



Dane County, WI

Rodefeld Landfill

Madison, WI

BioCNG, LLC, assisted with the development of a biogas to compressed natural gas system for Dane County, WI.

The BioCNG project focused on producing a small but economically viable quantity of biogas based fuel using the patent pending BioCNG™ fuel conditioning system to power compressed natural gas (CNG) vehicles.

The project was implemented in collaboration with partners and supporters from both the private and public sectors, including Dane County, Alliant Energy, Madison Area Technical College, Unison Solutions, ANGI Energy Systems, and Cornerstone Environmental Group.

The BioCNG system fuels Dane County parks and public works trucks, with the potential to expand to supply fuel to waste trucks and other County vehicles.

Originally built to operate at a capacity of 100 gallons of gasoline equivalent (GGE) per day, it has since been recently upgraded to operate at a capacity of 250 GGE. The landfill's BioCNG vehicle fueling station operates in conjunction with an existing landfill gas electrical generation system.

Project Manager:

Mark Torresani

Client Contact:

John Welch - Solid Waste and Recycling Manager
Tel # 608.267.8815

Start/End Date:

December 2010 - Ongoing



**BioCNG™**

For more information:

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Specifications

Biogas Source

MSW Landfill

Disposal Rate

(average tons per day)

675 TPD

Gas Collected (total)

Methane (CH₄) - 50-55%

Gas Quality

Methane (CH₄) - 62%

Other Gas Use

6.4MW LFGTE Plant

Available Gas for CNG

50 scfm

Size of BioCNG Unit

BioCNG 50

Components

H₂S removal, chilling, VOC/Siloxane removal, CO₂ removal, skid-mounted/winterized

Fueling Unit

ANGI-fast fueling, single compressor with expansion capability

Start-Up Date

March 18, 2011

Fuel Production Capacity (GGE)

Up to 250 GGE/Day

Waste Gases

Routed to engines for destruction

Back up for CNG Fueling

NG will be available on site

Fleet Size/Type

Approximately 19 pickups and cars - county vehicles

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