



Dynamis Energy Frequently Asked Questions

What is Waste to Energy?

Waste to energy is a process where facilities use waste in order to create power or electricity. The national focus on developing renewable energy sources has resulted in increased interest in developing waste to energy facilities.

What happens to my garbage at a waste to energy facility?

After your hauler picks up your garbage, the hauler delivers it to a waste-to-energy facility where it is fed directly into gasification chambers and used to create electricity or steam. Emissions are carefully controlled and monitored to limit air pollution. Ash from the combustion of the garbage is managed in a landfill. Only 5% of the volume of your original garbage becomes ash, the rest becomes energy.

What are the environmental benefits of Waste to Energy?

- A source of renewable energy
- Reduces greenhouse gas emissions
- Supports recycling
- Keeps our waters clean

What are some other advantages and benefits of Waste to Energy?

- Removing and recycling materials from trash that were not separated at the home or business.
- Our 3.0 technology processes the trash to make is non-hazardous, non-infectious and less harmful to humans and the environment.
- Reducing the volume of the waste requiring final disposal, if any, thereby reducing the amount of land needed for landfills.

How does Waste to Energy reduce greenhouse gases?

When solid waste decomposes, it creates methane which is 20 times more potent than Co₂ in terms of its impact on greenhouse gas production and global warming. Our waste to energy facilities eliminate that production of methane and destroys virtually all CO₂ thereby reducing the emission of greenhouse gases substantially.

How does burning garbage in a waste to energy facility compare to using a burn barrel?

To begin with, the Dynamis 3.0 technology, does not technically burn garbage, it is combusted through a proprietary process of controlled gasification without flame. Burn barrels or open pit burning do so at low temperatures and are extremely polluting. Burning waste is estimated to be the largest source of dioxins, a very toxic and carcinogenic group of pollutants. Just one family using a backyard burn barrel will emit more dioxins per year than a 200 ton per day waste to energy facility. Our facilities are well below all jurisdictions limits on dioxin emissions.

Do waste-to-energy facilities adversely affect recycling rates?

Concerns have been expressed about the impact of waste-to-energy facilities on recycling rates—that waste to energy acts as a disincentive to recycling. European countries and US communities that rely heavily on waste-to-energy to manage solid waste also have higher recycling rates than those communities without waste to energy facilities. In fact, communities with waste-to-energy facilities have an average recycling rate of 33% as compared with the national average of 28%.

Are waste-to-energy facilities significant generators of greenhouse gases?

Dynamis 3.0 technology waste-to-energy facilities provide a much lower carbon alternative to landfills. Decomposition of solid waste in landfills produces methane, a greenhouse gas that is over 20 times more effective in trapping heat in the atmosphere than an equivalent amount of carbon dioxide. Waste-to-energy facilities produce no methane and overall lower carbon dioxide emissions per ton of waste disposed or combusted than landfills. However, the level of carbon benefit is affected by the distance the solid waste is transported and the mode of transportation that is utilized. Waste-to-energy facilities also recover ferrous and non-ferrous metals that are not ordinarily recovered by residential curbside recycling programs. Recovery and reuse of these materials can save on average 75 percent of the energy needed to produce the same amount of virgin steel.

What will be done to monitor and control the odors at the facility?

- Traffic patterns for trucks entering and exiting the facility will be identical to the current traffic pattern because the facility is to be located at the landfill site.
- Automated doors will be installed at the facility, minimizing the length of time the doors are open.
- The facility will have negative air pressure. Fans pull air from the facility, helping to keep odors inside the facility.
- Roadways will be swept and kept clean of debris from trucks.

Are waste-to-energy facilities safe for the environment?

Yes. Waste-to-energy facilities produce electricity with “less environmental impact than almost any other source of electricity,” according to the U.S. Environmental Protection Agency. “EPA recognizes the vital role of the nation’s municipal waste-to-energy industry,” wrote former EPA Administrator Marianne Lamont Horinko, and Assistant Administrator for the Office of Air and Radiation, Jeffrey Holmstead. Waste-to-energy facilities are a “clean, reliable, renewable source of energy.”

Waste-to-energy technology prevents the emission of eleven million metric tons of greenhouse gases (methane and carbon dioxide) that would otherwise be released into the atmosphere on an annual basis. In addition, waste-to-energy serves as an alternative to land disposal and power generation from fossil fuels, which prevents the release of more than 20,000 tons of nitrogen oxides and 2.2 million tons of volatile organic compounds.

Why have so few new waste-to-energy plants been built in the last ten years?

Waste-to-energy facilities rely on revenue from waste disposal and energy sales. Over the past ten years, the price of land disposal has been low, providing stiff competition. In addition, the price of electricity had also been low. But times are changing. The high cost of electricity, combined with the elevated fuel costs of hauling trash to distant landfills has communities considering waste-to-energy once again. In addition, there has been a renewed focus on the environmental issues as well as developing renewable energy sources.

Is waste-to-energy a renewable energy source?

Yes. Waste-to-energy is renewable because its fuel source---garbage---is sustainable and non-depletable. According to the U.S. EPA, waste-to-energy is a “clean, reliable, renewable source of energy.” In addition, the Energy Policy Act of 2005, the Federal Power Act, the Public Utility Regulatory Policies Act, the Biomass Research and Development Act of 2000, the Federal Energy Regulatory Commission’s regulations, and fifteen states all recognize waste-to-energy power as renewable.

Is the ash from waste-to-energy plants safe?

Yes, ash residue from waste-to-energy facilities is tested in accordance with strict state and federal leaching tests and is consistently shown to be safe for land disposal and reuse. Waste-to-energy reduces the volume of trash by about 90%, resulting in a 90% decrease in the amount of land required for garbage disposal. Ash also exhibits concrete-like properties causing it to harden once it is placed and compacted in a landfill, reducing the potential for rainwater to leach contaminants from ash landfills into the ground. It also has beneficial use in concrete plants, can be used to build roads, or concrete blocks for building or landscaping.

What is Dynamis 3.0 technology and gasification?

Our state of the art 3.0 technology of gasification is a process that converts carbonaceous materials, such as coal, biomass, or municipal solid waste (garbage) into carbon monoxide and hydrogen by reacting the raw material at high temperatures with a controlled amount of oxygen. The resulting gas mixture is called synthesis gas or syngas and is itself a fuel. Gasification is a very efficient method for extracting energy from many different types of organic materials, and also has applications as a clean waste disposal technique. The advantage of gasification is that using the syngas is more efficient than direct combustion of the original fuel; more of the energy contained in the fuel is extracted. Gasification of fossil fuels is currently widely used on industrial scales to generate electricity. However, almost any type of organic material can be used as the raw material for gasification, such as wood, biomass, or even plastic waste. Thus, gasification is an important technology for renewable energy. Of particular importance is the fact that biomass gasification is carbon neutral.

What are the Dynamis 3.0 technology gasification's main advantages?

Gasification is one of the cleanest power systems available today. There are four main advantages or benefits of gasification technology.

Feedstock flexibility – Gasification can produce syngas not only from garbage having a wide range of heat values but also from other feedstock's such as petroleum coke ("pet coke"), high-sulfur fuel oil, municipal wastes, and biomass, tires, medical waste, coal, etc. This flexibility increases the economic value of these resources and lowers costs by providing industry with a broader range of feedstock options.

Product flexibility – The syngas produced by gasification in our plant will be converted into steam and electricity but there are many other valuable products, ranging from liquid fuels, basic chemicals, and hydrogen. Integration of multiple products gasification into industrial applications increases opportunities for added revenues since plant operations can focus on the most lucrative products, provides economies of scale associated with production of multiple commodities and increases opportunities for added revenues.

Near-zero emissions – Gasification systems can meet the strictest environmental regulations pertaining to emissions of sulfur dioxide (SO₂), particulate matter, and toxic compounds.

High efficiency – Gasification can be integrated with other technologies for advanced power generation, particularly combustion turbines. The resulting systems are highly efficient, squeezing more value from each pound of feedstock. Systems using advances in gasification and related components can achieve efficiencies of up to 60 percent, compared with an efficiency limit of 40 percent for conventional plants.