What is anaerobic digestion?

Anaerobic digestion is the natural breakdown of organic matter by microbial life in the absence of oxygen. Usable products – biogas, digestate, and soil amendments – are formed.



What goes into anaerobic digestion?

Any organic material can be digested, including but not limited to perennial grasses, crop residues, animal manure, and food waste.

Biogas? Renewable natural gas? What's the difference?

Biogas is the raw gas produced by anaerobic digestion. The biogas can be cleaned and purified to become renewable natural gas, which is 98% methane and can be injected into gas distribution pipelines.

What is biogas?

Biogas, a product of anaerobic digestion, is naturally produced at a ratio of 60:40 methane to carbon dioxide.

What is fossil natural gas?

Fossil natural gas is a fuel energy source that is formed beneath the Earth's surface. Like renewable natural gas, the main compound in fossil natural gas is methane.



What are the benefits of biogas?



<u>Resource management</u> Improved manure management, recycling of food waste, and alternate uses for plant biomass.



Methane capture and use Methane has 28 times more global warming potential than carbon dioxide. Wastes that would normally be harmful to the environment are turned into products with more beneficial uses.



Carbon dioxide capture and storage A co-product of anaerobic digestion is carbon dioxide, which can be captured and used for food or industrial uses, or geologically sequestered for long-term storage.

What else is made through anaerobic digestion?

A variety of additional products can be made from both the biogas and the digestate, such as:



How is anaerobic digestion integrated?

Perennial vegetation and diverse rotations of annual crops form living continuous cover on crop acres, protecting soil and retaining nutrients. Perennial cover, crop residue, manure and food waste from neighboring industries are mixed and anaerobically digested to generate biogas. Generating heat and power improves farm economics by improving production efficiencies and reducing costs.

- Nutrients are returned to soil using carbon-rich digestate as fertilizer.
- Energy from biogas production is converted to heat and power by a generator.
- Electricity is used on the farm, reducing costs and improving resiliency, and sold to the grid.
- Heat is recycled to the digester and livestock barns in winter.



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