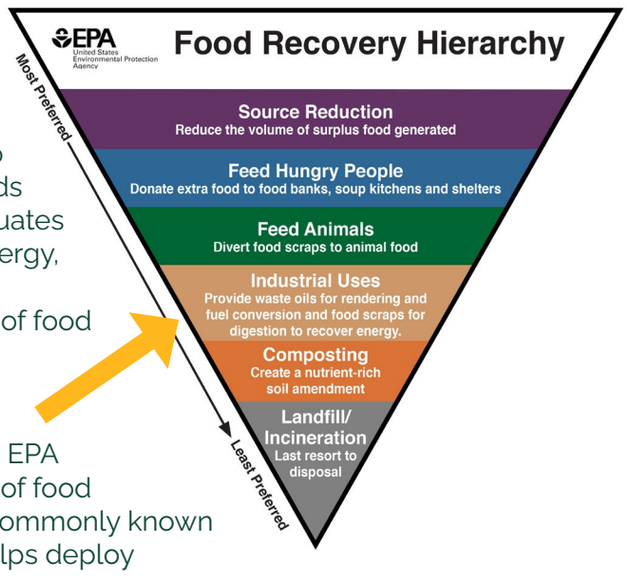
Wasted food is a problem.

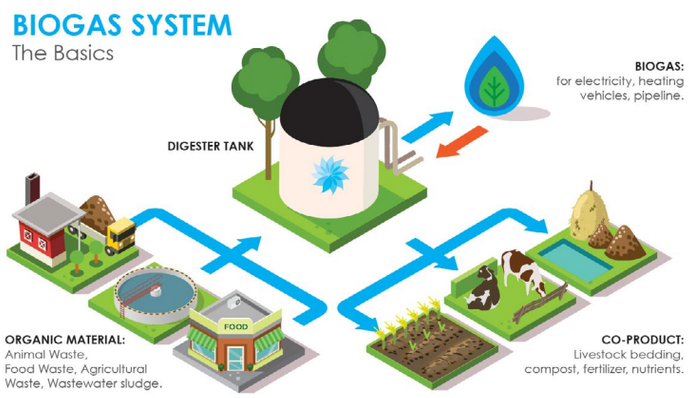
According to the U.S. Department of Agriculture, 30-40% of the food in America is wasted. In 2018 alone, over 100 million tons of food waste was generated and less than 4% of that waste was diverted from landfills and incinerators for composting. Wasted food also represents a significant misallocation of resources. When we waste food, we are also wasting agricultural resources. For instance, wasted food ends up consuming nearly a quarter of our water supply which equates to about $172 billion in wasted water. Add to this the time, energy, fossil fuels, chemicals, and other resources needed to grow and produce our food and the true scale of the large impact of food waste becomes clearer.



The EPA Food Recovery Hierarchy is a great tool to utilize when considering wasted food solutions. All solutions on the EPA Food Recovery Hierarchy are helpful in addressing the issue of food waste. Anaerobic Digestion (AD) is a technology that is less commonly known than some of the others, and is often misunderstood. CET helps deploy solutions at all levels of the hierarchy and presents this fact sheet to help people better understand the benefits of anaerobic digestion.

Did you know that the scraps left on your plate can become fuel?

Anaerobic Digestion is a process by which organic matter, such as animal waste or wasted food, is broken down by bacteria in the absence of oxygen. This is usually done in a very large, sealed container called a digester. The process both creates fertilizer from the waste inside the digester that can be used for farming, and generates biogas composed mostly of methane. This biogas can then be combusted to generate electricity and heat, or it can be processed into renewable natural gas and transportation fuels.



Quantum Biopower, an anaerobic digestion facility in Southington, Connecticut, shared this useful graphic demonstrating how these facilities work.

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wastedfood.cetonline.org

What makes Anaerobic Digestion a great option?

- Mechanical power, heat, fuel, and electricity can be produced from the biogas that is generated.
- Renewable energy is a productive use of the embodied carbon in food waste that is captured during anaerobic digestion.
- Anaerobic digestion creates a mixture called digestate, which can be applied as a fertilizer or soil amendment, used for livestock bedding, and can be made into agricultural products like flowerpots.
- A digester can process a variety of food waste including liquid waste such as fats, oils, and grease (FOG) and melted ice cream.
- Some facilities even have de-packaging equipment, that separate food waste from its packaging or other inorganic materials that would be considered contamination, creating even more opportunities to reduce waste.
- Adopting prevention, donation, and diversion options, can lead to cost savings.

When Anaerobic Digestion might not be a good fit:

- Anaerobic digestion is usually best suited for businesses and institutions that collect food waste only, as most anaerobic digestor facilities cannot accept compostable plastics or fiber, such as cutlery, cups, and dishes. In some cases, facilities have installed de-packaging equipment to enable acceptance of packaged food for processing, offering a time-saving element that enables diversion of out-of-date, mislabeled, damaged, or spoiled products.
- Some haulers and processors can accept food waste as is, while some locations collect material as a pulped liquid slurry. As a result, it may be necessary to prepare the food waste before it is collected.
- Items such as chemicals, yard waste, glass and large volumes of seafood shells are not accepted at these facilities.

Resources to learn more:

- US EPA Website on Anaerobic Digestion
- BioCycle offers more in-depth information, including these two articles:
  - Food Waste and Recycling – Environmental and Economic Assessment
  - Cost, Environmental Impacts of Food Waste Recycling Options
- Anaergia Inc.: Owner of Anaerobic digestion facility in Johnston, Rhode Island.
- Quantum Biopower: Anaerobic digestion facility in Southington, Connecticut, which provides a brief description of AD with more detailed information on their system on their website.
- Vanguard Renewables: Operate several on-farm AD facilities in Massachusetts. Their website includes background information brochures and videos.

This overview was put together by the Center for EcoTechnology for Rhode Island Department of Environmental Protection and Rhode Island Schools Recycling Club with input from Waste Management, Vanguard Renewables, Quantum Biopower, and with information found on the EPA website and BioCycle articles.

About CET

The Center for EcoTechnology (CET) helps people and businesses save energy and reduce waste. CET acts as a catalyst to accelerate the development of a vibrant marketplace to divert wasted food from the commercial and institutional sectors. We have been a leader in the wasted food reduction and diversion movement for more than 20 years, implementing some of the first wasted food composting programs in the country, and contributing to effective public policy. We believe that better managing wasted food is critical in order to address climate change, feed more hungry people, and grow our economy.

If you are a city, state or federal agency, industry group or foundation, and want to tackle the issue of wasted food, please contact us! If you have any questions or feedback, please contact CET at 888-813-8552 or email wastedfood@cetonline.org.

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