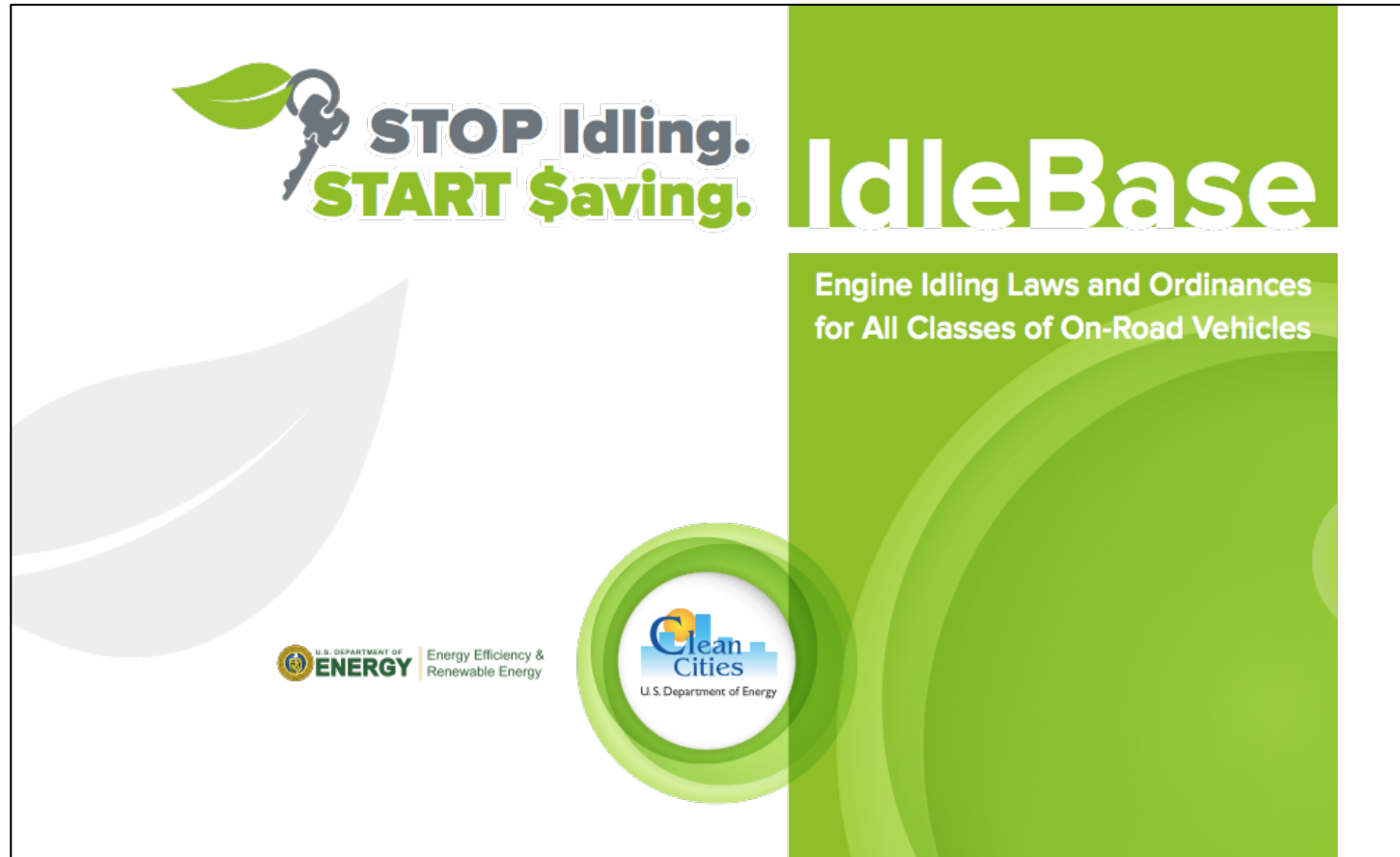
TMC: TMC Recommended Practice 1108, "Analysis of Costs from Idling and Parasitic Devices for Heavy Duty Trucks" (2003). Technology & Maintenance Council, American Trucking Associations (TMC/ATA).

WVU: Khan, ABM S.; Clark, N.N.; Gautam, M.; et al. (2009). "Idle Emissions from Medium Heavy Duty Diesel and Gasoline Trucks." *Journal of the Air & Waste Management Association* (59:3) 354-359.

Other Idling Reduction Resources

- IdleBox www.cleancities.energy.gov/IdleBox
- IdleBase <http://cleancities.energy.gov/IdleBase>
- National Idling Reduction Network News energy.gov/vehicles/vehicle-technologies-office-national-idling-reduction-network-news
- Argonne National Laboratory <http://www.transportation.anl.gov/engines/idling.html>
- Alternative Fuels Data Center http://www.afdc.energy.gov/conservation/idle_reduction_basics.html

IDLEBASE



cleancities.energy.gov/idlebase

IDLEBASE, CONT.

Illinois	Type of Vehicle	Idling Restriction	Exemptions	Consequences of Infraction	Regulation	Resources
Counties in the Chicago Area: <ul style="list-style-type: none"> • Cook • DuPage • Lake • Kane • McHenry • Will • Aux Sable and Goose Lake Townships in Grundy • Oswego Township in Kendall Counties in the Metro East St. Louis Area: <ul style="list-style-type: none"> • Madison • St. Clair • Monroe 	Diesel vehicles ≥8,000 lbs	10 minutes/hour	Traffic conditions or controls. Prevent a health or safety emergency. Emergency or law enforcement purposes. Service or repair. Government inspection. Idling necessary to operate auxiliary equipment to accomplish intended use of vehicle. Guarding contents of armored vehicle. Bus can idle a maximum of 15 minutes/hour to maintain passenger comfort. Resting in sleeping berth. Mechanical difficulties out of control of operator. Airport ground control support. Buses owned by public transportation authorities on bus route. Implements of husbandry. Electric utility service vehicles. If temperature <32F or >80F, idle limit to 30 minutes/hour while in queue.	\$90 for first conviction. \$500 for second or subsequent conviction in 12-month period. Fines are divided and paid to 3 groups, dependant on the county that wrote the ticket.	625 Illinois Compiled Statutes (ILCS) 5/11-1429	http://www.ilga.gov/legislation/ilcs/default.asp?DocName=062500050K11-1429
City of Chicago	Diesel-powered vehicles	3 minutes/hour	Emergency vehicles providing health and safety services. Airport support vehicles necessary for airport operations. Engine running is necessary to operate auxiliary equipment to accomplish the intended use of the vehicle. Vehicles standing with engine running for purpose of service, repair, or inspection. Vehicles standing in traffic. Air conditioning if temperature >80F or heat if temperature <32F. Operation of APU or generator set. Mechanical requirements or difficulties out of operator's control. Vehicles standing due to automatic regeneration of diesel particulate filters or pre-shutdown cooling required by engine manufacturer.	\$250 per violation	Chicago Municipal Code, Section 9-80-095	http://www.cityofchicago.org/dam/city/depts/doe/general/ESB_PDFs/StandngLimitOrdinanceAsPassed.pdf
Chicago	City fleet vehicles	3 minutes in a 60-minute period	a. Emergency service vehicles; b. Vehicles standing in traffic; c. Airport support equipment; d. Vehicles being serviced or repaired; e. Idling to operate auxiliary equipment that is required to accomplish the intended use of the vehicle; f. Idling to provide heat within the cab of the vehicle if the outside temperature is less than 32F and there is no accessible temperature-controlled area within a reasonable distance; or g. Idling to provide cooling within the cab of the vehicle if the outside temperature is more than 80F, there is no accessible temperature-controlled area within a reasonable distance, and the vehicle is equipped with air conditioning.	NA	City of Chicago Vehicle Idling Management Policy	http://www.cityofchicago.org/content/dam/city/depts/doe/general/ESB_PDFs/CityVehicleIdlingManagementPolicy05202010.pdf

IDLING REDUCTION TECHNOLOGY SOLUTIONS

Describes and provides links to 50+ products.

Organized by service(s) needed:

- Idle management
- Heat only
- Cooling only
- Heat, cooling, and power (auxiliary power unit)
- Power take-off
- Cargo refrigeration
- Wayside power / truck stop electrification

Argonne
NATIONAL LABORATORY

Idling Reduction Technology Solutions for Class 1–8 Vehicles^{*, †}

Services provided	Vehicle type (LD, MD, HD, trailer)	Power source	Company/Product(s)	EPA verification [‡]	Notes
<i>Idle management</i>					
	LD, MD	Battery/electric	Derive Systems / Derive Efficiency	No	Idle efficiency gains are achieved by reducing idle RPM levels
	LD, MD, HD	Battery/electric	GRIP / Grip Idle Management	No	Enables use of heat and cooling and provides power for auxiliaries while maintaining battery state of charge
	LD	Battery/electric	Havis / ChargeGuard	No	Automatic idle shutoff timer
	LD, MD	Battery/electric	Havis / IdleRight2	No	Monitors the battery's voltage while the vehicle is turned off and electronics, such as emergency lighting, are on. Restarts vehicle when battery voltage drops below a preset level
	MD, HD	Battery/electric	IdleSmart / IdleSmart	No	Cycles engine on and off as needed to maintain battery state of charge and coolant heat
	LD, MD, HD	Battery/electric	InterMotive Vehicle Controls / EcoStar	No	Programmable system that automatically turns the engine off when specific customizable conditions are met
	HD	Battery/electric	Temp-a-Start / Temp-a-Start system	No	Cycles engine on or off to maintain engine block temperature, battery state of charge, and/or bunk temperature
	LD, MD, HD	Battery/electric	Vanner / IdleWatch	No	Idle management system to cycle on and off engine as needed to maintain battery state of charge and coolant heat

www.anl.gov/es/reference/idling-reduction-technology-solutions-for-class-18-vehicles

IDLEBOX: SPECIALTY RESOURCES

Specialty Resources



Personal Vehicles

[Idling Reduction for Personal Vehicles](#) (Fact Sheet)

[Which Is Greener: Idle, or Stop and Restart? Comparing Fuel Use and Emissions for Short Passenger-Car Stops](#) (Fact Sheet)

[Reducing Personal Vehicle Idling](#) (Presentation)

[Stop and Restart Effects on Modern Vehicle Starting System Components—Longevity and Economic Factors](#) (Technical Report)



Light- and Medium-Duty Fleet Vehicles

[Idling Reduction Basics for Fleets](#) (Presentation)

[Technology Solutions](#) (Presentation)



Heavy-Duty Vehicles

[Long-Haul Truck Idling Burns Up Profits](#) (Fact Sheet)

[Economics of Idling Reduction Options for Long-Haul Trucks](#) (Fact Sheet)

[Idling Reduction for Long-Haul, Heavy-Duty Trucks](#) (Presentation)

[Emissions From Idling Heavy-Duty Trucks and Idling-Reduction Equipment](#) (Technical Report)

[Idling Reduction for Long-Haul Trucks: An Economic Comparison on On-Board and Wayside Technologies](#) (Technical Report)



Emergency & Other Service Vehicles

[Idling Reduction for Emergency and Other Service Vehicles](#) (Fact Sheet)

[Idling Reduction For Emergency Vehicles: A Case Study](#) (Fact Sheet)

[Case Study – Idling Reduction Technologies for Emergency Service Vehicles](#) (Technical Report)



Work Trucks

[Work Truck Idling Reduction](#) (Fact Sheet)



FACT SHEETS

VEHICLE TECHNOLOGIES OFFICE

Idling May Even Be Illegal
If idling is illegal, some jurisdictions have laws against it. This could be subject to a fine if you are not careful in:

- New York City
- Massachusetts
- New Jersey
- New Hampshire
- New Jersey
- Virginia

you hold the key to the road

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduction for Personal Vehicles

Idling your vehicle—running your engine when you're not driving it—wastes gas, pollutes the air, and contributes to global warming. Idling for more than 30 seconds uses more fuel and produces more emissions than contribute to smog and climate change than stopping and restarting your engine does.

Researchers estimate that idling three hours a day and light-duty vehicles combined wastes about 6 billion gallons of fuel annually. About half of that is attributable to personal vehicles, which generate around 10 million tons of CO₂ every week just by idling. While the impact of idling may be small on a per-car basis, the impact of the 270 million personal vehicles in the U.S. adds up. For an easy fact and reduce emissions, eliminating the unnecessary idling of personal vehicles would be the same as taking 5 million vehicles off the road.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduction for Emergency and Other Service Vehicles

Emergency vehicles, such as police cars, ambulances, and fire trucks, along with other service vehicles such as armored cars, are often exempt from laws that limit engine idling. However, these vehicles can save fuel and reduce emissions with technologies that allow them to perform vital services without idling.

When waiting in traffic, you may keep your car in idling mode. In congested traffic, you may need to idle in order to avoid being stuck in traffic. Your car's ability to contribute to other drivers, and children's keeps an extra second of idling. However, these vehicles can save fuel and reduce emissions with technologies that allow them to perform vital services without idling.

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduction for Emergency and Other Service Vehicles

Police vehicles spend much of their time parked and running while officers receive traffic, help at accident scenes, write reports, and wait to be called. Officers commonly require lights, radios, computers, radar, and video cameras.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduction for Emergency and Other Service Vehicles

Ambulances are often called to maintain lighting, communication equipment, computers, refrigeration for medications, and life-support equipment, as well as the vehicle's heating and cooling systems. Idling these diesel engines outside hospital emergency rooms while the doctors complete paperwork and await their next call not only wastes fuel but produces significant air pollution that can exacerbate respiratory or cardiovascular problems in sensitive populations.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduction for Emergency and Other Service Vehicles

On-board battery-powered APUs can supply power for all needed functions are available for ambulances. Drivers can plug in the APU to charge at the hospital, or the vehicle engine can charge it while the ambulance is being driven. Solar panels can be installed on the roof to provide additional power. Stationary systems can be installed near the emergency room to enable ambulances to plug in for power and receive conditioned air through a window duct.

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VEHICLE TECHNOLOGIES OFFICE

Schools Offer Unique Opportunities

As communities are often concerned about the effects of poor air quality on children, some anti-idling campaigns have targeted school buses. School buses are often parked for long periods of time, and idling during these periods can contribute to air pollution. Schools can take steps to reduce idling during these periods, such as using alternative fuels, using alternative fuels, or using alternative fuels.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Economics of Idling Options for Long-Haul Trucks

Long-haul truck drivers perform a vital important service. In the course of their work, they must take rest periods as required by federal law. Most drivers remain in their trucks, which keep running to provide power for heating, cooling, and other necessities. Such idling, however, comes at a cost. It's an expensive and polluting way to keep drivers safe and comfortable. Technology alternatives to idling not only save money and reduce pollution, but also help drivers get a better night's rest.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduces Fuel and Increases Engine Wear

Idling a heavy-duty truck consumes about 0.8 gallons of fuel per hour when idled costs as little as \$2.50 per gallon, fuel for one 10-hour rest period will cost \$25. Typically, a long-haul truck idles about 1,000 hours per year, using about 1,000 gallons of fuel. Average National Laboratory (ANL) estimates that, in the U.S., long-haul truck idling consumes up to 1 billion gallons of fuel annually at a cost of around \$3 billion. Idling also accelerates engine wear and tear. When manufacturers' warranties and maintenance manuals apply to "hours operated" rather than "miles driven," the cost of idling is greater than just fuel.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduces Fuel and Increases Engine Wear

Auxiliary Power Units (APUs) provide drivers with on-board power for climate control and electrical devices. Most APUs are powered by diesel, but battery-powered APUs and alternative fuel APUs are also available. Some APUs are equipped to plug into a power pedestal for grid power (see Electrical Parking System on the next page).

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Idling Reduces Fuel and Increases Engine Wear

Idling may be illegal. Many state and local laws restrict the idling of heavy-duty trucks, and violating idling laws can result in steep fines. "Clean Cities" (cleanair.org) is a national coalition of a number of idling laws and ordinances, which lowers idling restrictions and penalties for all classes of on-road vehicles. The American Transportation Research Institute (ati.org) provides a downloadable web tool for laws specific to heavy-duty trucks.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Clean Cities: Idling Reduction

Work Truck Idling Reduction

Work trucks are everywhere—delivering packages to our doorsteps, removing snow, and towing electrical vehicles. Unlike the 10 vehicles that travel over 100 miles per day, work trucks typically travel over 100 miles. They are often used to work sites and are often parked for long periods of time.

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Solutions

To eliminate unnecessary idling for work trucks, industry power sources and technologies are being developed to provide power to essential equipment. Auxiliary power units (APUs) are being designed for use in work trucks to provide power to essential equipment. Auxiliary power units (APUs) are being designed for use in work trucks to provide power to essential equipment.

To eliminate unnecessary idling for work trucks, industry power sources and technologies are being developed to provide power to essential equipment. Auxiliary power units (APUs) are being designed for use in work trucks to provide power to essential equipment.

Benefits

Idling in the work truck can be a costly waste of money. Idling in the work truck can be a costly waste of money. Idling in the work truck can be a costly waste of money.

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Long-Haul Truck Idling Burns Up Profits

Idling Wastes Fuel and Increases Engine Wear

Idling a heavy-duty truck consumes about 0.8 gallons of fuel per hour when idled costs as little as \$2.50 per gallon, fuel for one 10-hour rest period will cost \$25. Typically, a long-haul truck idles about 1,000 hours per year, using about 1,000 gallons of fuel. Average National Laboratory (ANL) estimates that, in the U.S., long-haul truck idling consumes up to 1 billion gallons of fuel annually at a cost of around \$3 billion. Idling also accelerates engine wear and tear. When manufacturers' warranties and maintenance manuals apply to "hours operated" rather than "miles driven," the cost of idling is greater than just fuel.

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Idling Degrades Air Quality

Idling a heavy-duty truck contributes to air pollution. Idling a heavy-duty truck contributes to air pollution. Idling a heavy-duty truck contributes to air pollution.

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Idling May Be Illegal

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U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Clean Cities

VEHICLE TECHNOLOGIES OFFICE

THANK YOU

**Work sponsored by the U.S. Department of Energy's
Vehicle Technologies Office**

Patricia Weikersheimer
Argonne National Laboratory
pweikersheimer@anl.gov
630-252-3124

Learn more about Argonne National Laboratory at www.anl.gov
Learn more at cleancities.energy.gov
Find your nearest coalition at cleancities.energy.gov/coalitions/contacts/



Neeraj Chirmulay
neeraj@viatec.us
864.283.2427

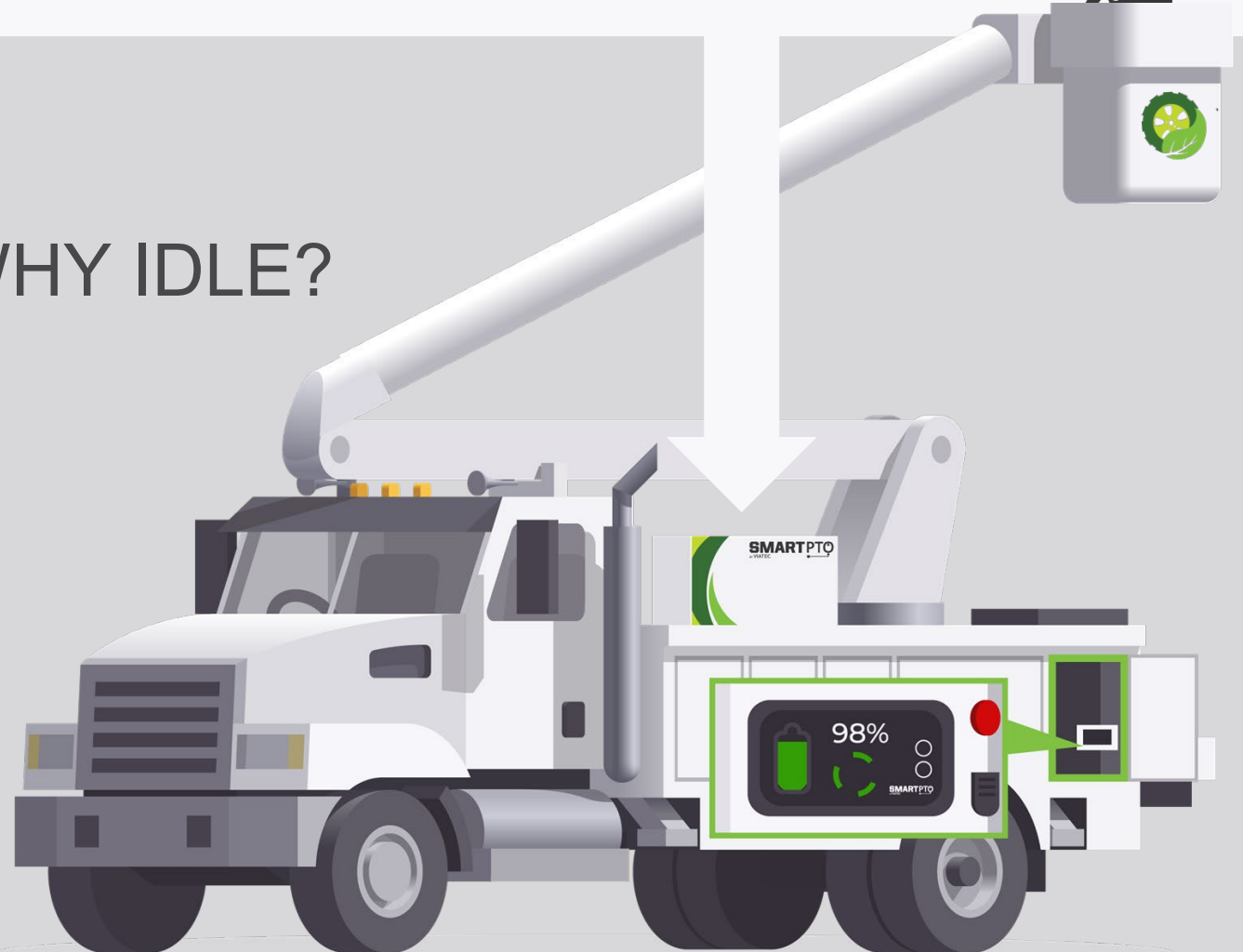
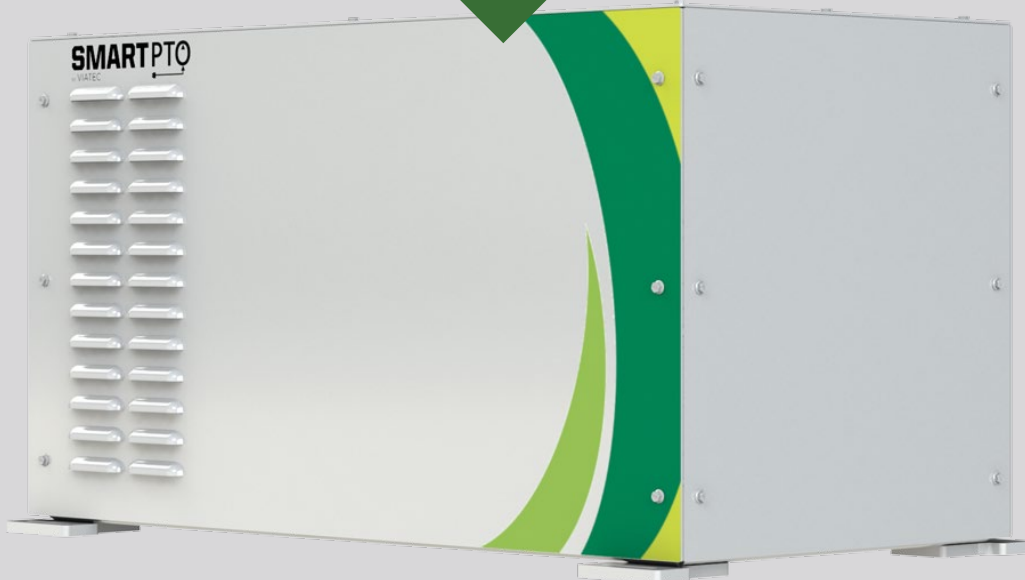
- Co-Founder and CTO for Viatec
- Primary interest and expertise is in systems engineering where different disciplines of engineering--mechanical, electrical and software--meet to create a final product
- Previous experience as a consultant for Washington DC Metro and with transportation electrification on electric buses and an off-highway multi-purpose electric work vehicle & power station
- Before jumping into transportation electrification worked on diesel engine development
- Master's degree at Clemson University's International Center for Automotive Research

SMARTPTO

It's quiet.

Truly Parallel Auxiliary
Power for Vocational
Vehicles and Equipment

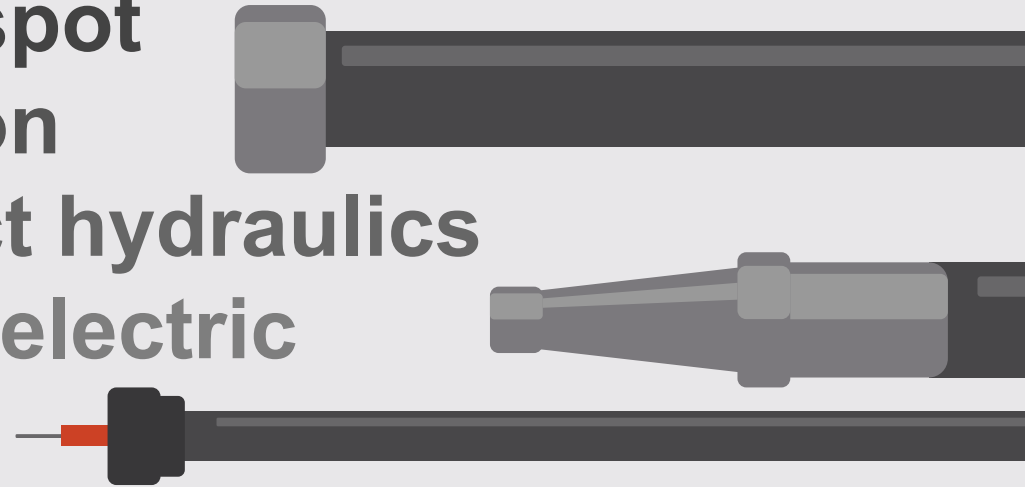
WHY IDLE?



Simple Installation



Pick a spot
Bolt it on
Connect hydraulics
Plug in electric
Done.



Minimal Interfacing



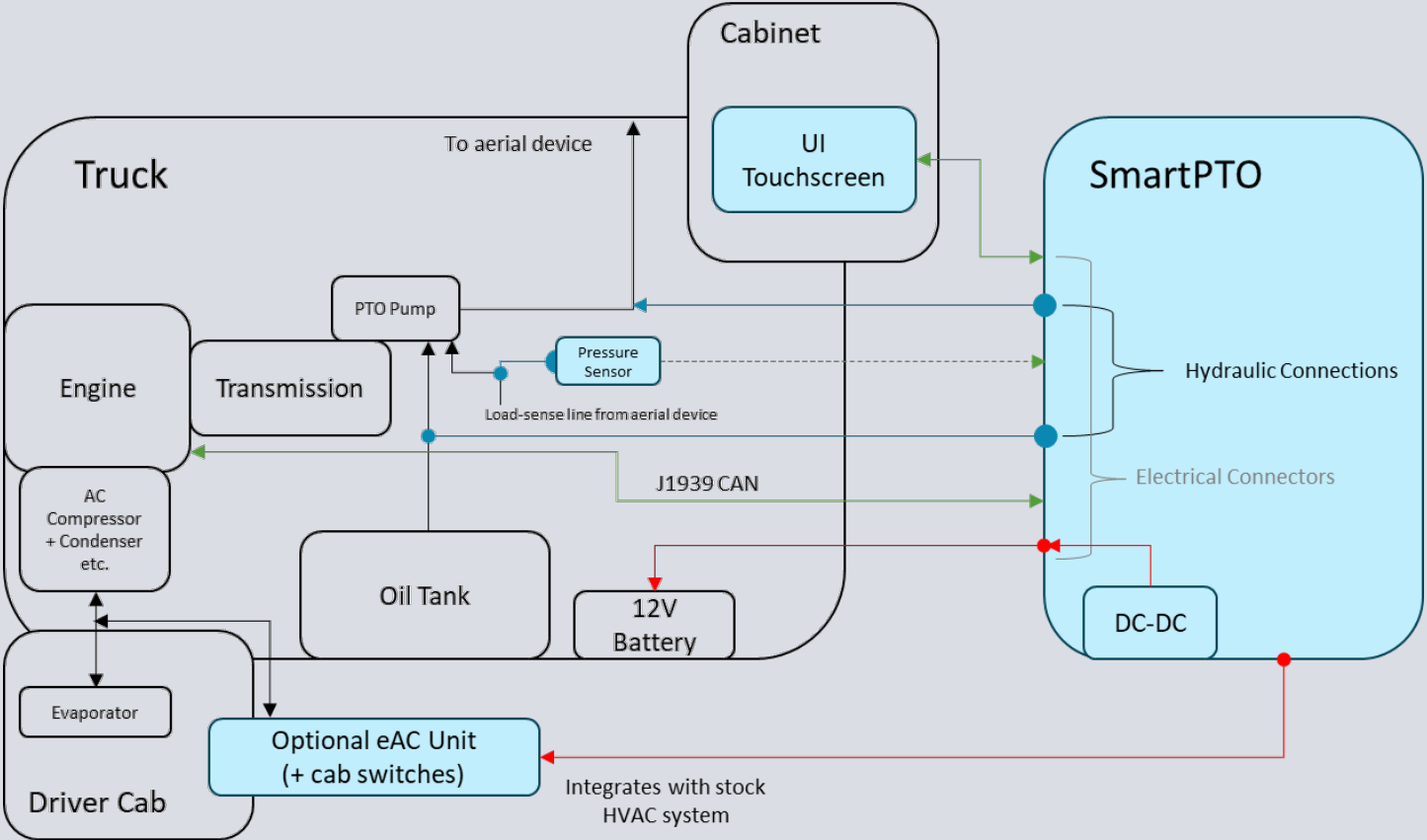
ELECTRIC

HYDRAULIC

550-570 lbs

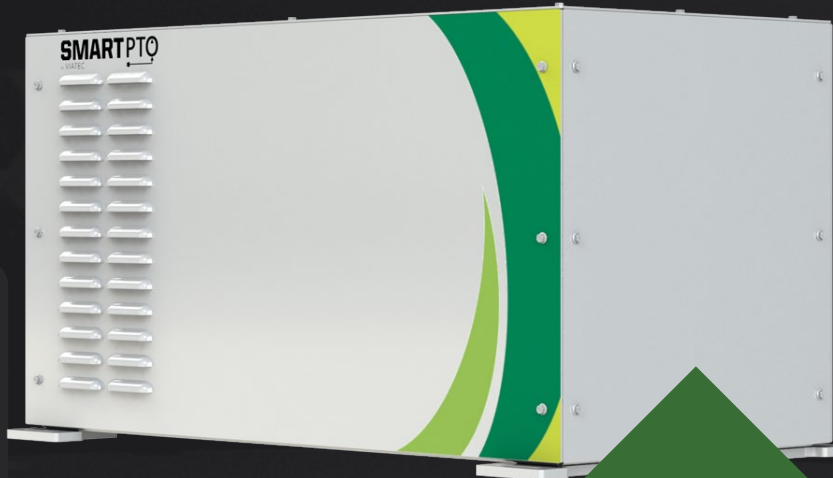
8-16 hours
Installation Time

Schematic



Setting Trends...

Technology Integration



\$100M+ in
Engineering,
Testing and
Validation



CORE
TECH
&
POWERTRAIN

HYDRAULIC
INTERFACE

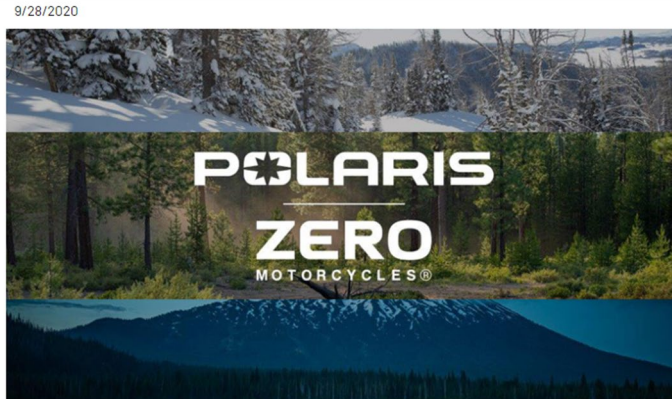
Hydraulic Pump + Valves
"Rear Wheel"

Zero Motorcycles Powertrain
"Motorcycle In a Box"

Viatic Electronics + Software
"Virtual Rider"

USER
INTERFACE

...big names are
following



Polaris Announces Partnership with Zero
Motorcycles to Co-Develop Electric Vehicles



Scalable



SMARTPTO

V3

Along with 55' Material Handlers, we are adding smaller trouble-trucks and larger digger derricks.

V3 will have configurations to 'fit' all devices/ use cases

Equipment, not just 'trucks'

SmartPTO can help you electrify other equipment like cable pullers/ tensioners
We are even working on a SmartPX system that can electrify non-hydraulic equipment!



Now's the time!



Provisional CARB
Approval

55+ Units Deployed
(EOY2020)

OEM Preferred
Option for 2 leading
manufacturers

\$100M invested in
powertrain development and
testing



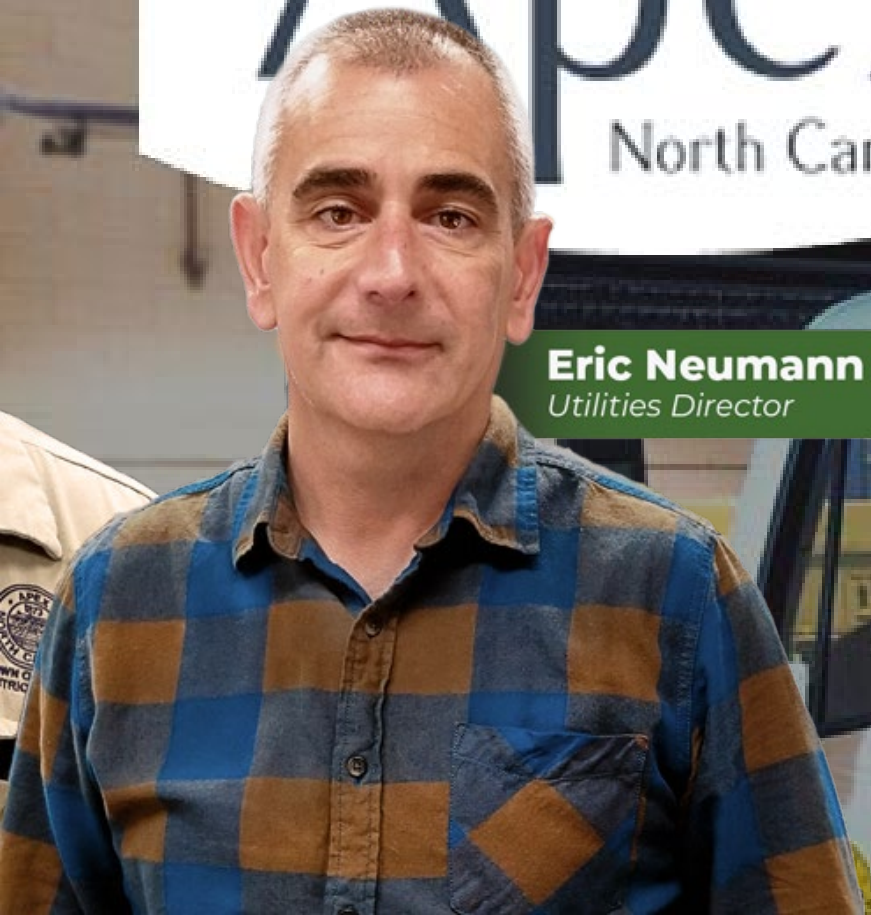
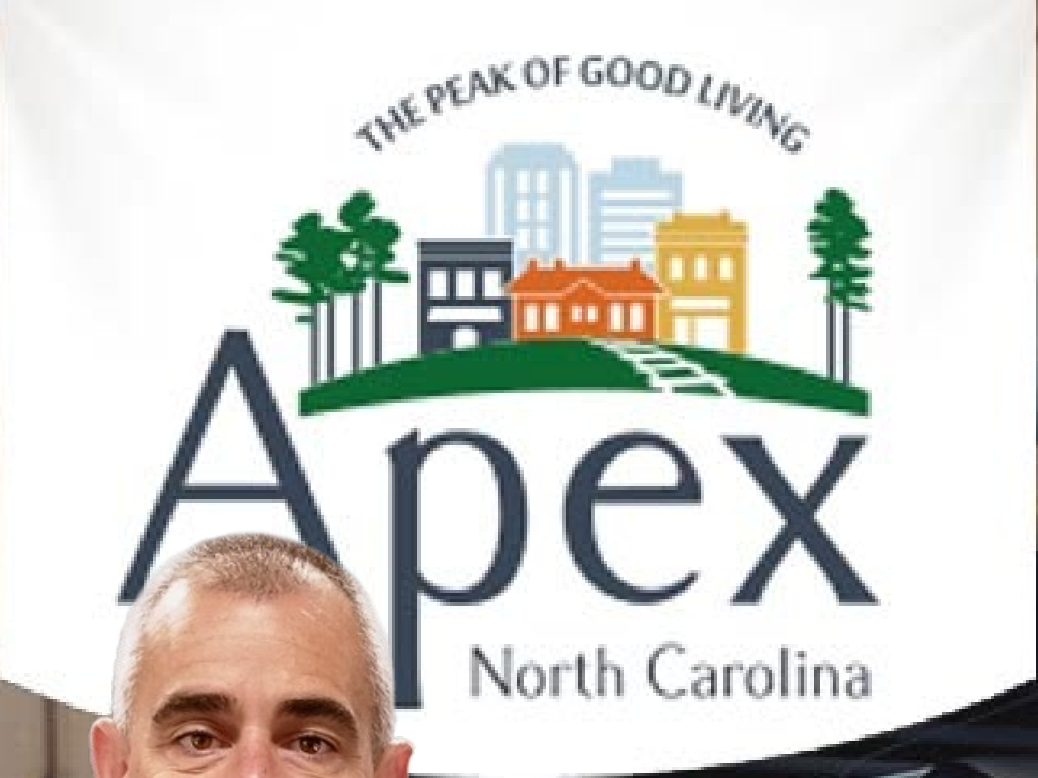
Equipping your trucks with SmartPTO counts towards your EEI commitments!

EEI


Edison Electric
INSTITUTE


Associate
Member
Directory



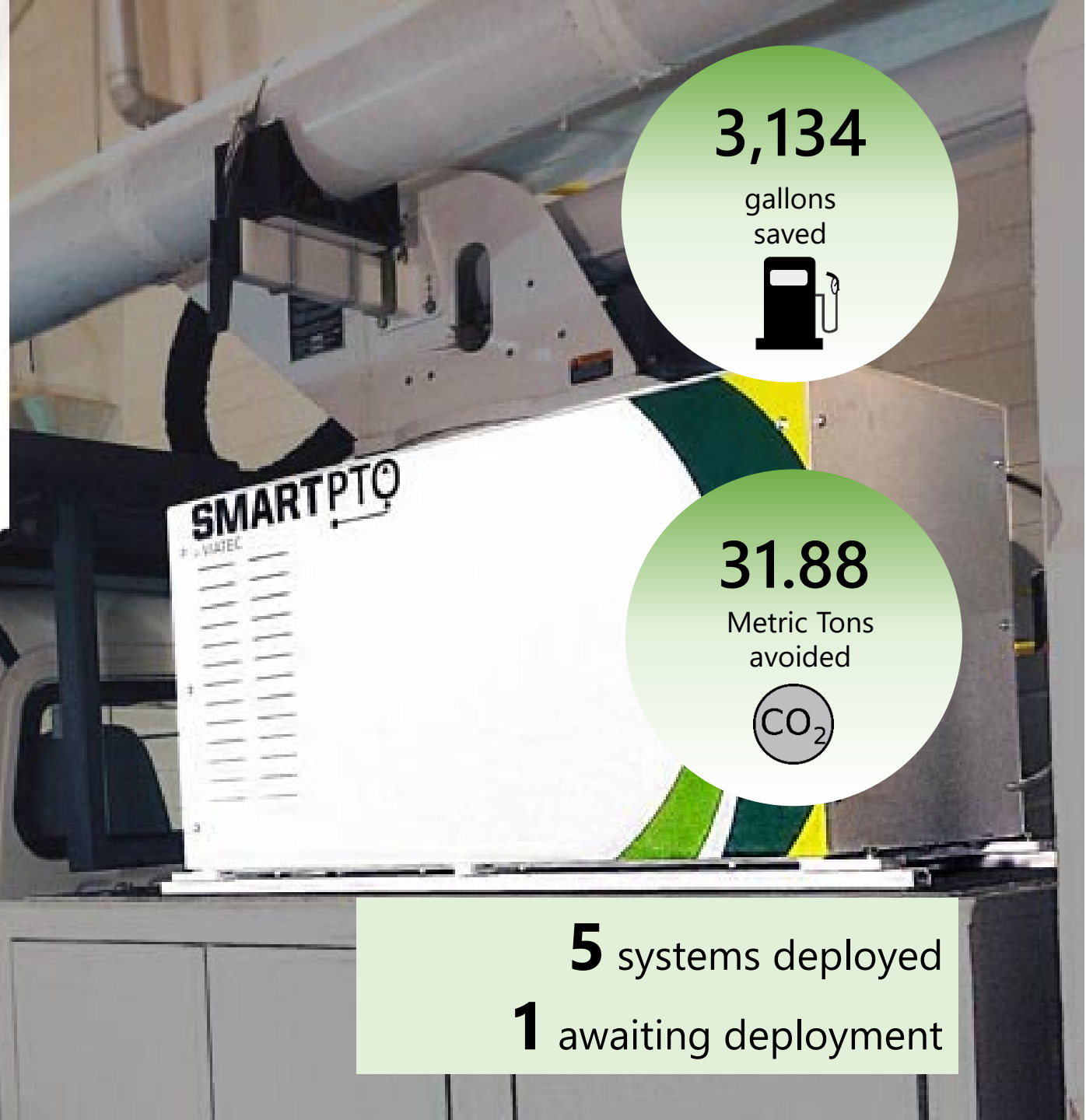


Eric Neumann
Utilities Director

3,134
gallons saved


31.88
Metric Tons avoided


5 systems deployed
1 awaiting deployment



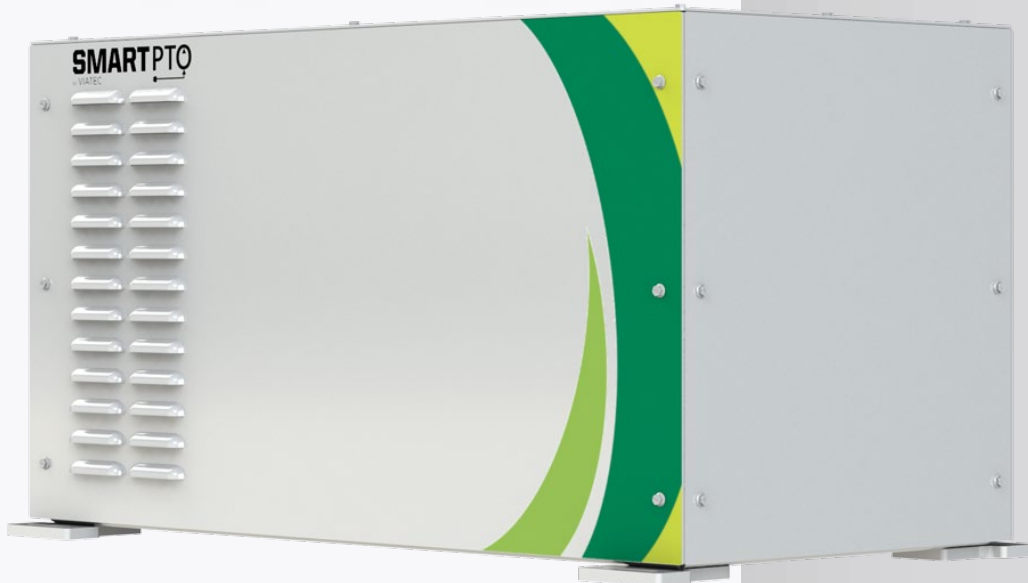


VIATEC

SMARTPTO

Thank You!

Why run
Without it?



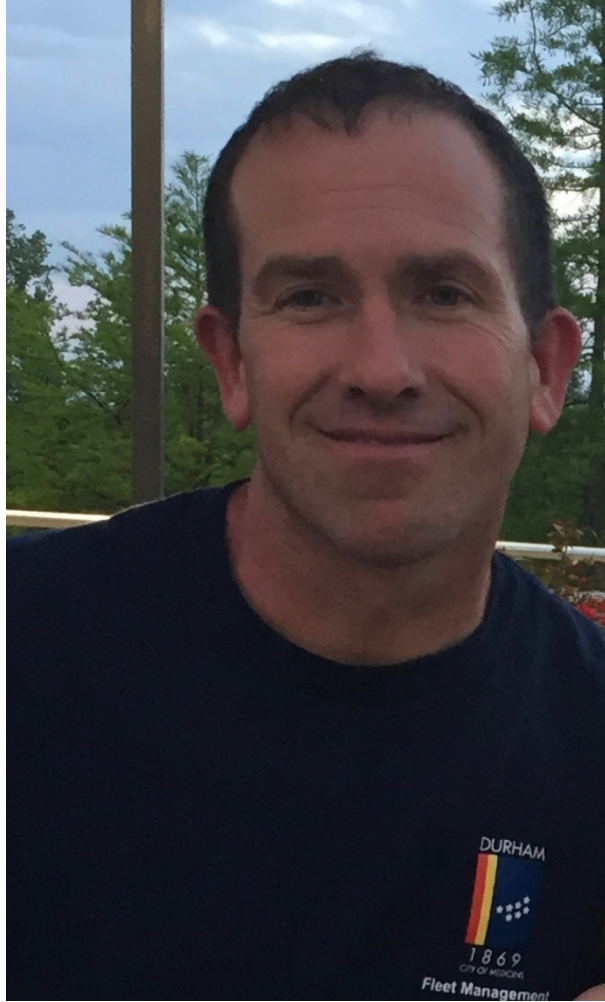


FLEET MANAGEMENT

CITY OF DURHAM

2020 Sustainable Fleet Technology

Idle Reduction | December 2, 2020



John Ferguson
Assistant Director
Fleet Management Department



FLEET MANAGEMENT
CITY OF DURHAM

919.560.4101

DurhamNC.gov

Follow Us @CityofDurhamNC



Bucket Truck

- CFAT grant for VIATEC Smart PTO
- Recently place into service
- Some pushback from the aerial OEM
- APU powered HVAC-Employee heat stress policy drives excessive idle in the summer months



FLEET MANAGEMENT

CITY OF DURHAM

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Fire Truck

- Harrison Diesel 6KW APU
- Automatic engagement with the ability to manually disable
- 20% Fuel savings
- 2 units in service with 7 units ordered with full battery powered APU's by Harrison
- More efficient emissions system with less regeneration events



FLEET MANAGEMENT

CITY OF DURHAM

919.560.4101

DurhamNC.gov

Follow Us @CityofDurhamNC





Mike MacComiskey
mike@advtracking.net
816-503-1826

- Senior Fleet Management Consultant for Advantage Asset Tracking
- Recently teamed up with Advantage Asset Tracking and GEOTAB
- Industry expert and a respected advisor in the government Telematics market and understands the explicit needs of municipalities and government fleets
- Avid supporter of Clean Cities Coalitions all over the country on their mission to convert fleets to utilize clean fuels, optimize fleet sustainability and assisting with EV conversion

Expandability That Grows With Your Business

We have the know-how you need to navigate through the complex world of fleet management and personal safety solutions.



GPS Telematics

You can't manage
what you can't
measure



What can you do?

Educate & Communicate with your drivers!

- Adopt an idling reduction policy
- Host an idling reduction workshop for drivers
- Post signs to remind drivers NOT to idle
- Ask drivers to make a pledge to idling reduction
- Offer incentives/rewards for idling reduction efforts



Good vs Bad Idle

Good Idle

- Trucks operating PTO, (engine MUST be running)
- First responders
- Utility vehicles with power equipment
- Law Enforcement
- Trucks that do a regeneration cycle to clean particulate traps

Bad Idle

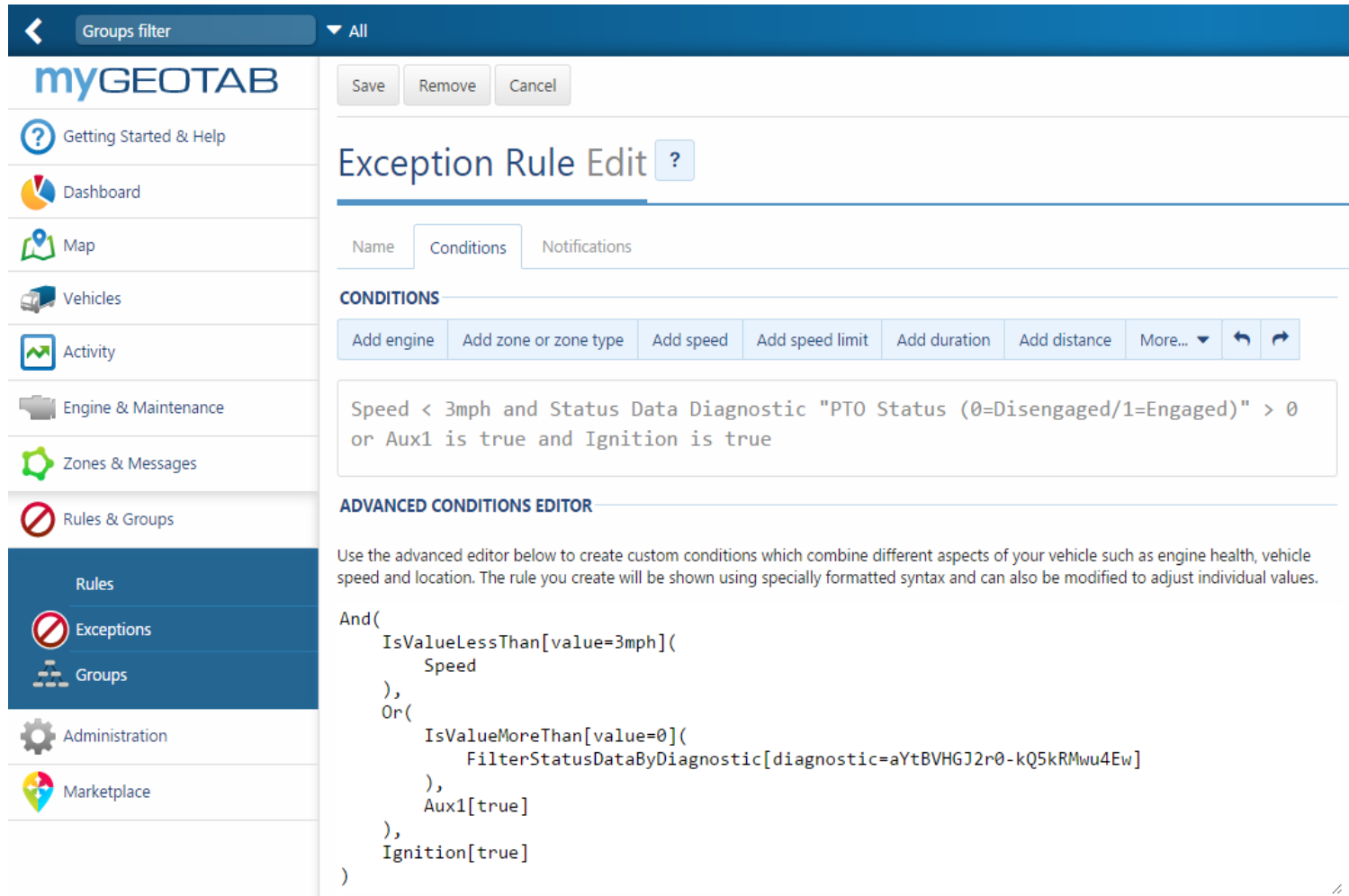
- Delivery trucks
- Transit busses
- Shuttle busses
- Taxis
- Engine warming
- Sitting in vehicle for lunch breaks, filling out work orders, make phone calls

How do we determine idle?

Parameter	Value	Chart
Odometer	83577000...84259700m	
Outside air temperature	2...41°C	
Parking brake (1 = on)	0...1	
PositionValidAtDevice	0...1	
Raw odometer	83577000...84259700m	
Raw outside air temperature	0...45°C	
Shift inhibit (1 = on)	0	
Standard harness detected	1	
Telematics device voltage	11.7...14V	
Total amount of fuel used	81853...82621.5L	
Total amount of fuel used while idling	27648...27943L	
Total engine idle time	20908337...21102929s	
Total fuel used (since telematics device install)	2079.6...2845.9L	
Total fuel used while idling (since telematics device install)	726.1...1006.2L	
Total power takeoff time	13500...14039.4s	
Trip fuel used	0.02...44.5L	
Trip idle fuel used	0.01...22.1L	
Vehicle active (idle or driving)	0...1	
Vehicle programmed cruise control maximum speed limit	121km/h	
Vehicle programmed maximum road speed limit	89...121km/h	
Vehicle programmed maximum road speed limit enabled (1 = enabled)	0	
Windshield washer fluid level	0...98%	

Some results are not displayed. Use the search and/or options to narrow the results.

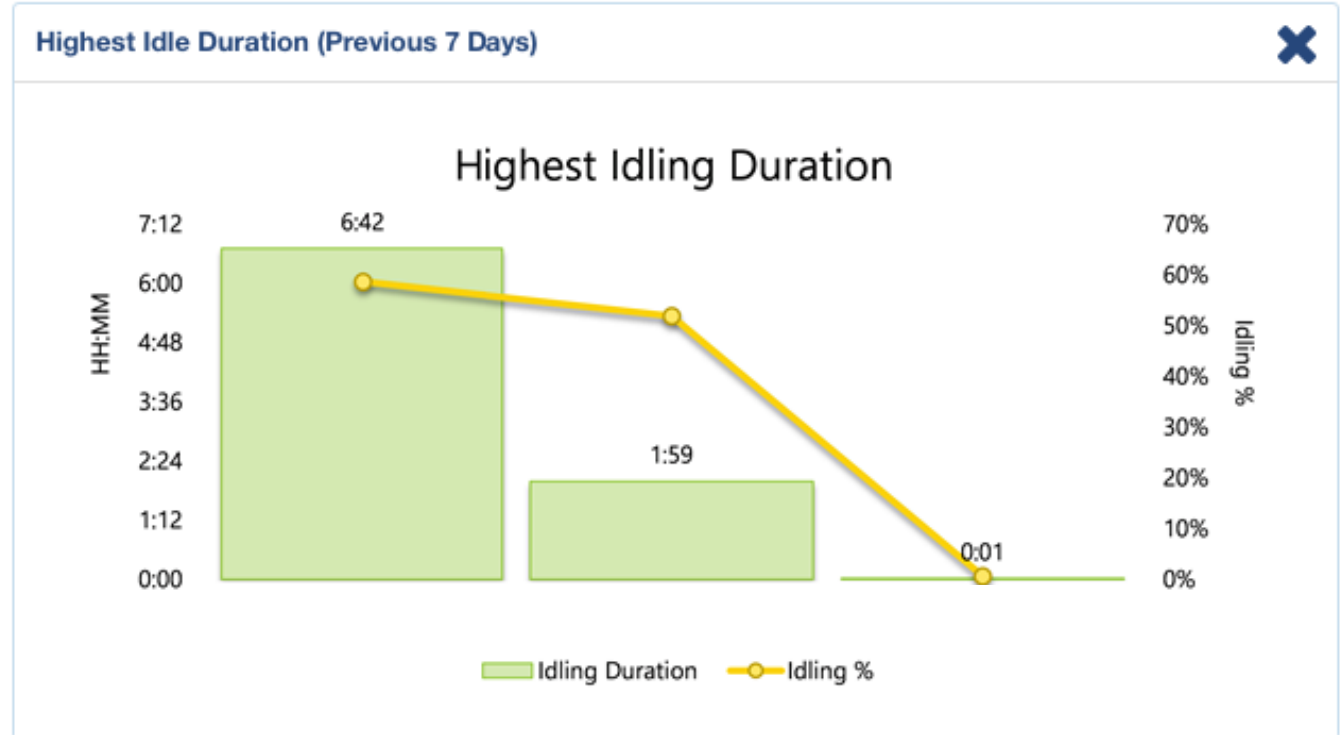
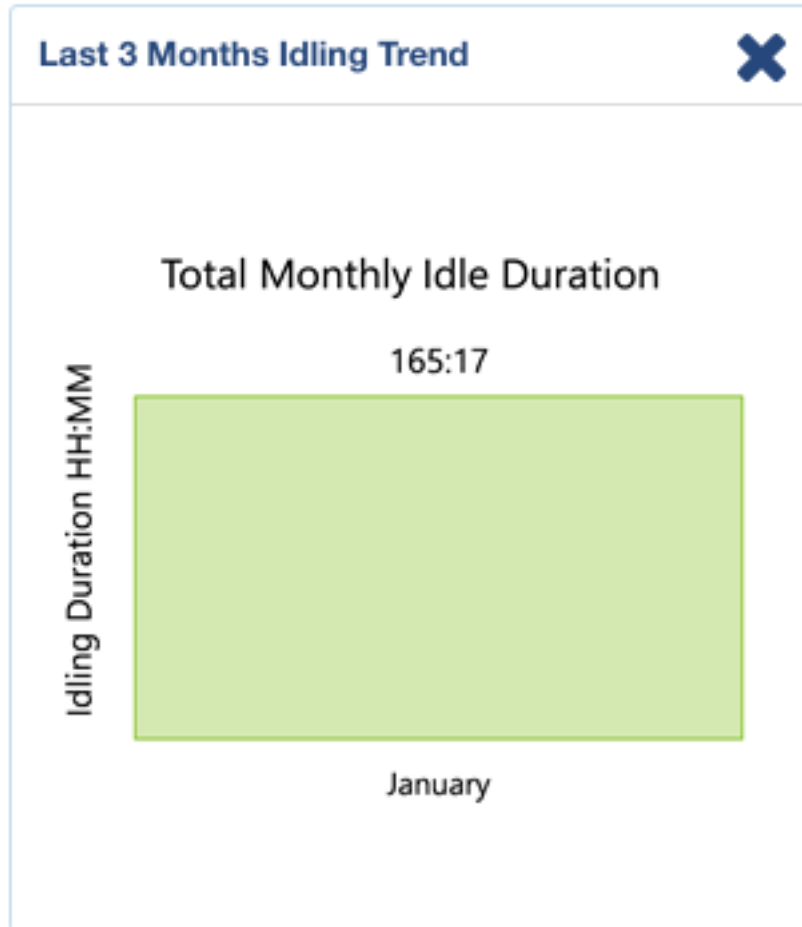
Useful Data



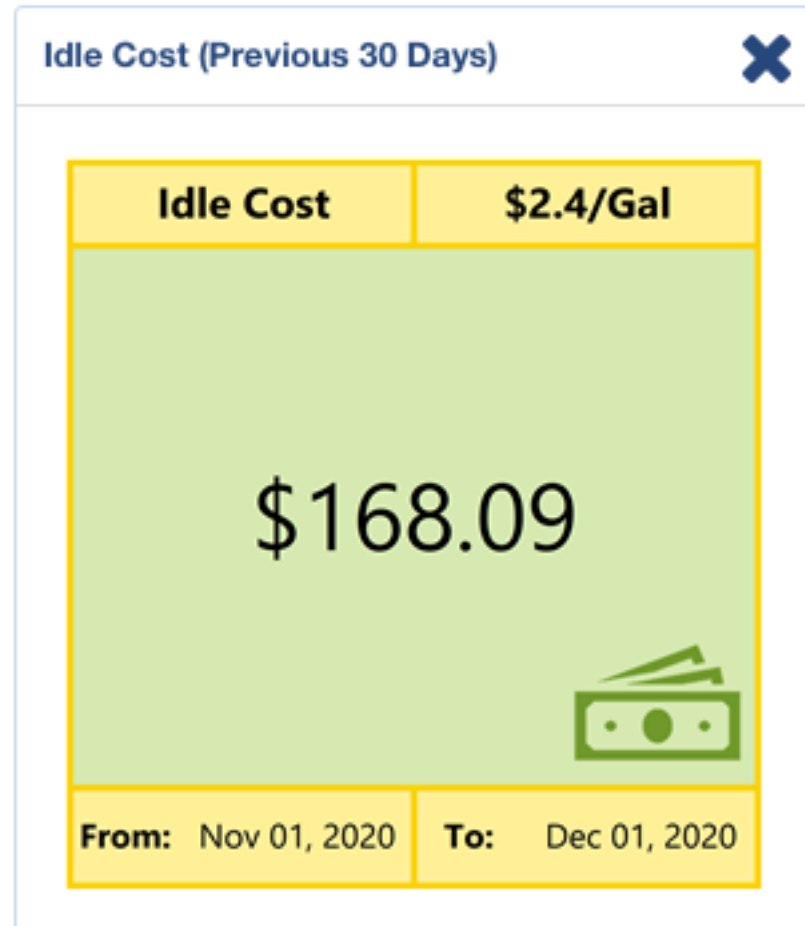
The screenshot shows the 'Exception Rule Edit' interface in the myGEOTAB application. The left sidebar contains navigation options: Getting Started & Help, Dashboard, Map, Vehicles, Activity, Engine & Maintenance, Zones & Messages, Rules & Groups, Rules, Exceptions, Groups, Administration, and Marketplace. The main content area is titled 'Exception Rule Edit' and includes 'Save', 'Remove', and 'Cancel' buttons. Below the title are tabs for 'Name', 'Conditions', and 'Notifications'. The 'Conditions' tab is active, showing a list of condition types: 'Add engine', 'Add zone or zone type', 'Add speed', 'Add speed limit', 'Add duration', 'Add distance', and 'More...'. A text box displays the rule condition: 'Speed < 3mph and Status Data Diagnostic "PTO Status (0=Disengaged/1=Engaged)" > 0 or Aux1 is true and Ignition is true'. Below this is the 'ADVANCED CONDITIONS EDITOR' section, which provides instructions on using the editor and shows the corresponding JSON syntax for the rule condition.

```
And(  
  IsValueLessThan[value=3mph](  
    Speed  
  ),  
  Or(  
    IsValueMoreThan[value=0](  
      FilterStatusDataByDiagnostic[diagnostic=aYtBVHGJ2r0-kQ5kRMwu4Ew]  
    ),  
    Aux1[true]  
  ),  
  Ignition[true]  
)
```

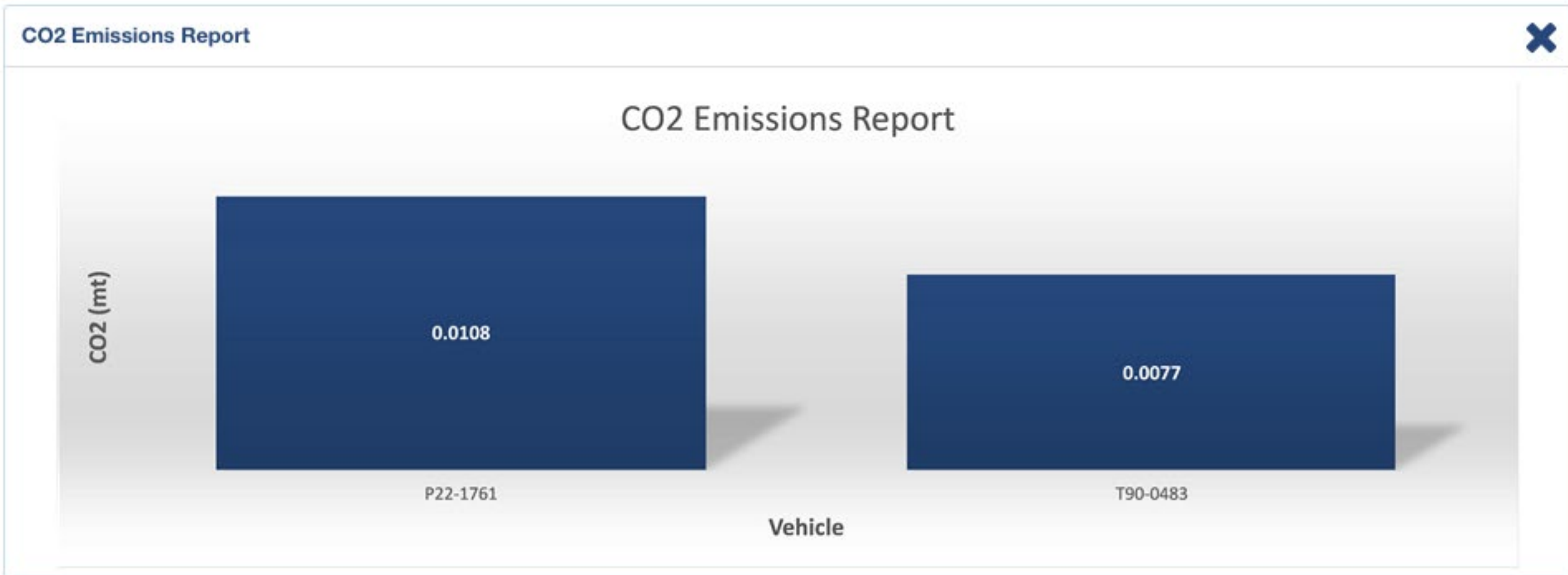
Idle Reports



We can show what Idle Costs



We can calculate GHG (CO2)



Driver Feedback (Coaching Tools)

Exception Rule Edit Show Help

Name Conditions **Notifications**

NOTIFICATION RECIPIENTS
 Add email Add alert Add driver feedback More...

TEMPLATE: **On Off Allow late notifications**

EMAIL:

There are no notifications set up for this exception rule.

HELP
 Choose how to notify someone when a rule is broken. Some ways to do this include: sending an email to an individual or to a group; displaying a popup to a user in the application; warning a driver through driver feedback or a prompt on their Garmin device. Third-party systems can be notified through additional means including web requests or text messages.

- Beep three times**
Beep the device three times
- Beep three times rapidly**
Rapidly beep the device three times
- Beep ten times rapidly**
Rapidly beep the device ten times
- Text message**
Send a text message to a compatible attached device
- GO TALK**
Send a message that will be spoken to the driver (requires an IXX-GOTALK)
- Change status**
Prompt the driver to change their status on a connected compatible device

Exception Rule Edit Show Help

Name Conditions **Notifications**

NOTIFICATION RECIPIENTS
 Add email Add alert Add driver feedback More...

TEMPLATE: Default email template

EMAIL: Type here and press Add when done...

There are no notifications set up for this exception rule.

HELP
 Choose how to notify someone when a rule is broken. Some ways to do this include: sending an email to an individual or to a group; displaying a popup to a user in the application; warning a driver through driver feedback or a prompt on their Garmin device. Third-party systems can be notified through additional means including web requests or text messages.

Exception Rule Edit Show Help

Name Conditions **Notifications**

NOTIFICATION RECIPIENTS
 Add email Add alert Add driver feedback More...

TEMPLATE: **Popup**
Display a yellow, low-priority popup alert at the top of the screen

EMAIL:

There are no notifications set up for this exception rule.

HELP
 Choose how to notify someone when a rule is broken. Some ways to do this include: sending an email to an individual or to a group; displaying a popup to a user in the application; warning a driver through driver feedback or a prompt on their Garmin device. Third-party systems can be notified through additional means including web requests or text messages.

- Urgent popup**
Display a red popup for each instance of an alert. Note: This can produce excessive notifications for easily-triggered rules.
- Log only**
Log a notification in "My Notifications"

Exception Rule Edit Show Help

Name Conditions **Notifications**

NOTIFICATION RECIPIENTS
 Add email Add alert Add driver feedback More...

TEMPLATE: Default email template

EMAIL: Type here and press Add when done...

There are no notifications set up for this exception rule.

HELP
 Choose how to notify someone when a rule is broken. Some ways to do this include: sending an email to an individual or to a group; displaying a popup to a user in the application; warning a driver through driver feedback or a prompt on their Garmin device. Third-party systems can be notified through additional means including web requests or text messages.

- Web request**
Make an HTTP GET or POST web request.
- Assign to group**
Assign vehicle to specified group
- Email to group**
Email to users in selected group
- Distribution list**
Send notification to distribution list
- Assign as Personal/Business**
Put vehicle(s) into Personal Mode (no GPS tracking) or Business Mode

Driver Feedback (Coaching Tools)

Hey!!!
Shut the engine off!!!



Less Idle = Less Wear & Tear




**EXPERIENCE
IS
EVERYTHING**
GEOTAB | Authorized
Geotab Reseller



Thank you!

Mike MacComiskey
Advantage Asset Tracking
mike@advtracking.net
816-503-1826
www.advtracking.net



Charlie Mahoney

charlie.mahoney@derivesystems.com

866-617-6493

- Business Development Manager for Derive Efficiency
- Been serving the fleet industry since 2007 promoting “right sizing” calibration parameters for public and private fleets
- More than 20 years ECU experience in providing logical, pragmatic recommendations to increase efficiency while promoting safety and environmental responsibility

Rethinking Idle with Technology



Vehicle Idle – Office on wheels

Idling is a vehicle function for a host of reasons:

- Mobile office
- Powering ancillary tools
 - Computers
 - Emergency lighting
 - Lifesaving equipment
 - Devices to perform services
- Providing shelter (climate)
- Distancing during Pandemic



DERIVE



Great Options

- Conversations are taking shape
- Solutions offered
- Everyone is pitching in
- There's more work to be done



Mission-specific idle profiles yield savings

Class 5 Bucket



.7 gph – 1.2 gph

- Vehicle – large displacement engine with two key idle modes.
- Accessories – non-standard aftermarket buckets requiring different PTO output
- Environment – often deployed following adverse weather, working 24 hours per day

Class 1 Compact Van



.3 gph - .5 gph

- Vehicle – small displacement engine that is often turbocharged
- Accessories – excessive use of 12V plug-ins
- Environment – Predominately urban use, experiencing high start/stop as well as post-appointment mobile office use

Example findings from diverse fleets – IDLE reduction

Static Optimizations



TESTING RESULTS: 20% to 25% savings depending upon MY

CASE STUDY: Delivered an overall 10.4% total savings to landscaping company

SAVINGS: \$540 / year; < 1 year ROI



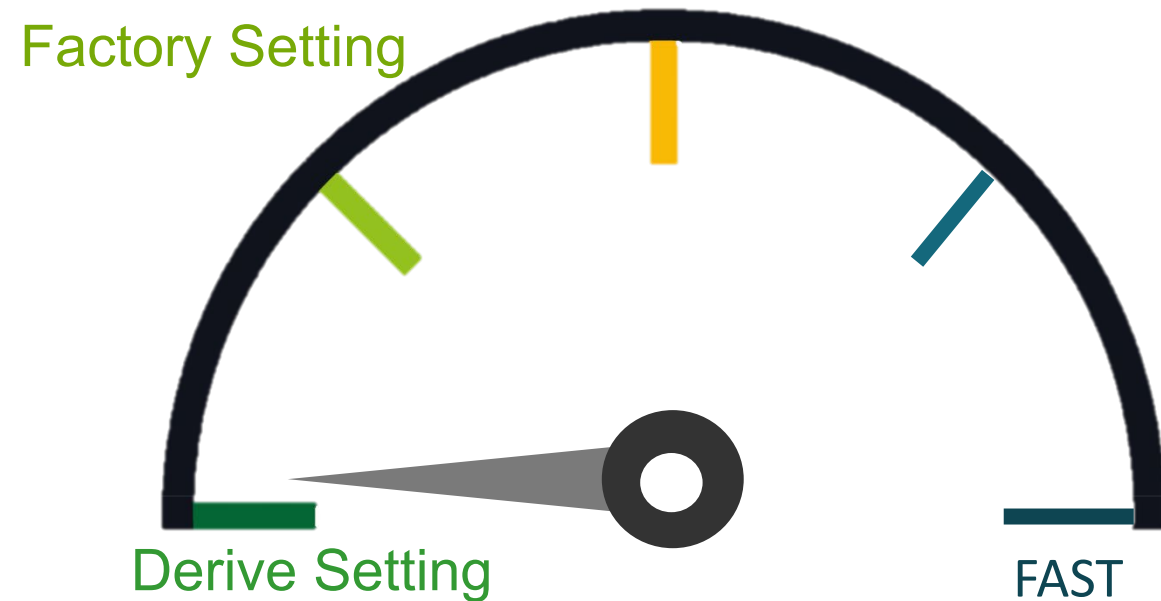
TESTING RESULTS: 12% to 15% savings depending upon MY

CASE STUDY: Delivered an overall 7.2% total savings to a parcel delivery company

SAVINGS: \$250 / year; ~ 1 year ROI

How does Derive VQ Optimization work?

1. ECM update.
2. Lower idle revolutions per minute (RPM) by up to 30%.
3. Business as usual.



Case Study 1 – City of Ontario

Fuel Management

Calif. City Reduces Fuel Use With Vehicle Calibration

April 05, 2017 – Government Fleet Magazine

- Fuel Use: 140 Gallons of Month
- Derive Saves: 22.5 Gallons per month
- Idle: 56%
- Annual Savings: \$750.60 @ \$2.78
- Emissions Reductions: 5300+# lbs



Case Study 2 – NYPD

NYPD / Derive Pilot

Conducted 2016



- Fuel Use: 94 Gallons of Month
- Derive Saves: 9 Gallons per month
- Idle: 60%
- Annual Savings: \$255 @ \$2.32
- Emissions Reductions: 2100+# lbs

Case Study 3 – City of Port St Lucie

How one Florida PD is saving nearly 12 percent on fuel

The Port St. Lucie Police Department uses a simple software solution from Derive Efficiency to increase fuel efficiency and decrease CO2 output

Jul 26, 2016 – Policeone

- Fuel Use: 91 Gallons of Month
- Derive Saves: 10.45 Gallons per month
- Idle: 76%
- Annual Savings: \$275.00 @ \$2.20
- Emissions Reductions: 2450+# lbs



Vehicle Support

Derive supports the majority of popular Ford and GM trucks van cut-aways and Law Enforcement vehicles



Questions?

Charlie Mahoney

Business Development Manager

+1 (407) 462-4145

Charlie.Mahoney@derivesystems.com

DERIVE

Nothing to Manage Post-Installation



STEPS TO INSTANT RESULTS

1. Connect Derive's handheld programmer or VQ device into OBDII port.
2. Follow the onscreen prompts and complete the one-time installation in only 10-20 minutes.
3. Experience greater efficiency, compliance and sustainability in your fleet.

DERIVE IS SIMPLE BY DESIGN

Where to buy

GSA Schedule 84

<https://www.gsaadvantage.gov/advantage/s/search.do?q=0:2Derive+systems+TeleSwivel&db=0&searchType=0>

Derive's Value Proposition

- ✓ 6% Fuel Savings Written Guarantee, Expected 8-12%
- ✓ Simple Installation And Immediate Savings.
- ✓ Nothing to Manage Post-Installation. No Driver Mgmt.
- ✓ OEM Warranty Unaffected, Backstopped by Derive

Derive guarantees 6% savings, at minimum



9.2%



8.3%



10.6%



7.2%



7.1%



8.3%



Yale Klat
yale.klat@idleair.com
646-481-6684

- Director of Government Relations for IdleAir and eNow
- Involved in joint venture to manufacture all-electric transport refrigeration units (TRUs)
- Prior experience with the Environmental Protection Bureau for the NY State Attorney General and as land use planner for Lake Tahoe
- Bachelor's and Master's Degrees from Cornell University in Environmental Management and JD from the City University New York School of Law

Sustainable Fleet Technology

VIRTUAL CONFERENCE 2020



in
partnership
with



Convoy Solutions & eNow

- Convoy Solutions purchased the IdleAir truck stop electrification network in 2010. Convoy is the leading provider of electrified parking spaces (EPS) for freight
 - More than 3000 electrified parking spaces
 - Over 700 fleet partners and 30,000 driver customers
 - Most recent installation is CLT at Schnyder
 - Thank you Duke Energy
 - Every 100 hours of service = 1 tonne of CO2
 - Over 60 Million gallons of diesel consumption mitigated
 - NOx mitigation protocol, ACR



Egoba private yard in Nuevo Laredo, Mexico



CR England private yard in Laredo, TX



in
partnership
with



TRU electrification

- TWO types
 - Standby plug-in
 - MDI
 - Zero emissions/all-electric
 - Challenge Dairy
 - Hunts Point
- CARB TRU RULE



Merchants Distributors (MDI)

- MDI installed 36 electric service points in a staging area (with capability of >100). Each service point, with a 480-volt connector, meets the needs of an eTRU that can draw up to 17 kW peak cooling capacity.
- MDI initially saved about 2,600 gallons of diesel fuel per month, a number that has risen to approximately 3,300 gallons per month commensurate with the company's growing eTRU usage. The electrical energy that displaces the diesel averages 18,000 kWh per month. At an average diesel cost of \$3.03 a gallon in the Southeastern U.S. and average commercial electric power cost of \$0.069 per kWh, MDI's net energy savings average \$8,700 each month.
- For an allocated electric service point installed cost of \$7,500, the payback is approximately 2.6 years.



Challenge Dairy

- By far the largest annual cost savings comes from eliminating the use of diesel fuel or refrigeration system, which saves almost \$17,000 annually in extended (12-hour) duration deliveries.
- Demonstration testing over the course of the 56-week over-the-road demonstration period showed that solar contributed 676 kWh (83%) of the hybrid all-electric TRU power, and the battery contributed 143 kWh (17%).



in
partnership
with



Hunts Point

- 750 plus TRUs; Distribution Center is the largest food distribution center in the world, moving 4.5 billion pounds of food annually, nearly all transported by diesel trucks and trailers.
 - Idling 24/7
 - Older TRUs
 - Levels of PM2.5, a harmful air pollutant produced from diesel emissions, in the Hunts Point area measure at 8.5 mg per cubic meter— the highest levels in all the Bronx.
- Demand constraint
- Semi Stationary
- NYSERDA funded pilot project of 4 TRUs



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- TRUCKS
 - Phase in beginning 2024
- TRAILERS (subject to change)
 - 15-minute rule
 - Telematics
 - Infrastructure
- AND THE CARROTS
 - The Clean Off-Road Refrigeration Equipment Voucher
 - \$40mm total allocated to first come first serve vouchers
 - \$65k per TRU & \$3k per plug
 - SB 350
 - Known as Charge-Ready (\$342mm over 5-years) for SCE and Fleet-Ready (\$236mm over 5-year) for PG&E.



in
partnership
with





Keith Kerman
kkerman@dcas.nyc.gov

- Deputy Commissioner at the Department of City Wide Administrative Services & NYC's first Chief Fleet Officer
- Leads fleet safety & sustainability as part of Mayor DiBlasio's Vision Zero and NYC Clean Fleet initiatives
- Implemented some of the nation's leading efforts in shared servicing, telematics, truck side-guards, electric vehicles, solar carports & biofuels
- NYC operates the largest municipal fleet in the US with >30,000 vehicles
- Works daily with NYPD, FDNY, DSNY and over 50 agencies
- In 27th year of public service and has been recognized in NY state and nationally
- 2019 one of six awardees for the Sloan Public Service Award (a.k.a.the Nobel Prize of public service)
- Graduate of Harvard College

Reducing Idling in Fleet

NYC Fleet

Keith T.Kerman

NYC Chief Fleet Officer

Deputy Commissioner, DCAS

December 2, 2020

NC, North Carolina, Cleantech Center

Sustainable Fleet Technology Conference

Shut It Off! Mayor, Billy Idol Team Up to Stop Vehicle Idling

By: Keith Kerman



At City Hall on February 27, artist Billy Idol joined Mayor de Blasio to launch a **new campaign** against vehicle idling and the harmful air pollution it causes. The campaign was developed by NYC DEP.

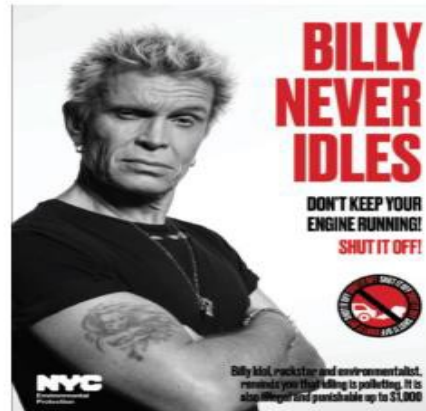
As the crowd chanted "Shut It Off," the mayor and Billy Idol discussed the wasteful and unnecessary environmental impacts from vehicle idling.

Idling uses a lot of fuel, creates as much pollution as driving, and also wears down vehicle engines. Idling for an hour is the equivalent of driving 25 to 30 miles. An idling truck or bus can use up to a gallon of fuel an hour.

If you have to drive, one of the best ways to avoid idling is to drive an electric or hybrid vehicle. NYC operates 8,000 electric and hybrid fleet units which use non-polluting batteries to power vehicles when stationary. We are transitioning to hybrid plug-in ambulances, hybrid police cars, and start-stop technology for waste trucks.

DCAS has also installed telematics on 23,000 fleet units so far. Among many benefits, these tracking units can provide alerts of unneeded idling.

Idling is against the law in NYC. Vehicles may not idle over 3 minutes in general or 1 minute near a school or hospital. As part of today's announcement, Mayor de Blasio and DEP Commissioner Vincent Sapienza encouraged all New Yorkers to report illegal idling through 311 or to file complaints online. There is even a financial reward program available.



Idle Local Law

§2. Section 24-163 of the administrative code of the city of New York is amended by adding new subdivisions f and g to read as follows:

(f) No person shall cause or permit the engine of a motor vehicle, other than a legally authorized emergency motor vehicle, to idle for longer than one minute if such motor vehicle is adjacent, as determined by rule, to any public school under the jurisdiction of the New York city department of education or to any non-public school that provides educational instruction to students in any grade from pre-kindergarten to the twelfth grade level, while parking as defined in section one hundred twenty-nine of the vehicle and traffic law, standing as defined in section one hundred forty-five of the vehicle and traffic law, or stopping as defined in section one hundred forty-seven of the vehicle and traffic law, unless the engine is used to operate a loading, unloading or processing device, and provided that idling of an engine of a school

Idle Alerts and Reporting through Telematics

Exceptions Summary Report

Created
From Nov 16, 2020
To Nov 18, 2020
Time Zone America/New_York
Distance Unit miles

Device	<input type="checkbox"/> Device Group	<input type="checkbox"/> Agency	<input type="checkbox"/> Rule	<input type="checkbox"/> First Incident
P8346	DPAR-MANHATTAN, CV Eligible, COLLECTION TRUCK, 6 YD, DIESEL/BIODIESEL, HEAVY DUTY	PARKS	Citywide Idling > 3 Minutes	Nov 16, 2020 7:59:37 AM
E54F005	DEP-Green Infrastructure, CV Eligible, GASOLINE, MEDIUM DUTY	DEP	Citywide Idling > 3 Minutes	Nov 16, 2020 5:15:09 AM
E54F005	DEP-Green Infrastructure, CV Eligible, GASOLINE, MEDIUM DUTY	DEP	Citywide Idling > 30 Minutes	Nov 17, 2020 5:49:13 AM
DCAS4077	DCAS Facilities, Non-Commuter, TRUCK, MISC, DIESEL/BIODIESEL, HEAVY DUTY	DCAS	Citywide Idling > 3 Minutes	Nov 18, 2020 7:51:55 AM
DCAS4077	DCAS Facilities, Non-Commuter, TRUCK, MISC, DIESEL/BIODIESEL, HEAVY DUTY	DCAS	Citywide Idling > 30 Minutes	Nov 18, 2020 7:51:55 AM
NYC027	x NYC Fleet x, CV Eligible, CROSSOVER, ELECTRIC, LIGHT DUTY	NYC FLEET	Citywide Idling > 3 Minutes	Nov 16, 2020 5:44:47 AM
NYC049	x NYC Fleet x, Commuter, CROSSOVER, V2V, ELECTRIC, LIGHT DUTY	NYC FLEET	Citywide Idling > 3 Minutes	Nov 16, 2020 7:09:56 AM
NYC049	x NYC Fleet x, Commuter, CROSSOVER, V2V, ELECTRIC, LIGHT DUTY	NYC FLEET	Citywide Idling > 30 Minutes	Nov 16, 2020 1:54:09 PM
CA151	DCA Brooklyn Division, CV Eligible, SEDAN, ELECTRIC/GAS HYBRID, LIGHT DUTY	DCA	Citywide Idling > 3 Minutes	Nov 16, 2020 8:18:18 AM
DCAS2732	DCAS Administration, CV Eligible, UTILITY TRUCK, DIESEL/BIODIESEL, HEAVY DUTY	DCAS	Citywide Idling > 3 Minutes	Nov 16, 2020 8:56:49 AM
CA46	DCA Petroleum Division, CV Eligible, PICKUP, GASOLINE, MEDIUM DUTY	DCA	Citywide Idling > 3 Minutes	Nov 16, 2020 9:16:14 AM
CA46	DCA Petroleum Division, CV Eligible, PICKUP, GASOLINE, MEDIUM DUTY	DCA	Citywide Idling > 30 Minutes	Nov 16, 2020 12:20:50 PM
DCAS3534	DCAS Administration, Non-Commuter, PICKUP, GASOLINE, MEDIUM DUTY	DCAS	Citywide Idling > 3 Minutes	Nov 18, 2020 11:39:05 AM

APUs for Ambulances



Start-Stop for Sanitation Trucks



Hybrid Vehicles



Bill de Blasio, Mayor
Lisette Camilo, Commissioner
Keith T. Kerman, Deputy Commissioner
and Chief Fleet Officer

NYC Fleet Newsletter

July 15, 2020 - Issue 312

Every New NYPD Police Car Is an Electric Hybrid in FY20

By: Keith Kerman

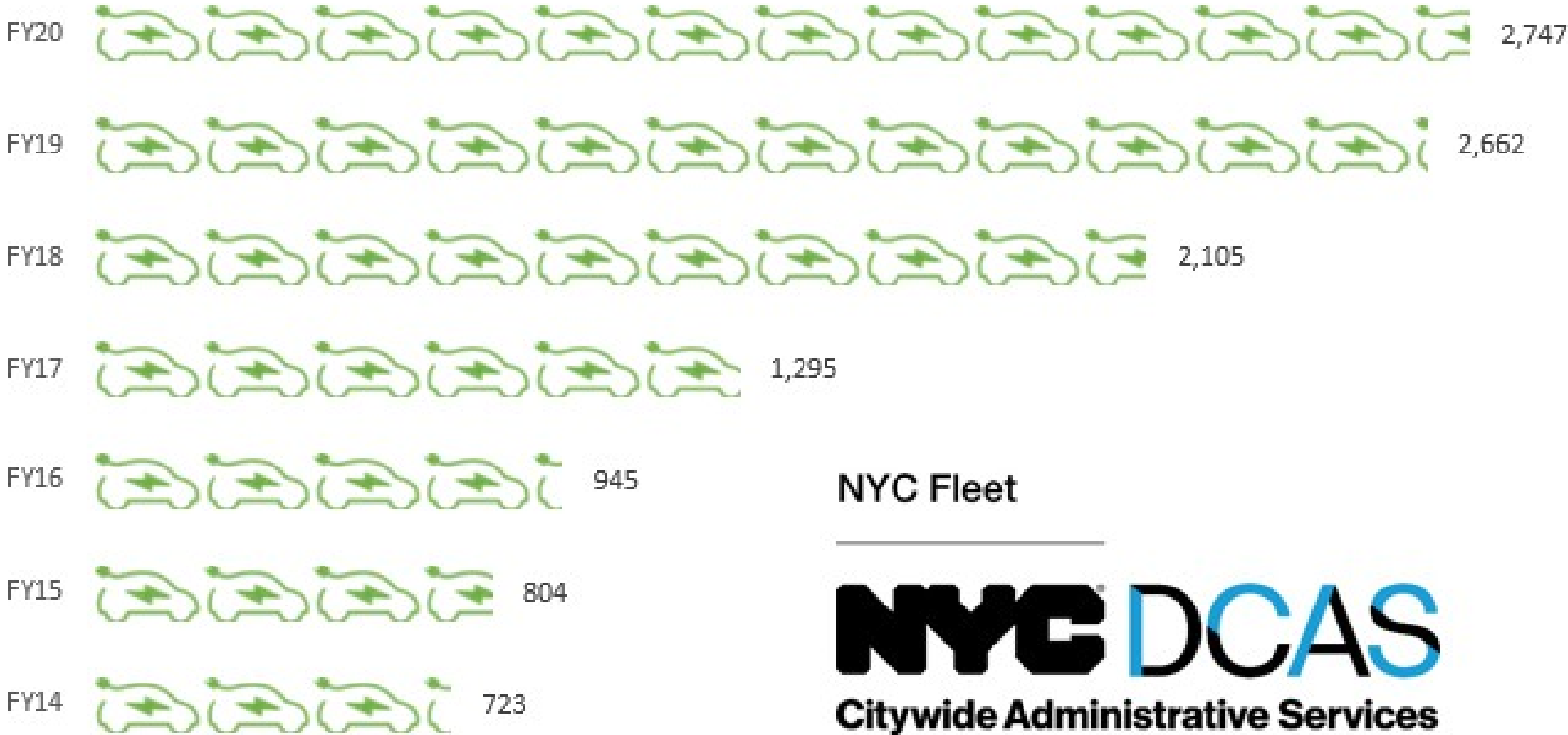
The City we love is enduring extraordinary challenges on many fronts. While these pressing concerns occupy all of our attention, we also want to make and recognize progress wherever we can.

Last summer, NYPD and DCAS announced that NYPD would be transitioning to all hybrid police cars. This transition is a critical component of our NYC Clean Fleet Plan to reduce fuel use 50% by 2025. You can read more about the transition [here](#).

With Fiscal Year 20 now behind us, we can report that every new police car and utility procured this year was in fact hybrid. NYPD received 409 new hybrid police cars, with 374 hybrid sedan Ford Responders and 35 Ford Hybrid Utility Interceptors and Escapes. This is the first time NYPD has procured an entire class of hybrid police cars. Of the 534 total fleet units received by NYPD in FY20, 81% will use some type of fleet alternative, either hybrid-electric or biofuels. The remaining units include police motorcycles, a disabilities accessible mini-van, SWAT trucks, and general support trucks.

Transition to an All-Electric Fleet

NYC Fleet Electric Vehicles



NYC Fleet



Image from vecteezy.com

Mayoral Executive Order 53, 2020

Section 2. Clean Fleet Design and Electrification. The Department of Citywide Administrative Services (DCAS) and NYC Fleet will issue, implement and update a Clean Fleet Transition Plan (CFTP). This plan will be updated at least every two years. The plan will outline alternative fuel, fuel efficiency, and electrification requirements for all City fleet units by type. The plan will also review fuel efficiency and emissions reductions outfitting that is implemented for specific fleet segments only and/or being tested. As part of the plan, the City will report on electrification and charging options for each class of fleet vehicle. The plan will include a schedule for adoption of cleaner vehicles and technologies which will lead to a fully-electric, carbon-neutral fleet by 2040. In addition to City fleet agencies, DCAS will consult with private, non-profit and other public fleets that operate in NYC on this plan. The plan will include a section discussing options for requiring and/or encouraging adoption of these clean fleet improvements with the private fleets the City contracts and regulates. The first CFTP plan aimed at both public and private fleets will be published by January 1, 2021.

Fully Electric Sanitation



All Electric Policing



Reducing Fuel Use

VEHICLE FLEETS AND MAINTENANCE

INDICATORS	Actual		Target	
	FY19	FY20	FY20	FY21
Total Fleet Size	30,755	30,502	30,500	30,250
- Light Duty	13,153	12,703	12,900	12,600
- Medium Duty	4,627	4,628	4,850	4,600
- Heavy Duty	7,568	7,546	7,450	7,500
- Other Vehicles	5,407	5,625	5,300	5,550
Vehicle in-service rate (%)	91%	91%	92%	92%
Daily fleet in-service targets achieved (%)	96%	98%	98%	98%
Purchased vehicles compliant with Local Law 38 (%)	100%	100%	99%	99%
Alternative fuel vehicles	18,942	19,100	19,500	20,000
Alternative fuel vehicles in City fleet (%)	63%	65%	65%	68%
Electric vehicles	2,662	2,747	3,000	3,250
- On-road electric vehicles	2,113	2,174	2,400	2,650
- Off-road electric vehicles	549	573	600	600
Vehicle fuel used (gallons)	28,905,781	26,756,419	28,500,000	28,000,000

EV Future



Contact

For more information, go to the NYC Fleet website:
<http://www.nyc.gov/html/dcas/html/employees/fleet.shtml>

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New York City
Deputy Commissioner,
Department of Citywide Administrative Services

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DCAS

THANK YOU



Session #15: Idle Reduction an Easy Win

December 02, 2020