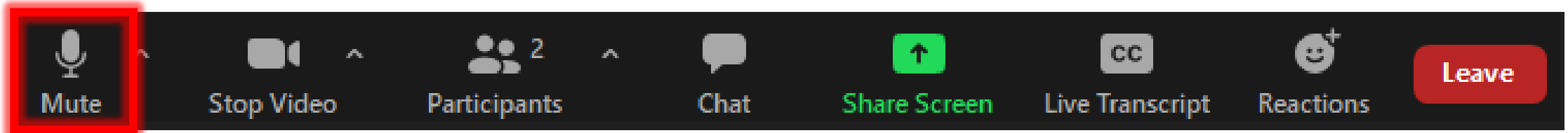


# WEBINAR REMINDERS

- Please **Mute** your microphone unless speaking.
- You can place questions in the **Chat** which will be answered in the chat and during the Panel Discussion Session at the end.
- You can use the **“Raise Your Hand”** feature to ask questions or make a comment during the Panel Discussion portion of the webinar.
- This meeting will be **Recorded**.





North Central Texas  
Council of Governments

# SMARTE

Saving Money and Reducing Truck Emissions

Saving Money and Reducing Truck Emissions  
Webinar Series

## LOCAL SMARTWAY VERIFIED TECHNOLOGY

**Date:** Wednesday, October 5, 2022

**Time:** 11:00 – 12:00 PM Central Standard Time

**Hosted** by the **North Central Texas Council of Governments (NCTCOG)**

Webinar will be presented through [ZOOM](#)

**Contact:** Huong Duong, [hduong@nctcog.org](mailto:hduong@nctcog.org)

### Presenters:

Patrice Thornton, EPA

Jason Brown, NCTCOG



# OVERVIEW



Image provided by Getty

## Welcome, Introduction

Presenter: Huong Duong, Transportation Planner, NCTCOG

## SmartWay Verified Technologies

Presenter: Patrice Thornton, Environmental Protection Specialist, US EPA SmartWay

## SMARTE Vendor Directory

Presenter: Jason Brown, Principal Air Quality Planner, NCTCOG

## Panel Discussion

## Local Updates and Close





# SmartWay<sup>®</sup> Program Overview

**North Central Texas Council of Governments  
(NCTCOG)**

**Local SmartWay Technology**

October 5, 2022

Patrice Thornton

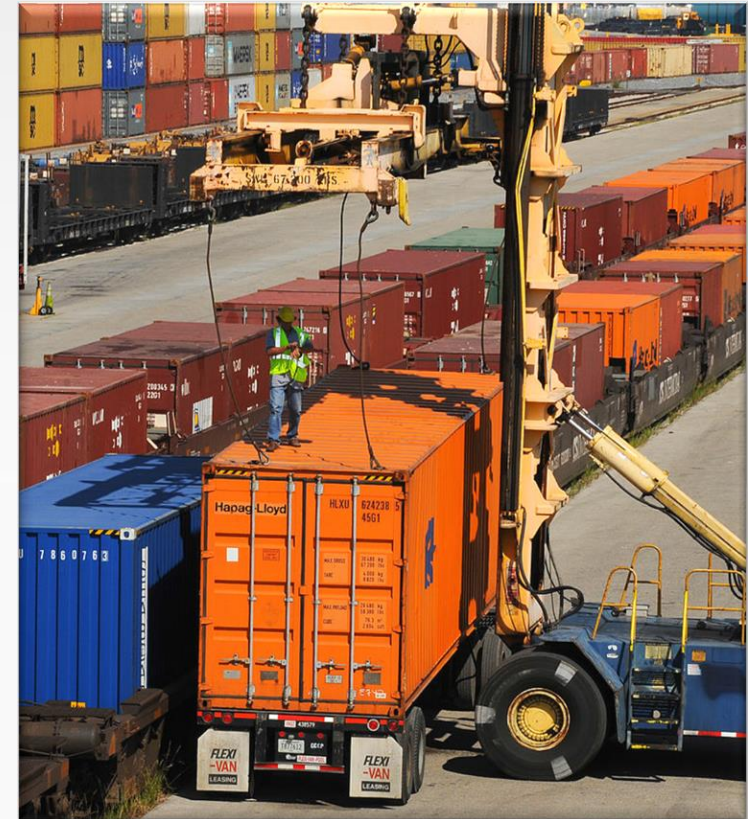
EPA SmartWay





# The Importance of Freight Movement

- Freight Movement is vital to global trade and the world economy. Yet it also creates adverse impacts on the environment and public health.
- The U.S. transportation system moves a daily average of over 51 million tons of freight
- E-Commerce sales increased 20-fold between 2000 and 2019
- Experts project that by 2050, global freight transport emissions will surpass those from passenger vehicles.
- To address these trends and challenges, EPA developed the SmartWay Program.





# SmartWay® Program Origins

Launched in 2004, this voluntary public-private program:

- Provides a comprehensive and well-recognized system for tracking, documenting, and sharing information about fuel use and freight emissions across supply chains
- Helps companies identify and select more efficient freight carriers, transport modes, equipment, and operational strategies to improve supply chain sustainability and lower costs from goods movement
- Supports global energy security and offsets environmental risk for companies and countries
- Reduces freight transportation-related emissions by accelerating the use of advanced fuel-saving technologies
- Is supported by major transportation industry associations, environmental groups, state and local governments, international agencies, and the corporate community



- **The SmartWay Transport Partnership**

Freight shippers, carriers, logistics companies, and other stakeholders partner with EPA to measure, benchmark, and improve logistics operations so they can reduce their environmental footprint.

- **The SmartWay Brand**

Through SmartWay technology verification and branding, EPA has accelerated availability, adoption, and market penetration of fuel-saving technologies and operational practices while helping companies save fuel, lower costs, and reduce adverse environmental impacts.

- **SmartWay Global Collaboration**

EPA works with a broad range of national and global organizations to harmonize sustainability accounting methods in the freight sector. SmartWay also provides support to global policy makers that wish to model transportation sustainability programs after the SmartWay Program.





**Idling Reduction Technology  
(for tractors)**

**Aerodynamic Devices  
(for trailers)**



**Low Rolling Resistance Tires  
(for tractors) (for trailers)**



- The SmartWay technology verification program has test protocols for certain fuel saving technologies. The test protocols are typically based on industry procedures with additional constraints to improve confidence in performance.
- Some verification protocols directly measure fuel savings such as by track testing trucks, while other test methods such as for tire rolling resistance measure a related performance metric.



Installing EPA-verified aerodynamic devices on your trailer can save fuel by minimizing aerodynamic drag and maintaining smoother air flow. By using combinations of devices, you can save 9% or more on fuel usage.

- Front fairing

A device attached to the front of the trailer, such as a gap reducer, to minimize turbulence between the tractor and trailer.

- Rear fairing

A device mounted around or on the back of the trailer, such as a tail, that reduces the drag from the low-pressure wake behind the trailer.

- Under fairing

A device installed on the underside of a trailer, such as a skirt, to manage air flow along the side of the trailer and reduce turbulence in front of the rear wheels.





### Track Testing

This method measures fuel usage and savings with full-scale vehicles and technologies on an outdoor test track. This method is most like highway driving.



## Wind Tunnel Test

This test uses a test chamber to evaluate air flow around an object and is often used for measuring the aerodynamic efficiency of vehicles and airplanes. Testing tends to be smaller than full-scale, as tunnels operate at 1/3 or 1/8 scale. Fuel savings are calculated from the measured drag reductions.



- **Coast-Down Testing**

Traditionally used for light-duty, coast-down testing accelerates a full-scale tractor-trailer to a certain speed before disengaging the engine and drive train. The time it takes the truck to “coast down” to a lower speed is measured and used to calculate aerodynamic drag and potential fuel savings with changes in drag.

- **Computational Fluid Dynamics (CFD) (supplemental only)**

CFD is a computer simulation tool that models a vehicle’s movement on the road or in a virtual tunnel. CFD analyses are performed with computer software to estimate a vehicle’s aerodynamic drag based on the vehicle’s geometry, speed, and ambient air conditions. At this time, CFD is a supplemental test method only, meaning that it must be used with another method for verification purposes.

- **Benefits of Multiple Test Methods**

EPA encourages technology manufacturers to use multiple test methods. Diversified device testing with a consistent outcome gives customers confidence in product reliability. Results from secondary test methods can support the original verification outcome even though there may be some differences between test methods for the same device.







**SmartWay**  
**Low-Rolling  
Resistance Tires**

- The SmartWay Technology Program verifies low rolling resistance (LRR) performance for both new and retread tire products.
- On long-haul Class 8 tractor-trailers, LRR tires and retreads can save fuel by 3% or more compared to common higher rolling resistance (RR) tires. EPA testing has shown that LRR tires can save fuel by 7% to 10% when compared to high RR tires.



- Retread technologies are verified for drive and trailer axle positions.
- Fleet operators should check with the tire manufacturer of multi-position tires to confirm that the tire is suitable for the intended application.
- Where a tire casing is in good condition and suitable, verified retreads can be applied to most SmartWay verified tires and achieve comparable fuel savings.

## Maximum Efficiency

To achieve fuel savings of three percent or more, the following requirements must be met:

### LRR Tires

- Tires are used on the axle positions for which verification is specified.
- Verified low rolling resistance tires are installed on all axle positions of the tractor and trailer. (NOTE: EPA has also demonstrated incremental fuel savings when low rolling resistance tires are used just on the tractor and/or just on the trailer.)
- All tires are properly inflated according to the manufacturer's specifications.

### Retreads

- Verified retread technologies are used on both the drive and trailer axles. (NOTE: EPA has also demonstrated incremental fuel savings when low rolling resistance tires are used just on the tractor and/or just on the trailer.)
- The retread technologies are used on the axle positions for which verification is specified.
- Verified low rolling resistance steer tires are used.
- All tires are properly inflated according to the manufacturer's specifications.



Driver comfort is essential to the job of long-haul trucking, and sometimes truck drivers must run their engines to stay warm or cool in their trucks while resting. But long-duration idling is also costly to the driver, to the fleet owner, and to the environment.

Benefits from reducing long-duration idling include:

- Decreasing fuel costs
- Decreasing engine maintenance costs
- Extending engine life
- Improving operator well-being by decreasing noise levels
- Decreasing emissions that are harmful to the environment

There are two ways of reducing idling:

- Behavioral strategies
- Idling Reduction Technologies, which are assessed and verified by EPA

Each year, long-duration truck idling results in the following estimated or approximated figures:

- 1 billion gallons of fuel consumption
- 11 million tons of carbon dioxide (CO<sub>2</sub>)
- 180,000 tons of nitrogen oxides (NO<sub>x</sub>)
- 5,000 tons of particulate matter (PM)





- **Behavioral Strategies for Reducing Idling**

Both driver training and financial incentives are effective strategies to reduce idling.

- **Driver/Operator Training**

Educating drivers and operators about the impacts and adverse effects of long-duration idling can help change their behavior.

- **Financial Incentives**

Fleet owners can offer financial incentives to drivers to reduce idling. Many large trucking companies already offer these incentives and have reported success in reducing idling times below national averages.



## Idling Reduction Technologies (IRTs)

There are IRT devices that allow operators to shut down the main propulsion engine. IRT devices allow engine operators to reduce long-duration idling of the main propulsion engine by using an alternative technology.

An IRT device generally has the following three main characteristics:

- Is installed on a vehicle (e.g., bus, truck, locomotive, automobile, marine vessel, equipment, etc.) or at a location
- Reduces unnecessary main engine idling of the vehicle or equipment
- Provides services (e.g., heat, air conditioning, and/or electricity) to the vehicle or equipment that would otherwise require the operation of the main drive engine while the vehicle or equipment is temporarily parked or remains stationary



## Examples of Idle Reduction Technologies Include:

- **Auxiliary Power Units and Generator Sets (APU/GS)**

An APU/GS device contains an EPA emission-certified engine (certified under 40 CFR Part 89). APU/GS devices supply cooling, heating, and electrical power.

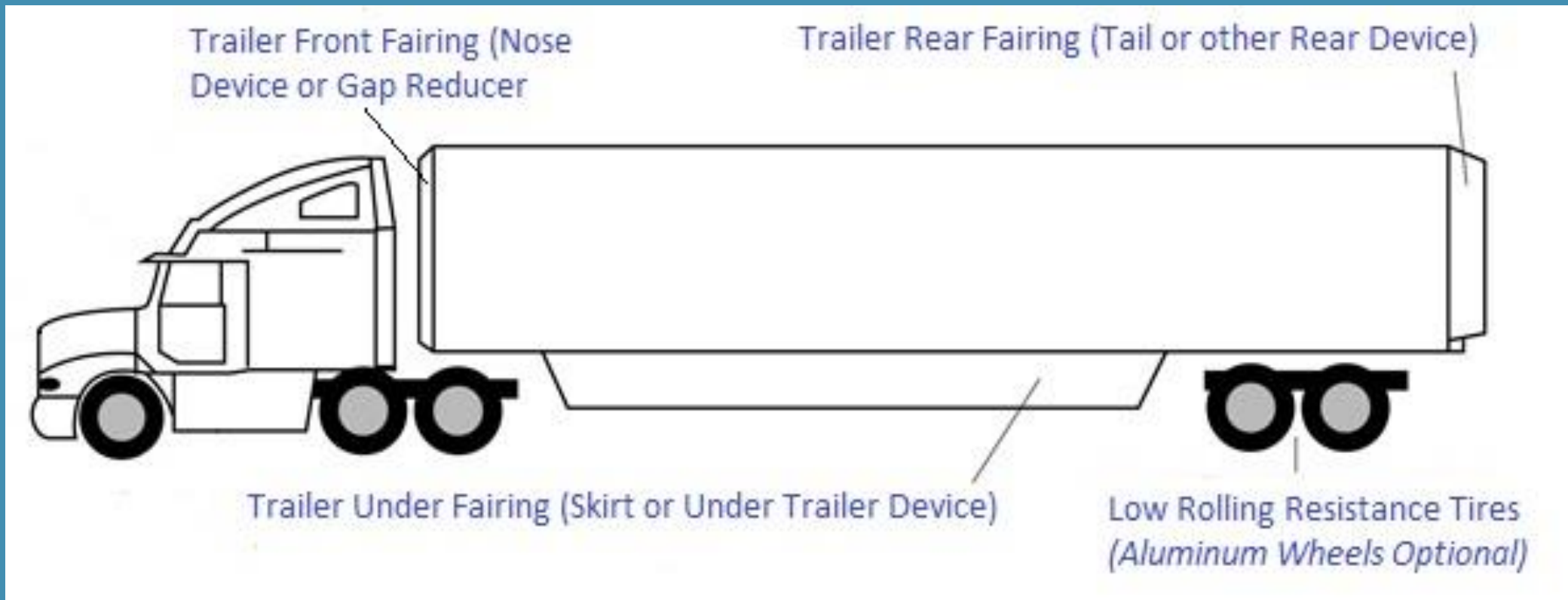
- **Fuel Operated Heaters (FOH) aka Direct Fired Heaters (DFH)**

FOHs are small, lightweight heaters that burn fuel (typically diesel) from the main engine fuel supply or a separate fuel reserve. They provide cabin and driver heating, and some models provide coolant heating to pre-heat and facilitate starting and operation of a typical internal combustion engine (ICE). FOHs can be used in conjunction with the cooling system for driver and cabin seasonal comfort needs.

- **Battery Air Conditioning Systems (BAC) (battery-electric heating and/or cooling system)**

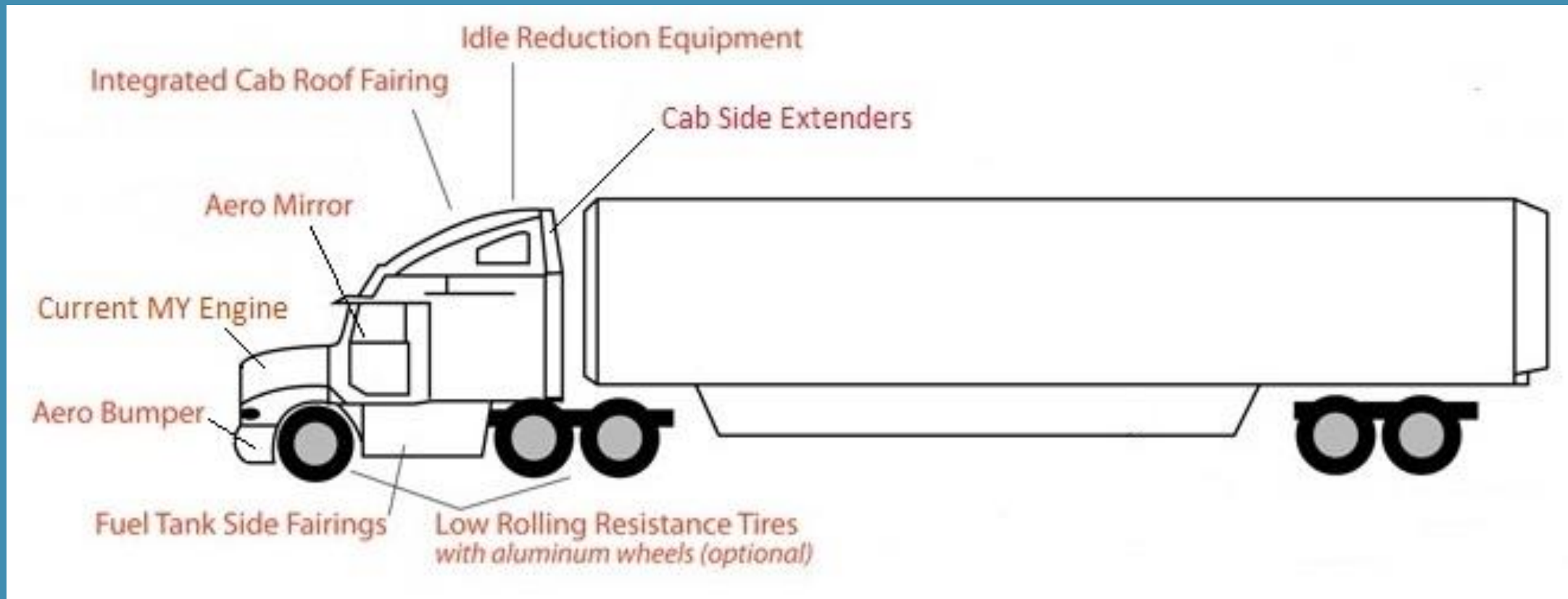
A BAC system uses batteries to power an independent electric cooling system. These systems may integrate a FOH, heat pump, or coolant heaters to supply heating.





- There are two levels of SmartWay designation for trailers. Both levels require SmartWay verified LRR or retread tires and some aerodynamic device use.
- To achieve the SmartWay Elite level, trailers may achieve a total fuel savings of 10% or more.





- In order to be designated by SmartWay, tractors must be equipped with aerodynamic features, LRR tires (or retreads for the drive tires), and idle reduction.
- Electric tractors may also qualify as Designated Tractors when properly equipped with aerodynamics and tires.

## Benefits of Registering as a SmartWay Partner

Whether you are a Shipper, Carrier, or Logistics Operation, there are a number of benefits to joining SmartWay including:

- **Credible efficiency tracking and sustainability accounting**  
EPA's emissions calculating tools are the "gold standard" of fuel efficiency and sustainability accounting in the freight transportation sector, ensuring that your tracking efforts are consistent with industry best practices.
- **Identifying Operational efficiencies**  
You can't fix what you don't measure. SmartWay helps you identify inefficiency and waste that costs you money, allowing you to make strategic improvements year after year.
- **Demonstrated commitment**  
Clients and customers are making more decisions based on companies' performance on environmental metrics that matter to them. Your participation in SmartWay quickly signals that you prioritize sustainability and efficiency and your performance data let them know what you've accomplished.



- While organizations that ship, carry or manage freight can become SmartWay Partners, organizations that do not control freight can still participate in SmartWay as SmartWay Affiliates. SmartWay Affiliates are organizations that agree to educate and support their members' efforts to improve freight sustainability.
- There are several benefits to joining SmartWay as an Affiliate, including:
  - Bringing value to your stakeholders via education, webinars, best practices, and technical support.
  - Helping members make a difference and address climate impacts from goods movement.
  - Providing free value-added resources for your members and stakeholders.
  - Getting recognized by EPA for your commitment to raising awareness and transforming the freight sector.
  - Learning from other organizations about how to advance sustainable freight efficiency.





# Questions?





# Saving Money and Reducing Truck Emissions Program



## GOALS

Promote emissions reduction and cost saving strategies within the trucking industry



## INITIATIVES

Build relationships within the trucking industry

Share information about emission reduction strategies

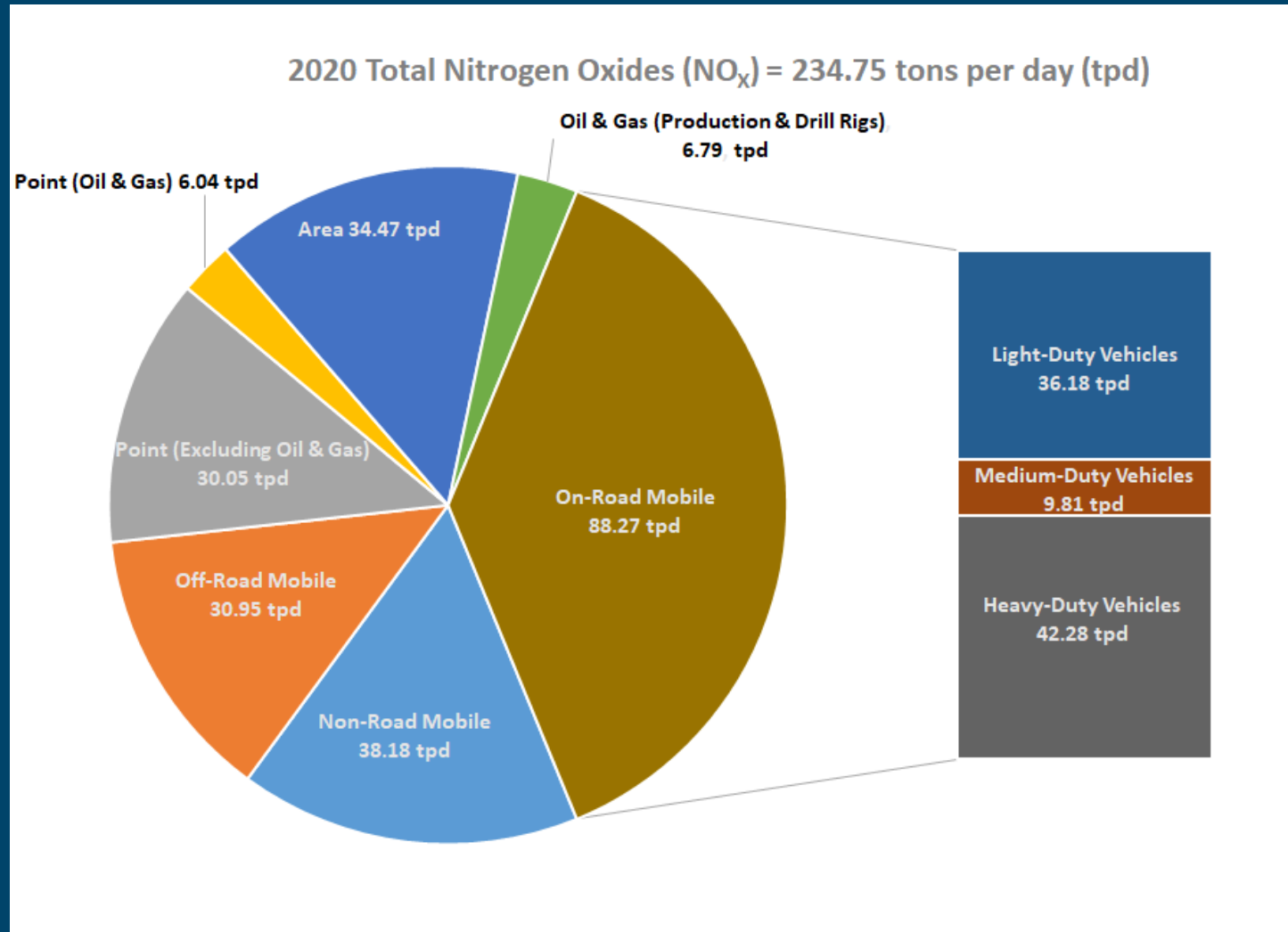
Connect SmartWay verified technology to trucking owner/operators and fleet managers

# SMARTTE

Saving Money and Reducing Truck Emissions



# Dallas-Fort Worth Region Nitrogen Oxides Emissions Sources



Source: Dallas-Fort Worth Serious Classification Attainment Demonstration State Implementation Plan Revision for the 2008 Eight-Hour Ozone National Ambient Air Quality Standard, September 2019



# SMARTe Vendor Directory

Local Vendors of SmartWay  
Verified Technology

Promoted through the  
SMARTe Program

Free to join and free to use



Image Provided By Getty



# SMARTe Vendor Benefits





# Become a SMARTe Vendor



SELL

Sell SmartWay  
Verified Technology



LIST

Provide a list of  
SmartWay Verified  
Technology offered  
that can be made  
available



SIGN UP

Complete Vendor  
Directory Sign- Up  
Form

<https://forms.office.com/r/dfd0zsnS8v>



# Participation Guidelines

## SmartWay Verified Technology

- Aerodynamic Devices
- Idle Reduction Technology
- Low Rolling Tires
- SmartWay Certified Tractors & Trailers

<https://www.epa.gov/smartway/learn-about-smartway-verified-technologies>

## Guidelines

- Agree to be added to SMARTE Vendor Directory and other SMARTE promotional materials
- Update NCTCOG on sales information of SmartWay Verified Technologies
- Inform NCTCOG within 10 business days if SmartWay Verified Technology are no longer being offered



# Panel Discussion



# Local Updates

## North Texas Freight Terminal Electrification

[NCTCOG.ORG/NTFTE2020](https://www.nctcog.org/NTFTE2020)

Deadline: 10/14/2022

## North Texas Clean Diesel Project

[NCTCOG.ORG/NTCDP2021](https://www.nctcog.org/NTCDP2021)

Deadline: 10/14/2022





# CONTACT US



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