

Energy-from-Waste as a Clean, Renewable Energy Solution

While recycling is a preferred first step in the waste management process, not all waste can be recycled. After recycling, there are two proven options for disposal: bury waste in a landfill or use the advanced Energy-from-Waste process to turn trash into clean, renewable power.

Energy-from-Waste (EfW), also known as waste-to-energy (WTE), is a process that takes municipal solid waste (MSW), i.e. household trash, and transfers it into combustion chambers where it is burned at high temperatures and reduced to 10% of its original volume. The heat generated from the combustion chambers heats up water in steel tubes that form the walls of the combustion chambers. The water is turned to steam and sent through a turbine that continuously generates electricity.

The EfW industry has been in existence for over 25 years and has developed state-of-the-art technology making it one of the cleanest forms of energy generation. The advanced technology in combusting waste is the air quality (emission) control system. EfW facilities also employ a multi-step process to achieve superior environmental performance.

In addition, as Metro Vancouver strives to find alternative sources of clean energy, EfW becomes an important option. For every tonne of waste processed in an EfW facility, we avoid the need to import one barrel of oil or mine a quarter tonne of coal.

EfW facilities not only offset our dependence on fossil fuels, they also prevent the production of greenhouse gases. In a more direct comparison, combusting one tonne of waste in an EfW facility prevents the equivalent of one tonne of CO₂ from entering into the atmosphere through the burning of fossil fuels to produce the same amount of electricity, and the decomposition of MSW in landfills.

Importantly, over the past 25 years, the EfW industry has developed state-of-the-art technology that makes EfW one of the cleanest forms of energy generation.

During those years, Covanta has converted more than 250 million tonnes of residual municipal solid waste into energy. Since beginning operations in 1986, Covanta has provided several significant environmental benefits:

- Offset enough greenhouse gas emissions to have the same benefit as planting 6 billion trees;
- Generated enough clean, renewable electricity to power 11 million homes;
- Preserved hundreds of acres of land and habitat - 250 million tonnes of waste is enough to cover the entire island of Manhattan 30 feet deep; and
- Recycled approximately 5 million tonnes of metal that would have otherwise been land filled; enough metal to build 60 Golden Gate bridges.

“By turning municipal solid waste into clean energy, Covanta enables local communities to achieve their sustainability goals and businesses to achieve near zero-landfill targets.”

*Michael Eckhart, President,
American Council on Renewable Energy (ACORE)*

About Covanta

With 38 energy-from-waste facilities worldwide, Covanta uses municipal solid waste as a fuel to generate clean, renewable energy. Covanta's modern energy-from-waste facilities safely and securely convert 17 million tonnes of waste into more than 8 million megawatt hours of clean renewable electricity each year and create 10 billion pounds of steam that are sold to a variety of industries.