



Webinar Resource Guide, June 2024

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Webinar Resource Guide – June 18, 2024

Table of Contents:

Webinar Link:

- [RNG 101 Part One: Overview of RNG and Synthica \(Jesse Blair\)](#)
- [RNG 101 Part Two: Morrow Energy \(Joshua Hull\) and EDL Energy \(John Reis\)](#)

[Presenters Slide Deck](#)

[Renewable Natural Gas \(RNG\)](#)

[RIN \(Renewable Identification Numbers\)](#)

[Webinar Takeaways](#)

[Related Articles](#)

[Presenters' Bios and Contact Information](#)

Texas Round-Up: RNG 101 Survey

We need YOUR feedback for future RNG webinars.

Let US know what YOU are interested in:

- Hearing from municipalities generating RNG for energy
- In-depth focus on specific feedstock: Waste Water, Landfill, Animal, or Food Waste
- How to evaluate RNG production opportunities in my area
- San Antonio RNG production facility site visit
- Other

Give Us Your Feedback!

Renewable Natural Gas (RNG)

Renewable natural gas (RNG) is a pipeline-quality gas that is fully interchangeable with conventional natural gas and can be used in natural gas vehicles. RNG is essentially biogas (the gaseous product of the decomposition of organic matter) that has been processed to purity standards. Like conventional natural gas, RNG can be used as a transportation fuel in the form of compressed natural gas (CNG) or liquefied natural gas (LNG). RNG qualifies as an advanced biofuel under the [Renewable Fuel Standard](#) (RFS).

- The US Department of Energy's Alternative Fuel Data Center (AFDC) (https://afdc.energy.gov/fuels/natural_gas_renewable.html) provides information on renewable natural gas production. Additionally, the AFDC Renewable Natural Gas webpage provides the biomass sources that qualify RNG as an advanced biofuel under the Renewable Fuel Standard. (<https://afdc.energy.gov/laws/RFS>)
- General information on RNG: [U.S. Environmental Protection Agency's \(EPA\) RNG webpage](https://www.epa.gov/lmop/renewable-natural-gas) (<https://www.epa.gov/lmop/renewable-natural-gas>)
- Argonne National Laboratory's [RNG for Transportation FAQ](#) is an overview of RNG. (https://www.anl.gov/sites/www/files/2021-03/RNG_FAQ_March_2021_FINAL_0.pdf) [USDA released Building a Resilient Biomass Supply Chain](#), its plan to strengthen the bio-economy and create a more resilient supply chain. It includes increasing the utilization of food waste, manure, and farm residuals for biofuels and biobased products.

RIN (Renewable Identification Numbers)

The U.S. Environmental Protection Agency administers the Renewable Fuel Standard program and tracks compliance through the RIN System, which assigns a RIN to each gallon of renewable fuel. EPA tracks the production and use of qualifying renewable fuels using RINS. RINS are generated by renewable fuel producers or importers and are bought and sold "attached" to the renewable fuel until the fuel is purchased by an obligated party (e.g., a refiner or importer of gasoline or diesel fuel). At that point, the RIN is "separated" from the fuel and may thereafter be independently bought or sold until it is retired to meet an obligated party's renewable volume obligation. Visit the EPA RINs under the [EPA's RFS Program webpage](#) for more information.

Related Articles (courtesy of Marianne Mintz Argonne National Lab)

- The Transport Project and the Coalition for Renewable Natural Gas announced that [79 percent of all on-road fuel used in NGVs](#) in calendar year 2023 was RNG, surpassing the previous year's record-breaking level. (Note difference from EIA's 2022 estimate of 84% which may be based on a lower estimate of on-road NGV fuel use). California ARB data estimates the annual average CI of bio-CNG in its LCFS program for the first three quarters of 2023 was -118.85 gCO_{2e}/MJ (as compared with -94 in 2022).
- A Deloitte [Energy and Industrials Insight](#) estimated large untapped RNG production potential and concluded, "Strategic partnerships between public gas utilities and waste facilities could position renewable natural gas to play a crucial role in decarbonization and resiliency."
- One Harvard study reported that 'extreme' methane bursts lasting three hours or less from oil and gas facilities are being missed by satellites, and another concluded that [EPA significantly underestimates methane emissions from landfills and urban areas](#). By combining 2019 satellite observations with an atmospheric transport model, researchers generated a high-resolution map of methane emissions, which was then compared to EPA estimates for the same year. The researchers found: (1) Methane emissions from landfills were 51% higher than EPA estimates; (2) Methane emissions from 95 urban areas were 39% higher than EPA estimates; (3) Methane emissions from the 10 states with the highest methane emissions were 27% higher than EPA estimates.
- Reporting in Science, researchers from Carbon Mapper, EPA, Arizona State, and NASA found a large discrepancy and generally [poor correlation between EPA Greenhouse Gas Reporting Program \(GHGRP\) bottom-up emission estimates and observations from airborne platforms](#). While it may be partially explained by sampling, researchers point to "potential gaps in landfill models and/or calculation of emissions reported to GHGRP."

Webinar Takeaways

Renewable Natural Gas:

- Trends show RNG becoming a significant fuel resource; from 2022 to 2023 the total RNG facilities in the U.S. grew from under 500 to a total of 800 RNG facilities.
- RNG Production Segment: Landfills have the largest production of RNG followed by Agriculture Waste, Food Waste, and Wastewater.

RNG Production:

- Having a natural gas connection near your facility is the key to a profitable RNG production site.
- Municipalities can use the RNG royalty payments from host landfills to reduce the cost of waste management on customers or use royalties to support additional services.
- The implementation of RNG production can help **reduce or eliminate unpleasant odors** from waste, landfill, or agriculture sites.
- RNG Production facilities can help to keep farming local by addressing the negative environmental impacts associated with agriculture waste.

Food Waste RNG Production:

- Most Food Waste from residential consumers ends up in landfills; targeting residential consumers comes with more challenges than commercial food waste.
- Targeting commercial food waste is more controlled and fees are required to cover the cost of sorting and collecting waste.

To learn more about the overview of RNG and hear from local experts from Synthica, Morrow Energy, and EDL Energy watch the Texas Round-Up: RNG 101 Webinar.

Presenters' Bios and Contact Information



Jesse Blair

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Jesse Blair is the Director of RNG Development for Synthica Energy. He is responsible for pipeline interconnects and marketing of natural gas production and environmental attributes. He has over 25 years of experience in the natural gas industry including rates and regulatory, marketing, origination, and trading. He joined the Synthica team in October 2023. Jesse is a native Houstonian and has a Master's degree in Business Administration from the University of Texas and a Bachelor's degree in Finance from the University of Houston-Clear Lake.



Joshua Hull

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Worked for Morrow Energy since its founding in 2011. Oversees manufacturing, engineering, and sales at Morrow's fabrication facility, and is involved in the design, fabrication, construction, operation, and startup of many high-BTU landfill projects and anaerobic digester projects while at Morrow B.S. in Chemical Engineering, Texas Tech University; MBA, The University of Texas, Permian Basin.



John Reis

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John joined EDL Energy in June of 2020 and currently serves as Regulatory & Government Affairs Director. With over 30 years of experience in the energy industry, John focuses on renewable natural gas and electricity policies and other emerging industry issues.

Prior to joining EDL Energy, John was Director – Asset Manager at DTE Energy Services, where he focused on developing and managing new renewable energy projects across the United States with a particular focus on California.

He held various roles at DTE Energy Services during his nearly twenty years with the company focused on developing gas-fired, industrial utility solutions, and renewable energy projects as well as positions with Trigen Energy.

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David Cox is a Paris, Texas, attorney specializing in RNG Contracts. He is licensed in Texas, Oklahoma and California and has advocated for RNG throughout the country, including at the U.S. EPA, the Federal Energy Regulatory Commission, the DC Circuit Court of Appeals, and

the United States Supreme Court. He is widely recognized for his leadership in RNG law, policy, and markets. Mr. Cox is a founder of the Coalition for Renewable Natural Gas and a member of the North American Energy Standards Board where he helped write the model RNG Addendum to the NAESB Base Contract for the purchase and sale of renewable natural gas. He is the author of *New Energy Technologies: Biomass* in the LexisNexis/Matthew Bender's seven-volume legal treatise, *Energy Law and Transactions*. He is a frequent speaker and author on RNG and a graduate of Westmont College and Pacific McGeorge School of Law.



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Let us know if you have any questions.