What is Renewable Natural Gas (RNG)?

American Gas Association

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Renewable natural gas (RNG) is defined as a pipeline-compatible gaseous fuel derived from biogenic or other renewable sources that has lower life cycle carbon dioxide equivalent (CO_2e) emissions than geologic natural gas.

Based on the 2019 Renewable Sources of Natural Gas: Supply and Emissions Reduction assessment from the American Gas Foundation, there is an estimated 3,780 trillion Btu of RNG which could be produced annually for pipeline injection by 2040.

Local Distribution Companies Play an Integral Role in RNG Development & Delivery

Gas utilities are key to making RNG a viable, scalable and sustainable solution for the communities they serve.

Local distribution companies (LDCs) play three critical roles in the delivery and end-use of RNG:

1. Existing Infrastructure:
Since gas utilities already manage large regional pipeline networks, they can deliver RNG at scale, reaching a wide range of customers. As RNG is injected into existing natural gas infrastructure, it can be used directly in homes and businesses without requiring major modifications. This makes it an easy and cost-effective way to reduce emissions compared to other emissions reduction pathways.

2. Regulatory Oversight and Safety:
Gas utilities are subject to strict regulations and safety standards, ensuring that the delivery of RNG is done safely and reliably. This level of oversight helps maintain public trust and confidence that the gas being delivered is of the same high quality and safety standards as conventional natural gas.

3. Advancing Emissions Reduction Programs:
Many natural gas utilities and stakeholders are working together to educate decision-makers across the United States on the benefits of RNG. Innovation funding programs and green and sustainability bonds are just some of the programs natural gas utilities are helping establish to encourage the adoption of RNG and other emissions reduction programs.

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An Emissions Reduction Opportunity That is Also an Economic Boon

By distributing RNG, gas utilities directly contribute to lowering the carbon footprint of the energy sector.

Landfills, agricultural operations, sewage treatment plants and food waste are major sources of methane emissions. Capturing and converting methane into RNG and diverting it into alternative end-uses prevents its release into the atmosphere and subsequently reduces greenhouse gas (GHG) emissions.

The production and distribution of RNG represents an economic opportunity for communities, businesses and governments by:

- **Driving Economic Growth and Job Creation:** Creating jobs in renewable energy sectors like facility design, construction and gas capture technology, particularly in rural and agricultural areas, while supporting new revenue streams for farmers, utilities and infrastructure providers.
- **Advancing Sustainability and Energy Security:** Reducing reliance on imported fossil fuels, enabling corporations to achieve carbon neutrality and helping farmers and waste management companies monetize animal and landfill waste for improved financial sustainability.
- **Investing in Rural Economies:** Strengthening rural communities through infrastructure investments and enhancing the value of agricultural byproducts to promote long-term economic resilience.

Where Does RNG Come From?

1: Landfill

As organic waste like food scraps and paper break down in landfills, it produces methane. Capturing and cleaning methane can turn it into RNG.

2: Agriculture Waste

Manure and other agriculture byproducts, like crop residues, can be processed to produce methane through anaerobic digestion. This methane is then upgraded to RNG.

3: Wastewater Treatment Plants

When wastewater is treated at wastewater treatment plants, organic matter breaks down and produces methane. This methane is captured and processed into RNG.

4: Food Waste (Organic Waste)

When household or commercial food scraps, yard waste and other biodegradable materials break down in controlled environments, like anaerobic digesters, they produce methane, which can be converted into RNG.