U.S. Energy™
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Renewable Natural Gas (RNG)

Renewable natural gas is made by capturing methane that is released during the decomposition of organic materials at landfills, agricultural operations, wastewater treatment plants, and food-processing facilities. The methane is then cleaned and conditioned to be chemically identical to natural gas and injected into the existing natural gas pipeline. RNG is a drop-in fuel, allowing it to be used in existing natural gas vehicles and fueling stations without modifications. Commercially available for over a decade, RNG accounts for over 69% of on-road fuel used in natural gas vehicles.

Things to Keep in Mind

1 ENVIRONMENT

When sourced through renewable means like dairy waste, RNG can be carbon negative by capturing the methane that would otherwise be released into the atmosphere.

2 COST

Natural gas prices are less volatile than diesel, and RNG often receives high value from carbon credit programs.

3 TECHNOLOGY

Natural gas vehicles are available across most market segments, but require different engines than diesel trucks, resulting in an increased upfront capital investment. Technology advancements continue to improve performance and lower prices.

4 INFRASTRUCTURE

RNG is a drop-in fuel for existing natural gas vehicles and pipelines, and benefits from a national network of CNG fueling locations.

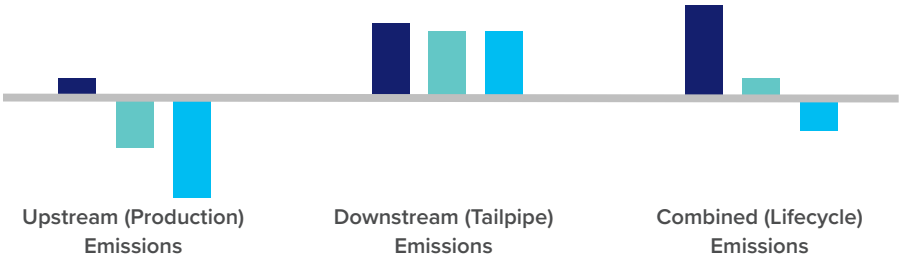
Environmental Impact

Methane is more than 25 times as potent as carbon dioxide, making it much more effective at trapping heat.

Through the RNG development process, methane that otherwise would be emitted into the atmosphere is captured and transformed into an alternative fuel or renewable energy source.

When sourced from dairy waste, RNG can achieve a negative carbon intensity (CI)—meaning over its lifecycle, it eliminates more carbon than it produces. The lower the CI, the better the emissions and financial incentives.

Lifecycle Emissions Comparison by Fuel Type

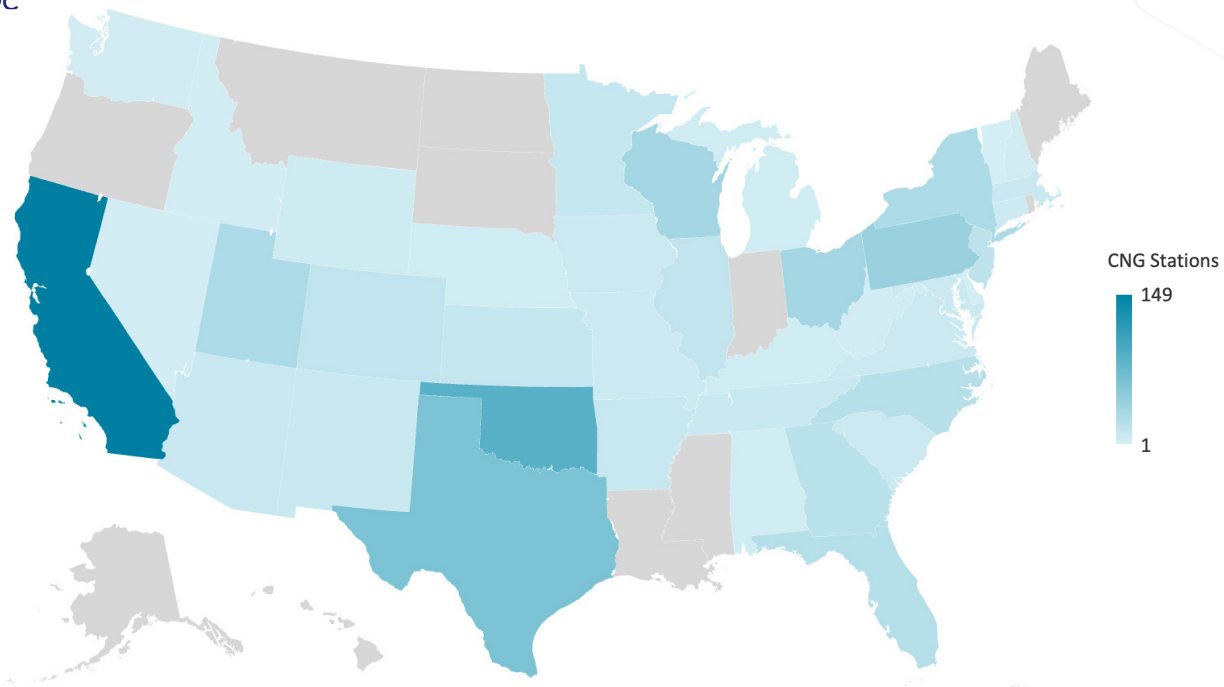


Fueling Locations

CNG stations have expanded to most states, with over 1,300 combined public and private stations available nation wide. California has the highest concentration where the Low Carbon Fuel Standard (LCFS) makes RNG especially lucrative given it slow carbon intensity. Commercial users of CNG may also elect to develop private fueling stations to support their individual operations.

Public CNG Station by State

Source: AFDC



Vehicle Availability

- School Bus
- Transit Bus
- Refuse Truck
- Delivery Van
- Medium-Duty Truck
- Heavy-Duty Short-Haul Truck

Financial Incentives for RNG

Federal Renewable Fuel Standard: Classified as a D3 RIN (highest RIN value)

California/Oregon/ Washington: Negative carbon intensity score= more financial credits

United States: $0.50/gallon Alternative Fuel Excise Tax Credit

Performance Comparison–Class 8 Trucking

Equipment	Range	Refuel	Fuel Efficiency
Diesel	1,000+ Miles	15 Minutes	–
CNG/RNG	650+ Miles	15 Minutes	0-5% Reduction

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