STARTnow.
RNG IS HOW!

A Project of NGVAMERICA

THE RACE TO ZERO IS ON.

RNG achieves carbon negative transportation today. Join us.

SECTIONS

Achieve cleaner air and decarbonized miles today with an RNG-fueled fleet.

Even in the hardest to abate transportation sectors like medium- and heavy-duty trucking, RNG provides a carbon neutral — even negative — alternative now.

Renewable Natural Gas (RNG), or biogas, is gas produced from methane emitted through the decomposition of agricultural waste, food waste, forest management waste, wastewater sludge, and garbage. It can be transmitted and stored either as compressed natural gas (CNG) or liquified natural gas (LNG) just like geologic, or conventional, natural gas.

RNG production captures this methane and redirects it away from the environment, repurposing it as a clean, green energy source and supporting the transition to a circular, carbon-neutral economy.

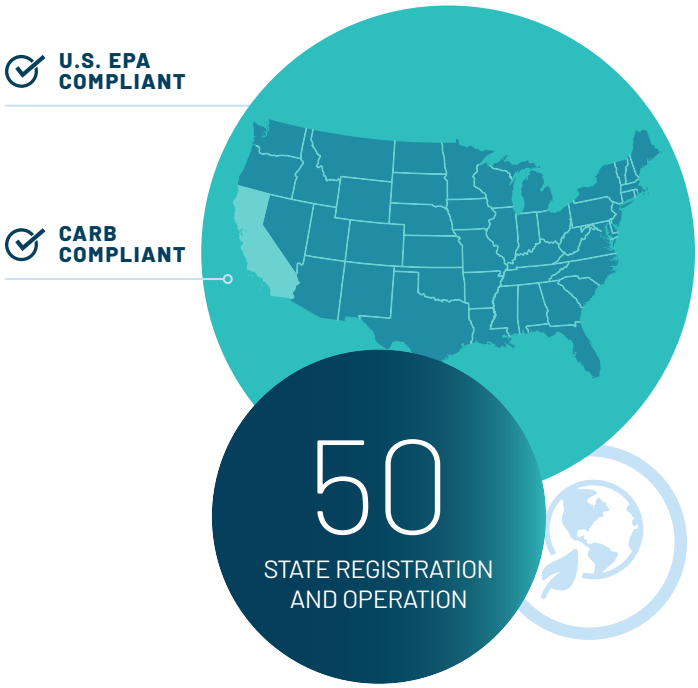
Don't just avoid emissions, actively remove them from the environment by fueling with RNG.

What is RNG?

Investing in commercially available NGVs fueled by RNG is the most cost-effective and immediate climate positive transportation change policymakers can affect. Learn more at **NGVAmerica.org**

VEHICLES

NGVs are proven, durable, scalable, and in operation on our roadways today. NGVs are cost effective, with far lower incremental costs over diesel than electric or hydrogen options still in development.



Available

- Medium- and heavy-duty natural gas models are commercially available and scalable now by leading truck manufacturers including Autocar, Crane Carrier, Ford, Freightliner, Hyliion, Kenworth, Mack, Peterbilt, and Volvo
- 50 state registration and operation — both U.S. EPA and CARB compliant

Affordable

- A 1:1 replacement for diesel
- Minimal unit incremental cost over diesel and less expensive than still-in-development battery electric and hydrogen technologies

Proven Performance

- Reliable and ready to roll
- Similar power, torque, and range capabilities as diesel regardless of terrain or weather
- Options exist to meet every needed application:
  - Pickup and Delivery
  - City Tractor
  - Regional Tractor
  - Refuse
  - Vocational – Dump, Mixer, Stake Truck
  - Transit, School Bus and Motor Coach

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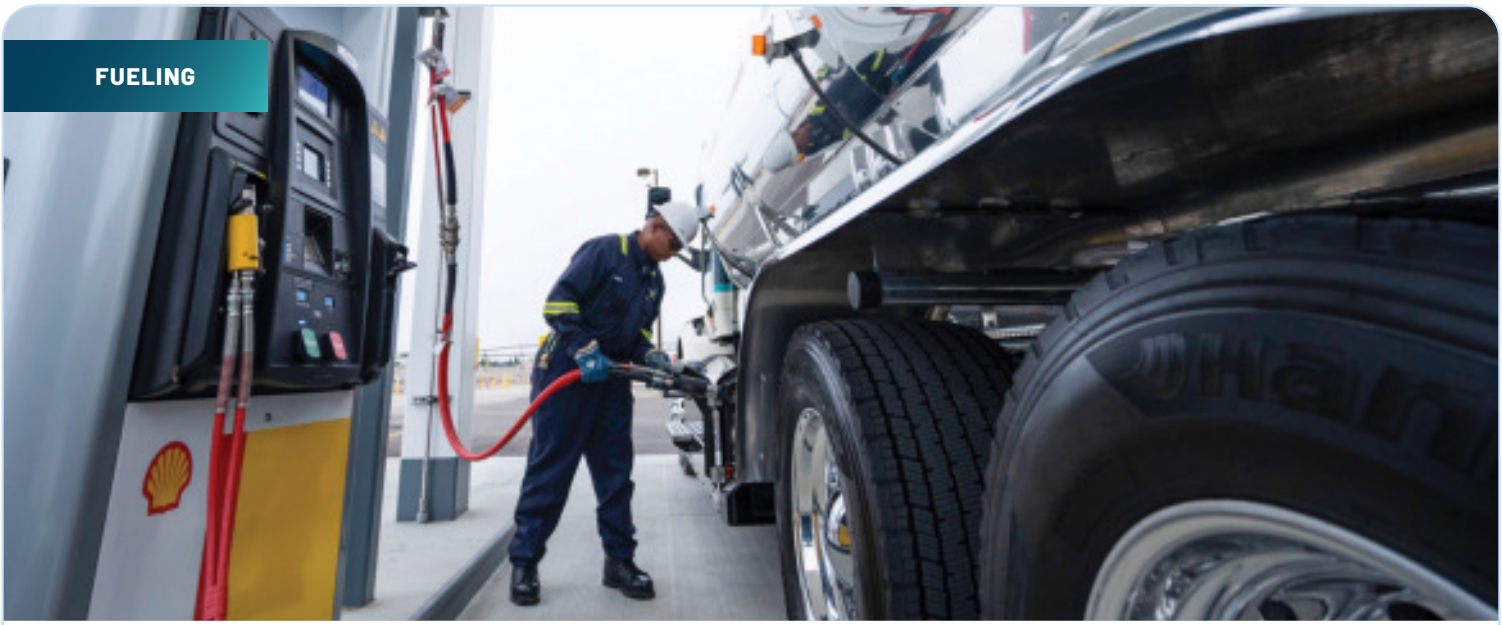
FUELING



As a drop-in fuel for existing natural gas vehicle technology, RNG is an inclusive, long-term, no regret solution with immediate impact. NGV fuel pricing is consistent and competitive with no hidden charges or added fees.

RNG

EVOLVING, INCLUSIVE, LONG-TERM.

Along with the advantages in NGV fuel pricing, RNG is easily stored, distributed, and replenished for motor fuel use.

Established Infrastructure

- Nationwide refueling network is in place, storm resilient, and growing
- No massive buildout of charge connections or transmission network and capacity needed to get started
- Multiple private on-site options available for permanent fast fill and time fill systems or temporary or portable refueling operations to meet various applications and needs

Available Low Carbon Fuel

- RNG motor fuel has been verified in the State of California as carbon-negative
  - Q3 2021 data from the California Air Resources Board (CARB) confirms that the energy weighted carbon intensity (CI) of California's bio-CNG vehicle fuel portfolio in its Low Carbon Fuel Standard (LCFS) program is well below zero at **-62.7 gCO2e/MJ**, marking five quarters where bio-CNG's CI is certified carbon-negative.
- RNG is easily stored, distributed, and replenished for motor fuel use
- RNG is domestically, sustainably, and responsibly sourced

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NGVs provide immediate emissions improvement — both in terms of criteria pollutants and carbon. Reductions made today have cumulative impact later. NGVs require no costly or cumbersome emission control equipment (i.e. SCR systems) to achieve a zero-emission equivalent tailpipe result.

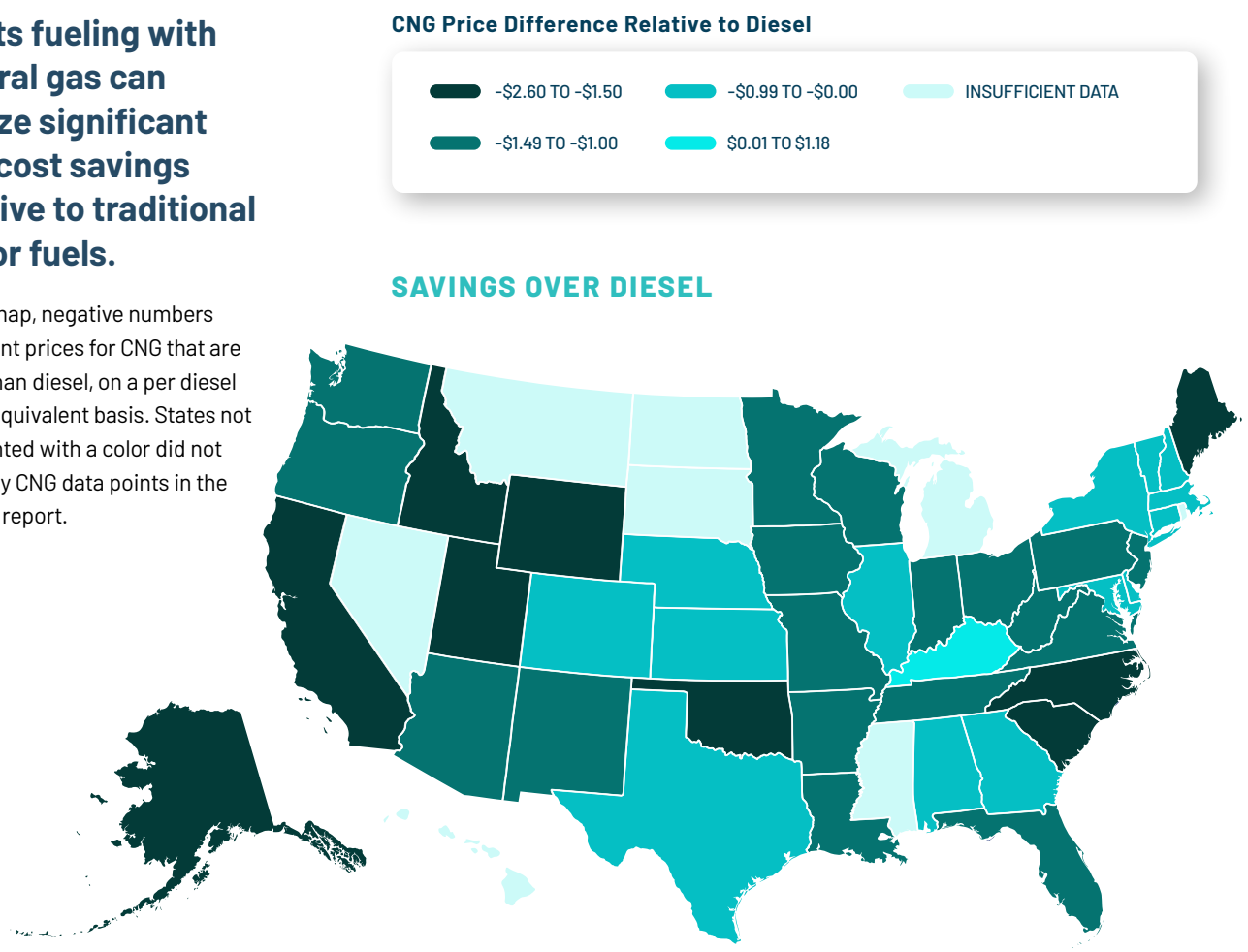
Go Carbon-Negative Now

- RNG holds a lower carbon intensity (CI) than on-road vehicle fuel from renewable electric derived from solar or wind
- Achieve ultra-low to no to negative carbon fleet results immediately with RNG (final CI dependent on feed stock)

Cost Effective Clean

Fleets fueling with natural gas can realize significant fuel cost savings relative to traditional motor fuels.

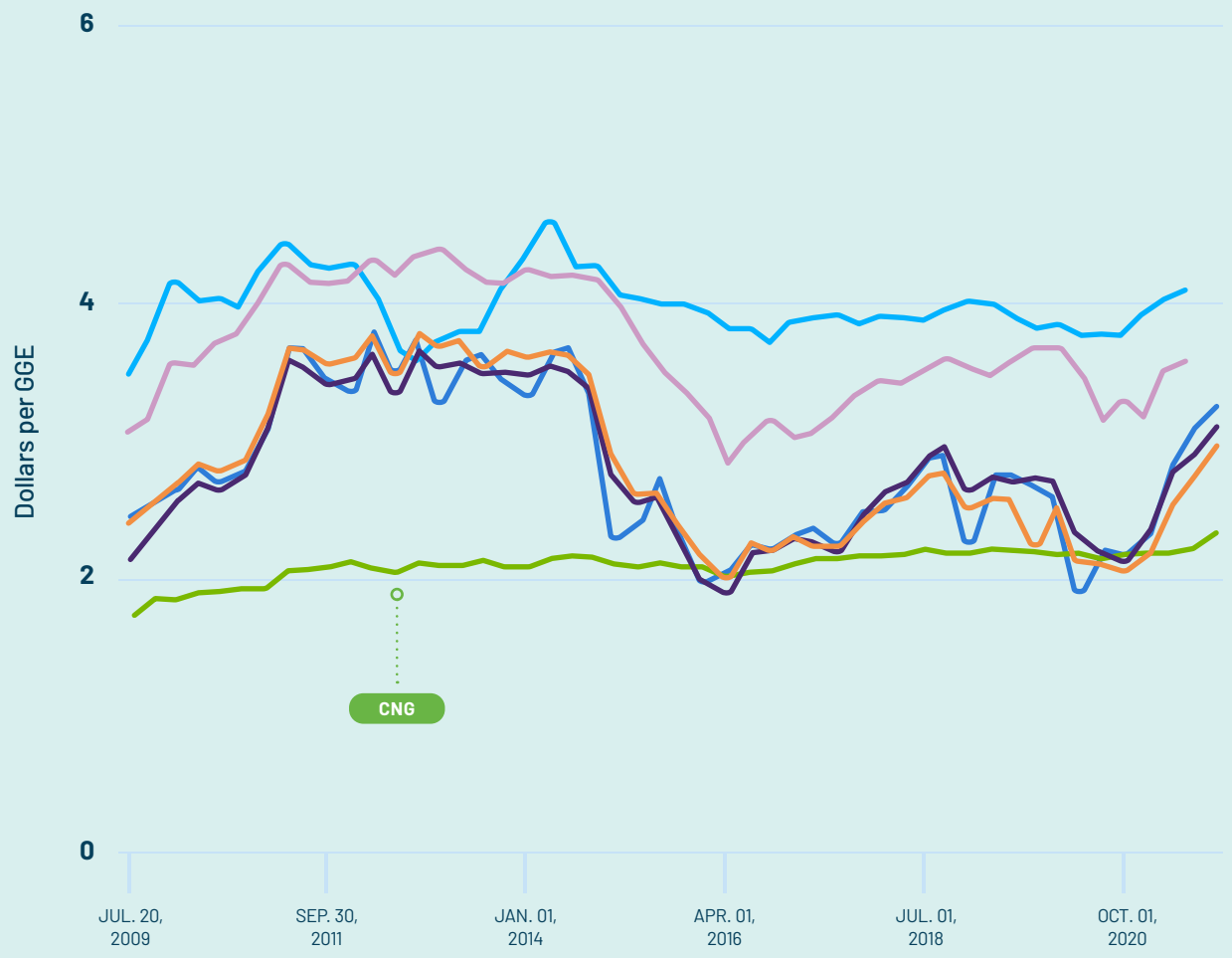
In this map, negative numbers represent prices for CNG that are lower than diesel, on a per diesel gallon equivalent basis. States not highlighted with a color did not have any CNG data points in the current report.



Source: "Clean Cities Alternative Fuel Price Report," U.S. Department of Energy, EERE, October 2021.

Natural gas fueling is less volatile to market swings, providing price stability and savings to fleets of all sizes.

AVERAGE RETAIL FUEL PRICES IN THE UNITED STATES



Source: U.S. Department of Energy, Alternative Fuels Data Center, December 2021

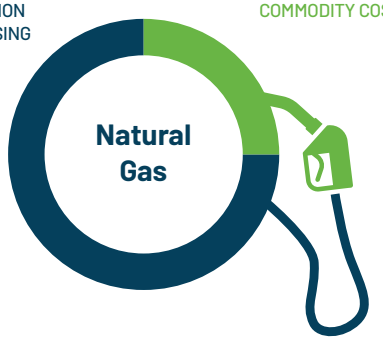
SUSTAINABLE RESULTS

Natural gas provides long-term motor fuel savings with limited pricing volatility because approximately 25 percent of the pump price is related to the commodity cost compared to 50 percent for gas and diesel.

WHAT MAKES UP THE TOTAL PRICE AT THE PUMP?

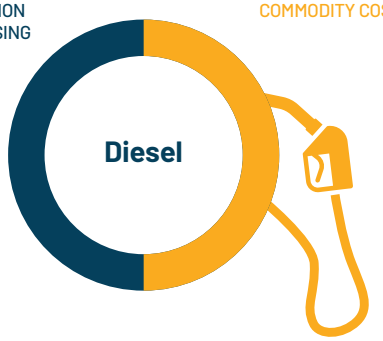
75%
TAXES, DISTRIBUTION & PROCESSING

25%
NATURAL GAS COMMODITY COST



50%
TAXES, DISTRIBUTION & PROCESSING

50%
CRUDE OIL COMMODITY COST



Fleets can expect this natural gas price stability and savings over diesel to extend long term.

MOTOR FUEL PRICE PROJECTIONS

Source: U.S. Energy Information Administration, Annual Energy Outlook 2022

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Return on Investment

The longer natural gas vehicles remain in service, the larger the payback. Similarly, natural gas vehicles deployed in high mileage applications will achieve greater payback sooner. Return on investment correlates directly with vehicle incremental cost, fuel price, and fuel consumption.

Get started today on the road to carbon negative freighting. NGVAmerica members can help.

Find partners at: ngvamerica.org/startnow

WITH FUEL SAVINGS OF $1.50/GALLON OVER DIESEL

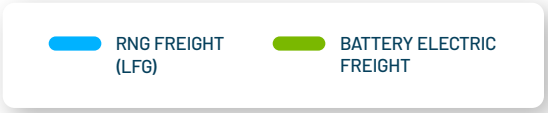
4.76 years	$2,500	$10,500/year
ROI ACHIEVED	YEAR 5 NET SAVINGS	YEAR 6+ NET SAVINGS

WITH FUEL SAVINGS OF $2.00/GALLON OVER DIESEL

3.57 years	$6,000	$14,000/year
ROI ACHIEVED	YEAR 4 NET SAVINGS	YEAR 5+ NET SAVINGS

Note: Above assumes $50,000 natural gas truck incremental cost over diesel option with no incentive or grant funding provided toward the truck purchase price and 7,000 diesel gallons equivalent (DGE) consumed annually. Fuel price differential does not include Alternative Fuel Tax Credit of $0.50/gallon. The economics of operating natural gas vehicles can further improve if the fleet fuels with renewable natural gas and has contracted for a portion of that credit value (Low Carbon Fuel/Clean Fuel Program Credit and/or Renewable Fuel RIN Credit).

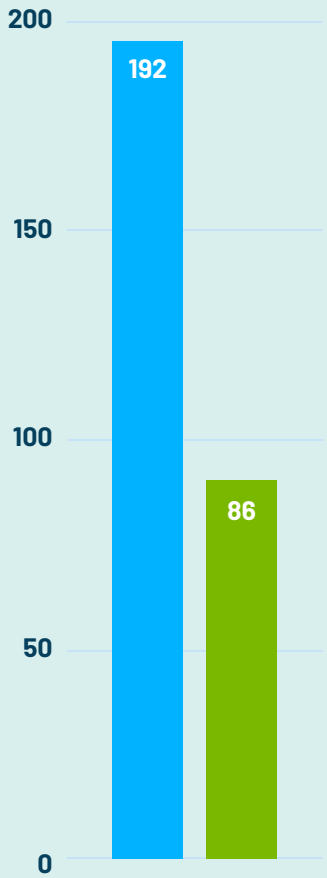
More Trucks, Greater Emission Reductions with RNG



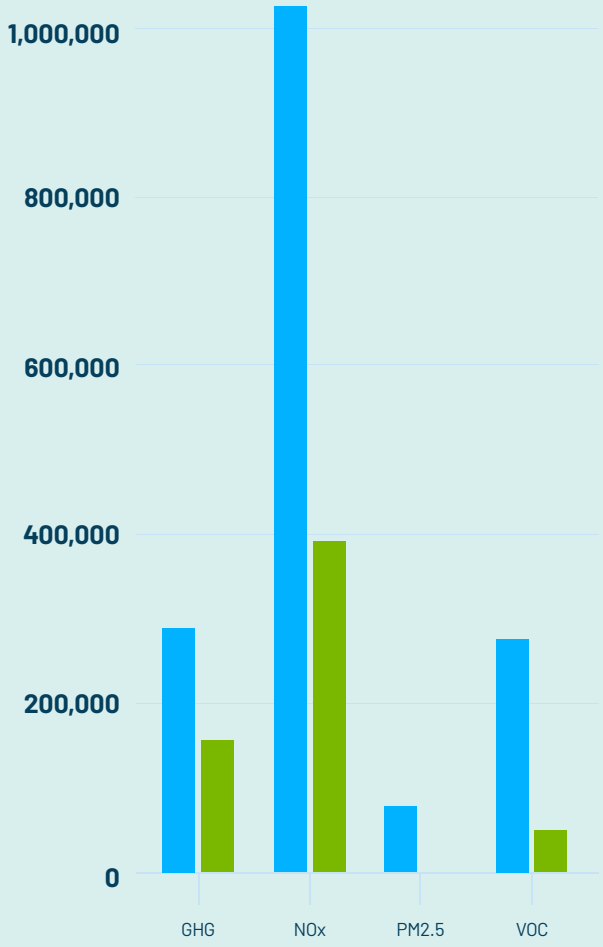
WHAT A $25 MILLION INVESTMENT ACHIEVES

CLASS 8 FREIGHT

Number of Clean Freight Trucks Purchased



Total Freight Truck WTW Lifetime Emission Reductions For Investment



Note: LFG = landfill gas, or renewable natural gas (RNG) produced from landfill waste. BE = battery electric vehicle. GHG reduction figures in tons. Criteria pollutant (NOx, PM2.5, VOC) reduction figures in pounds. The well-to-wheel (WTW) reductions for criteria pollutants and GHG emissions including benefits associated with landfill gas were calculated utilizing Argonne National Laboratory's AFLEET tool. GHG emission reduction figures will improve dramatically when refueling with RNG derived from agricultural waste. Further, this is a conservative comparison because it assumes BEVs are a 1:1 replacement for diesel which is often not the case.

The RNG Vehicle Value Proposition

REIMAGINE WASTE

Naturally occurring methane is a potent GHG and the second biggest contributor to human caused global warming after CO_2

RNG projects capture this methane and redirect it away from the environment, repurposing it as a clean, green energy source

IMPACT IMMEDIATELY

Heavy-duty RNG-fueled trucks and buses are commercially available, scalable and on the road now

RNG vehicles offer a 1:1 replacement of diesel technology with similar power, torque, and range capabilities as diesel regardless of terrain or weather

AMPLIFY IMPACT

RNG holds a lower carbon intensity than on-road vehicle fuel from renewable electric derived from solar or wind

RNG motor fuel use has been verified in the State of California as carbon-negative

RNG is zero-emission equivalent when it comes to smog-forming tailpipe pollutants like NOx

Big Trucks = Big Impact

Big Trucks = Big Impact: replacing one aging diesel truck with one new natural gas-powered truck is the clean air equivalent of removing 119 cars from our roadways

MAXIMIZE INVESTMENT

RNG transport and transit are considerably less expensive than battery electric or hydrogen options

Nationwide refueling infrastructure is in place, storm resilient, and growing; no massive buildout of charge connections or transmission capacity is needed

GREEN SUSTAINABLY

Unlike certain renewables, RNG is easily stored, distributed, and replenished for motor fuel use

RNG is domestically, sustainably, and responsibly sourced, produced without child labor

Notes:

STARTnow.
RNG IS HOW!

A Project of NGVAMERICA

NGVAmerica is a national trade association of sustainability solutionists, experts in the clean transportation field. Our roughly 200 members are dedicated to the development of a growing, profitable, and sustainable market for vehicles, ships and carriers powered by natural gas and biomethane. NGVAmerica member companies produce, distribute, and market natural gas and biomethane across North America, manufacture and service natural gas vehicles, engines, and equipment, and operate fleets powered by clean-burning gaseous fuels.

Find Out More

WWW.NGVAMERICA.ORG