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The Mountain Home Energy Center (MHEC) □ a combined heat and power plant located on the campus of the James H. Quillen Veterans Administration (VA) Medical Center □ burns the high-BTU landfill gas in a boiler and engine as a direct replacement for natural gas. MHEC supplies steam, power and chilled water to the VA hospital, several East Tennessee State University buildings and a large civic center. To ensure that MHEC receives gas that is clean, dry and free of impurities such as siloxanes and volatile organic compounds, the gas is cleaned using Air Liquide-MEDAL's membrane separation system and the SulfaTreat system, which removes hydrogen sulfide.

Before constructing the four-mile pipeline along a city right-of-way that passes through dense residential development, Johnson City launched a public awareness campaign, including sponsoring meetings, publishing newspaper articles, and distributing door hangers, to keep residents informed of the project developments. In addition, Johnson City and Waste Management operate an educational center at the landfill; storyboards show visitors how landfill gas is generated, collected and processed for steam and power generation.

As a result of this project, Johnson City receives a steady stream of revenue from the sale of landfill gas. The VA pays ESG a stable price for landfill gas, and ESG expects to recover its investment during the 25-year life of the project. In fact, the project was so successful that ESG is considering applying the same technology to similar landfills.

## Project of the Year

### **Southeastern Chester County Refuse Authority (SECCRA) Landfill Gas Energy Project: Chester County, Pa.**

In Chester County, another small landfill (250 scfm) proved viable for a landfill gas energy project. SECCRA, a public entity, developed this project on its own, without the assistance of a third-party developer. Five years of planning led to economic benefits that exceeded expectations. The project generates nearly 1 megawatt (MW) of green power, which is sold to PJM Interconnection, a regional transmission organization based in Norristown, Pa., that coordinates the movement of wholesale electricity. With gross income expected to be \$500,000 in 2007, SECCRA anticipates recovering its initial investment of \$3.2 million in eight years.

SECCRA empowered its staff to hire a team of outside experts, learn about the interconnection to the utility and construct the project. The team of experts included LMOP partners American Environmental Group, Caterpillar, Concord Engineering Group, DCO Energy and Roman Consulting. DCO Energy served as design engineer, and Roman Consulting acted as project manager.

□By turning the gas into useful electricity, we are offsetting the use of fossil fuels and creating value that didn't exist before, □ says Rick Cairns, chairman of SECCRA's board of directors. □On all fronts, this is a win-win project. □

The staff found creative ways to generate additional revenue and promote green power. For example, to realize the best rate for electricity sales, SECCRA Power became a member of PJM Interconnection. Participation in the PJM real-time wholesale market enables SECCRA to sell electricity at the market rate rather than at a low fixed rate. Revenue has averaged \$35,000 each month. In addition, sales of renewable energy credits has generated \$83,000.

## Energy Partners of the Year

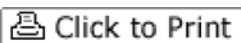
### Alameda Power & Telecom and the City of Palo Alto: Watsonville, Calif.

When the city of Palo Alto, Calif., committed to increase the percentage of its electricity load from renewable energy in 2002, it looked in its own backyard for resources. Tapping renewable energy from local landfills would help Palo Alto meet the city's own clean energy goals. To create demand for this green power, the city developed the PaloAltoGreen program, and customers signed up in record numbers.

To meet the community's demand for green power and its 2002 pledge to obtain 10 percent of its power from newly acquired renewable energy sources by 2008 □ 20 percent by 2015 □ Palo Alto teamed with Alameda Power & Telecom to pursue landfill gas opportunities. Since 1999, Palo Alto and Alameda had been working with LMOP and LMOP partner Ameresco to buy or generate renewable energy from landfills. LMOP provided the city with information on landfills in northern California and their potential for project development. Eventually, the two community-based power generators agreed to buy landfill gas energy from the Buena Vista Landfill, which generates 3.2 MW of green power and is owned by Santa Cruz County.

#### Find this article at:

[http://www.wasteage.com/Landfill\\_Management/waste\\_wealth\\_lmop\\_energy/index1.html](http://www.wasteage.com/Landfill_Management/waste_wealth_lmop_energy/index1.html)



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