Fact Sheet

WASTE-TO-ENERGY: Clean, Reliable, Renewable Power

What is "waste-to-energy"?

Waste-to-energy facilities produce **clean, renewable energy through the combustion of municipal solid waste in specially designed power plants equipped with the most modern pollution control equipment to clean emissions**. Trash volume is reduced by 90% and the remaining residue is regularly tested and consistently meets strict EPA standards allowing reuse or disposal in landfills. There are 89 waste-to-energy plants operating in 27 states managing about 13 percent of America's trash, or about 95,000 tons each day. Waste-to-energy generates about 2,500 megawatts of electricity to meet the power needs of nearly 2.3 million homes, and the facilities serve the trash disposal needs of more than 36 million people. The $10 billion waste-to-energy industry employs more than 6,000 American workers with annual wages in excess of $400 million.

Why is waste-to-energy clean?

America's waste-to-energy facilities meet some of the most stringent environmental standards in the world and employ the most advanced emissions control equipment available. The EPA announced that America's waste-to-energy plants produce "dramatic decreases" in air emissions, and produce electricity "with **less environmental impact than almost any other source of electricity**." The "**outstanding performance**" pollution control equipment used by the waste-to-energy industry has produced "dramatic decreases" in emissions. EPA data demonstrate that dioxin emissions have decreased by more than 99% in the past ten years, and represent less than one-half of one percent of the national dioxin inventory. Mercury emissions have declined by more than 95% and now represent two percent of the national inventory of man-made mercury emissions. Additionally, EPA estimates that waste-to-energy technology annually avoids 33 million metric tons of carbon dioxide, a greenhouse gas, that would otherwise be released into the atmosphere.

Communities served by these facilities recycle an average of 35% of their trash as compared with the national recycling rate of 30%. Waste-to-energy annually removes for recycling nearly 700,000 tons of ferrous metals and more than three million tons of glass, metal, plastics, batteries, ash and yard waste at recycling centers located on site.

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Why is waste-to-energy renewable?

- more than twenty years, waste-to-energy has been recognized as a source of renewable energy under ting law. **Waste-to-energy is a "clean, reliable, renewable source of energy," according to the U.S. EPA.** The Federal Power Act, the Public Utility Regulatory Policies Act, the Federal Energy Regulatory Commission's regulations, and the Biomass Research and Development Act of 2000 all recognize waste-to-energy power as renewable biomass, as do fifteen states that have enacted electric restructuring laws. EPA estimates 75% of trash contains biomass on a Btu-output basis. Turning garbage into energy makes **"important contributions to the overall effort to achieve increased renewable energy use and the many associated positive environmental benefits,"** wrote Department of Energy Assistant Secretary for Energy Efficiency and Renewable Energy David Garman.

What makes waste-to-energy reliable?

Waste-to-energy plants **supply power 365-days-a-year, 24-hours a day**. Facilities average greater than 90% availability of installed capacity. Waste-to-energy plants generally operate in or near an urban area, easing transmission to the customer. Waste-to-energy power is sold as "base load" electricity. There is a constant need for trash disposal, and an equally constant, steady, and reliable energy generation. Waste-to-energy promotes energy diversity while helping cities meet the challenge of trash disposal.

How does waste-to-energy produce clean energy from dirty garbage?

Waste-to-energy facilities achieved compliance in 2000 with new Clean Air Act pollution control standards municipal waste combustors. More than $1 billion was spent to upgrade waste-to-energy facilities, leading A to write that the "**upgrading of the emissions control systems of large combustors to exceed the requirements of the Clean Air Act Section 129 standards is an impressive accomplishment**." In addition to combustion controls, waste-to-energy facilities employ sophisticated pollution control equipment.

- A "bag house" works like a giant vacuum cleaner with hundreds of fabric filter bags that clean the air of soot, smoke and metals.
- A "scrubber" sprays a slurry of lime into the hot exhaust. The lime neutralizes acid gases, just as a gardener uses lime to neutralize acidic soil. Scrubbing also can improve the capture of mercury in the exhaust.
- "Selective Non-Catalytic Reduction" or "SNCR" converts nitrogen oxides – a cause of urban smog – to harmless nitrogen by spraying ammonia or urea into the hot furnace.
- "Carbon Injection" systems blow charcoal into the exhaust gas to absorb mercury. Carbon injection also controls organic emissions such as dioxins

Ash residue from waste-to-energy facilities represents about 10% by volume of the original trash. The **ash is tested in accordance with strict state and federal leaching tests and is consistently shown to be safe for land disposal and reuse**. Ash makes good cover in landfills because it 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 trash landfills into the ground.