

Introduction to Voluntary RNG Programs in North America

Renewable natural gas (RNG) is interchangeable with conventional natural gas. RNG is an upgraded form of biogas, which is produced from decomposing organic waste from landfills, agricultural waste, food waste, and wastewater from treatment facilities. RNG can be injected into natural gas systems and commingled with conventional natural gas, directly reducing GHG emissions.

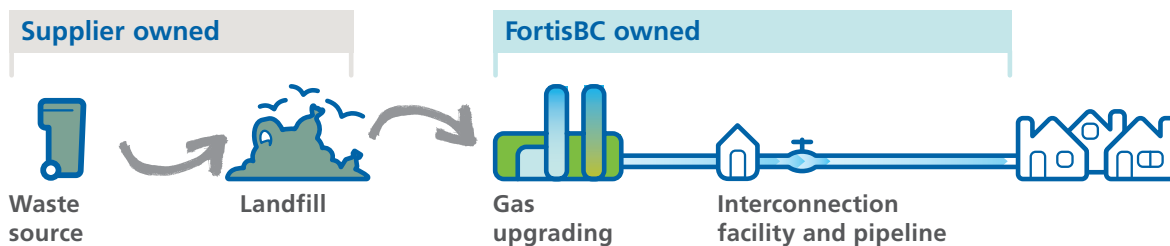
Select jurisdictions in North America now offer voluntary RNG programs through the local natural gas utility for residential and commercial customers. The programs are available to customers who choose to participate to reduce GHG emissions by purchasing RNG at a premium. Ontario may be the next region to offer a program, with a *Made-in-Ontario Environment Plan* released November 2018, including an initiative to require natural gas utilities to implement a voluntary RNG option for customers.

Common Elements of Voluntary RNG Programs

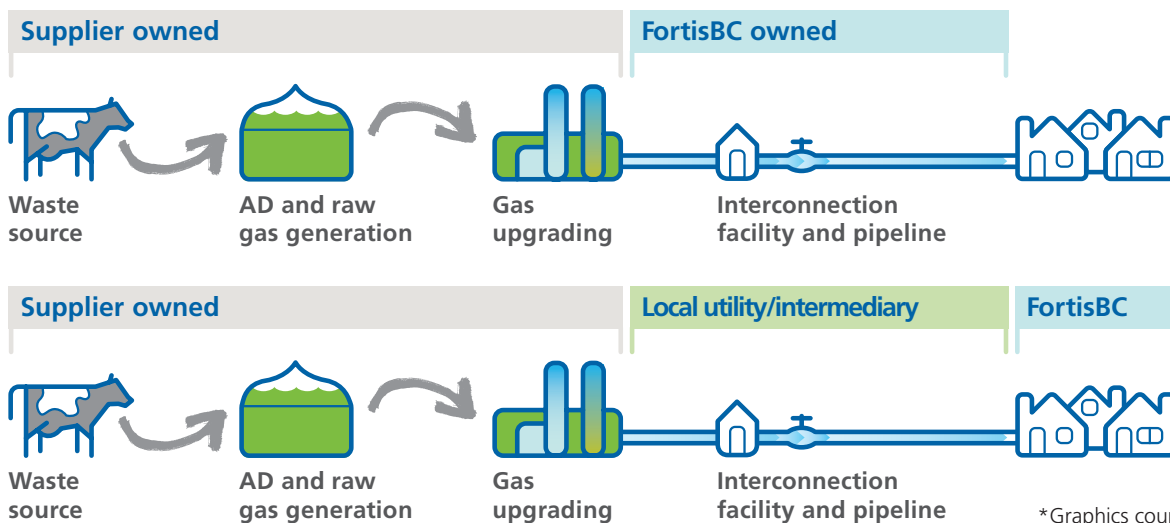
Supply and Ownership Models

Supply and ownership models between suppliers (RNG producers) and utilities can vary based on the program. Some common models are:

- **Utility purchases raw biogas:** The supplier owns the anaerobic digestion (AD) facility or landfill, and the utility owns the gas upgrading equipment and interconnection facility and pipeline.



- **Utility purchases RNG:** The supplier owns the AD facility or landfill and gas upgrading equipment, the utility owns the interconnection facility and pipeline.



*Graphics courtesy of FortisBC

- **Utility purchases environmental attributes of RNG:** The environmental attributes are purchased by the utility to dedicate the environmental benefits to customers participating in the program in cases where RNG does not directly flow to the local natural gas grid.

Facilitating the Program

In North America, natural gas utilities facilitate the voluntary RNG programs. This is a logical approach since they own and maintain the natural gas pipeline to transport RNG and have direct access to the customer base to consume the gas. When utilities offer a program, they usually apply to their regulator for a rate or rate methodology. These programs are generally premised on a cost recovery model and not a for-profit model. Utilities add margin to the cost of the RNG when selling to customers.

Typical Contract Terms

Contract terms can vary based on the agreement with the utility. For the financial stability of a project, most RNG producers prefer a long-term, fixed price arrangement. This differs from how utilities buy conventional natural gas, usually with seasonal volumes and daily deliveries. Contracts may require the RNG supplier to certify the renewable attributes and assign full ownership of those attributes to the utility. The environmental attributes are the value differentiator in price between RNG and conventional gas.

Location of RNG Producers

Depending on the program and agreements with the regulator, RNG can be sourced from producers either within the jurisdiction or outside of the jurisdiction. Suppliers from outside of the jurisdiction can work with local utilities to transport RNG or RNG brokers to transport the fuel. RNG can come from a variety of sources including digesters, landfills, and wastewater treatment facilities.

Offering to Customers

Voluntary programs typically offer a blending rate of RNG either as a percentage of gas consumed or based on a total amount per year that a customer opts to pay for RNG. For example, customers can opt to purchase 5% of their natural gas as RNG to lower greenhouse gas emissions.

Voluntary RNG Programs in North America

	British Columbia	Vermont	Michigan
Who is the program offered by?	FortisBC	Vermont Gas Systems (VGS)	DTE Energy
When did it start?	2010	2017	2012
What are the contract terms?	Long-term, fixed-price	Unique to each supplier	No formal arrangement at this time
What are the supply models?	Utility purchases raw biogas or RNG	Utility purchases RNG and environmental attributes	Utility purchases RNG
Is RNG supplied from out of the region?	In development	Yes	No
Who buys the gas?	Commercial, residential, and transportation customers	Customers voluntarily enrol in the RNG program and will pay an additional Program "RNG Adder", based on the percentage of RNG the customer has subscribed	Customers elect to pay a premium of \$2.50 per month to support the development and advance the utilization of natural gas generated from biogas resources.
Who claims the environmental attributes?	When FortisBC purchases RNG, they acquire the environmental attributes from the supplier. These attributes are then passed along to customers subscribed to their RNG program.	VGS	Not specified