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Finding energy savings in unlikely places

Bergen County taps sewage sludge to lower utilities bills



By Shankar P.

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Cogeneration of energy — where heat generated by a power plant is captured and used for heating or chilling — is increasingly popular among businesses and other organizations in the state, insiders say.

Lower energy bills, the use of cleaner fuels and incentive programs appear to be the key drivers, said **Fred Eckert**, senior vice president of **Energenic LLC**, based in Hamilton's Mays Landing section, which installs and operates cogeneration facilities. And a proposal to exempt sales tax, making smaller-sized units feasible, now awaits the governor's signature, he said.

Energenic so far has built six cogeneration power plants in the state with a collective generating capacity of 200 megawatts, Eckert said. Among those are casinos, hospitals, utility authorities, colleges, food processing units and correctional facilities.

Frank DiCola, president and chief executive of Energenic, said cogeneration facilities also cut out transmission and distribution costs utilities charge, which is close to 30 percent, he said.

DiCola said a 2-megawatt plant would cost about \$4 million, and would pay itself back with savings in four to five years; rebates and investment tax credits could reduce it to three years.

Large facilities that use power and heat, or steam or chilled water, simultaneously and operate around the clock are ideal candidates for cogeneration facilities, Eckert said. These units don't make economic sense for

residential dwellings because of the investments in piping and related infrastructure, he added.

The Bergen County Utilities Authority in Little Ferry has found cogeneration of power particularly attractive because its raw material is free — sewage sludge from its 570,000 residents.

A \$12 million cogeneration plant Energenic installed for the utilities authority has helped it save more than \$1.2 million in the nine months since it was set up, said **Eric Anderson**, its chief engineer and director of its water pollution control division. Further, it reduces emissions, and the biogas from sewage is “now being used beneficially.”

The plant produces 22 million kilowatt-hours of electricity out of the 29 million kilowatt-hours the county authority uses annually, reducing its dependence on the regional grid. Anderson said he expects to save \$26 million over the 25-year life span of the cogeneration plant.

The Essex County Department of Corrections is another savings-happy user of a cogeneration plant, said **David Boyd**, its business manager and facilities manager. “You’re always going to have to turn on the lights in our facility, and provide meals that utilize electricity, gas, heat and hot water,” he said.

The Energenic-built plant is installed at the Essex County Correctional Facility in Newark, and helps it save close to \$500,000 annually, Boyd said. About \$360,000 of that comes from the sale of surplus power to a refrigerated storage facility in the vicinity, he said. It saves another \$115,000 from reductions in energy bills because it uses relatively cheaper natural gas as fuel.

The power and heat generated by the cogeneration plant at the correctional facility supplies the four buildings on its 880,000-square-foot campus, which have an average of 2,300 inmates, Boyd said.

Energenic now plans to explore the market for cogeneration facilities among small and midsized users of power, Eckert said. It is encouraged by the state’s incentives, especially one offering a sales tax rebate. In late February, a bill Assemblyman **Upendra Chivukula** (D-Somerset) co-sponsored promises those rebates, and should make smaller units more economical.

The New Jersey Clean Energy Program already offers incentives for cogeneration plants, or combined heat and power facilities. Those incentives range from 50 cents to \$4 a watt depending on the fuel and the equipment used, with a maximum of \$1 million for each project.

Another bill seeks to provide performance-based rebates of at least \$450 a kilowatt “to encourage private investment in the high upfront capital costs to

construct a new cogeneration facility,” according to the state’s energy master plan, which aims to produce 1,500 megawatts from cogeneration facilities by 2020. That goal opens up a potential market for “several hundred facilities,” Eckert said.

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