



# Biogas and Landfill Gas Services

Experts in collection, control, and beneficial re-use

## Knowledgeable staff develop cost-effective plans

Cornerstone provides biogas services to large and small solid waste companies, municipalities, and other public solid waste authorities. Our staff members specialize in the assessment of the factors that affect biogas generation and recovery, and formulate the most effective plan for incorporating biogas collection and control systems (GCCS) into the facility.

Cornerstone has extensive experience in beneficial use of biogas. Although the primary biogas source has traditionally been landfill-generated, Cornerstone also provides services for the use of biogas from anaerobic waste digesters, including municipal and industrial wastewater and agricultural waste digesters.

Most recently, we have expanded our services to include producing biogas-based fuel to power vehicles using compressed natural gas (CNG).

We use our understanding of the energy sector, the process of generating energy from biogas, and its associated air emissions, to assist project developers, equity investors, and financiers quantify the value, risks, and upside potential of biogas projects.

## What Sets Cornerstone Apart?

- Industry-leading engineering – From designing the wellfield and gas collection header layout to flare sizing and development of beneficial-use facilities, our engineers provide a consistent, performance-based approach to biogas control and utilization.
- Wide range of successful projects – We have completed extraction and control systems at more than one hundred facilities throughout the United States, Canada and South America over the past four years.
- Using advancements in technology – Our staff reach for the next innovation, including using conditioned biogas to produce a blended vehicle fuel.
- Client focus – Listening to our clients' needs and objectives and thoroughly understanding their challenges is our goal.
- Expert operations staff – Field technicians are trained and qualified to make adjustments to our clients' systems to maximize operating efficiency and meet regulatory requirements.
- Nationwide presence – Offering perspective and knowledge of local business and regulatory issues, we also incorporate successful regional, national, and international solutions.



## Biogas Services Provided

### Biogas Engineering and Design

- Biogas generation and recovery modeling
- NSPS GCCS design plans
- Facility master plans and multi-year phasing plans
- Facilities design
- Pipeline, compressor station, and electric power station design
- Operation and financial evaluations
- Construction related services

### Air Quality Services

- Air quality monitoring and permitting
- Air compliance and reporting
- NSPS Tier I, II, and III evaluations and reporting
- Surface emissions monitoring, and start-up, shutdown, and malfunction (SSM) plans
- GHG emission reduction services

### Biogas Utilization/Landfill Gas-to-Energy

- Beneficial use feasibility studies
- Facility engineering
- Construction management
- Biogas generation and recovery modeling
- Gas collection system efficiency assessments
- Evaluations of biogas enhancement options
- Project financial modeling

### Operations and Maintenance

- O&M of biogas control equipment and systems
- Adjustments to maximize operating efficiency and meet regulatory requirements
- Small construction project capabilities
- Training

### Landfill Closure and Post Closure

- Remedial or control measures to mitigate potential gas migration issues
- LFG generation modeling
- Geotechnical evaluations

## Recent Cornerstone Experience

Cornerstone prides itself on establishing close and productive relationships with our clients. A few recent examples of biogas projects include:

**Waste Management, Inc., Kirby Canyon Landfill (CA)** – Permitting, design, and construction management of new LFG flare installation project, vertical wells, and expansion of the LFG well field to a new fill area.

**Waste Management, Inc. Pine Tree Acres Landfill (MI)** – Provided design and construction management services for the development of a 20,000 scfm LFG control facility, including extraction and compression equipment, gas conditioning systems, a “scavenger” H<sub>2</sub>S removal system and provisions for a regenerative H<sub>2</sub>S removal system. This facility provides fuel to three LFGTE facilities with a combined output of approximately 20 MW.

**Taylor Biomass Energy, LLC, Biomass Energy Facility (NY)** – Permitting, engineering, and design services for proposed biomass processing, gasification and clean energy production facility.

**Republic Services Inc., Conestoga Landfill (PA)** – Designed an 18,000 scfm enclosed flaring system and an 18,000 scfm extraction and 1st stage compression system to deliver gas to a third-party end-user.

**Northeast Waste Systems, Mostoller Landfill (PA)** – Design of a 1,300 scfm compression and transmission system, including 5-mile pipeline.

**Brown County, Brown County East Landfill (WI)** – Prepared an LFGTE plan for a 2 MW electrical generation system, including a backup flare to take excess gas not used for electrical production.

**Veolia Environmental Services, Emerald Park Landfill (WI)** – Located, permitted and designed a 3,000 scfm compression station and 17-mile pipeline for direct LFG use at the Jones Island WWTP.



### For more information:

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