

EXECUTIVE SUMMARY

WESTCHESTER COUNTY, NEW YORK WASTE-TO-ENERGY FACILITY

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ENERGY RECOVERY CASE STUDY: WESTCHESTER COUNTY, NEW YORK

The Westchester County waste to energy facility is one of the first mass burn facilities built in the United States and serves a densely populated, diverse county of 956,000 adjacent to New York City. Owned and operated by Wheelabrator Technologies, Inc. a subsidiary of Waste Management, the plant has been operating successfully without disruption for 26 years. The County generates about 1.2 million tons of municipal solid waste, of which about 41% is recycled 13% is landfilled and 46% or about 550,000 tons is treated through the energy recovery facility. An additional 150,000 tons per is processed at the facility from generators outside the county. The County has been aggressively expanding its recycling program and enforcement, working continuously to reduce its waste generation and increase its recycling.

Economic Impacts

- **Energy Efficiencies:** The 700,000 tons of waste processed at the plant produces about 412,000 Mwh (megawatt-hours) of electricity sold to the grid enough to service about 41,000 homes and displace the use of 243,000 barrels of oil annually. Residual or non-recycled plastics contribute about 35% of the energy recovered on a BTU basis.
- **Employment:** The plant employs 66 permanent skilled workers, who contribute about \$5,000,000 to the local economy annually. In addition, the facility contributes an additional \$6,000,000 to the region annually through purchases of goods and services.
- **Impact on the Public Budget:** In order to procure the waste to energy plant, the county secured the agreement of 36 of its 43 municipalities to form a refuse disposal district. This district gave the county a stable, dedicated tax revenues and a guaranteed waste flow. Thus the county could construct waste transfer stations, maintain a low, stable tipping fee at the WTE plant and aggressively implement and expand its recycling programs. The total district budget in 2009 was \$76,000,000 of which 60% came from dedicated property taxes, 26% from tip fees and material sales, and the remainder from reserves.

- **Real Estate Footprint:** The facility, processing nearly 2000 tons per day, is located in the northern tier of the county on the Hudson River on an old industrial site. A landfill capable of handling that level of daily waste would occupy many times the acreage.

Environmental Impacts

- **Recycling Levels:** Since 1992, when the county passed its source separation law mandating separate residential and commercial recyclable collection, its recycling program has grown. There is a financial incentive for localities to recycle, since they pay a per ton fee for waste disposal, but do not pay for the processing of recyclables. The county built its own Materials Recovery Facility (MRF) and has implemented innovative initiatives such as boat shrink wrap recycling, cooking oil recycling, yard waste composting, e-waste collection and depots. In the early 1990s, the county's recycling rate stood at 7%. By 1994, this rate had doubled to 15% and as of 2009, it stands at 41%!
- **Metal Recovery:** The facility recovers about 17,000 tons per year of ferrous metal at a value of approximately \$3.4 million. The county receives 50% of these revenues.
- **Landfill Diversion:** Over the plant's life, about 15 million tons have been kept out of landfill. There is no landfill space available within the county or in areas surrounding it. Thus, all of this waste would have to be trucked over long distances to other sites. By relying on the waste to energy plant, the county reduced its need for landfill space by about 90%. In addition, by keeping wastes out of a landfill, it avoids the production of leachate as well as the emission of hazardous gases at a landfill. By eliminating long transfer trailer trips to out of county landfills, the county also contributes to a reduction of truck traffic, fossil fuel consumption and harmful automotive emissions.
- **Reduction of Reliance on Fossil Fuels:** The plant takes the non-recyclable portion of the waste stream and generates energy. This energy is sold onto the grid and is enough to service about 41,000 homes as well as meet the in-house energy needs of the plant, displacing 243,000 barrels of oil. In addition, if the county had to truck its waste to out of county landfills, it would be consuming an additional about 650,000 gallons of gasoline.
- **Greenhouse Gas Reductions:** The processing of 700,000 tons of waste at the WTE plant contributes to the net reduction of Greenhouse Gas (GHG), compared to the alternative of landfilling the waste. Using the US EPA's WARM model, one can calculate that the waste to energy plant results in a net reduction of 248,000 MTCEs (Metric Tons Carbon Equivalents), which is comparable to taking about 166,500 cars off the road.
- **Air Emissions:** The WTE plant operates under strict federal and state air emissions and operating standards, which are monitored and tested on a regular basis. In 1996, the plant underwent a \$75,000,000 replacement of its air pollution control system. It installed a scrubber/baghouse combination for dioxin/furan and particulate matter control as well a selective non-catalytic reduction system for nitrogen oxide control and carbon injection to reduce mercury emissions.

Political/Institutional Impacts:

- **Community Support:** The plant has operated without significant opposition over the last 26 years. Alfred DelBello, the County Executive who negotiated the construction of the plant went on to become the Lieutenant Governor of the state. Soon after the plant

was built, he was quoted by Forbes Magazine as saying “If the politics got out of the way, we would be burning garbage all over the U.S.”¹

- Support has also come from NYPIRG (the New York Public Interest Research Group). In 2002, when New York City halted its plastic and glass recycling programs due to financial issues, a senior environmental associate with NYPIRG interviewed by the *New York Times* about the city’s actions responded: “We’ve pointed to Westchester as an example of how to conduct a successful recycling program.” As the *New York Times* indicated: “So far, Westchester has avoided New York City’s refuse woes—because [of its] planning and capital expenditures over the last 20 years.”²
- **Industry Recognition:** Wheelabrator on behalf of the Peekskill facility has been recognized by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA), earning membership in its Star Voluntary Protection Program. This program recognizes employers for outstanding job and health safety management.

¹ *Forbes Magazine*, July 1, 1985.

² Marc Ferris. “The Truck Stops Here”. *New York Times*. November 10, 2002.