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# Byproduct methane provides cheap power for water treatment plant

After nearly three years of hassles, Watsonville's waste-water treatment plant is now recycling some of its own power.

The treatment plant is being powered between eight and 10 hours a day by methane gas, a byproduct of the breakdown of organic matter in the waste-water treatment process.

Previously, the plant had "flared" or burned off the gas it produced. The gas is now burned to produce electricity and heat for plant operations in a process known as cogeneration.

The process is expected to save the city \$125,000 a year in power costs. The plant is using the methane gas during so-called daily "peak hours" when PG&E charges the most for electricity. During the second-most expensive hours, it burns natural gas in the cogeneration plant. At night, when power costs are the lowest, it uses electricity from PG&E.

Money is also saved through the use of heat generated when the methane gas is burned for its boilers and digester tanks, which need

to be kept at 90 degrees.

The city ran into a number of problems installing the new set-up. There was trouble with the contractor, a subcontractor doing the work went bankrupt and went out of business, and there were technical and regulatory difficulties.

"It just took that whole three-year period to get operational," said Bob Geyer, the city's waste-water division manager.

Geyer said a city employee helped the plant get over its final hurdle, allowing the cogeneration to start up three weeks ago.

Sus Nagai, the plant's maintenance supervisor, asked if he could try his hand at making some needed modifications. A contractor had given the city a \$65,000 bid for the work. Nagai sketched up his ideas and made the modifications over a weekend.

Air emissions from the plant were tested two weeks ago and came in at 10 percent of what is considered allowable, he said.

Geyer said it's possible that in the future the plant will be able to operate longer on methane gas.

Right now, it simply doesn't produce enough because it is only operating at about a third of its capacity. If and when the city grows, and more waste-water comes into the plant, more methane will be produced, he said.

Because it's so much cheaper to run on the methane gas, Geyer said the city encourages private waste haulers to use the plant.

"We're always out recruiting for those guys," he said.

There are also some plans to pipe in the methane produced at the city and county dumps for use at the treatment plant, Geyer said.

Right now, the Santa Cruz County dump flares off its methane gas. The city lets the gas disperse naturally into the air.

Geyer said the city and county are talking about the feasibility of running a gas line to the plant from the dumps, which are right next to each other.

Geyer estimates that the additional methane from the dumps could run the plant for another one or two hours a day.

—Chela Zabin