

RNG Facility Tour at Skyline Landfill

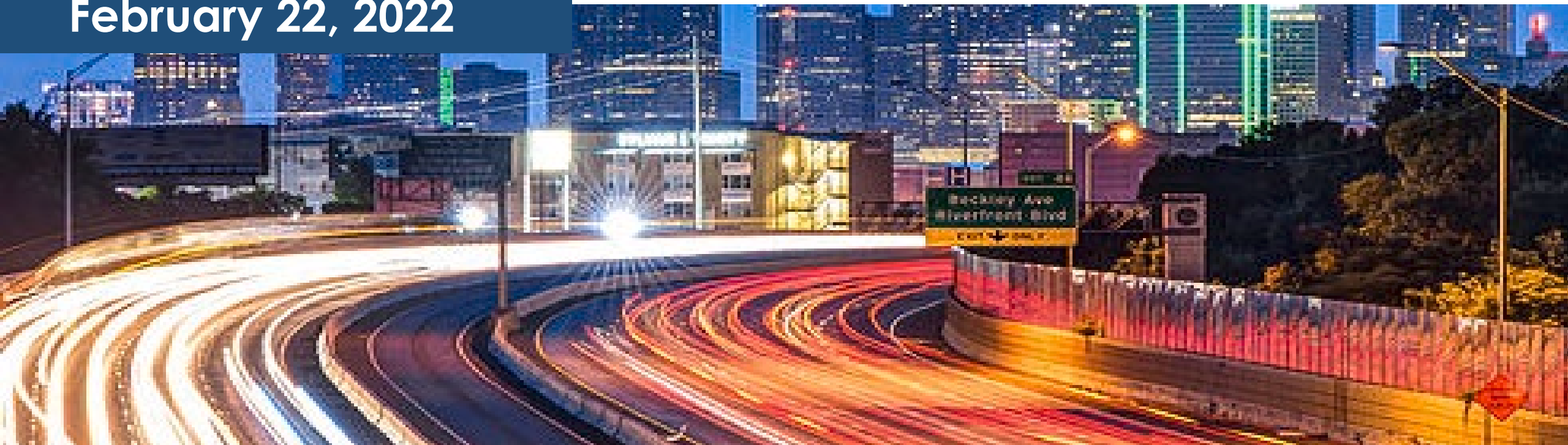
February 22, 2022



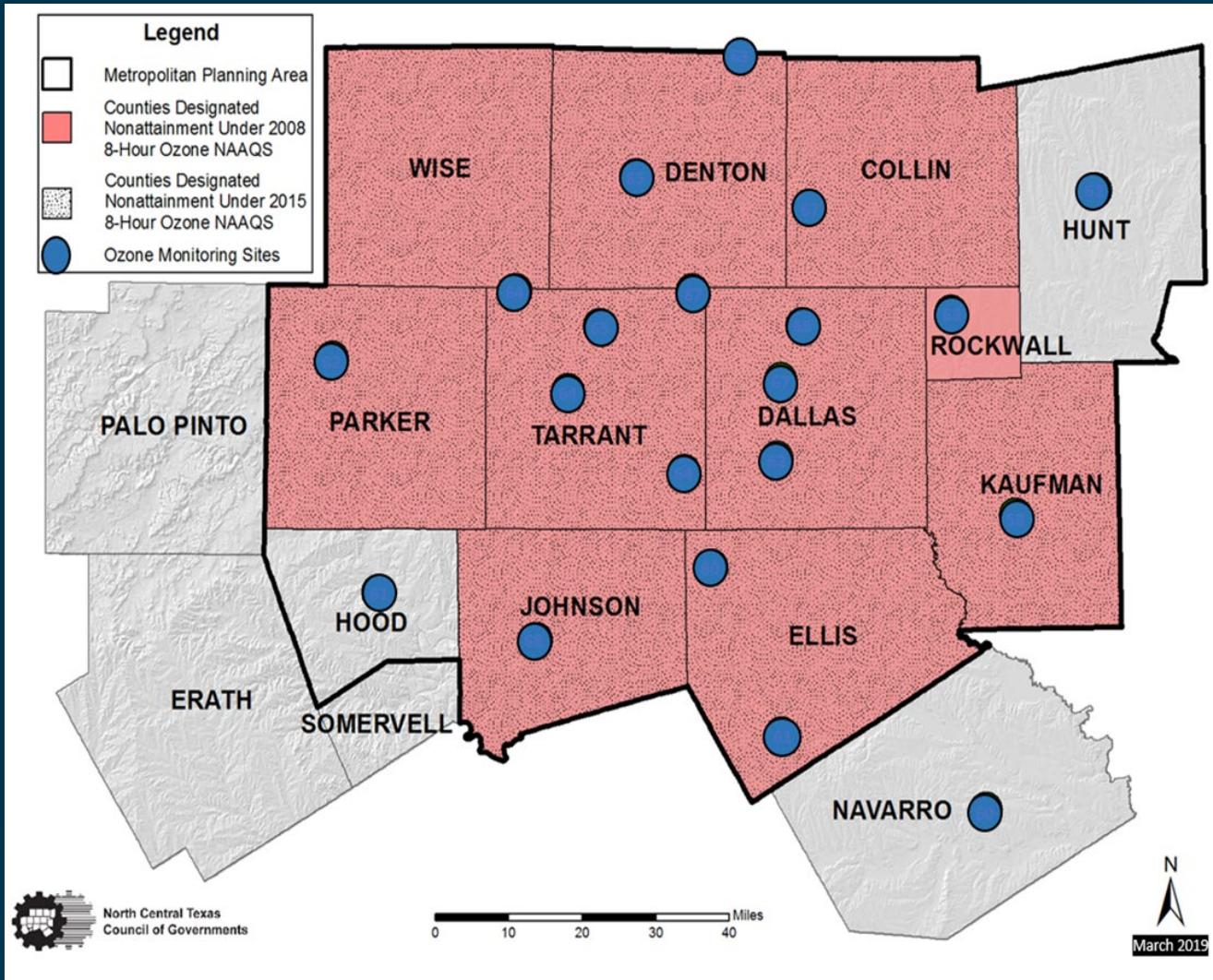
Dallas-Fort Worth
CLEAN CITIES



North Central Texas
Council of Governments



Who We Are



Regional Planning
Agency

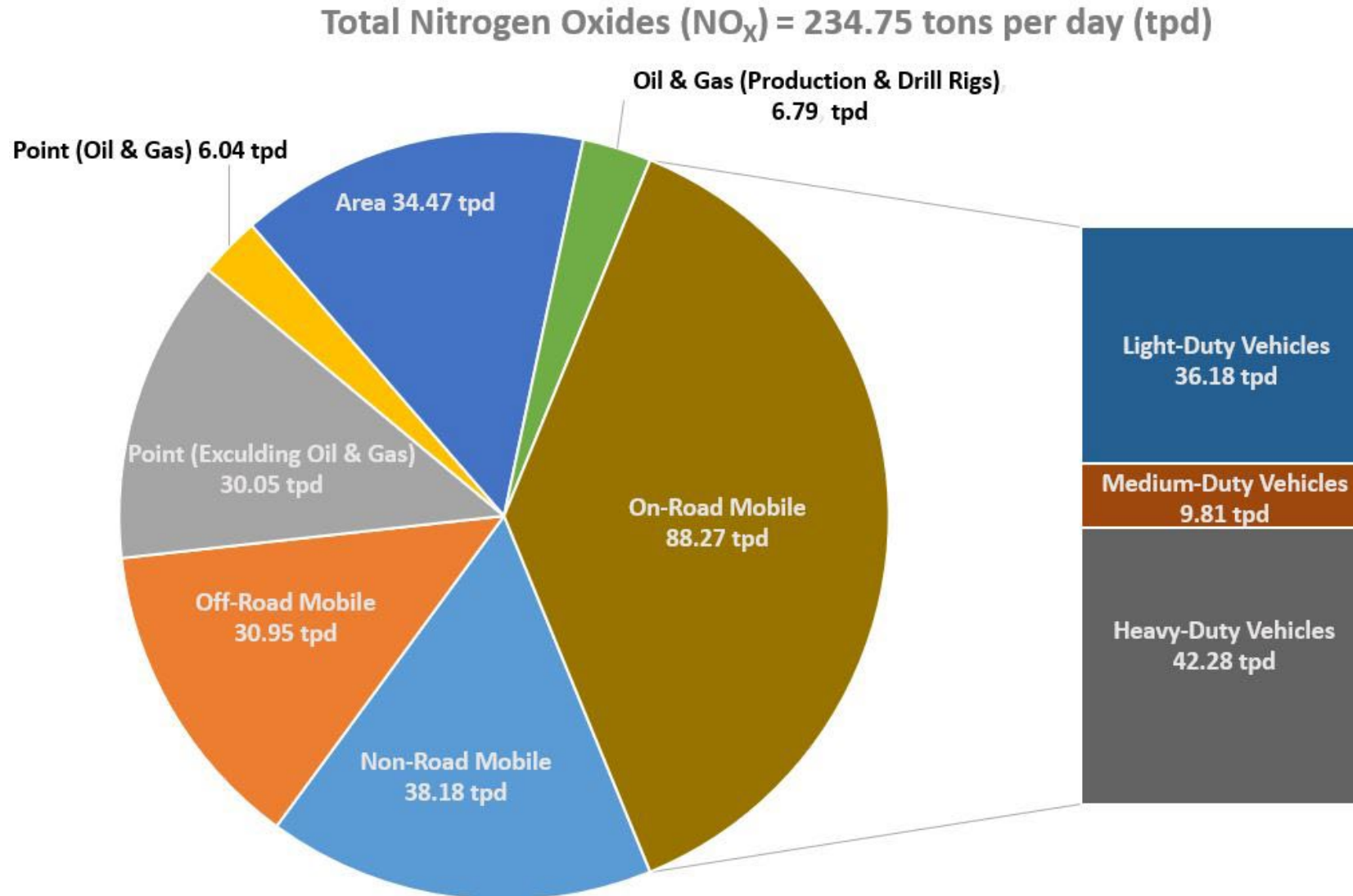


Metropolitan Planning
Organization (MPO)



Local Clean Cities
Coalition

Nitrogen Oxides Emissions Sources



Compressed Natural Gas

- Mixture of Hydrocarbons, Predominantly Methane (CH₄)
- Conventional Compressed Natural Gas (CNG) Extracted from Domestic Gas and Oil Wells
- Uses Existing Pipeline Distribution System

Benefits:

- Helps Air Quality
- Lower Vehicle Maintenance
- Affordable and Consistent Fuel Price
- Domestically Produced
- Similar Performance to Conventional Vehicles

Considerations:

- Reduced Driving Range
- Incremental Cost
- Infrastructure Availability

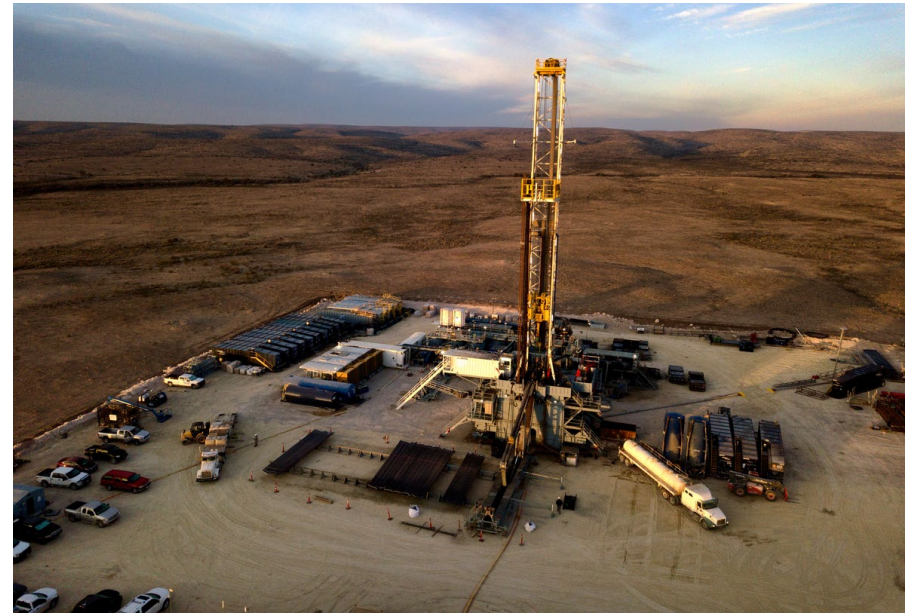
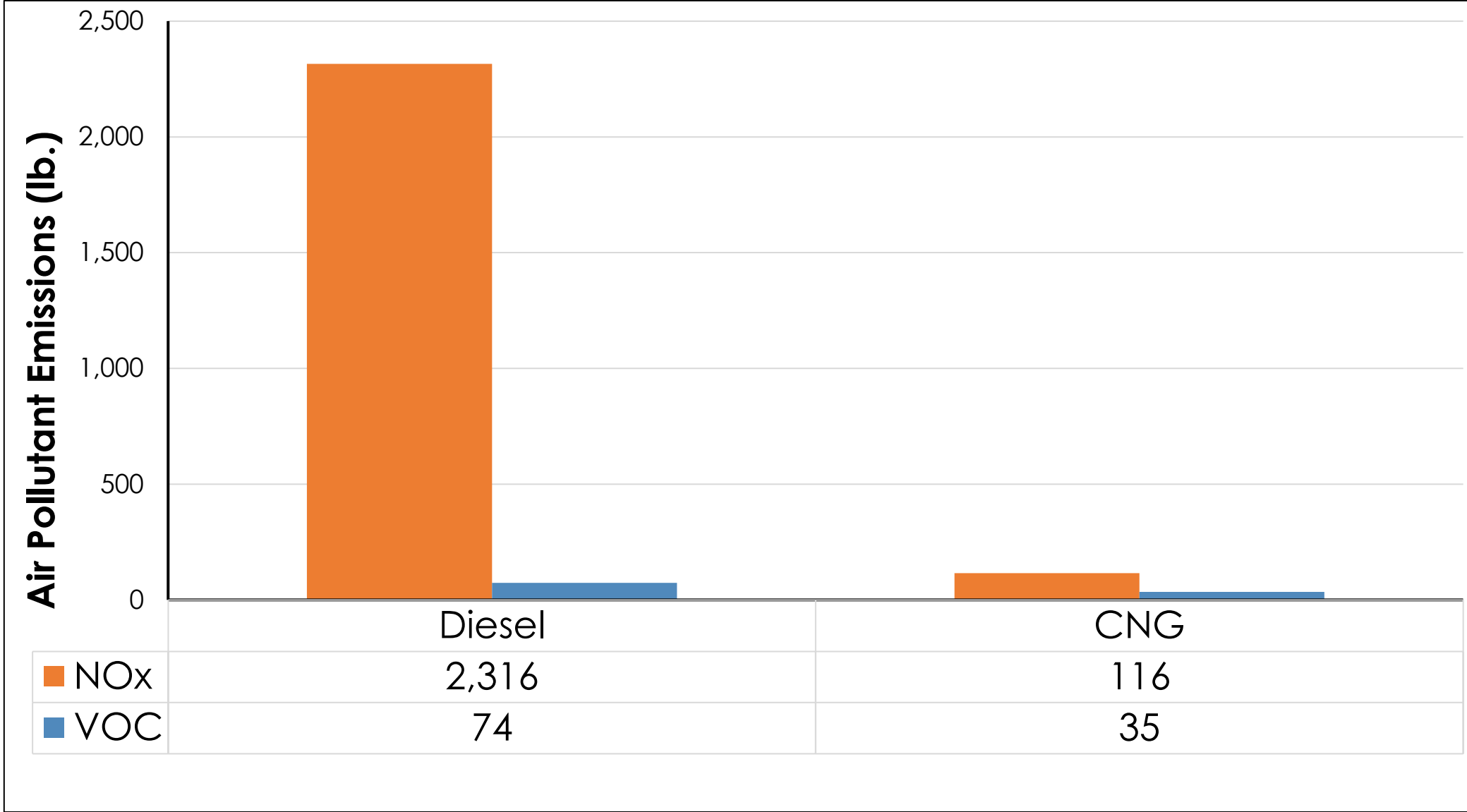


Photo Source: iStock #1080451964

Lifetime Air Pollutants- CNG Refuse Truck



Source: AFLEET

Renewable Natural Gas

- Renewable Natural Gas (RNG) is Chemically Identical to Conventional Compressed Natural Gas
- Produced Domestically from Decomposing Organic Matter, Including Sewage, Animal By-Products, and Municipal Solid Waste

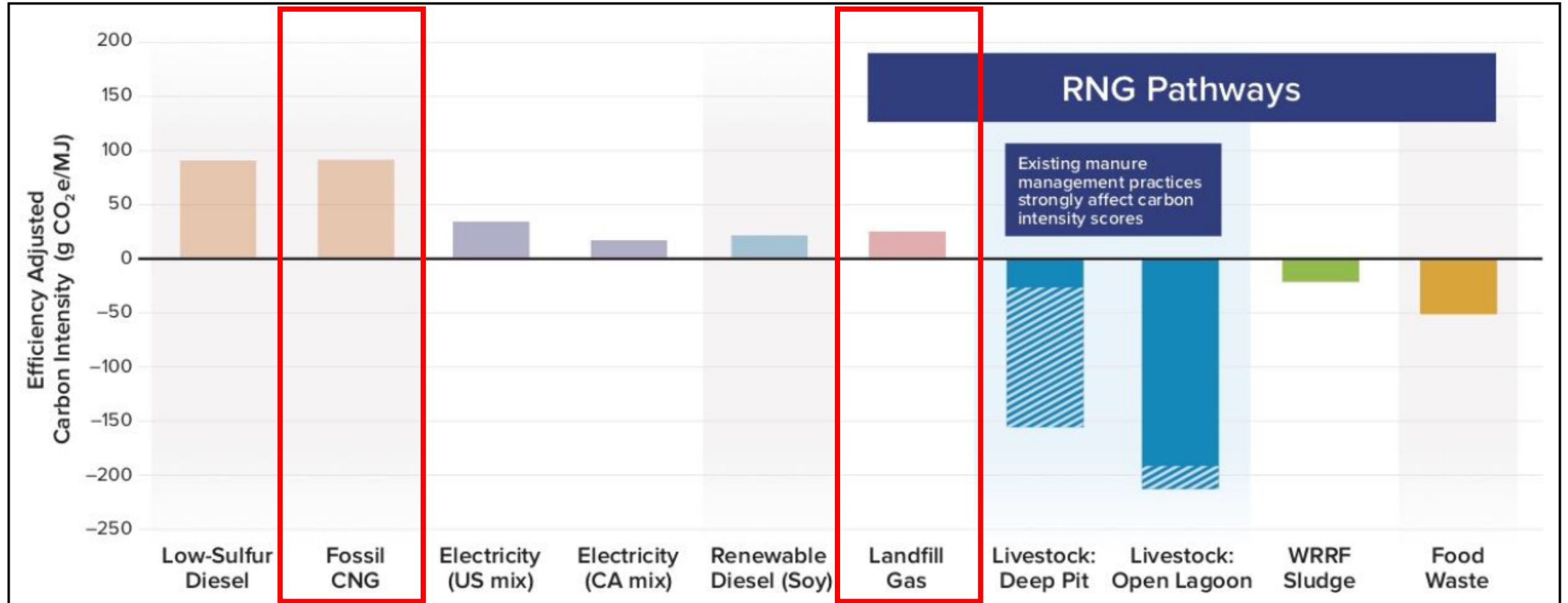
Benefits:

- Reduces Odor and Runoff
- Converts Waste to a Valuable Product
- Creates Jobs
- Federal Incentives for RNG Producers
 - [Alternative Fuel Excise Tax Credit](#)
 - [Renewable Identification Numbers \(RINs\)](#)
- **Any CNG Vehicle or Infrastructure can Use RNG**
- **Lower Green House Gas (GHG) than CNG**
- **Can be Carbon- Neutral or Carbon-Negative**



Photo Source: National Renewable Energy Laboratory
Image Gallery #06331

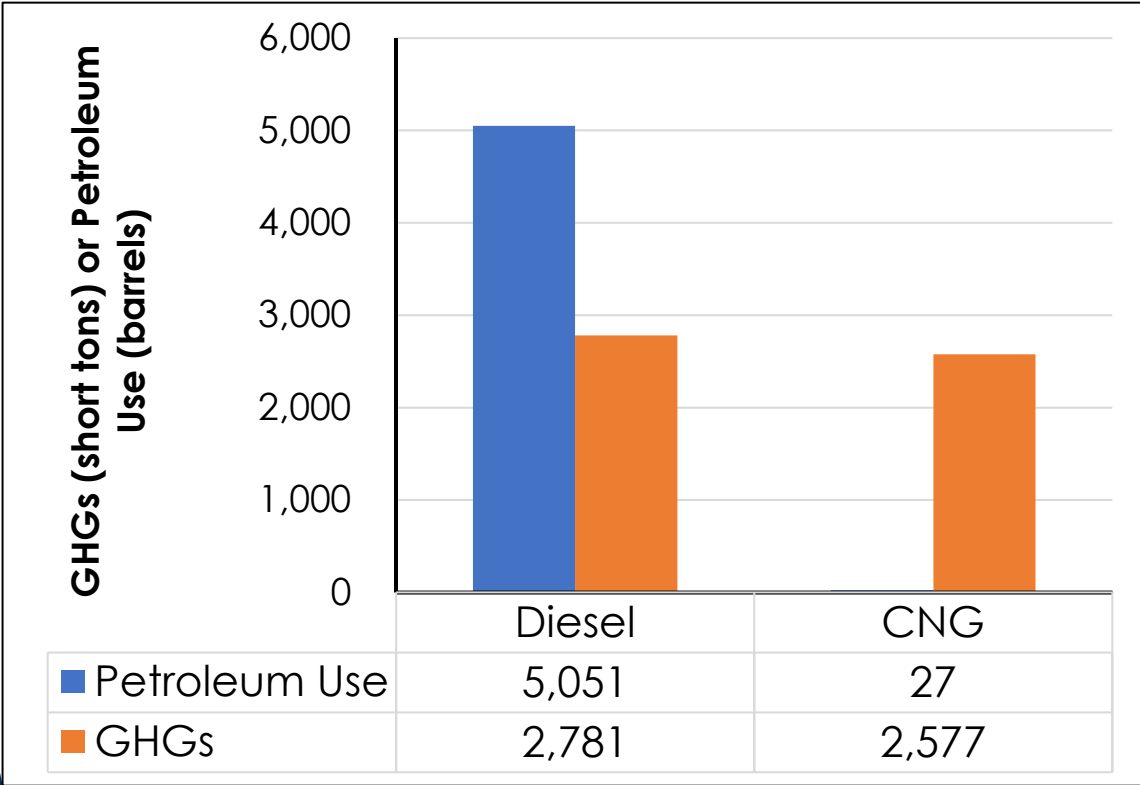
RNG Pathways



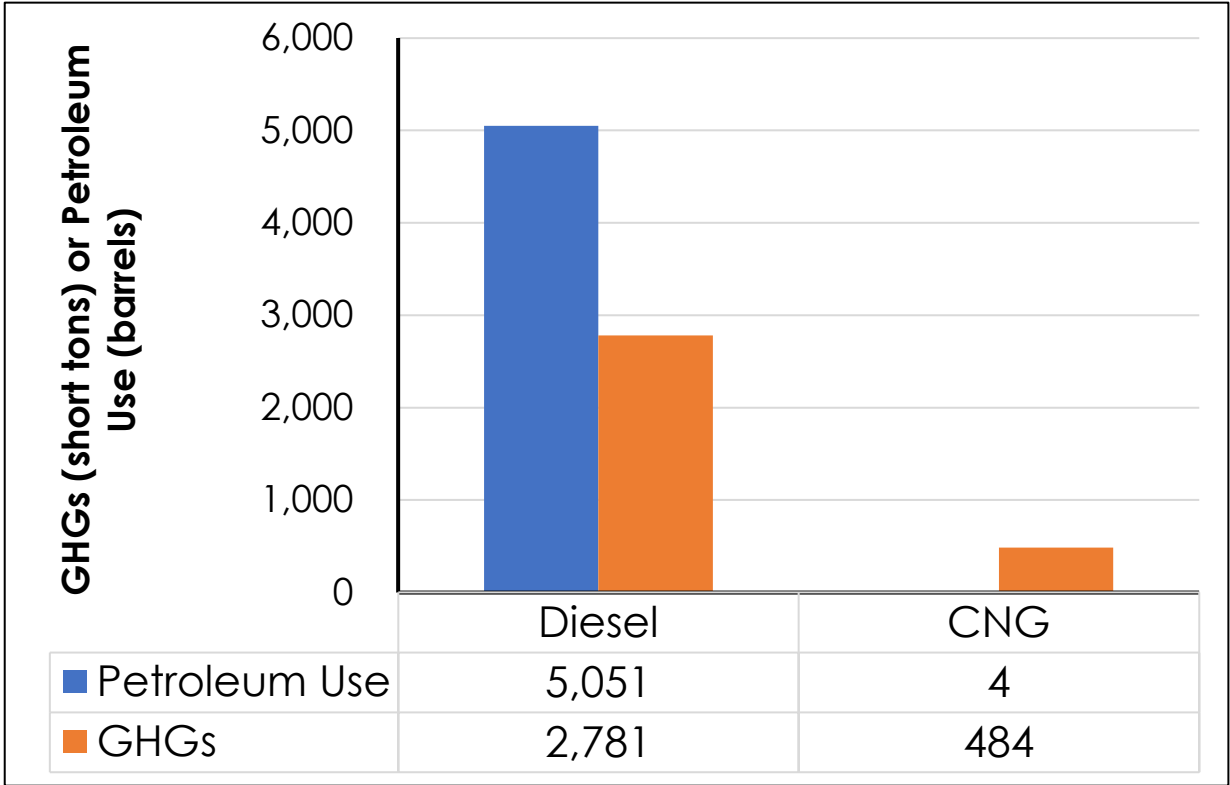
Source: [Argonne National Laboratory's Renewable Natural Gas \(RNG\) for Transportation Frequently Asked Questions](#)

Lifetime Wells-to-Wheels Petroleum Use and GHGs- CNG Refuse Truck

CNG Refuse Truck Utilizing Fossil CNG



CNG Refuse Truck Utilizing Landfill Gas CNG



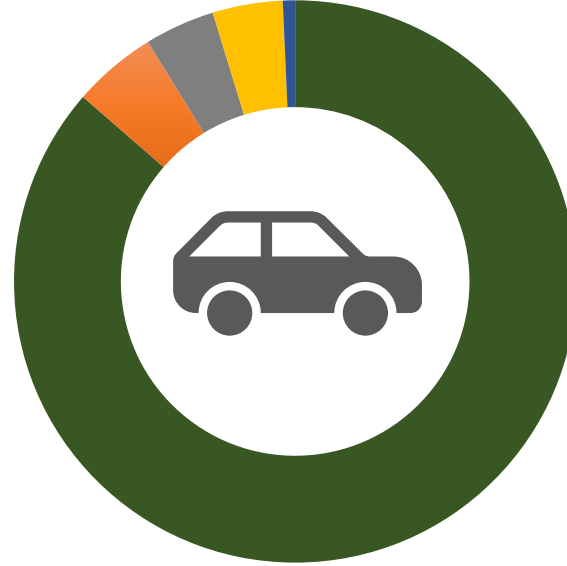
Source: AFLEET

DFW Clean Cities Impacts – Results from 2020 Survey

55 Fleets Reporting
10,165 Alternative Fuel
Vehicles and Equipment

*Impacts Over Calendar
Year 2020

**~23.95 Million Gasoline Gallon
Equivalent Reduced***



- Alternative Fuel Vehicles
- Vehicle Miles Traveled Reductions
- Fuel Economy Improvements
- Idle Reduction
- Off-Road Vehicles/Equipment

**~367 Tons Ozone-Forming
Nitrogen Oxides Reduced***



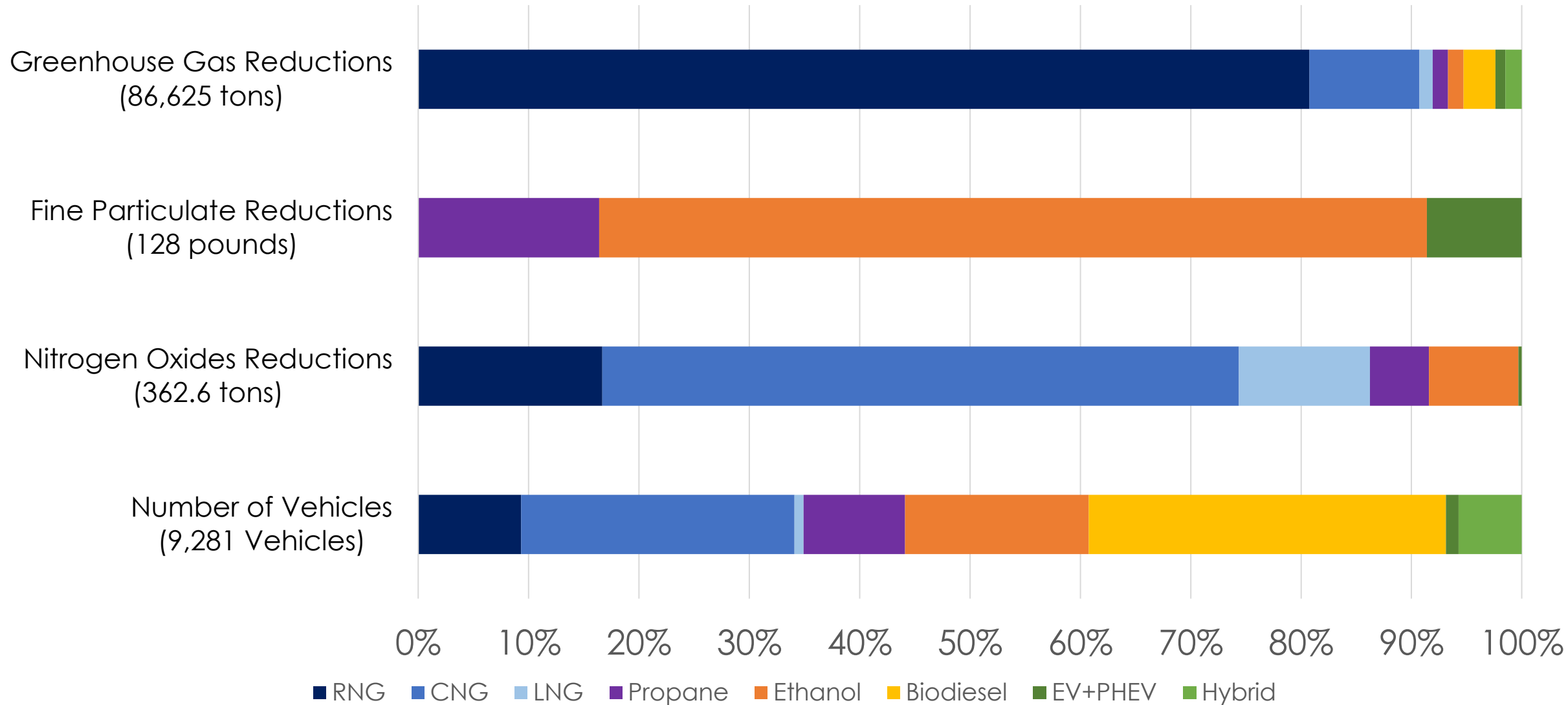
**125,058 Tons Greenhouse Gas
Emissions Reduced***

Equivalent to Eliminating



Tanker Trucks of Gasoline

Impact of Various Fuel Types



RNG- Renewable Natural Gas; CNG- Compressed Natural Gas; LNG- Liquified Natural Gas; LPG- Liquified Propane Gas; EV- Electric Vehicle; PHEV-Plug-In Hybrid Electric Vehicle

2020 Annual Survey - Fleets Utilizing CNG and RNG

CNG

Campbell Kings – 3 Box Trucks

City of Arlington – 6 Cars

City of Dallas – 579 Refuse Trucks

City of Denton – 10 Refuse Trucks

City of Irving – 4 Refuse Trucks

Dallas County – 7 Pickups/SUV/Vans

Greenpath Logistics – 31 Trucks

Texas Department of Transportation -

26 Pickup/SUV/Vans

Trinity Metro – 194 Transit Buses

UPS – 572 Trucks

CNG and RNG

Dallas Area Rapid Transit – 674 Transit

Buses

Dallas-Fort Worth International Airport -

192 Total Vehicles

Total – 12 Fleets Operating 2283

CNG Vehicles

DFW International Airport has been using RNG since 2016 with the intention to further reduce their carbon footprint.

Read about their success at:

<https://www.dfwcleancities.org/successstories>

DFW INTERNATIONAL AIRPORT

A Leader in Renewable Natural Gas

LIVE GREEN | DFW

Dallas Fort Worth International Airport (DFW) covers more than 26.9 square miles (larger than the island of Manhattan, New York!) and is one of the busiest airports in the world – with its bus fleet surpassing more than 4 million miles of annual usage alone.

When DFW began looking for ways to achieve carbon neutrality and improve air quality in the Dallas-Fort Worth Region, the airport's active bus fleet became a primary target to further reduce impacts of airport operations. The airport transitioned its diesel bus fleet to compressed natural gas (CNG) more than 20 years ago, which helped DFW achieve carbon neutral status in 2016. But since achieving that recognition, the airport began exploring ways to further improve its carbon footprint.

"Clean Energy was already making inroads in California," says environmental program manager, Kris Russell. "In fact, some of our airport colleagues—at both San Diego International Airport and San Francisco International Airport—were already using renewable natural gas (RNG)."

In late 2016, DFW Airport approached RNG provider Clean Energy about the feasibility of delivering and supplying renewable fuel to the existing Clean Energy airport CNG stations. In August 2017, the airport started the supply of RNG in the form of landfill methane. Today, the airport's natural gas fleet runs on 55 percent renewable natural gas—an amount that has been and will continue to increase in accordance with the airport's contract with Clean Energy. The RNG contract aims for 90 percent supply by 2025. "We project, based on what Clean Energy is telling us about supply, there will be more supply coming on-line soon," says Russell. "We think we'll be much closer to 100 percent supply within the next 12 to 18 months." Apart from improving local air quality, DFW Airport's

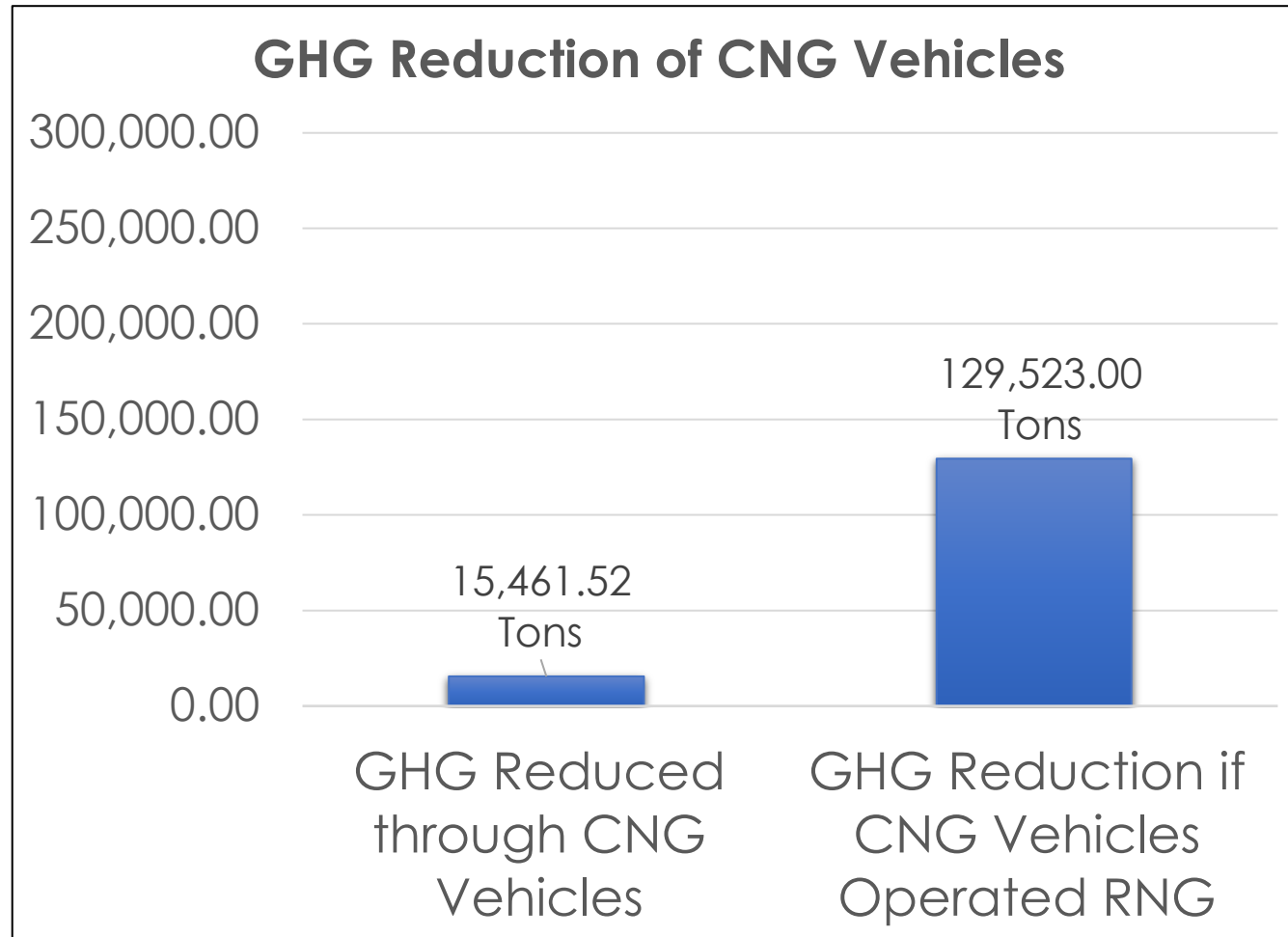
DID YOU KNOW?

You don't need any new infrastructure or vehicles to transition your compressed natural gas (CNG) fleet to renewable natural gas (RNG).

The two are the **same fuel technology, simply sourced differently**. You can think of it as transitioning from coal-sourced electricity to wind or solar generated electricity.

Contact your current natural gas fuel provider and ask them about options to transition to RNG.

What-If RNG was Utilized



In 2020, fleets in the DFW Region had a total GHG reduction of **125,058 tons**.

If all CNG vehicles utilized RNG, total coalition GHG reduction would increase to **239,120 tons**.

Clean Cities Annual Survey – Due March 11



Inform Future Events, Convey Needs

Trainings and Webinars
Resources
Funding



Provide Opportunity for Recognition

Gold, Silver, Bronze
Awards
Shining Stars
Fleet Challenge



Meet Regional Goals Set by DOE

27,787,339 Gasoline Gallon
Equivalent Reduced
(16% Increase Relative to 2020)
150,070 Greenhouse Gas
Reduced
(20% Increase Relative to 2020)

Document Impact to Justice 40
Communities

Start the Survey: dfwcleancities.org/annualreport

North Central Texas Organic Waste to Fuel Feasibility Study

- Funded through grant from the Environmental Protection Agency
- Regional Study Goals:
 - Advance regional efforts to divert food waste, and other organics, from landfills to preserve landfill capacity
 - Increase regional renewable energy opportunities
 - Evaluate the potential to reduce fleet emissions
 - Identify pilot projects and partnerships to advance those projects



DFW Try And Drive Alternative Program

Connects fleets and consumers with providers who have extended loaner programs for clean vehicle and advanced technologies. Examples of technologies include:

- Electric Vehicles
- Telematics
- Compressed Natural Gas Refueling Stations

To see current directory of technologies available to borrow, go to <https://www.nctcog.org/dfwtrydrive>

Additional technologies will be added to the directory. If you would like to be listed as a provider, please contact cleancities@nctcog.org.

CNG and RNG Funding Opportunities

North Texas Clean Diesel Projects 2021 – **NOW OPEN**; Deadline is April 15, 2022

Funds: On-Road and non-road diesel vehicle replacements; 45% if replacement is electric, 35% if certified CARB Low-NOx, 25% for others

Texas Emissions Reduction Program (TERP) – **Programs Begin Opening Spring 2022**

Funds: Various programs funding purchase, lease, or replacement of vehicles and equipment

Light-Duty Motor Vehicle Purchase or Lease Incentive Program (LDPLIP) – **NOW OPEN**; Deadline is January 17, 2023

Funds: \$2,500 rebate for electric vehicle; \$5,000 rebate for CNG and LPG vehicles

Texas Clean Fleet Program - **Expected to Open Spring 2022**

Funds: Replacement of diesel vehicles with alternative fuel and hybrid vehicles

Alternative Fueling Facilities Program (AFFP) – **Expected to Open Summer 2022**

Funds: 50% of the total eligible costs with a maximum grant amount of \$600,000 for construction or expansion of alternative fueling infrastructure, with funding for projects open to the public being prioritized

Bipartisan Infrastructure Law Competitive Infrastructure Grants – **Programs Begin Opening in Spring 2022**

Funds: Various programs funding infrastructure for local governments. Go [here](#) for a full list of grants

Competitive Grants for Electric and Alternative Fueling Stations – Expected Summer 2022

Funds: Publicly accessible electric and alternative fueling infrastructure along alternative fuel corridors and in communities

For a full list of available funding opportunities visit www.nctcog.org/aqfunding

Resources

[AFDC Alternative Fueling Station Locator](#)

[AFDC Vehicle Search](#)

[AFDC Natural Gas Webpage](#)

[AFDC Renewable Natural Gas Production Webpage](#)

[AFLEET Tool](#)

[Argonne National Laboratory Renewable Natural Gas for Transportation](#)

[DFWCC Try and Drive Alternative](#)

[Natural Gas Vehicle America](#)

[NCTCOG AQ Funding](#)

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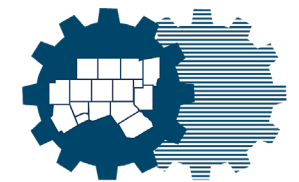
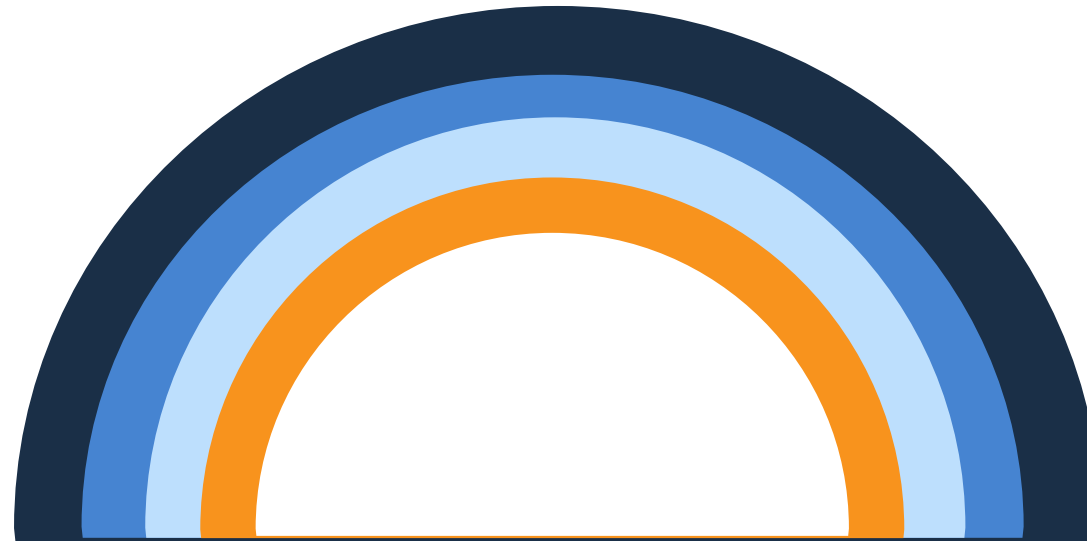
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