

Producing green power, profit

Waste byproduct will no longer go to waste

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Your garbage gives gas to Mount Rumpke.

Starting Monday, that indigestion - methane gas generated by, among other things, rotten oranges from the garbage of homes in Southwestern Ohio, moldy grapes from Northern Kentucky and smelly scraps from last weekend's barbecues in Southeastern Indiana - will be recycled and readied for natural-gas pipelines at the largest recovery plant of its kind in the world.

The \$10 million Montauk Energy Capital Plant sits at the base of the man-made mountain known as the Rumpke Sanitary Landfill.

The new plant - plus the landfill's existing 20-year-old gas-recovery system - can refine 15 million cubic feet of methane gas a day. With an average retail price of \$13.50 per 1,000 cubic feet of gas in Ohio - according to the U.S. Energy Information Administration - that daily gas supply is worth \$202,500 on the retail market. That's \$73.9 million a year, all from garbage.

The daily output of 15 million cubic feet at this round-the-clock operation can produce enough natural gas to fuel 25,000 homes - as many as there are in Colerain Township.

"This plant is doing its part with technology that is as green as it gets, to cut down on greenhouse gas emissions while using a renewable resource and cutting down our dependence on foreign oil," said Dan Bonk, an engineer and director of business development for Montauk. The Pittsburgh firm owns, operates and staffs the new plant as well as similar ones in its hometown and Houston.

The Rumpke site "is the largest of its kind in the world from a capacity standpoint," Bonk said.

He pointed to 24-inch pipes moving methane gas from the landfill and into the system. All around him, compressors hissed, generators hummed, and filters whirred as the system went through its shakedown phase.

- **[Video: How does it work? Take a tour with Dan Bonk of Montauk Energy](#)**

The world's second-largest gas-to-pipeline energy production plant can be found at Staten Island's Fresh Kills Landfill. That site, the final resting place for the debris from the World Trade Center, produces 14 million cubic feet of gas a day.

"We would much rather recycle this gas and see it turned into natural gas than flare it off or burn it through a smokestack," Rumpke vice president Jeff Rumpke said. "This way, we're taking a waste and turning it into something positive."

And profitable.

Montauk buys the gas from Rumpke, sells the refined product to Duke Energy and pays a royalty to Rumpke.

The 1.5-acre plant resembles a small refinery. With its system of landfill wells, pipes, pumps, holding tanks and filtration devices, the operation takes methane - a gas produced by decaying garbage - and in minutes strips out impurities. Away go molecules of water, carbon dioxide and hydrogen sulfide - which gives garbage its rotten egg-type smell.

"Landfill gas is a slightly different animal from natural gas out of an oil well," Bonk noted.

"Oil-well gas is effectively 100 percent methane. Landfill gas is 50 percent methane and 50 percent carbon dioxide," along with water and hydrogen sulfide.

At the end of the refinery's line, the gas goes into a Duke pipeline. From there, the landfill's byproduct is processed into natural gas suitable for lighting a burner on a nearby home's cooktop.

Bonk sees no shortage of the plant's raw material.

"As long as they keep dumping garbage on top, it will keep decaying and producing gas," he said.