



Renewable Natural Gas Facility

At Casella's Bethlehem, NH Landfill

11/9/21



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CASELLA'S



Who We Are

Casella was founded in 1975 as a single truck operation in Rutland, Vermont. In 1977, Casella opened the first recycling facility in the state. From our Vermont roots, we've grown through a commitment to making a difference in our local communities.

Together with our communities and our customers, we work to deliver environmental and economic value. At Casella, we see waste as a valuable resource, an opportunity for thoughtful and disciplined innovation.

- \$847.6mm of revenues for the 12-months ended 9/30/21; publicly traded on NASDAQ:CWST
- Operations in MA, ME, NH, NY, PA, and VT
- 2,500 employees serving over 300,000 customers and 550,000 households
- Recover over 600,000 tons of recycling and over 400,000 tons of organics for beneficial use each year
- Provide professional resource management services to over 10,000 business locations in over 45 states
- Since 2005, cut companywide carbon emissions by 50%
- Stock price has increased by 1,700% since January, 2015; as of 9/30/21

RNG Basics

- Renewable Natural Gas (RNG) Facility to start up at the North Country Landfill in Bethlehem during the summer of 2022
 - What does an RNG Facility do?
 - Starts with the anaerobic decomposition of organic waste in a landfill. A landfill is an anaerobic digester that produces landfill gas which is approximately 50% methane.
 - Natural gas is approximately 100% methane
 - An RNG facility upgrades landfill gas to approximately 100% methane “pipeline quality”
 - RNG is injected into the natural gas pipeline and mixes with natural gas

Development History

- Traditionally, landfill gas has been converted to useable energy in the form of power generated from internal combustion engines
 - The CAT 3520 generates 1.6 MW of power by combusting approximately 550 SCFM of landfill gas
 - Casella has engines at 5 of its landfills
- Engines produce power that is sold into the wholesale energy market
 - The New England wholesale power price is largely dictated by natural gas prices
 - Enter Fracking; abundance of natural gas causes wholesale prices to drop dramatically
- Many Landfill Gas to Power projects are uneconomical



Development History

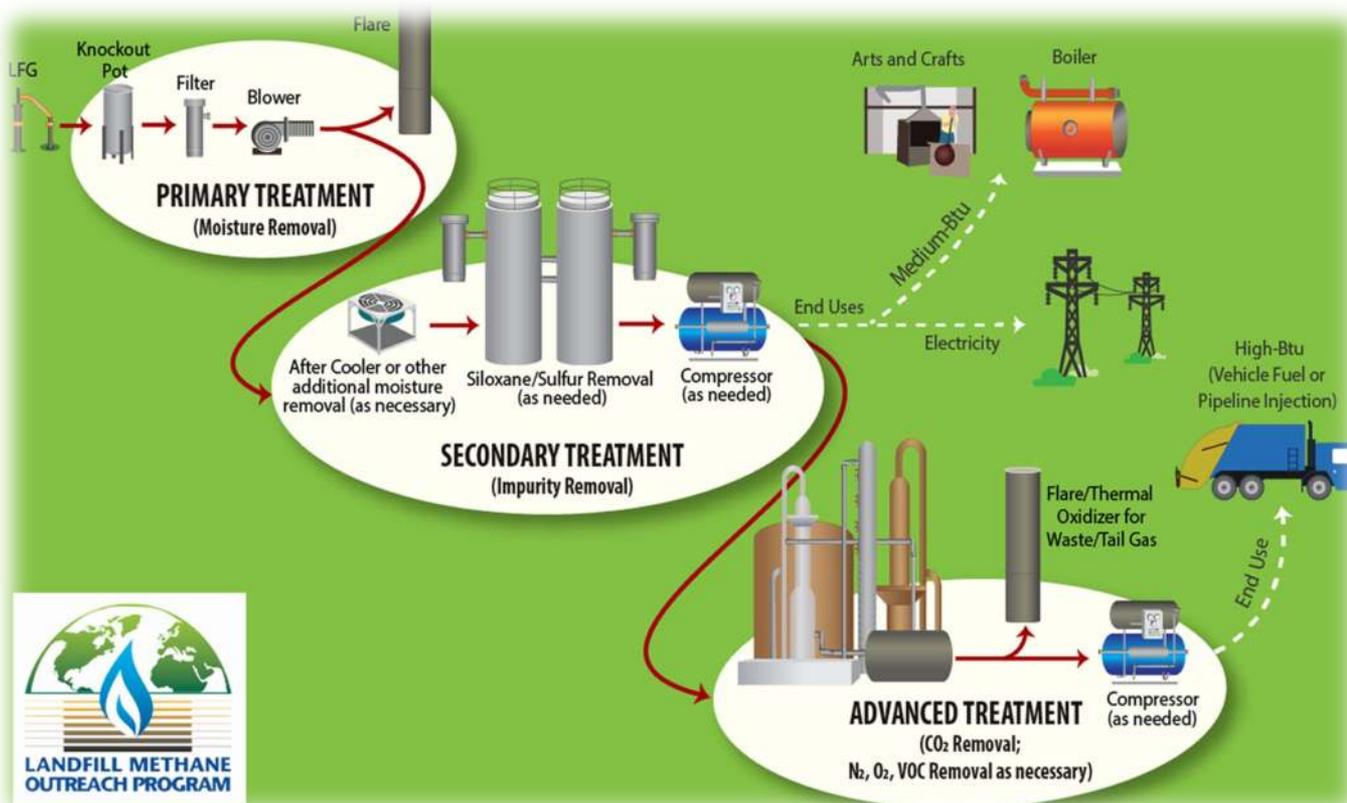
- The North Country Landfill in Bethlehem has additional challenges for power production from its landfill gas.
 - The grid could not support power production from the landfill without significant upgrades to the infrastructure
 - Sending power to the grid would not work economically.
- Bring the Load to Bethlehem
 - Created an adjacent industrial park with the goal of attracting businesses with a high demand for power....renewable power
 - Not much luck with this endeavor until we met RUDARPA, a company looking to convert landfill gas into pipeline quality natural gas

Federal Renewable Fuel Standard (RFS)

- The RFS created an incentive to produce fuels that can displace fossil fuels in the transportation market
 - The incentive is called a RIN (Renewable Identification Number). Each gallon of fuel produced is assigned a RIN for tracking purposes.
 - Various categories of RINS...RNG from dairy is the highest value RIN
 - RNG from landfill gas qualifies as a D3 RIN; a high value classification
 - RINS are akin to RECS in the power market
- The RFS has been transformational
 - All new landfill gas energy recovery projects are to create RNG
 - Many power projects are looking to convert to RNG production

Rudarpa

General Overview of Landfill Gas (LFG) Processing / Treatment



Rudarpa

North Country Landfill Gas (LFG) to RNG, CO2 and Heat Resource Recovery

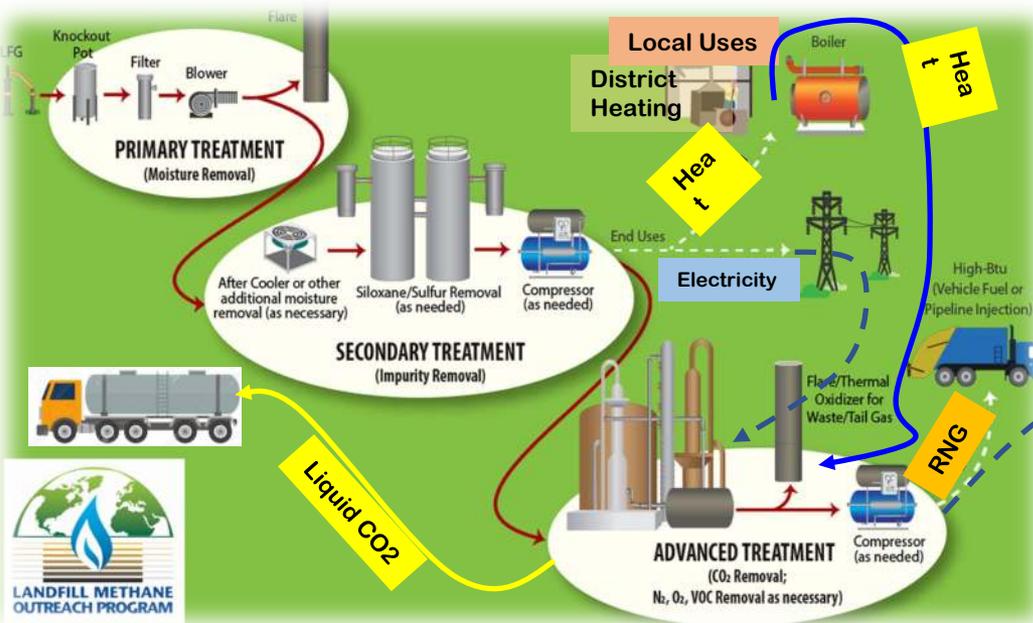
North Country

Truck Routing

Advanced Treatment

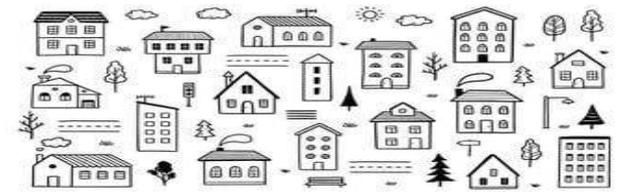
Secondary Treatment

Primary Treatment



Vehicle

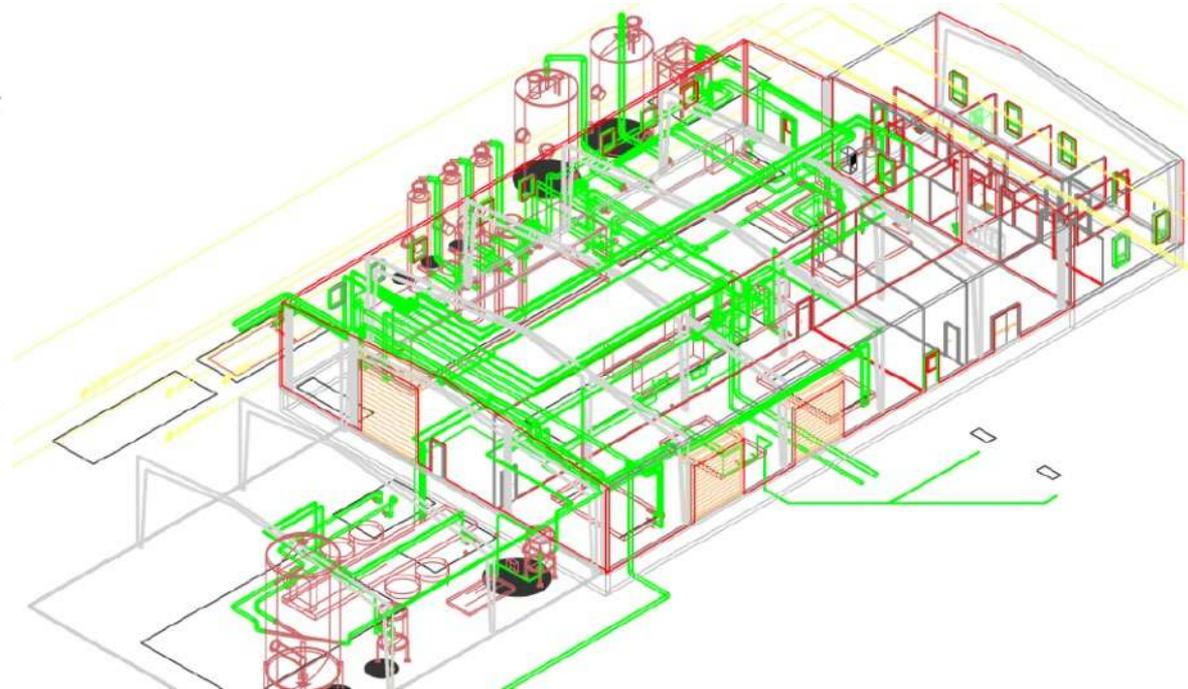
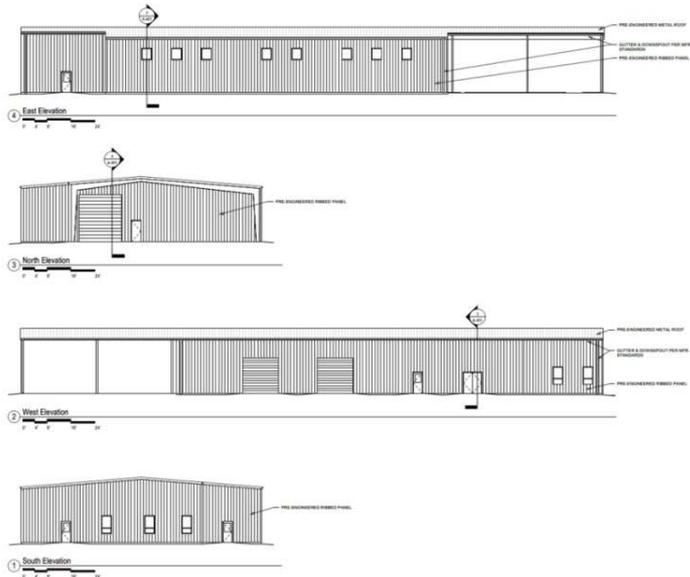
Residential / Business



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Rudarpa

Rudarpa North Country RNG Facility



Rударpa North Country RNG Facility Benefits to the Region

- Reduction of 60,000 tons / year of carbon emissions
- Production of 400,000 Mmbtu / year (OR 400 Million standard cubic feet, OR 4 Million Therms each year) of renewable energy
 - Energy equivalent to 3.1M gallons / year of gasoline
 - Energy equivalent to 220 train cars / year of coal
 - Enough energy to heat 2000+ homes / year
- 7-9 direct full-time jobs
- Added Tax base for the region
- Potential for industrial park / regional district heating / cooling
- Plant will be economically feasible for 17-20 years

Thank you!

To learn more, please visit:

casella.com



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