



Biogas to Renewable Natural Gas Project



Digester Gas
Biogas, a mixture of 63% methane and 37% carbon dioxide is produced as a by-product of the anaerobic digestion process in the solids treatment process.



Scrubbers
The raw or brown gas is processed through scrubbers where hydrogen sulfide, moisture, siloxanes and VOCs are removed.



Membrane Filtration
The biogas is filtered through a three phased Unison membrane system.



Temperature Adjustment
Biogas flows through a heat exchanger at 190 degrees Fahrenheit to remove oil and impurities. The gas then goes through a chiller to reduce the temperature to 50-60 degrees Fahrenheit.



Pipeline Injection
Once all standards are met, nitrogen is used to boost the pressure to 175 psi, and an odorant is added as a safety precaution so leaks can be easily detected by consumers.

The first of its kind in the Commonwealth.
The Western Virginia Water Authority partnered with Roanoke Gas Company to create the Biogas to Renewable Natural Gas (RNG) project to better utilize the raw digester gas, improve the environment, utilize the best technology and, most importantly, serve the community.
The digester gas conditioning system has the ability to create pipeline quality RNG at a design flow of 550,000 cubic feet per day (cfd), providing enough clean natural gas to heat 500 homes in the Roanoke Valley.



Serving customers in the City of Roanoke, the Counties of Roanoke, Franklin and Botetourt, and the Towns of Boones Mill and Vinton, Virginia

The Roanoke Regional Water Pollution Control Plant provides daily tertiary treatment for 32-million gallons (mgd) of sanitary sewer a day from all jurisdictions in the Roanoke Valley. Permitted capacity at the plant is 62-mgd.