# The Next Phase of RNG Is Here, Now What?

The utility industry is rapidly adopting biomethane, also known as renewable natural gas or "RNG," to supplement traditional natural gas as a fuel source for both electric generation and heating purposes. Previously, RNG project developers were predominantly focused on the unregulated space due to RNG's high production costs and the regulatory requirements utilities otherwise faced in incorporating RNG into their existing, regulated systems. But times are changing. The passage of the Inflation Reduction Act, the enactment of several aggressive state-mandated carbon reduction targets, and the adoption of company-specific environmental programs mean RNG is now in the front seat.

The primary appeal of RNG arises from a combination of factors: its environmental benefits for capturing naturally-occurring greenhouse gas emissions from existing waste streams, a similar chemical composition to traditional natural gas, and the plentiful supply of organic feedstocks from which RNG is derived.[1] Various low-carbon fuel standard programs also offer incentives for the increasing use of greener fuels such as RNG, as these programs award entities tradable credits for reducing carbon emissions.

Although use of RNG as a fuel source in the utility industry is not new, the scope of its use continues to expand. Early adopters of RNG projects—dating back more than a decade—tended to focus on small, localized projects. In most cases, RNG was physically isolated and was not otherwise distributed by local utilities (*i.e.*, local distribution companies or "LDCs") for immediate end-use consumption in place of traditional natural gas. That has since changed. Today, and for the foreseeable future, LDCs and interstate pipelines are not only more active in helping develop RNG projects but are incorporating RNG pipeline facilities into their existing, regulated distribution systems.

Despite the benefits RNG offers, there are critical issues that must be considered to ensure RNG facilities are integrated in a safe, reliable, and efficient manner. This article highlights some of the most prominent issues.

## Location Matters!

One factor predominates when deciding whether and how to incorporate RNG into a utility system or to transport it on interstate pipelines for power generation—LOCATION! Introducing RNG into an interstate gas pipeline system near large RNG supply sources is vastly different than introducing RNG into an LDC's gas distribution system near a residential area. The location of RNG injection sites plays a major role in the viability of connecting RNG supply to regulated utilities. For one, the precise chemical composition of RNG differs based on where it is sourced. This lack of uniformity in RNG composition means that entities further down the chain, particularly pipelines and end-users, as well as regulatory agencies, may impose unique (and potentially significant) measures to ensure RNG meets the necessary quality specifications.

For example, regardless of the particular feedstock or production pathway used, certain constituents of RNG are not typically tested as part of a regulated pipeline's gas quality specifications. If a pipeline determines that such constituents require additional quality control measures, the timing, quantity, and costs associated with preparing RNG for pipeline transportation could be impacted. As another example, the concentrations, dissemination, and disposal of several RNG constituents—namely, carbon dioxide, inert gases, siloxanes, and volatile organic compounds—are often restricted by regulatory agencies.[2] These limits require developers to make additional investments to ensure their processing systems comply with regulatory

[1] RNG (biomethane) is produced from two sources: (1) biogas that has been upgraded via anaerobic digestion, or (2) synthetic gas that has been cleaned as part of the gasification of biomass. The process of upgrading biogas to produce biomethane consists of removing carbon dioxide and other contaminants present in the biogas.

[2] https://www.epa.gov/sites/default/files/2020-07/documents/lmop_rng_document.pdf. Volatile organic compounds are regulated by EPA as potential pollutants.

directives. In turn, utilities and pipelines must consider where the proposed RNG project is located on their system and how much RNG will be injected into their systems. Utilities and pipelines may be able to mix smaller volumes of RNG with much larger volumes of traditional natural gas to ensure an acceptable "blend" of gas on their system, but limits on acceptable concentration levels are also likely to restrict the allowable proximity between multiple RNG injection sites on a given pipeline system. Of particular importance for local pipelines is whether RNG will be introduced near end-users, including residential and commercial customers.[3]

As is evident, the location, quantity, and specific end-users of RNG must be analyzed when a utility considers whether to incorporate RNG facilities into its pipeline system.

## Warranty & Other End-Use Considerations

Aside from location, several additional factors are in play when assessing whether to incorporate RNG into existing systems:

- **Warranties** (or other potential liabilities) – Introducing RNG into a pipeline system can implicate original equipment manufacturer ("OEM") warranties, such as warranties for natural gas-fired turbines. This has been a contentious and widely debated issue recently, including in an ongoing proceeding at FERC involving one pipeline's attempt to incorporate RNG into its pipeline system.[4] While RNG, by definition, contains at least 90% methane, traditional natural gas used to fuel turbines typically contains at least 96% to 98% methane. Other RNG constituents, *e.g.*, siloxanes, can also be problematic for certain generating equipment. Whether RNG will violate an OEM's turbine warranty depends on the particular turbine manufacturer, so careful consideration must be given when introducing RNG into existing pipeline systems.
- **Pipeline Gas Quality Specifications** – Related to the issue of warranties, to head off potential damage to their systems or equipment, pipelines and end users may prescribe more stringent, or RNG-specific gas quality specifications such as specific heating values, pressure, temperature, and moisture content.[5] Pipelines typically require a high methane content (again, between 96 – 98%) and restrict the amount of oxygen and inert gases allowed.[6] Pipelines also typically require RNG to be compressed between 50 to 1,000 psig, depending on the interconnection location and system configuration.[7]
- **Economic & Operational Considerations** – RNG isn't cheap! High production costs and nascent demand mean RNG prices remain high. Federal and state incentives can help reduce RNG project and end-user costs, but the availability of these incentives is often project-specific, of limited duration, or subject to other eligibility requirements.[8] Also, who is going to use the RNG? Electric generation and

[3] For instance, if RNG is injected into a utility's system near end-users, there may not be a sufficient blend of RNG with traditional natural gas, which could adversely impact service to end-users.
[4] FERC urged to avoid setting national RNG standard amid sparring over tariff, S&P Global Commodity Insights (June 30, 2023), available at: https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/natural-gas/062923-us-ferc-urged-to-avoid-setting-national-rng-standard-amid-sparring-over-tariff
[5] https://www.epa.gov/sites/default/files/2020-07/documents/lmop_rng_document.pdf; *Dominion Energy Transmission, Inc.*, 175 FERC ¶ 61,091, at P 20 (2021); *Great Basin Gas Transmission Co.*, 178 FERC ¶ 61,071 (2022).
[6] https://www.epa.gov/sites/default/files/2020-07/documents/lmop_rng_document.pdf.
[7] *Id.*
[8] *See* https://www.epa.gov/lmop/renewable-natural-gas#:~:text=National%2C%20state%20and%20local%20incentives%20may%20be%20available,can%20provide%20additional%20economic%20drivers%20for%20project%20development. For example, certain states have implemented programs that encourage RNG development, such as state renewable portfolio standards programs with renewable energy certificates ("RECs"). Rhode Island offers a 100% property tax exemption to manufacturers and residential customers who use eligible technologies in cluding anaerobic digestion as part of a renewable energy system. New York has established the Clean Energy Fund to provide financial support to all state-sponsored clean energy activities on a fuel-neutral basis. These programs provide incentives for LDCs and other entities to seek out pipeline-supplied RNG as a means of meeting their state's carbon goals or to trade RNG-based RECs among one another.

heating are the end uses most likely to use pipeline-supplied RNG but supplying RNG for these purposes requires the conversion of existing pipelines to accommodate RNG. And don't forget other considerations such as the need for consistent quantity and quality of feedstocks, the particular processing technology, end-user availability and demand for RNG, the existence of physical connection barriers, and the availability of reliable power sources for the compression and cleanup processes.[9]

## Potential Regulatory Implications & Pitfalls

As the amount of RNG being injected and transported on pipeline systems continues to grow, so too will the regulatory implications.

First and foremost is the issue of identifying whether the applicable state or the federal government has jurisdiction over the transportation of RNG via pipeline. The physical movement of a particular molecule of gas through a pipeline does not always coincide with the movement contracted for in the applicable transportation agreement when said pipeline has multiple receipt and delivery points. The misalignment between the physical realities of gas pipeline transportation and the contracts underpinning these movements have potential legal implications for LDCs and entities seeking to trade their RNG-based Renewable Energy Credits or source renewable fuels to meet state energy goals. Because certain credits and financial incentives can only be obtained if the RNG molecules are delivered to certain far-away states or regions of the country (even if just on paper), utilities looking to incorporate RNG facilities onto intrastate pipeline systems may inadvertently trigger federal jurisdictional issues. In addition, the particular factors that determine whether RNG facilities are regulated at the state and/or federal level can be complex, multi-faceted, and project-specific.

Utilities seeking to avoid being treated as interstate pipelines subject to FERC's regulation should ensure in their contractual arrangements that they are only distributing the gas they receive at their city gates to their respective customers—they should not make any determinations or representations regarding whether they are moving RNG from a particular point to another (including in interstate commerce). As noted, such representations have several legal and regulatory implications.

## Conclusion

RNG provides a means for stakeholders to achieve clean energy goals. However, as this article highlights, despite such promise, there remain several challenges to bridging the link between RNG supply and RNG demand. Careful consideration must be given as utilities begin to consider whether and how to integrate RNG into their pipeline systems to ensure RNG integration is accomplished in a safe, reliable, and efficient manner, and done so without inadvertently triggering additional regulatory requirements.

[9] https://www.epa.gov/sites/default/files/2020-07/documents/lmop_rng_document.pdf.

# About Us

Troutman Pepper has extensive experience advising clients on transactional and regulatory matters involving renewable natural gas (RNG) production facilities, landfills, and biogas-to-electricity projects including a variety of waste sources such as landfill waste, food waste, animal manure and wastewater sludge. Our attorneys have a proven record of enabling clients to swiftly adapt to, capitalize on and thrive in the rapidly evolving energy transition toward a cleaner, renewable grid. We understand how, why and to what end federal and state regulations continue to present opportunities resulting from the fundamental restructuring of the energy sector and the broader economy.

## Our Team

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