Renewable Natural Gas
Value Chain

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UTILITIES CORPORATION

Chesapeake
Overview

160+
Years of providing energy

1,000+
Employees

300k+
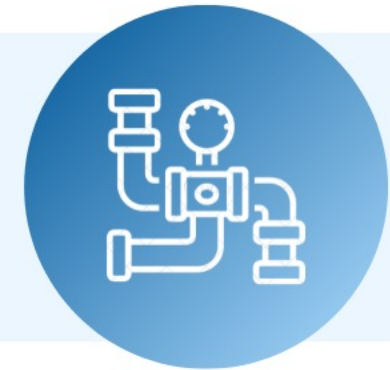Distribution customers

15
Years of superior earnings growth

$2.5B
Market cap achieved in 2021

$1.75B
In cap investment over the last ten years

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Where does RNG come from?

RNG is fossil-free natural gas that is produced by cleaning and processing biogas into pipeline quality gas.	Anaerobic Digestion is the most often used technology to produce biogas from feedstocks such as animal manure, agricultural byproducts and wastewater facilities. Landfills capture biogas from on-site collection systems.	Biogas must be treated and cleaned, raising it to a standard where it can be injected into gas pipelines.

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Renewable Natural Gas
Potential in the U.S.

The U.S. has over 2,200 sites producing biogas in all 50 states

- Farms - 250
- Wastewater - 1,269
- Food Waste - 66
- Landfill - 652

Louisiana ranks 38th for its biogas production potential

Current Systems
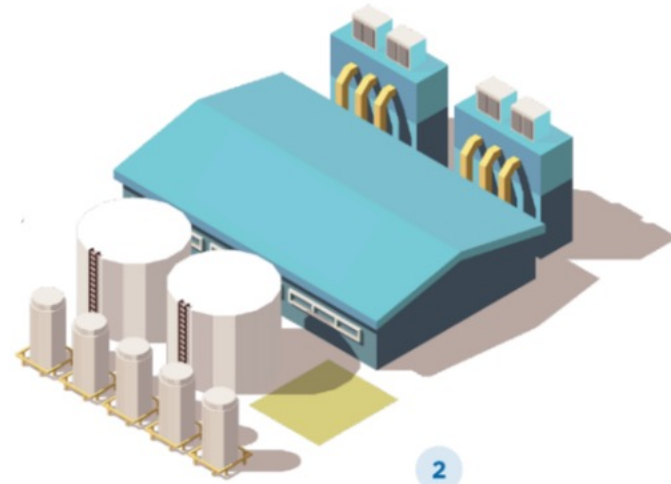9 Landfill, 8 Wastewater = 17

Potential Systems
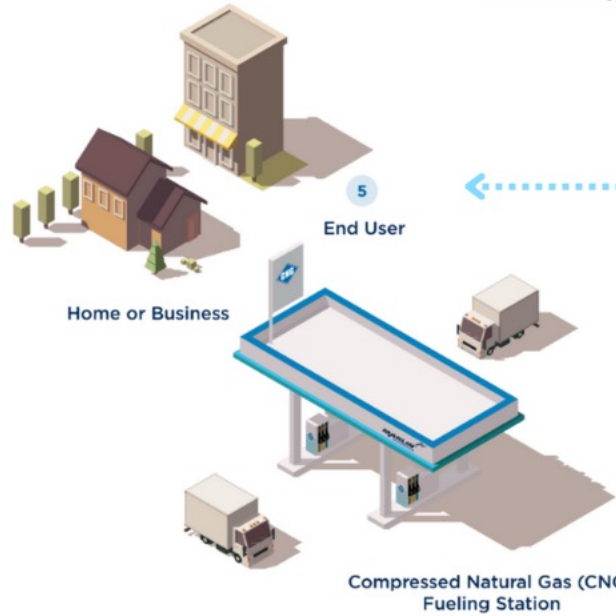16 Landfill, 77 Wastewater, 1 Manure, 29 Food Waste = 123

AMERICAN BIOGAS COUNCIL

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The Chesapeake RNG Suite

1 Farm Waste + Landfill Waste

2 RNG Facility

3 Existing Pipeline Distribution System

4 Virtual Pipeline Transport

5 End User

Home or Business

Compressed Natural Gas (CNG) Fueling Station

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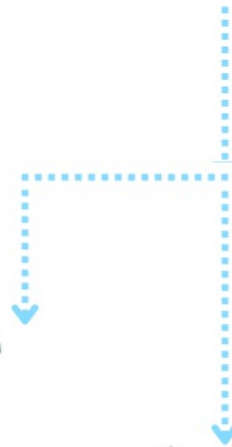
Renewable Fuel
Standard (RFS)

The RFS is a Federal Program that requires transportation fuel sold in the United States to contain a minimum volume of renewable fuels. The EPA administers the RFS program and establishes the volume requirements for oil refiners, gasoline and diesel importers.

The EPA tracks compliance through the Renewable Identification Number (RIN) system, which assigns a RIN to each gallon of renewable fuel. To generate a RIN, the EPA certifies that RNG was produced, injected into the pipeline and was used solely for transportation fuel. Four different types of RINs exist based on feedstock and each have their own market value.

The volumes required of each obligated party are based on a percentage of its petroleum product sales. Obligated parties can meet their renewable volume obligations by either selling required biofuels volumes or purchasing RINs from parties that exceed their requirements.

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California Low Carbon
Fuel Standard (LCFS)

As a State Program, LCFS requires refineries and fuel suppliers in California to reduce the carbon intensity (CI) of its transportation fuels.

Transportation fuels must meet an annual CI target that decreases each year. Refineries and fuel suppliers can meet these targets by mixing in fuels with lower CI into the overall supply or by purchasing credits. Fuels with CI below the target level (based on a lifecycle analysis) are able to generate credits.

Under the rule, RNG is considered a low carbon fuel and can generate credits. To generate LCFS credit, California Air Resource Board certifies that RNG was produced, injected into the pipeline and was used solely for transportation fuel in California.

Oregon and other states are also implementing state-run credit programs.

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Unregulated
Revenue Streams

Revenue Source	Description	Applicable Feedstocks
Renewable Identification Numbers (RINs)	Federal program administered by EPA requiring transportation fuel sold in the US to contain a minimum volume of renewable fuels	D3: Manures, WWTP, landfills; D5: Food waste, agricultural byproducts, etc.
California's Low Carbon Fuel Standard (LCFS) Credit Program	State program providing monetary credit to RNG used as a transportation fuel	Animal waste from dairies and swine; Landfills
Gas Molecules	RNG minus the green attributes	All RNG project
Tipping Fees	Landfill avoidance waste disposal based on the weight of waste per ton	Food waste and agricultural byproducts
Fertilizer Product Mixes	Repurposing digestate into organic commercial fertilizer products	Animal waste from poultry and dairies; Agricultural byproducts

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The Success
of RNG

Environmental policies and markets

Interconnection with and access to the natural gas infrastructure

Development of natural gas fueling stations and deployment of natural gas vehicles

Overcoming bias against natural gas in favor of other alternatives

Educate and advocate – needs to be an industry-wide effort

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Thank you!

Visit www.chpk.com to read our 2021 Sustainability Report and learn more.

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