

Methane production pays off for counties

By CHARLIE BAN
 STAFF WRITER

Digging deep into landfills is paying off for some counties that are finding gas that is valuable in more than one way.

Decomposition in oxygen-free environments such as under piles of garbage produces methane, a greenhouse gas that traps heat in the atmosphere 20 times more effectively than carbon dioxide. Methane emissions can be traded for carbon offset credits, but it is also a valuable source of energy.

King County, Wash. is making a killing selling methane from its landfill to Puget Sound Energy (PSE) for an estimated \$500,000 per year. And because King County is no longer releasing that methane into the atmosphere, it can sell its unused emissions credits to the company for another \$500,000. The contract's initial term is 11 years, with provisions to extend it another nine years.

"King County is taking advantage of the emerging renewable energy market to turn landfill gases into energy to power people's homes and revenue for the county," Councilman Larry Phillips said. "As one of the first and largest projects of this kind in the nation, we are demonstrating that reducing greenhouse gas emissions through innovation pays off."

In Michigan, St. Clair County's methane capture plan will not only net \$200,000 a



Photo courtesy of CTI and Associates

Septic tanks store sewage that is later injected into St. Clair County, Mich.'s bioreactor to accelerate methane production.

year, but will also help the county to delay buying more landfill space until the tail end of the century. The county recently signed a contract to provide methane gas produced at its landfill to DTE Energy, the main energy supplier for the Detroit metropolitan area.

St. Clair County's three-acre landfill, which serves 170,000 people, is much too small for most energy companies to bother building converters to turn methane into energy, according to Morgan Subbarayan, the county's consultant. The county's septic bioreactor, however, speeds the decomposition process that produces methane seven fold.

The bioreactor injects sewage into decomposing materials, accelerating the release of methane, Subbarayan said. The procedure, which required a change in Michigan law, "expedites the decomposition, creating as much methane as a much larger landfill would naturally, using the land more efficiently."

County Commissioner Howard Heidemann, who has watched the project develop over the past three years, expects the methane converter to be completed by the end of the year. In addition to creating valuable methane, the bioreactor will allow the county to use the landfill much longer than anticipated. Opened in the 1960s, it should now last until at least 2075, 40 years past its original lifespan, Heidemann said.

"We're coming as close as possible to developing what can be considered a perpetual landfill," he said. "Landfills are one of the original not-in-my-backyard hot buttons, and we've managed to make it productive and limit the need to expand ours in the future."

For St. Clair County, necessity was indeed the mother of invention. The septic bioreactor came off the drawing board because waste from the the landfill was leaking into the groundwater.

Kentucky county methane burn also yields rewards

Pike County, Ky. may not yet be marketing its methane to power companies, but in a NACO Achievement Award-winning program, it is collecting methane through 11 wells at its landfill. That methane is then burned off, producing carbon dioxide (a much less potent greenhouse gas) and water. That process should earn the county roughly \$270,000 a year in carbon offsets, said Brandon Roberts, Pike County spokesman.

"We figure the EPA was going to make it mandatory in the future anyway, so we're just ahead of the curve," he said. "If we can sell it instead, it will be that much better for the county. We're still strongly pro-coal and pro-natural gas, but this furthers our commitment to being a 'green' county."