

New Waste-to-Energy Projects: Opportunity Knocks!

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Abstract

Never have conditions been more favorable for the development of new waste-to-energy projects. The record of operating waste-to-energy plants has dispelled all of the objections that had been raised by environmental activists with respect to emissions and residue toxicity. The economics have become positive due to the rising cost of disposal at distant landfills and the increased value of the recovered energy due to sharp increases in the cost of fossil fuels. The threat of global warming and the recognition of the need to reduce reliance on imported fuel sources have made the public aware of the need to make full use of all domestic sources of energy.. Regardless of legal definitions, energy from wastes is renewable energy and established technology. Waste-to-energy plants are even now providing more energy than other renewable sources such as biomass, wind, and direct solar combined.

What is needed now for the industry to look at the existing technology to see how it can optimize energy recovery, both in capital and operating costs, without compromising environmental performance. Above all, we need a major push to make our case with the public and the politicians who represent it to convince them that waste-to-energy is not only good economics, but good environmental policy as well.

Historical Background

Using solid waste as a fuel to generate electricity is not a new idea. The first waste-to-energy (WTE) plant in the United States started operating in New York City in 1903. The electricity was used to light one of the bridges over the East River (there seems to be some uncertainty now which one). By the start of World War II in 1941, most major cities, including New York, Chicago, and Washington, had built incinerators to dispose of their municipal solid waste. These incinerators did little to control emissions and did not try to recover the energy released during combustion..

The mid 1970's saw the awakening of the environmental movement in the United States, started by Earth Day in 1972. At about the same time, new grate technologies that resulted in more complete combustion were being developed in Europe. The first two incinerators to be built in the United States using these technologies were at Saugus, MA, using the VonRoll grate, and at Harrisburg, PA, using the Joseph Martin grate technology. Both started operations around 1974, and neither initially included electric energy generation, with Saugus supplying steam to a General Electric plant in Lynn, MA, while Harrisburg supplied steam to an adjacent sewage treatment plant. Another pioneer at about the same time was a plant at Ames, IO, which used shredded and air classified waste (refuse derived fuel or RDF). as a supplemental fuel in a coal fired power plant. The first incinerator designed specifically for generating electricity was the plant in Pinellas County, FL, completed in 1981.