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Trash is turning into key power source for NJ

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By DAVID PORTER

KEARNY, N.J. (AP) - Standing atop the 400-acre 1-E landfill, you get a panoramic view of the Meadowlands sports complex to the north and the New York City skyline to the east. You're also standing on a critical part of New Jersey's, and the nation's, energy future.

Decades worth of household trash, construction waste and assorted refuse buried in the landfill is providing electricity to thousands of homes.

"It's like you're buying back your own garbage, but in a different form," said Tom Marturano, director of solid waste and natural resources for the New Jersey Meadowlands Commission, which owns and operates the 1-E site.

The Kearny site is among 21 landfills in New Jersey where methane gas produced by decomposing garbage is used as fuel to generate electricity, according to the state Board of Public Utilities.

That is almost as many as in the state of Texas, and more than the combined number in Georgia, Mississippi, Louisiana, Arkansas and Oklahoma.

Nationwide, the federal Environmental Protection Agency counts 455 landfills that use their methane to generate electricity and has targeted more than 500 more as potential candidates through its Landfill Methane Outreach Program.

One of New Jersey's leading environmentalists envisions the state's landfills someday making more use of their sites by installing wind and solar power to supplement methane.

"We see landfills as potential New Age energy plants, because you can combine all three and create a steady source of power - and not everybody wants a windmill in their back yard," said Jeff Tittel, executive director of the New Jersey chapter of the Sierra Club.

Marturano cautioned that adding wind farms might take a while since landfill surfaces are constantly shifting, but the Meadowlands Commission already has plans to install 20 acres of solar panels on the southern side of the 1-E landfill.

Gov. Jon S. Corzine's Energy Master Plan for the state touts landfill methane gas as one of the key renewable energy sources that the state hopes will combine to supply 30 percent of New Jersey's electricity consumption by 2020. According to the plan, New Jerseyans produce 6.7 pounds of trash per day, 50 percent more than the national average.

While wind and solar power are in their relative infancy in New Jersey - Corzine recently announced the state's first offshore wind power project - landfills in the state have been collecting methane gas and using it as fuel to generate electricity for more than two decades.

Mike Winka, director of the BPU's Office of Clean Energy, said new landfills in New Jersey are required to be designed to accommodate methane gas collection.

Existing landfills can produce methane long after they've been shut down.

For example, the freshest garbage in the Kingsland landfill, adjacent to 1-E, dates from 1987, according to Marturano.

That means the half-eaten Big Mac you threw away at the end of the Reagan administration may be helping to light your neighbor's home today.

Marturano estimates the 1-E landfill can keep collecting methane for 20 more years or so. He said the energy produced by the four landfills in the Meadowlands district powers about 25,000 homes.

The Edgeboro landfill in East Brunswick, operated by the Middlesex County Utilities Authority, has been collecting methane since 2001 and currently generates about 13 megawatts of electricity, enough for about 13,000 homes for a year, according to Public Service Electric and Gas, the state's largest utility.

The Middlesex County agency uses the electricity generated by the Edgeboro landfill's methane to power the county's wastewater treatment plant in Sayreville. Last year, that saved the authority about \$3 million, according to executive director Rich Fitamant.

Methane gas is produced by microorganisms that feed on organic matter in trash. The bacteria are not picky eaters and have adapted to feasting on wood, cardboard or plastic if food waste isn't available. "It's evolution on a fast track," Marturano said.

Long tubes with perforated bases are drilled down into a landfill to collect the methane gas, which then is used as fuel to drive generators. Inactive landfills like 1-E are capped, usually with a plastic or rubber covering that prevents excess gas from escaping.

"People used to think of the landfills as wasted space," Marturano said. "But we're turning them from the juvenile delinquents of the district into productive members of society."