

Butler County Landfill Landfill Gas Utilization Project

Facts about landfills and landfill gas.

- Landfill gas is created when waste in a landfill decomposes.
- Landfill gas contains about half methane and half carbon dioxide, with small amounts of oxygen, nitrogen, and hydrogen, and trace amounts of VOCs (less than 0.2%).
- Landfill gas causes odors at a landfill. Collecting and reusing this gas can reduce or eliminate these odors.
- Landfills are the largest anthropogenic (human-related) source of methane in the United States. Using landfill gas beneficially has a positive impact on the environment.

Combustion of landfill gas in an engine, turbine, boiler, or flue significantly reduces odors and emissions of methane and VOCs.

Landfill gas is created by the natural process of bacterial decomposition of organic material contained in all landfills

By volume, landfill gas is about 50 percent methane and 50 percent carbon dioxide.

Methane is a very potent greenhouse gas that is 21 times stronger than carbon dioxide. Instead of allowing landfill gas to escape into the air, it can be captured, converted, and used as an energy source.

By using landfill gas to produce energy, landfills can significantly reduce their emissions of methane and industry can avoid the need to generate energy from fossil fuels, thus reducing emissions of carbon dioxide, sulfur dioxide, nitrogen oxides, and other pollutants from fossil fuel combustion.

Burning the methane in industrial boilers reduces the release of the gas into our air, and our fossil fuels such as coal and natural gas are preserved.

Using landfill gas for energy is a win/win opportunity. Methane capturing projects involve community and corporate commitments to cleaner air, renewable energy, economic development and improved public welfare and safety.

The EPA has a site called LMOP landfill methane outreach program that will get you general information. For more information visit [http:// www.epa.gov/lmop/](http://www.epa.gov/lmop/).

Specific to Butler County, projections are that 300,000 cubic feet of methane will be captured per day. The landfill gas is collected at the landfill and then piped 5 miles to Henningson Foods where it is burned in an industrial boiler. The landfill gas is used in place of natural gas to heat and dry the eggs for their products.

This will offset 6,500 tons of CO₂ per year that would have been created by using conventional natural gas. The average person in the US creates about 15 tons per year of CO₂, so this project will offset over the emissions from over 4,000 people.

What are the economic benefits of using landfill gas?

- Landfill gas is a cost-effective, reliable, and local source of energy.

- Using landfill gas can generate economic benefits for the community.
- Developing and maintaining a landfill gas energy project creates local jobs.
- A landfill with good power potential can attract business to the community.

What are the environmental and social benefits of using landfill gas?

- Landfill gas is a safe and renewable energy source.
- Using landfill gas reduces the need to use more polluting forms of energy, such as coal and oil.
- Using landfill gas reduces health and community risks, such as air pollution and odor that can be associated with some landfills.
- Landfills that use their landfill gas tend to be better managed and make better neighbors.

For example, the total 2008 benefits for the BUTLER COUNTY LANDFILL project using 208 standard cubic feet per minute (scfm) of landfill gas are approximately equal to one of the following;

Environmental Benefits

- Annual greenhouse gas emissions from 4500 passenger vehicles
- Carbon sequestered annually by 5600 acres of pine or fir forests
- Carbon dioxide emissions from 52,200 barrels of oil consumed
- Carbon dioxide emissions from 2.7 million gallons of gasoline consumed

and are approximately equal to the following:

Energy Benefits

- Powering 665 homes