

# CASE STUDY

## WESTCHESTER COUNTY, NEW YORK WASTE TO ENERGY FACILITY

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### EXECUTIVE SUMMARY

#### 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 if 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 Equivalent), 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.”<sup>1</sup>
- 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.”<sup>2</sup>
- **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.

## INTRODUCTION

Westchester County covers an area of 450 square miles. It has a population of 955, 962 persons, who reside in 45 municipalities. The county stretches from the northern borders of New York City on its south to with Connecticut and the Long Island Sound on the east and the Hudson River on the west. Its northern tier has retained a rural and exurban character, while the areas towards the south in proximity to New York City have a suburban or urban lifestyle. Already by the Revolutionary War period Westchester was the richest and most populous county in the colony of New York. Despite great devastation during the Revolutionary War, the county grew quickly during the 18<sup>th</sup> and 19<sup>th</sup> centuries. Due to proximity to the Hudson River and the invention of the steamboats, iron foundries, brickyards, marble quarries were established. The coming of the railroads to the county and later the interstate highway and numerous parkways created rapid economic and population growth. By the mid 1900s, the character of the county changed from rural to suburban. Population centers grew in the southern tier of the county due to the proximity to New York City. Large corporations such as Pepsico, IBM, General Foods, Ciba-Geigy located their headquarters in the county. In 1860 the population was 99,000. In less than 100 years in 1950, the county’s population had burgeoned to 625,000!!

A garbage crisis in 1972 led to the county to consider waste to energy. Much of the county’s garbage was hauled to the county-operated Croton Point “dump”, which was leaking toxic liquid and garbage into the Hudson River. The federal government brought the county to court, which ruled in the federal government’s favor, finding that the county had violated various River and Harbor Acts. The court ordered the county to cease all dumping at this facility as soon as possible, to obtain alternative environmentally acceptable sites as well as remediate the damage done. It also mandated that the county hire a consultant under the supervision of the New York

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<sup>1</sup> *Forbes Magazine*, July 1, 1985.

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

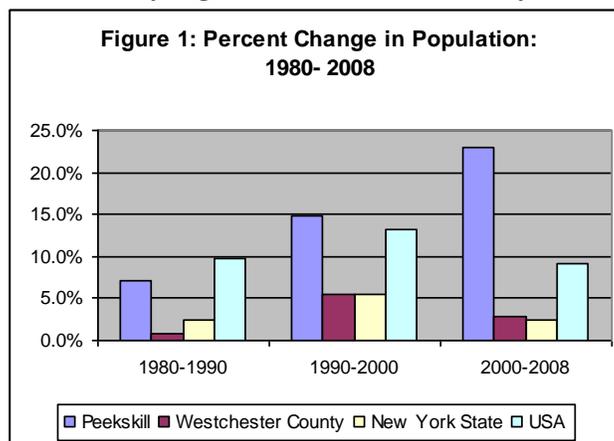
State Environmental Facilities Corporation to examine and recommend sound disposal alternatives as well as report on methods to maximize recycling efforts throughout the county. In its final settlement with the county in 1975, the Federal District Court enjoined and required the county to continue working with the state and its consultants with respect to recycling and resource recovery and to devise long range plans for solid waste disposal to include resource recovery, if economically feasible. In 1978, the County Executive Alfred DelBello recommended to the County Board that a waste to energy facility be built and in 1981 the County signed an agreement with Wheelabrator-Frye to construct a 2250 ton per day waste to energy facility.

The plant commenced operation in 1984, one of ten such facilities in New York State. It is a mass burn waterwall plant with three 750 ton per day (tpd) boilers. It processes about 700,000 tons of waste per year, handling most of the municipal solid waste generated in Westchester County. The plant is located in the northwestern corner of the county in Peekskill, NY which has a population of about 27,500.

## DEMOGRAPHIC AND ECONOMIC PROFILE OF WESTCHESTER COUNTY AND PEEKSKILL, NY

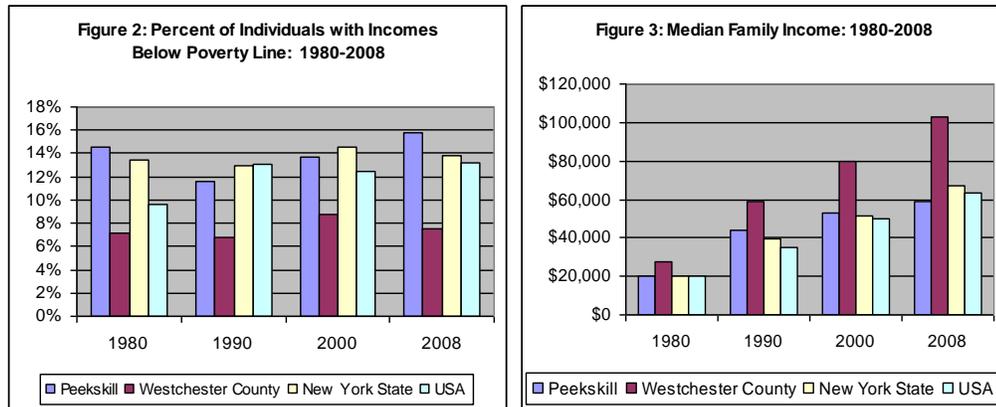
### *Demographic Characteristics*<sup>3</sup>

Westchester County, located adjacent to New York City is a mature, wealthy, diverse, highly suburbanized county comprised of six cities, 16 towns, and 23 villages. Its current population is about 950,000. Peekskill the site of the waste to energy facility is one of the six cities in the county. While the county has shown some degree of population growth since 1980, Peekskill has been growing at a rapid rate in the last three decades. Between 1980 and 2008, Peekskill's population increased by 85%, while Westchester County's population increase was about 9%. Figure 1 shows the percent of population growth of the city, county and state for the periods between 1980 and 1990, 1990 and 2000, 2000 and 2008. The city grew by 7% between 1980 and 1990, 15% between 1990 and 2000 and 23% between 2000 and 2008. Since 1990, Peekskill has outpaced the county, state and nation in percentage growth. It is one of the fastest growing areas in the county, while the county's growth has been relatively static.

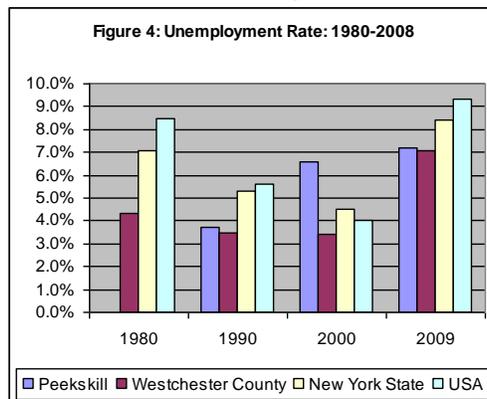


<sup>3</sup> 1990, 2000, 2008 Population, housing and income data from Decennial Census and 2006-2008 American Community Survey 3-year Estimates. <http://factfinder.census.gov>. 1980 data is from U.S. Department of Commerce, Bureau of the Census. **County and City Data Book: 1983, 10<sup>th</sup> Edition**, 1983. Data on employment is from the Bureau of Labor Statistics. Local Area Unemployment Statistics. <http://www.bls.gov/lau/#tables>.

When one examines poverty rates and median family across the city, county and state certain differences become apparent. Westchester County as a whole is wealthier than either the city or the state, while Peekskill is more representative of the state and nation. As shown in Figure 2, the percentage of individuals below the poverty line in Westchester County was substantially lower than the comparative percentage in Peekskill across all time periods. Peekskill has poverty rates that are nearly double that of the county across all time periods. Figure 3 graphs median family income. As can be seen in 1980 there was not a great disparity in median income between the four governmental entities. By 1990 median family income for Westchester County began to outstrip that of Peekskill as well as the state and country as a whole, a relationship which continues through each subsequent time period. Between 1980 and 2008, Westchester County median family income grew from 27,000 to about \$103,000. During the same period median family income in Peekskill grew from about \$20,000 to \$59,000, the state's median family income increased from \$20,000 in 1980 to \$67,000 in 2008



Although Westchester County has a higher income profile than either Peekskill or the state, both the county and the city reflect a more robust employment picture in comparison to the state. Figure 4 shows unemployment rates for all three entities.<sup>4</sup> As can be seen unemployment rates in the Peekskill area were similar to those of the county in 1990 and below those of the state and

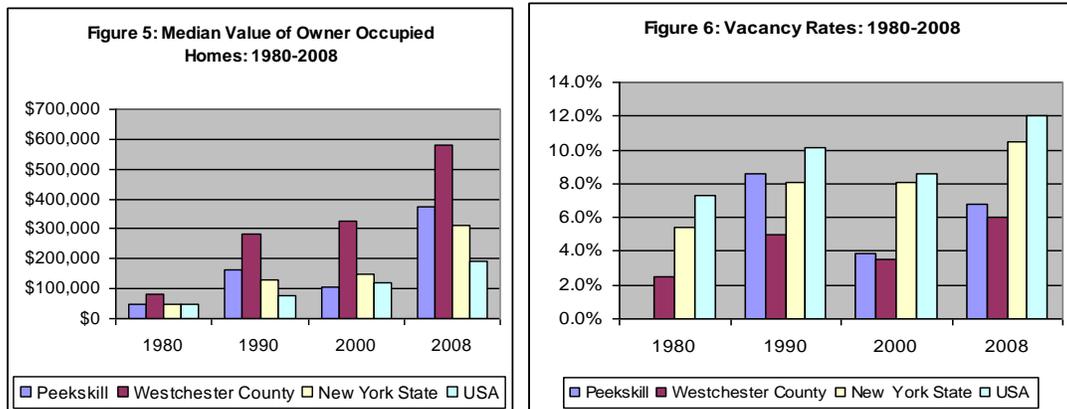


<sup>4</sup> 1980 Unemployment percentages for Peekskill were unavailable. The 1990 data were from the Newburgh-Middletown-Poughkeepsie area which encompasses Peekskill.

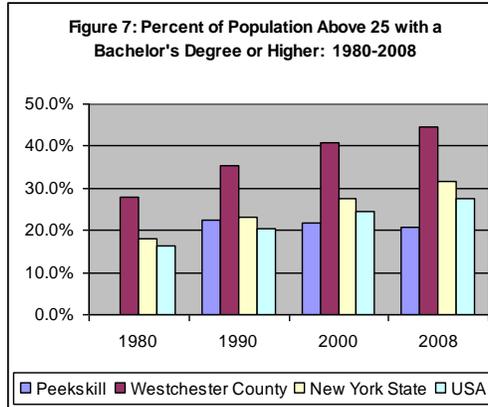
nation. By 2000 unemployment in Peekskill had risen to about 6.6%, nearly three percentage points above its rate of ten years before. The county held its unemployment rate at about 3.3%, while the state and nation were at about 4% unemployment. However, by 2009, Westchester County's rate had increased substantially, catching up to that of Peekskill, which stood at about 7.2%. However, both Peekskill and Westchester have fared better than both the state and country as a whole. New York State reported an unemployment rate of about 8.4%, while the national rate had climbed to 9.3%

With respect to the housing market, Peekskill enjoyed modest growth in the value of its owner-occupied homes, behaving somewhat similarly to the state and country, until 2008 when the median value of a home increased substantially. By 2009 real estate values had dropped across all jurisdictions. In contrast, Westchester County home values nearly tripled between 1980 and 1990, remained somewhat stable between 1990 and 2000 and then nearly doubled in the housing boom between 2000 and 2008. Thus median values in Peekskill remained somewhat stable through 2000, but through 2008 city real estate participated in the housing boom.

Figure 6 graphs housing vacancy rates between 1980 and 2008. While the 1990 period showed high vacancy rates in Peekskill with comparison to Westchester County, by 2000 to 2008, its rates were similar to those of the county and well below that of the state and nation.



Finally Figure 7 reflects the percentage of persons above 25 years of age with a Bachelor's Degree or higher as an indication of educational attainment in the community. As can be seen, in Westchester County by 2000 about 40% of persons above 25 have a minimum of a college degree. In Peekskill, this percentage is about one-half that of the county. Overall, the county has a highly educated workforce, with the city and state lagging behind.



In sum, the picture that emerges of Peekskill is one of a community that has experienced significant population growth in the last 28 years but has lagged behind the county in income growth, level of poverty and housing values. Westchester County has a diverse economic base and benefits from its proximity to New York City. Its housing values, median family income, levels of educational attainment are substantially above similar indicators for state and country. Peekskill does not reflect the economic strength shown by the county, yet does demonstrate a stable housing and employment base.

### ***The Local Economy***

Westchester County with its proximity to New York City is at the same time part of the global economy and a more localized regional economy. As has been mentioned, it is home to many multi-national companies. IBM is headquartered in the county and also maintains one of its premier research centers there. It is the county's largest single private employer with about 5200 employees in various locations. Mastercard, Pepsico, Kraft Foods, the Readers Digest Association, and Starwood Hotels North American Division are also headquartered in the county. In addition, multi-national finance firms Morgan Stanley, Citigroup have a large presence. The county is home to a large number of renowned health related institutions, hospitals and firms. Westchester Medical Center, the Burke Rehabilitation Research Center and Hospital, Four Winds Hospital, Bayer Healthcare are a few examples.<sup>5</sup> Major educational institutions are also located in the county and include Pace University, Fordham University at Marymount, Manhattanville College, the State University at Purchase, Sarah Lawrence College, Mercy College, Iona College, Manhattanville College and New York Medical College. Finally the county boasts major retail centers with two large upscale malls in the White Plains area. In terms of wages paid out, the county is a \$27 billion economy. Private sector wages comprise 85% of this amount; the remaining 15% are from government entities. The three largest employment sectors are health care, retail trade and professional and technical services.<sup>6</sup> As a testament to its strong economy and governmental oversight, the county has retained a AAA bond rating from all three rating agencies, only one of thirty counties in the U.S to do so.

<sup>5</sup> Westchester County. Department of Planning Data Book 2010, p. 89.

<sup>6</sup> Westchester County CAFR 2009.

The city of Peekskill used to be the hub of industrial activity, in part due to its location on the scenic Hudson River. It boasted a large industrial campus at Charles Point where Fleishmann's Yeast Company operated a plant. This manufacturer of whisky and margarine was the city's largest employer for much of the 20<sup>th</sup> century, but left the city in the 1970s. Since then, the city has worked hard to reinvent itself as a mecca for artistic, cultural and small arts and technology businesses. Due to a solid housing stock at relatively low prices, Peekskill has been successful in attracting artists and computer based firms.<sup>7</sup> There are two hubs of artistic activity in the area, the Paramount Center for the Arts and the Hudson Valley Center for Contemporary Art. Retail and some tourism are additional aspects of the local economy. Finally, within 15 miles of Peekskill is Entergy's Indian Point nuclear power plant. One of the larger employers in the county, the plant employs 1300 people and remits earmarked payments to Peekskill's the school district.

## **HISTORY OF WASTE TO ENERGY IN WESTCHESTER COUNTY**

Westchester County's involvement with waste to energy was borne of the federal lawsuit brought against it in 1972.<sup>8</sup> Issues over garbage disposal had been with the county since the 1950s, when the federal government ordered the county's old municipal incinerators to close due to air pollution. Both the incinerator ash and additional raw garbage was also being dumped at the Croton dump on Croton Point. By the 1960s, the county commission that controlled the landfill ordered it closed. However, the county's legislative body kept extending the deadline for closing and little was done by the various localities using the site to search for alternatives. Ultimately in 1967, an engineering report recommended the construction of a modern incinerator at the site, while the State of New York Pure Waters Authority proposed that the waste be compacted at three plants and then hauled further north to landfills. The rural areas which were to receive the waste successfully blocked the plan, only to have the plan revived again in 1971 by the New York State Environmental Facilities Corporation (EFC), which proposed to take over the county's waste disposal and compact and rail haul the waste. The County Executive agreed to the 20-year plan; however soon after, the federal lawsuit began and the state quickly withdrew.

As a result of the federal court settlement, the County Executive Alfred DelBello examined several "resource recovery" or waste to energy options. He initially engaged the Union Carbide Corporation to build a waste gasification pyrolysis plant. However, this plan ran into problems when Union Carbide could not guarantee the efficacy of its system. The County Executive then looked to another alternative, the construction of a WTE facility in Mount Pleasant, which would provide steam to heat and cool Westchester Medical Center facilities. This plan was blocked due to local opposition to the site.

By 1978, DelBello had found a site for the plant—the abandoned industrial area at Charles Point in Peekskill, where the Fleishmann's factory had once stood. However, he had to implement three major initiatives to facilitate the building of the plant. Firstly, in deciding to have a private entity build and operate the plant, which the county was willing to finance, the county had to create a structure which could raise funds for a private entity. Thus, the Westchester Industrial Development Agency was created, which could issue bonds on behalf of a private entity.

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<sup>7</sup> Alex Phillippidis. "Commerce and natural beauty woven into the fabric of Peekskill". **Westchester County Business Journal**. June 12, 2005.

<sup>8</sup> History is summarized in *943 F. 2<sup>nd</sup> 180-United States v. P O'Rourke*.

Secondly, the county had to guarantee a minimum amount of waste to the facility as well as develop an infrastructure of transfer stations throughout the county to transport the waste from the populated southern portions to the plant. In order to accomplish this, the county had to sign inter-municipal agreements with each municipal entity in the county, in which the localities committed to delivering a minimum amount of waste and paying a tip fee in return for the county taking the responsibility for the disposal of waste. Thirdly, in order to help finance the plant and the network of transfer stations, county voters had to approve the creation of a special tax district, which was done in 1981. Voters in 36 of the 43 municipalities approved the special district. Thus in July 1981, the county signed an agreement with Wheelabrator to design and build a 550,000 ton per year waste to energy plant at Charles Point.

New York State has 10 operating waste to energy plants, of which the Wheelabrator plant is the second oldest. The state did not actively create incentive for localities to consider waste to energy; however it did provide planning and construction grants under the 1972 Environmental Quality Bond Act (EQBA). This act raised funds in order to provide aid for solid waste disposal, sewage treatment, air pollution controls and waste to energy. Westchester County received \$27,000,000 of EQBA monies towards the construction of the plant.

However, despite the existence of the EQBA which was reauthorized in 1986, the state did little in terms of proactive solid waste planning during the 1980s. The federal Resource Conservation and Recovery Act (RCRA) of 1976 required states to develop solid waste management plans, and the New York State Legislature responded by directing the Department of Environmental Conservation (DEC) to draft such a plan. DEC submitted a draft plan in 1978, but the legislature took no further action until 1980, when it passed a law recognizing the need for solid waste planning. The law designated DEC as the agency responsible for preparing a solid waste management plan and mandated that all solid waste management projects be in accord with the plan, but by 1981 funding for the municipal solid waste program was withdrawn, and further development of the plan ceased. At the federal and state levels, emphasis and funding were shifted from municipal solid waste management to hazardous waste management programs.<sup>9</sup>

By 1987, the state as a whole and several of its regions were facing a disposal crisis. New York City's Fresh Kills Landfill was running out of space. Long Island under state law was being compelled to suspend all landfilling on the island due to aquifer contamination. Other sub-standard landfills throughout the state were being closed. At the same time, national and international attention became focused on the crisis through the now famous "garbage barge", which departed from Long Island with baled garbage en route to North Carolina. North Carolina refused to let the barge dock and it sailed to various ports seeking a disposal site for months. The saga only ended when New York State made an agreement with New York City to incinerate the waste.

In 1987 New York State finally issued a new solid waste plan, which was incorporated in the 1988 Solid Waste Management Act. This Act embodied the 1987 plan, which clearly set out the priorities for solid waste management as waste reduction, reuse and recycling, energy recovery for the non-recyclable portions of the waste, and land disposal for any remaining fractions. The

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<sup>9</sup> New York State Department of Environmental Conservation. **Beyond Waste: A Sustainable Materials Management Strategy for New York. Draft Solid Waste Management Plan.** 2010.

Solid Waste Management Act required the submission of local solid waste plans embodying the waste hierarchy, mandated that localities pass local source separation and recycling ordinances by 1992, encourage the creation of regional waste authorities, and established DEC as the overseeing agency.

Interestingly, most of the state's activity on integrated solid waste management planning occurred after the Wheelabrator plant had commenced operation. By the 1990s with the Supreme invalidation of flow control by the U.S. Supreme Court, the highly contentious decision by New York City to site a waste to energy facility in the Brooklyn Navy Yard, strong citizen opposition to waste incineration and the emphasis of the federal Environmental Protection Agency on regulating the environmental impacts of waste to energy plants, New York State turned its focus its regulatory role with respect to waste to energy. It no longer provided funding nor policy encouragement to waste to energy initiatives.

## **DESCRIPTION OF THE WESTCHESTER COUNTY WASTE TO ENERGY PLANT**

### *Site*

The Wheelabrator WTE plant is located on the Hudson River, in the City of Peekskill. The city with a population of about 27,000 is situated about eight miles south of the West Point Military Academy. Located in the northwest corner of the county, most of the waste is trucked from the southern portions of the county in transfer trailers. The facility is adjacent to a commercial and industrial park, a marina, and a park from which Hudson River tour boats disembark.

### *Technical Specifications*

The facility began operations in 1984. It was one of the largest waste to energy plants built at that time. It is mass burn waterwall plant with three Babcock & Wilcox boilers and Von Roll reciprocating grates. Each of the three process lines has a design capacity of 750 tons per day. In 2009, 700,000 tons were processed at the facility, with an average of 1918 tons per day. The plant was designed and built by Wheelabrator which has operated the plant under an agreement with the county. Negotiated in 1981 and extended in 1995, the operating contract expired in 2009. All publicly financed bonds were paid off and the plant reverted to Wheelabrator ownership. The county renegotiated a ten year tip fee based contract with various renewal options. The plant produces about 60 MW of electricity per year, of which 53 megawatts are sold to Consolidated Edison, the local utility and the remainder is used in house. It also recovers about 17,000 tons of ferrous metal post combustion in 2009. Until the termination of the operating contract in 2009, the county received 50% of the revenues from electricity sales which helped offset the waste processing fee charged by Wheelabrator. In the new contract, the firm charges the county a flat tipping fee of \$71.50 per ton. It retains all electricity and material revenues.

The plant reduces the volume of waste by 90%. Ash makes up the residual 10%. Under the old contract, ash disposal was the county's responsibility. It was disposed at the county's designated ash fill, the Sprout Brook landfill in Cortlandt, New York. About 169,000 tons of ash were generated in 2009, comprising approximately 24% of total waste processed by weight. Under the new contract with the county, Wheelabrator has assumed all responsibility for ash disposal. The Sprout Brook landfill has been closed and ash is being transported to a Waste Management ashfill in Connecticut with a backup in Pennsylvania.

The plant has a fully updated air pollution control system. It operates with spray drier absorbers and fabric filters for particulate control, a SCNR (NO<sub>x</sub> control) system, as well as carbon injection for the control of mercury. It also has a continuous emissions monitoring system, to track regulated emissions. The air pollution control system was retrofitted in 1999 to comply with the 1990 Clean Air Act Amendments. The upgrades cost in the range of \$75,000,000.

### ***Waste Flow***

Because of the 1975 federal court consent agreement, the county was compelled to take control over waste disposal within its borders, as well as focus on recycling as much of the waste as possible. In addition, the county was required to submit monthly reports to the court of its progress and the federal government retained the right to inspect the county's efforts in properly closing the landfill and controlling leachate spillage into the Hudson River.

As has been mentioned, the county executive at the time turned to waste to energy as a solution, since there was no sufficient landfill space in the region. In order to obtain control over the waste flow in the county, the county executive negotiated individual inter-municipal agreements (IMA) with 36 of the 43 localities in the county, representing 90% of the population. At that time 7 small localities in the most northern section of the county opted not to enter into the agreement as they adamantly disagreed with the approach and did not want to bear the extra costs and did not want county interference in their existing disposal arrangements.<sup>10</sup> Under the IMA, each locality guaranteed a minimum amount of waste to be delivered directly to the waste to energy plant or to county transfer stations. In addition, localities agreed to become part of a new County Refuse Disposal District(RDD). This district was given the power to levy ad valorem taxes to finance the new refuse disposal system.

Thus as a result of the federal court order, the county assumed direct responsibility for refuse disposal on behalf of all municipalities which agreed to become part of the special district. In return, localities became full participants in the county's solid waste system which grew to include not only two transfer stations, the Sprout Brook ashfill (now closed), but also a state of the art Materials Recycling Facility (MRF). The three transfer stations are located Mount Vernon, White Plains and Yonkers, serving the southern portions of the county. They handle about 1600 tons of waste per day. Other waste not going through the transfer stations is hauled directly to Charles Point.

In addition, over the years the county vastly expanded its recycling programs, adding yard waste collection and composting, e-waste and household hazardous waste collections, tire disposal, a mobile document destruction van, vegetable oil collections and a myriad of education programs. There is also a "take back medications" program, where residents can turn in their old and expired medications for disposal. All recycling services are provided free of charge. Refuse disposal is pegged at \$21.50 per ton with the remaining cost subsidized out of the ad valorem tax revenue.

All district member refuse is handled through the solid waste system. This includes all residential waste and some commercial waste. The issue of commercially generated waste has been contentious at various points. When the Charles Point facility was built private carters would not

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<sup>10</sup> The seven localities were Bedford, Pound Ridge, Lewisboro, Somers, North Castle, New Castle and North Salem.

agree to join in the proposal. Thus, in sizing the project, the County did not include commercial waste tonnage. As waste amounts grew in the 1980s, the county executive decided to explicitly limit use of the waste to energy facility to the 36 municipalities which signed agreements, a decision which the courts upheld. Private county haulers were only able use the facility on a spot basis, when the facility needed waste and thus the waste from this sector going into the plant fluctuated over time. As mandatory recycling has taken hold and waste amounts have dropped, haulers have been able to secure short term contracts to bring waste to Charles Point. As of 2009, District Member tonnage received at Charles Point totaled 438,000 tons. Other county refuse was about 29,000. Thus about 467,000 tons out of the 700,000 tons processed by the facility or about two thirds of the plant's input comes from county controlled waste. A small amount is hauled directly by neighboring counties. The remaining 230,000 tons comes from Waste Management transfer stations in New York City and Connecticut as well as contracts with private haulers.

### ***Financing***

The Department Environmental Facilities operates the solid waste management system, which has been set up as a special taxing district. The district's main source of revenues is ad valorem tax levied on property. Additional revenues are generated from tip fees levied at its transfer stations, licensing fees from private haulers and sales of materials both at the waste to energy plant and its MRF.

The original capital cost of the plant was \$237,000,000. While Wheelabrator was both the owner and operator, the newly formed Westchester Industrial Development Agency (IDA) issued a revenue bond \$215,000,000. The state contributed \$27,000,000 and Wheelabrator made an equity contribution. Debt service was paid through the Refuse District's tax revenues as well as tip fees and materials sales. In 1994 the remaining bonds were refinanced and the resulting savings were shared between the County and Wheelabrator. In 1996, a new bond was issued by the Westchester IDA of about \$64,000,000 to cover the extensive air pollution control upgrade that was done on the facility. An additional \$8.3 million was raised by Wheelabrator towards the air pollution control upgrades.

The original agreement between Wheelabrator and Westchester County initiated in 1981 expired in 2009, after numerous extensions. In the original agreement, the County on behalf of the participating localities guaranteed a minimum of 365,000 tons of waste, which increased to about 400,000 tons. In order to provide for growth, the county had sought a facility with about 550,000 ton capacity. Wheelabrator, anticipating that it could successfully market the excess capacity constructed a facility originally permitted at 657,000 tons.<sup>11</sup> The county agreed to pay a base fee as well as guarantee an electricity payment of \$.06 per kilowatt-hour. If the local utility, Consolidated Edison offered less, the county made up the difference on an annual basis. In past years the county's electricity payment has been nearly three times that of the base service fee. In 2008, the county paid \$25,000,000 to Wheelabrator exclusive of debt service. Of this amount, about \$19,000,000 went towards ensuring Wheelabrator's electricity revenue targets

## **ECONOMIC IMPACTS OF THE WASTE TO ENERGY PLANT IN WESTCHESTER COUNTY**

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<sup>11</sup> James Feron. "Westchester Signs Contract for a Garbage-to-Fuel Plant". *New York Times*, June 19, 1981.

### ***Energy Recovery***

The main purpose of the Westchester's waste to energy plant was to serve as a solid waste disposal alternative for a highly populated county that was forced not only to close its sole landfill but to produce and implement a plan to handle solid waste for the entire county. The Wheelabrator waste to energy plant had as its secondary goal the production of energy. In 2009, it produced a total of 53 megawatts (MW) of which 46 MW are sold to Consolidated Edison, an investor-owned utility in the area and 7 MW are used in-house. This translates into 411,705 megawatt hours (mwh) of electricity sold unto the grid which is enough to serve about 41,000 homes and displace the use of about 243,000 barrels of oil annually.<sup>12</sup>

Since the 1990s, New York State has had an ambiguous stance towards waste to energy. While it initially assisted in plant financing, it subsequently enacted an unofficial moratorium on new WTE plant construction. Furthermore, when the State's Public Service Commission was developing its Renewable Portfolio Standard (RPS), it explicitly excluded waste to energy, particularly mass burn combustion facilities on the basis that such facilities have a high level of mercury and NOx emissions per kilowatt-hour of electricity generated as compared to other energy sources. In reviewing the inclusion of waste to energy in the RPS, the Public Service Commission's concluded: "At this time, WTE facilities will not serve an RPS that, among other things, aims to improve air quality, public health and the environmental performance of the electricity supply system serving New York State."<sup>13</sup> The Public Service Commission deemed that the inclusion of energy from waste combustion in the program would subvert the goals of the program.

### ***Employment and Community Development Impacts***

The Westchester plant employs 66 full-time equivalent skilled workers from the local area. With an average salary conservatively estimated at about \$80,000 per year, these employees put back about \$5.3 million into the local economy. In addition to providing direct employment, the plant regularly relies on local and regional contractors to provide goods and services. One can estimate that it spends about \$6,000,000 annually on businesses providing construction and maintenance, uniforms and health services, road cleaning, grounds maintenance and janitorial services.

The plant has also had a direct local community development impact. In 1970, Standard Brands (formerly Fleishmann's Margarine) left Peekskill, taking with it 500 jobs and associated tax revenues and abandoning a large industrial site on the Hudson River. Thus, in 1979 when Westchester County was looking for a site of the waste to energy plant, Peekskill agreed, hoping to spur industrial development in and around the site. In addition, Peekskill received a host community fee, which it split with its school district, as well as reduced electricity rates for its residents. With the construction of the Wheelabrator plant, the city began an aggressive marketing campaign to seek additional tenants for the large industrial park that had been vacated. Through the 1980s various developers and commercial users purchased space and as of 2010, there is a diverse mixture of businesses at the industrial park ranging from manufacturing to meat and beverage wholesalers; paper suppliers to heating and cooling equipment vendors. Directly adjacent to the plant, the Charles Point Marina opened with a fine dining restaurant. Also

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<sup>12</sup> Household calculation is based on U.S. DOE average kwh per household data.

<sup>13</sup> State of New York, Public Service Commission. "Proceeding on a Motion of the Commission Regarding a Retail Renewable Energy Standard. Case 03-E-0188. Issued and Effective September 24, 2004, p.39.

adjacent is a waterfront park, which the city has enhanced and improved. As a company, Wheelabrator has directly supported Peekskill's efforts at redevelopment, lending support to the Paramount Center of the Arts and sponsoring school environmental programs.

### ***Public Budget Impacts***

Created in 1981 with the County's need to secure waste and financing for the waste to energy plant, Refuse District #1 has grown into a \$76,000,000 operation. This structure permitted the county to levy a dedicated property tax for solid waste services, which in 2009 yielded \$44,750,000 in revenues or about 60% of the budget. Tip fees and material sales make up 26% of revenues with the remainder coming from reserve funds and investment income. The participating localities obtain recycling processing, hazardous waste collection, yard waste processing, recycling education, as well as low cost access to waste transfer stations or the waste to energy facility in return. As has been mentioned about 17,000 tons of ferrous metals are recovered from the combustion ash. These metals have a value of about \$3.4 million. The county receives 50% of these revenues which help support the district budget.

With the expiration of the contract with Wheelabrator and the paying of all outstanding debt financed through the Westchester Industrial Development Agency, the status of the county with respect to the Wheelabrator plant changes. It has negotiated a new 10 year contract with the firm, becoming the principal customer of the facility, guaranteeing a minimum amount of waste at a particular price per ton. The county no longer carries any responsibility for debt repayment and as part of the new contract has relinquished any responsibility for ash disposal. The company must now transport the ash out of the county to its own landfills. The county will pay a fee of \$71.50 per ton for wastes generated by its members. Wheelabrator is free to market any additional capacity to its own customers. There is no revenue share either for electricity or materials separated at the facility.

The plant has brought direct benefits to Peekskill where plant is located. In the initial contract between Wheelabrator and the county, Peekskill and the Hendrik Hudson School District received PILOTs (Payments in lieu of taxes). In addition, the community received rebates on electricity. In 2009, Wheelabrator paid \$3,764, 523 to the City of Peekskill and the same amount to the local school district.<sup>14</sup>

## **ENVIRONMENTAL AND HEALTH IMPACTS OF THE PLANT**

### ***Recycling***

From a regulatory standpoint, New York State initially became involved in recycling through the passage of the 1988 Solid Waste Management Act, which established overall solid waste policy. The Act incorporated the solid waste hierarchy, with a purpose of diverting as much waste as possible from landfills and incinerators. As an outgrowth of this Act, the state under General Municipal Law § 120-aa mandated that as of September 1, 1992, all municipalities adopt a local ordinance requiring that solid waste be separated into recyclable, reusable or other components. At the most basic "components" shall include paper, glass, metals, plastics, garden and yard waste, and may include other elements of solid waste.

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<sup>14</sup> County of Westchester Industrial Development Agency. Financial Statements and Supplementary Information for the Years Ended December 31, 2009 and 2009, p.18.

While the state did not mandate recycling until 1992, it did pass a deposit bottle bill in 1982, one of 11 states to do so. This bill mandated a \$.05 deposit for all carbonated soft drinks, beer and malt liquors, mineral waters and carbonated wine products. In 2009, deposit legislation was extended to cover all water bottles, which contain no added sugar, including flavored and nutritionally enhanced waters.

Because the county was under direct federal court supervision regarding the closing of the Croton Point Landfill, seeking alternatives for solid waste disposal, and implementing a new institutional structure for solid waste management services in the counties, it did not focus on recycling until the 1992 mandate was enacted. However, in response to the state law, the county as the designated planning unit for solid waste management passed Local Law 14-1992, “Westchester County Source Separation Law.” This law mandated that all municipalities provide separate collection of recyclables to include newsprint, ferrous and non-ferrous metal food and beverage containers, bulk metals, PET and HDPE bottles and containers, and glass jars and containers. Separate collections were also to be extended to multi-family buildings. Municipalities were to provide for yard and leaf collections in the fall months. This ordinance also mandated commercial recycling. Depending on the type of business, separate collections were to be established for newsprint, corrugated cardboard, high grade paper, bulk metals, vehicular batteries and used motor oil. In addition, firms in the food and restaurant business were directed to recycle metal, glass and plastic food and beverage containers. In the 1992 ordinance all other plastics, including rigid plastics, film, vinyl and plastic foam were specifically excluded.<sup>15</sup> Finally the ordinance required that municipalities establish public education and outreach efforts and submit annual reports on the extent of their waste reduction, reuse and recycling efforts. By 1993 the county’s recycling program became operational and it opened its Materials Recovery Facility (MRF) in Yonkers, NY. This facility is the primary recycling processing plant for the 36 Refuse Disposal District (RDD) communities.

Over the last 18 years, Westchester County has extended its recycling efforts. In addition to the MRF, the county conducts household recycling days at various locations in which residents can drop off hazardous wastes, expired prescriptions, tires and other hard to recycle materials. It also initiated e-waste drop off days throughout the county. The prescription drug take back program began in 2008 and is being extended to senior centers throughout the county. As of 2007, the County also hosts Shredder events, where residents can bring up to four file boxes of paper to be shredded and recycled. This program has also been expanded. In 2008 the county purchased a new mobile shredder truck. Another recycling innovation the county has implemented is the boat shrink wrap recycling program, which also began in 2008. Initially four collection points along the Long Island Sound were set up to which boat marinas could drop off the shrink wrap. In 2009, the program was extended to points along the Hudson River. The county picks it up the material free of charge and brings it to the MRF where it is sold. Finally, in 2008 the county began its free vegetable oil pick up from restaurants and other food establishments. It converts the vegetable oil for fuel in a diesel mix and as an additive to heating fuel used for county buildings.

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<sup>15</sup> Local Law #14-1992. Westchester County Source Separation Law. Chapter 825 of the Laws of Westchester County.

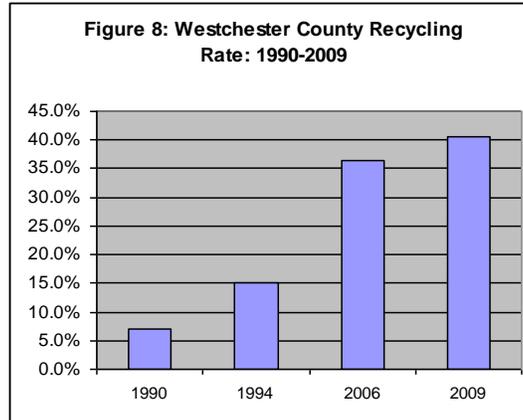
In addition to these county-wide programs, the county has additional recycling arrangements with the 36 members of the RDD. Municipal Electronic Waste Collection pods are offered to all RDD member municipalities. A municipality agrees to accept residentially generated electronic waste at a municipal depot, and the County arranges for a contracted vendor to collect and recycle the waste. Starting in 1998, the County has entered into 5-year Inter-municipal Agreements (IMAs) with RDD municipalities to operate the Organic Yard Waste Transfer Program. The program has now been extended to all municipalities. Each participating municipality collects yard waste at a municipal depot. The County arranges for pick-up from the depot and transport to commercial composting facilities. Finally the Department of Environmental Facilities operates an aggressive tire recycling program to increase recycling, reduce mosquito breeding areas, and decrease the use of pesticides. RDD municipalities may deliver municipally collected tires to various drop off points. Any residents can also deliver tires to the County's household recycling day events. The County transports these tires to recyclers.

As of 2010, municipalities are in discussion with the County to expand the types of plastics that must be recycled. The localities want to modify the law to include #3 through #7 plastics. This would reduce the chargeable weight of the localities' waste stream and generate revenues to the district to further reduce costs. In fact, the MRF has already purchased optical scanning equipment to allow it to separate out additional grades of plastic.

Since the County's 1992 law, commercial establishments and the private haulers which serve them have been mandated to establish separate pick-ups for recycling. An issue has been enforcement since the county found it difficult to monitor the extent to which private firms were following the law. To ensure compliance the county set up a Recycling Enforcement Task Force in 2007, in order to better track recycling in the private sector. Department and Solid Waste Commission inspectors observe loads dumped at private and municipal transfer stations to look for recyclables mixed with garbage. The inspectors also perform site inspections of commercial and institutional waste generators. They check external garbage and recycling containers to determine if businesses separate waste properly.

### **Recycling Rates in Westchester County**

Since 1992 when Westchester County mandated source separated recycling program, the county's recycling program has expanded to include a wide variety of materials. Specifically over the last five years, not only has the yard waste collection program been expanded, but last the county developed innovative programs to capture difficult to recycle materials. In addition, it has focused on enforcing laws which have been in effect over a long period of time. Figure 8 shows recycling rates as reported to the state since 1992. As can be seen, between 1994 and 2006 the county's recycling rate nearly doubled from 15% to 36%. It rose again between 2006 and 2009 to 41%. This large increase is due to several factors. In the 1990s the county assisted localities in implementing yard waste collection programs, which has been the main contributor to increased recycling rates. The county has also targeting commercial recycling both through education and outreach and stepped up enforcement.



### **Plastics Recycling**

PET and HDPE plastic bottles have been a part of the Westchester’s curbside recycling collection program since the program began. As has been mentioned, the county is currently considering modifying this portion of its 1992 source separation law to include #3-#7 plastics as part of mandatory materials that municipalities must recycle. With the expansion of the state bottle bill to non-sugared waters, additional plastics will be recycled. The percentage of plastics in Westchester’s recycled waste stream has been rising since the 1990s. In 1994, this percentage was 3%, in 1999 it was 3.6% and in 2007 it was 4.2%.<sup>16</sup> In the 2008 waste composition study conducted in New York State, the percentage of plastic of the recycled waste stream was 5%, quite similar to the results for Westchester County.<sup>17</sup>

Based on the New York State waste composition data, about 17% of waste disposed are plastics. Thus, in 2009 applying the statewide data, one can determine that about 119,000 tons of plastic are combusted and converted to energy at the Wheelabrator waste to energy plant. According to New York State analysis, most of this plastic is film and rigid non-containers.

### ***Landfill Diversion***

Since the beginning of its operation, the Wheelabrator WTE plant has resulted in the diversion of about 15 million tons of waste from surrounding landfills. This diversion avoided the production of leachate as well toxic gas emissions from the landfills. All of the waste directly under the county’s control, which includes RDD residential waste and waste from county facilities, is shipped to WTE plant. In addition, some of the private haulers use the plant largely on a spot basis. Thus some portion of the 261,000 tons of waste collected by private haulers does go to landfill. In total one can estimate that of waste generated in the county about 40% is recycled, 46% is combusted and 13% goes to landfill.<sup>18</sup> In fact, there are no operating landfills in the county. Much of the private hauler waste goes to privately owned and operated transfer stations. From

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<sup>16</sup> This percentages refer only to the municipal recyclables processed at the Westchester County MRF. Data is from Governmental Advisory Associates, Inc. **Materials Recovery and Processing in the United States. 1995, 2001 and 2007 Yearbooks.**

<sup>17</sup> New York State Department of Environmental Conservation. **Beyond Waste: A Sustainable Materials Management Strategy for New York. Draft Solid Waste Management Plan.** 2010.

<sup>18</sup> These allocations are based on the assumption that about 38% of private hauler waste goes to the waste to energy plant, with the remainder going to landfill.

there the waste is compacted and hauled to landfills in more rural portions of New York State or out of state.

### ***Reduction of Fossil Fuel Consumption***

As of 2009, the Wheelabrator plant generated 46 MW of electricity which is sold onto the grid, thereby reducing the amount of fossil fuel consumption in the region. The amount of fossil fuel saved is enough to power the equivalent of about 20,000 automobiles annually. The WTE also has diverted millions of tons from being transported to distant landfills. Under the current configuration of waste disposal facilities in the region, if the Wheelabrator facility did not exist, transfer trailers would conservatively be making an additional round trip of 150 miles. Given that a transfer trailer can haul about 25 tons of compacted refuse, one might conservatively estimate that it would take about 26,000 trips annually to dispose of waste at a landfill. At an average gas consumption rate of 6 miles per gallon, then one can assume that about 650,000 additional gallons of gasoline would be consumed annually if waste had to be transported out of county for disposal.

### ***Reduction in Greenhouse Gas (GHG) Emissions***

Modern waste to energy plants with up to date air pollution controls have successfully reduced greenhouse gas emissions so that on a per megawatt hour (Mwh) basis they generate less greenhouse gas emissions than plants using oil or coal and perform nearly as well as natural gas power plants. Furthermore, landfill gas to electricity projects generate nearly 6 times the amount of greenhouse gases per Mwh when compared to waste to energy projects. Only nuclear power plants create less greenhouse gas emissions on a per megawatt-hour basis than do waste to energy projects.<sup>19</sup>

In order to compare greenhouse gas emissions with other solid waste disposal and recycling alternatives, the U.S. EPA has also developed the WARM Model. Using this model with specific data from Westchester County, one can determine that the WTE facility, with the current level of recycling and landfilling results in a net reduction of about 248,000 MTCE (Metric Tons Carbon Equivalents) compared to a scenario in which the county would dispose of all its waste at out of county landfills.<sup>20</sup> This reduction is the equivalent of taking about 166,500 cars off the road per year. The reduction in net greenhouse gas emissions is achieved through the generation of electricity from waste rather than fossil fuels, the recycling of metals, and the shorter distances traveled by trucks to the waste to energy facility as opposed to the more distantly located landfills

### ***Fully Controlled and Monitored Air Emissions***

Waste to energy facilities operate in a highly regulated environment with respect to air emissions, water discharges as well as the transportation, storage and treatment of solid waste. Since the federal Clean Air Act Amendments of 1990, there have been stringent requirements placed on Waste to Energy facilities to use “maximum available control technology” (MACT). Because the Westchester plant was conceived in the late 1970s and built in the early 1980s, the air pollution control system pre-dated the later regulatory regime. It originally relied on electrostatic

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<sup>19</sup> P. Ozge Kaplan, Joseph DeCarolis, Susan Thornloe. “Is it Better to Burn or Bury Waste for Clean Electricity Generation?” **Environmental Science and Technology**. 2009. 43. 1711-1717.

<sup>20</sup> U.S. EPA. Waste Reduction Model (WARM) –Excel Format, Version 10, October 2009.

precipitators to handle particulates with no mercury, and NO<sub>x</sub> control. In 1998, the entire system was replaced with the most up to date technology to meet the EPA's dioxin, particulate matter, heavy metals, mercury and nitrogen oxide limits. Wheelabrator installed a scrubber/baghouse, SCNR for NO<sub>x</sub> control, carbon injection for mercury control and a new continuous emission monitoring system. These new controls cost an additional \$75,000,000.

There are environmental regulations which have been recently implemented or may be legislated in the future. In 2006 EPA issued revisions to the New Source Performance Standards (NSPS) as well as emissions guidelines in a Revised MACT Rule. These revisions lowered emissions limits for most regulated air pollutants. This revised rule is being challenged and may result in standards being made more restrictive than current levels for some pollutants. In addition, there is a revised rule with respect to fine particulate matter, which will impact waste to energy facilities in areas of generally sub-standard air quality.

The strong performance of waste to energy facilities with respect to controlling harmful air emissions, while producing electricity has been documented in a comparative study of landfill gas to electricity plants, waste to energy plants, nuclear power plants as well as those facilities powered by oil or natural gas. In terms of sulfur dioxide emission control on a per megawatt basis, waste to energy outperforms all other types of power plants. Similarly, with respect to nitrogen oxide emission control waste to energy plants outperform all other types of power plants with the exception of nuclear. Finally with respect to particulate matter control, waste to energy outperforms all plants with the exception of those fueled by natural gas.<sup>21</sup>

#### ***Health Impacts of the WTE Plant***

With its upgraded air pollution control system, the Wheelabrator Westchester plant operates under strict standards for air emissions and water pollution. Westchester operating permit was renewed in 2007 to run through 2012. In the permit review it was found to be in full compliance with all air emissions, health and safety procedures as well as materials separation procedures.<sup>22</sup>

Under strict scrutiny by both federal and state regulators, there have been no health concerns with respect to the plant. The main health concerns have been expressed with respect to the ash landfill which has been handling about 160,000 tons of ash per year since 1984. The town in which the landfill is located was concerned about noise and traffic. The town also undertook to have an independent environmental monitor study the site to determine if there was chemical leakage into the soil and groundwater as well as any harmful air emissions. The county also has to undertake quarterly monitoring of the site. Despite the town's concerns, both the independent and county monitors showed the landfill operating within acceptable limits. However, this landfill is now closed and the ash is going elsewhere.

### **POLITICAL AND INSTITUTIONAL IMPACTS OF THE WESTCHESTER WHEELABRATOR PLANT**

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<sup>21</sup> P. Ozge Kaplan, Joseph DeCarolis, Susan Thornloe. "Is it Better to Burn or Bury Waste for Clean Electricity Generation?" **Environmental Science and Technology**. 2009. 43. 1711-1717.

<sup>22</sup> New York State Department of Environmental Conservation, New York State Title V Air Permit Renewal, Permit #5-5344 00031/00014.

The construction of a WTE plant in Westchester County was the result of a consent order negotiated between the county and the federal court. The option of the status quo was not possible, since the county's only landfill was mandated to be closed under court order. The obstacles surrounding the implementation of a WTE facility were related to siting and the creation of an institutional framework around which the county could control waste flow to the plant and satisfy financing requirements. During the period in which the refuse disposal district was formed, there was friction between the county and certain of its municipalities. The seven localities that chose not to become members of the RDD did so on the basis of cost and the desire to remain independent of the county. Rural or exurban in character, located in the northern tier of the county, they felt they had little in common with the more urbanized, densely populated municipalities in the southern portions of the county. They were fearful that they would have to bear costs in excess of the service they would be receiving. They were able to opt out of the arrangement. Interestingly, in the latest contract renewal discussions several of these localities have expressed interest in joining the RDD.

Siting was another obstacle facing the county in pursuing a WTE facility. Numerous sites were rejected due to community opposition. Westchester County then entered into negotiations with Peekskill, for the Fleishmann site. However, the city would only agree to hosting the plant if it received annual payments to its general fund and school district as well as rebates on electricity charges to its residents. Both the County and Wheelabrator agreed and these payments were part of the operating agreement.

While there was not much opposition to the plant when it was built due in part to the dire situation in which the county found itself, some issues with perceived political impropriety developed in ensuing years. The county executive who negotiated the contract with Wheelabrator was elected Lieutenant Governor of the state in 1982. Two years later he left the job to become CEO of a subsidiary of Wheelabrator and later went to work for Wheelabrator. Similarly another public official involved in negotiations also left to take a job with a Wheelabrator subsidiary soon after the plant opened.

Minimal opposition surfaced around the current contract renewal with Wheelabrator. As has been mentioned above, most of the opposition surrounded the continuation of the use of the Sprout Brook Ashfill for the disposal of the ash. The community refused to agree to the county's request to extend the ash disposal contract for an additional five years. Ultimately, the county was forced to give in to community pressure. Under the new contract with Wheelabrator, the firm will be fully responsible for ash disposal at sites outside the county.

Finally, while there has been minimal opposition to the Peekskill plant, there is general opposition in New York State to the construction of any new waste combustion facility. New York City, upon closure of its landfill on Staten Island, is shipping its waste hundreds of miles to distant landfills, refusing to consider waste to energy as an alternative. When the city's new plan for solid waste disposal was debated before the City Council, and it was stated that some waste from Manhattan and Queens would be disposed at nearby waste to energy facilities, there was public outcry. Another indicator of public opposition came at the hearings on the state's renewable portfolio standard in 2004. As the Public Service Commission indicated in their report on the matter; "The issue of solid waste attracted by far the greatest volume of public comment,

in writing and at the nine publicforums held in various cities around the State. Thousands of letters were received opposing the inclusion of municipal solid waste (MSW) in the RPS; dozens, including State and local legislators and executives, supported its inclusion.”<sup>23</sup> Even the New York States’s new solid waste management plan gives minimal attention to waste to energy as a method of reducing greenhouse gases and conserving resources. It does not appear to have much of a place in the state plan going forward.

## **CONCLUSION**

The Westchester County Waste to Energy facility has successfully and without disruption disposed of approximately 15 million tons of refuse since it began full scale operation in October 1984. Just last year the plant celebrated its 25<sup>th</sup> consecutive year of service. These 15 million tons produced about 6.6 million megawatt-hours of electricity, which was enough to service about 600,000 homes since the plant has been in service. Born out of a disposal crisis facing the county, the plant has provided a stable disposal source and provided the central focal point around which the county was able to organize its solid waste management policies. With the creation of the RDD and the implementation of an ad valorem tax dedicated to solid waste, the county could develop a waste transfer system and construct a recycling processing facility. It has been able to broaden its services, working with its municipalities and private businesses to implement a broad array of recycling opportunities, with respect to electronic waste, yard waste, film and other plastics, vegetable oil, expired prescriptions. As of 2009, all of the county’s debt obligations with respect to the Waste to Energy facility have been paid. Under its new contract with Wheelabrator, it will pay a flat fee per ton of waste, which will allow the county flexibility to plan its future solid waste management strategies.

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<sup>23</sup> State of New York, Public Service Commission. “Proceeding on a Motion of the Commission Regarding a Retail Renewable Energy Standard. Case 03-E-0188. Issued and Effective September 24, 2004, p.39.