

RENEWABLE NATURAL GAS IN THE PACIFIC NORTHWEST

Regional gas utilities and pipelines continue to work with farmers, developers and local governments to capture and purify biogas that can be injected as RNG into existing natural gas systems, while new policies are being enacted to provide incentives for further development.

In BC, there are five operating biogas projects using agricultural waste, landfill waste and curbside organic waste to generate about 250,000 Gigajoules (GJ) (equivalent to 237,000 Dth) of RNG annually. FortisBC already purchases and injects RNG into its existing system, as well as investing in and operating biogas upgrading equipment, and is building another RNG-producing facility at the Vancouver Landfill. When the facility begins operation in late 2021, it will double BC's existing expected RNG supply.

On the customer side, FortisBC was one of the first utilities in North America to introduce a voluntary participation RNG Program in 2011.

FortisBC customers can designate between 5 and 100 percent of their natural gas use as RNG and pay a premium on their bill.

FortisBC then injects an equivalent amount of RNG into the FortisBC distribution system. Today, more than 10,500 BC homes and businesses are enrolled in the RNG program.

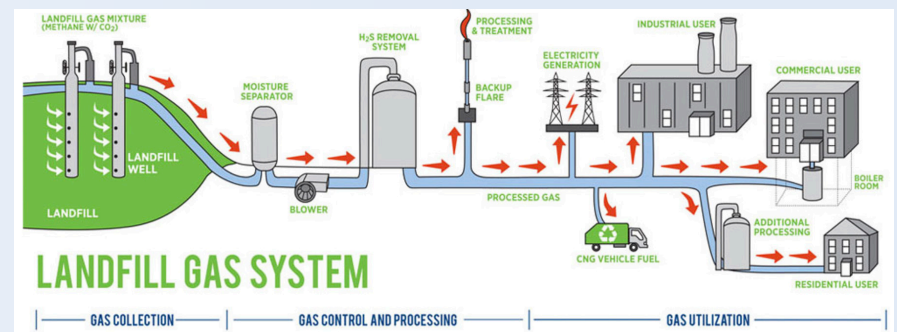
The provincial CleanBC plan, enacted in 2018, set an ambitious target of 15 percent RNG blend by 2030.

Though not yet in force, it represents a major shift in how FortisBC needs to look at its gas supply. Ultimately, FortisBC expects to use a number of tools to reach this objective, but if required to fill the gap with RNG, this represents a greater than 30-fold increase in its current supply levels.

In Washington, the state legislature passed a law in 2019 that requires each gas local distribution company (LDC) to offer RNG to its customers and gives those entities the ability to introduce RNG into their standard supply portfolios, provided the cost of RNG does not increase

customer costs by more than 5 percent. Washington gas utilities are currently working with Washington Utilities and Transportation Commission (WUTC) staff and other interested parties to develop RNG cost recovery rules, RNG program limitations and RNG gas quality requirements.

Currently there are five projects producing or soon-to-begin producing RNG in Washington state – two landfills and one multi-farm dairy-waste digester connected to Williams Northwest Pipeline and two wastewater treatment facilities connected to Puget Sound Energy's (PSE) distribution system. However, these facilities are currently all committed to serving the vehicle fuel market, primarily in California. As the vehicle fuel market matures and reaches saturation, it is expected that landfill- and wastewater-sourced RNG will be redeployed to serve local utility demand.



Example of RNG production from a landfill source

PSE has held preliminary discussions with numerous developers seeking to complete RNG projects in western and central Washington and with various municipal and regional wastewater treatment plants and landfills that seek to create additional revenue streams and reduce their own carbon footprint. PSE has begun physical and economic feasibility analysis of the facilities necessary to interconnect approximately 12 viable projects.

Other Washington utilities, such as Cascade Natural Gas, are also considering potential supply sources and some believe they may be able to offer RNG directly to retail customers through opt-in programs by late 2020 or mid-2021. By 2025, as much as 2 percent of Washington gas use could be sourced from renewable sources, with a potential of 5 percent by 2030.

In Oregon, similar to Washington, a law passed in 2019 requires the Public Utility Commission to adopt RNG programs for both large and small gas utilities, enabling them to fully recover costs of integrating RNG into their systems. Up to 5 percent of a utility's revenue requirement may be used to cover the incremental costs of RNG. The law also outlines goals for adding as much as 30 percent RNG into the state's pipeline system by 2050. A 2017 study by Oregon's Department of Energy showed a technical potential of recovering some 48 billion cubic feet (Bcf) of RNG within the state annually, an amount that could supply every home using natural gas in Oregon today with a local, renewable energy source.³

Oregon's first gas-grid-connected RNG facility, Threemile Canyon Farms in Boardman, began production in 2019, with a tie into the Williams Pipeline system. Three more projects have announced plans to interconnect to NW Natural's pipeline distribution system, beginning with the City of Portland's Columbia Boulevard Wastewater Treatment Plant and Shell New Energies' Junction City projects in 2020, and the Metropolitan Wastewater Management Commission project in Eugene-Springfield in 2021. Like RNG producers in Washington state, these projects are earmarked to supply the California vehicle market for now, although some of the Portland RNG will power city trucks at a natural gas fueling station to be built at the treatment plant.

In Idaho, Intermountain Gas Company has integrated RNG produced from one dairy farm in Jerome since December 2019, producing approximately 750 Dth/day. Another RNG producer is scheduled to come online sometime in February 2020.

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RNG development could reduce U.S. GHG emissions between 101-235 million metric tons (MMT) by 2040 – the equivalent of reducing GHG emissions from average annual residential natural gas use by 95% from levels observed over the last 10 years.⁴

³Biogas and Renewable Natural Gas Inventory SB 337 (2017), 2018. www.oregon.gov/energy

⁴<https://www.gasfoundation.org/2019/12/18/renewable-sources-of-natural-gas/>

