



Better Than Zero

Achieve a carbon-negative transportation outcome today with renewable natural gas.

Switch to RNG-fueled trucks and...



Save money



Slash emissions



Deploy and refuel new, clean trucks immediately

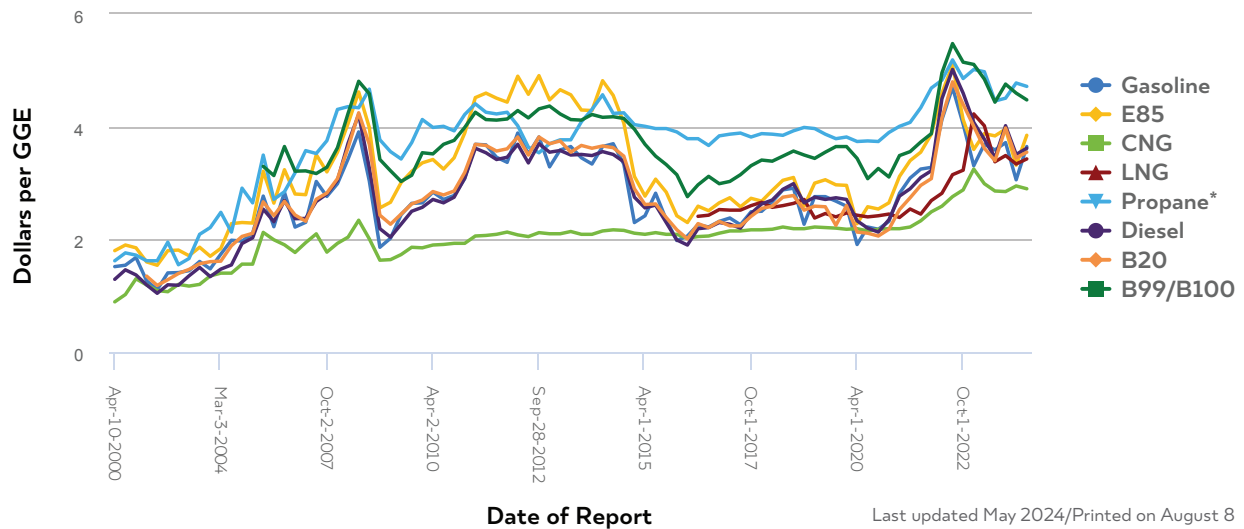


transportproject.org

Affordable, Clean Fuel Today

Save On Fueling. Sourced domestically, natural gas motor fuel is less volatile to global market swings, proving price stability and savings to fleets of all sizes.

Average Retail Fuel Prices in the United States



National Average Retail Fuel Prices

TABLE 3
National Average Retail Fuel Prices
on an Energy-Equivalent Basis
April 2024

	Per Gasoline Gallon Equivalent (\$/GGE)	Per Diesel Gallon Equivalent (\$/DGE)	Per Million British Thermal Units (\$/MBtu)
Gasoline	\$3.65	\$4.12	\$31.93
Diesel	\$3.62	\$4.07	\$31.62
CNG	\$2.90	\$3.28	\$25.37
LNG	\$3.43	\$3.85	\$29.91
Ethanol (E85)	\$3.85	\$4.35	\$43.95
Propane**	\$4.72	\$5.31	\$56.53
Biodiesel (B20)	\$3.55	\$4.02	\$28.09
Biodiesel (B99/100)	\$4.48	\$5.03	\$38.26

*Includes public and private stations
**Includes primary and secondary stations
U.S. Department of Energy, Alternative Fuel Price Report, April 2024

The retail price of compressed natural gas nationally is historically always less than the average for diesel fuel. In April 2024, the difference was about \$0.80/DGE. In some regions of the country, that price spread can be more pronounced with CNG motor fuel savings close to \$2.50 per DGE.

Fleets contracting for renewable natural gas also often see even more savings as they can benefit from economic value associated with renewable identification numbers (RINs). Under the U.S. EPA's Renewable Fuel Standard (RFS) Program, RNG sales generate RINs that can be sold to obligated parties (e.g. fleet users), sometimes for several dollars per gallon equivalent.

Federal Tax Credit

The Alternative Fuel Tax Credit provides a \$0.50/gallon credit for natural gas motor fuel credited at point of dispensing. Similar legislation has been introduced in Congress – H.R. 2448/S. 4389 – to expand the credit to \$1.00/gallon for natural gas motor fuel derived solely from renewable sources (bio-CNG or RNG).

State-specific clean fuel standard programs and the federal Section 48 Investment Tax Credit encourage additional RNG production, lowering NGV motor fuel costs.

Better Understanding RNG

Go Green with RNG

Reducing methane – a potent short-lived climate pollutant – is key to addressing climate change. One effective way is by capturing these methane emissions and converting them into transportation fuel, concentrating on those transport sectors nearly impossible to electrify.

As waste and organic matter break down, they emit methane. Renewable Natural Gas (RNG), or biogas, is gas produced from methane emitted through decomposition of animal manure, food waste, forest management waste, wastewater sludge, and garbage.

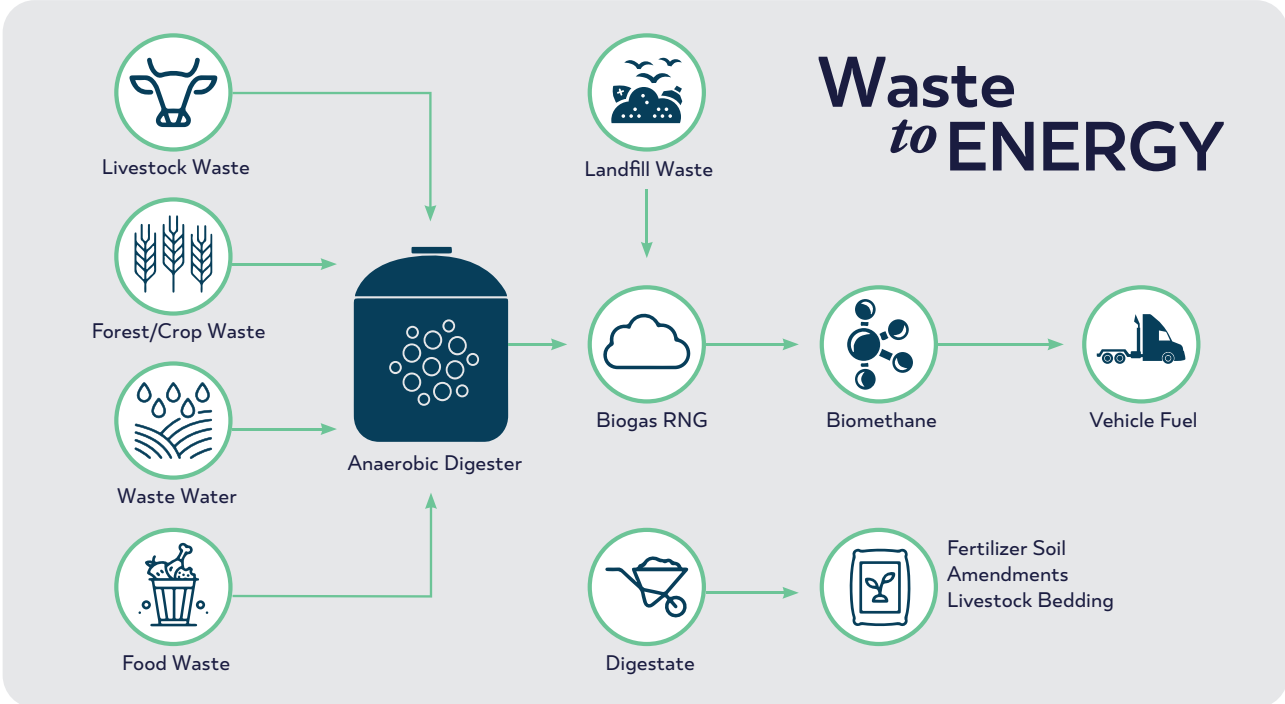
RNG projects capture this methane and redirect it away from the environment, repurposing this energy for positive use and supporting a circular, carbon-neutral economy.

And because this repurposed energy can easily displace complex liquid hydrocarbons like gasoline and diesel, its use as a heavy-duty motor fuel often results in carbon-negative fleet outcomes.

WASTE LIABILITY TO GREEN ENERGY ASSET

“State law ‘requires us to make sure that we address the methane fugitive emission from dairies, landfills and other sources, and we have to absolutely make sure that we capture that methane and we put it into a use to displace fossil [fuel].’”

Rajinder Sahota
 Deputy Executive Officer
 Climate Change & Research
 California Air Resources Board
 (CARB) 9/5/23



Accessible, Available, and Growing Infrastructure

Fuel with Ease. RNG is dispensed across North America, supported by 2.5 million miles of natural gas pipeline. Your fleet can rely on an established, mature network of nearly 1,600 public and private refueling stations across the U.S. and Canada with more stations in development. Many stations accommodate commercial vehicles of all sizes.



U.S. freight movement by volume, Bureau of Transportation Statistics

Access our interactive station map at: <https://TransportProject.org/fuel/>

Growing Infrastructure

The North American network of CNG stations continues to grow, and more and more of those stations are dispensing 100 percent RNG.

Top States for New Station Openings 2018-2023



CA 58



PA 34



TX 19



OK 14



FL 12



OH 10

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



POISED FOR INCREASED DEMAND

An extensive Fuels Institute study by researchers at Carnegie Mellon University concluded that the natural gas fueling infrastructure is well positioned to meet increased demand from the on-road transportation fuels market.

- Economic Viability of a Natural Gas Refueling Infrastructure for Long-Haul Trucks, Fuels Institute, July 2019

Types of CNG Fueling

Fast-fill

Used for retail applications and many private (behind-the-fence) stations, when vehicles arrive randomly for refueling, or when high fuel use vehicles arrive for sequential fueling one immediately after another. Comparable flow rates and time requirements to that of a retail gasoline or diesel station experience.



Time-fill

A lower cost option designed for fleets that return to central locations for a variable period of time, depending on fleet requirements. Ideal for return-to-base operations like school buses and refuse fleets.



Small-scale

Options exist for mobile/portable/temporary CNG fueling needs, introductory refueling for fleets just starting out, and very small fleet operations with lower fuel usage. Can be an affordable option due to lower capital expenditure costs versus conventional refueling stations.

Building Your Own Station

The cost to build a compressed natural gas or liquefied natural gas fueling station varies significantly, depending primarily on the capacity needed. Standardization of station size across North America will enable developers to reduce costs through economies of scale. Working with a Transport Project fueling partner, fleets can expect a station development timeline of 18 to 24 months. The recently revised federal tax credit for natural gas refueling infrastructure makes it much easier to invest in fueling.

Slash Your Emissions Profile

RNG is the Only Carbon-Negative Transportation Outcome Available.

It's Better Than Zero...

- The energy weighted annual average carbon intensity (CI) value of California's RNG vehicle fuel portfolio for 2023 was below zero at -126.42 gCO₂e/MJ
- Renewable CNG (dairy gas) close to -600 gCO₂e/MJ
- California fleets that fueled with bio-CNG in 2023 achieved carbon negative outcomes for the fourth consecutive year

At -126.42, bio-CNG holds the lowest average carbon intensity of any clean fuel option on California's roadways today and is the only fuel with a negative carbon outcome.

CA LCFS 2023 Renewable Fuels Average Ci Score (gCO₂e/MJ)



Note: Baseline conventional diesel carbon intensity = 100.45.
Data from CARB's LCFS Reporting Tool Quarterly Summaries

More and More Fleets are Fueling with RNG

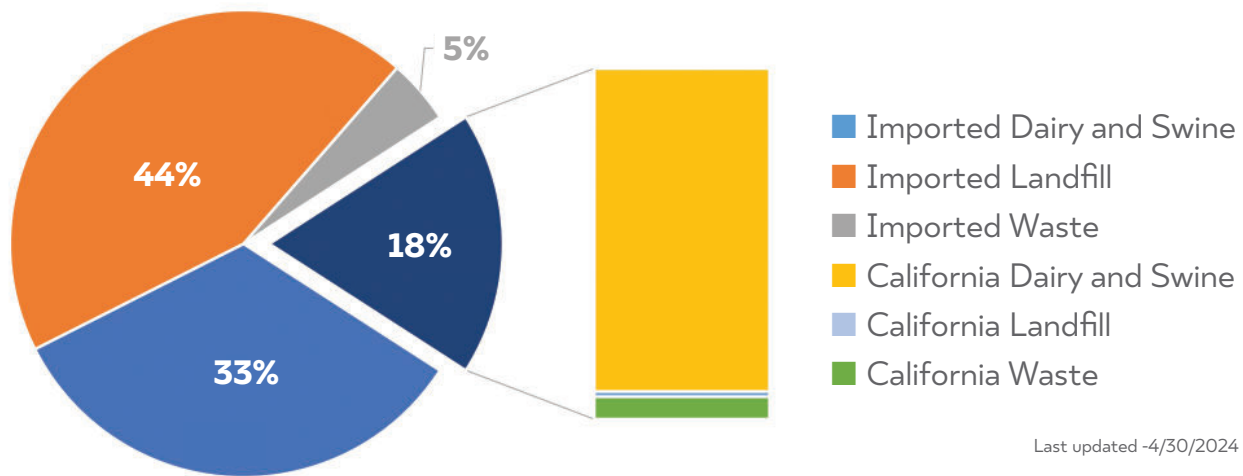
- In 2023, **79%** of all on-road fuel used in natural gas vehicles was derived from renewable sources, up **16%** from 2022 volumes
- In California, **97%** of natural gas vehicle fuel is RNG
- Nearly **50%** of all RNG dispensed as vehicle fuel in 2023 was outside California
- RNG use has increased **92%** over the last five years
- RNG offset a total of **6.96 million tons** of CO₂e in 2023, equal to offsetting close to **784 million gallons** of gasoline consumed
- NGV fuelers have made aggressive commitments to dispense **80% RNG by 2030**, aspiring to **100% by 2040**
- Over half of all truck-ready public retail natural gas stations in the U.S. and Canada dispense RNG today.

RNG is Produced Everywhere

RNG is produced across North America, with potential in every state and province. Looking at California where its CARB LCFS program closely tracks such data, 44 percent of its bio-CNG motor fuel is produced from out-of-state landfills, 33 percent from out-of-state dairy and swine farms, and 5 percent from out-of-state wastewater treatment facilities. Of the total 18 percent produced in-state, the overwhelming majority comes from farm-based digesters.


- California Air Resources Board LCFS Data Dashboard, data posted April 30, 2024

Volume share of Biomethane by source in 2023



Year	2021	2022	2023
Share of Total Reported Biomethane Volume that was Produced in State	6.74%	16.00%	18.23%
Total Instate Volumes (DGE)	10,947,399	29,847,515	37,544,319

No Shortage of Waste from Which to Harvest RNG



More than 144 million metric tons of food waste produced each year



17,000 wastewater treatment facilities



4,400 landfills



19,000 large farms and dairies

- Coalition of Renewable Natural Gas

RNG Production Continues to Expand



The Coalition for Renewable Natural Gas’s Sustainable Methane Abatement & Recycling Timeline (SMART) calls on all sectors to work together to capture and control methane from more than 43,000 waste sites across the U.S. and Canada, outlining benchmarks for North America as follows:

500

operating
methane-capture
facilities by 2025

1,000

operating
methane-capture
facilities by 2030

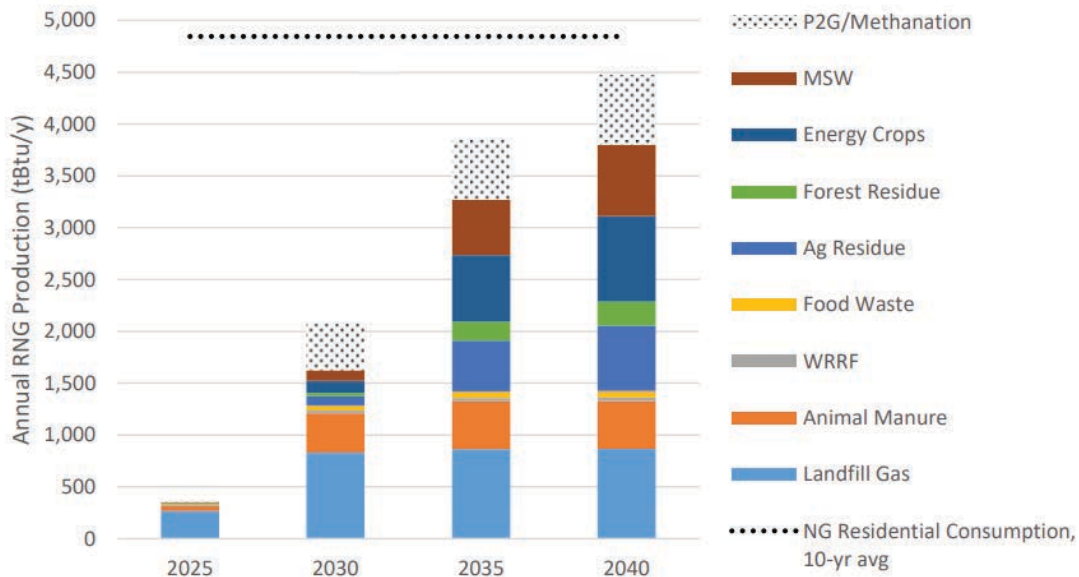
2,500

operating
methane-capture
facilities by 2040

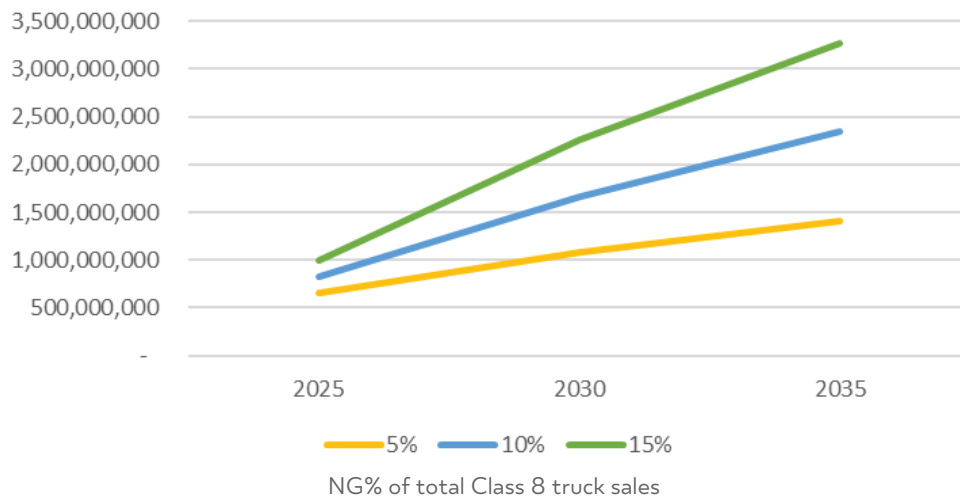
Ample Supply of RNG

Projections by the International Energy Agency, World Biogas Association, U.S. Department of Energy, National Petroleum Council, and American Gas Foundation all show that despite growing interest, expanding RNG supply will support additional NGV uptake under various scenarios here and abroad.

Estimate Annual RNG Production, High Resource Potential Scenario



On-Road NGV Fuel Consumption (DGE)



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 CO2



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

Maximize Investment



RNG is 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

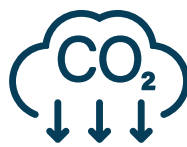


Unlike certain renewables, RNG is easily stored, distributed, and replenished for motor fuel use



RNG is domestically, sustainably, and responsibly sourced

Amplify Impact

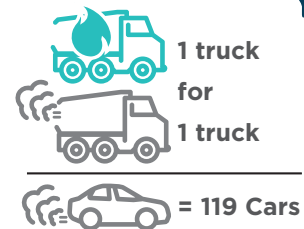


RNG holds a lower carbon intensity than on-road vehicle fuel from renewable electric derived from solar or wind



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

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



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



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