

City of Janesville

Wastewater Treatment Plant

Janesville, WI

Janesville Wastewater Treatment Plant, Janesville, WI

BioCNG's patent-pending biogas conditioning system produces biogas-based fuel to power compressed natural gas (CNG) vehicles from the wastewater digester gas at the wastewater treatment plant, in Janesville, WI.

The BioCNG 50 system went online in February 2012 and now fuels 8 city vehicles, with the goal of fueling more than 40 vehicles within the next 5-10 years.

Janesville is an integrated BioCNG and CHP system. Total skid capacity is 140 cfm of which 60 can be directed to BioCNG. Tail-gas from the BioCNG is captured and recycled back to capture 100% of the available methane.

The City of Janesville selected BioCNG because it is a home grown, cost-effective and sustainable fuel option for their city owned vehicles.

Project Manager:

Jay S. Kemp

Client Contact:

David Botts

Utility Director

Tel # 608.755.3116

Start/End Date:

February 2012 - September 2012



**BioCNG™**

For more information:

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Specifications

Biogas Source

WWTP digester

Size

18 MGD

Gas Collected (total)

140 scfm

Gas Quality

Methane (CH₄) - 62%

Flare

Existing Candlestick

Other Gas Use

Combined heat and power with microturbines

Available Gas for CNG

50 scfm

Size of BioCNG Unit

BioCNG 50

Components

Existing H₂S removal; gas compression, existing moisture reduction, VOC/Siloxane removal, CO₂ removal

Fueling Unit

ANGI fast fill fueling station with (4) 48" gas storage spheres

Start-Up Date

February 2012

Fuel Production Capacity (GGE)

275 GGE/Day

Waste Gases

Routed to turbines

Back Up For CNG Fueling

NG backup through the use of a manual three-way valve

Fleet Size/Type

7 light duty vehicles plus riding lawnmower

Outside Users

None at this time

BioCNG Sizing and Cost Information

System Size	Biogas Inlet Flow (scfm)	Typical Fuel Production (GGE/day)	Budget Price (\$million)	O&M Estimate (\$/GGE)		Estimated Fuel Production Cost without RINS	
				Fueling Station	Without Fueling Station	Fueling Station	Without Fueling Station
BioCNG 50	50	200-300	1.2	0.74	0.61	2.16	1.42
BioCNG 100	100	375-600	1.5	0.59	0.44	1.40	0.92
BioCNG 200	200	775-1200	2	0.96	0.31	0.98	0.60

- 1 Fueling station options available from BioCNG at additional cost.
- 2 Grants, subsidies, tax credits not included
- 3 Assumes 10 year depreciation
- 4 BioCNG is qualified to receive D3 and D5 Renewable Fuel Standard Credits. Financial impact will depend on the project-specific operating scenario, and can be up to \$1.20 per/GGE
- 5 Does not include road tax
- 6 Assume 60% methane