

Turning hog waste into electricity

By Frank Vinluan

RALEIGH – Orbit Energy is taking off with a Sampson County facility now ready to produce electricity from hog waste and plans to seek \$4.5 million in financing from institutional investors to get another two plants off the ground within two years.

Anwar Shareef, CEO of the Raleigh company, says Orbit's facility in Clinton has been in testing for most of the past two years. The North Carolina Utilities Commission on June 19 accepted the company's registration of a new renewable energy facility, and Shareef says Orbit has begun negotiations to sell energy produced at the Clinton plant to Progress Energy. He expects to put the plant in service by September 2009.

Orbit's goal is to launch a total of 12 such plants around the country by 2012. Shareef notes that the technology can use food waste and other organic material as fuel and that future plants would not necessarily rely on pig waste.

"It will probably find a broader application because wherever people live, there is food and food waste, unlike swine waste,

**'... WHEREVER PEOPLE
LIVE, THERE IS FOOD AND
FOOD WASTE ...'**

ANWAR SHAREEF
CEO, ORBIT ENERGY

which is concentrated only in certain parts," he says.

Sam Watson, a utilities commission staff attorney, says that because Orbit's facility will produce fewer than 2 megawatts of power, it does not need a certificate from the commission to operate. But like any renewable energy facility, it did need to file a notice of proposed construction. Watson says the amount electric utilities pay vendors for power is set by the utilities commission every two years.

Orbit's technology generates electricity by breaking down animal waste through a process called anaerobic digestion. The

SEE ORBIT PAGE 43

ORBIT: Company says it has raised \$2 million from investors and nearly \$2.5 million in grant funds

FROM PAGE 4

process creates methane gas, which is burned to power an electric generator. The facility in Clinton, which is about 60 miles southeast of Raleigh, can generate up to 1.6 megawatts of power. Shareef says it will use organic and swine wastes from Sampson County farms. According to documents Orbit filed with state regulators, the facility will require up to 37 tons of organic waste a day.

The system Orbit uses was developed by the U.S. Department of Energy. Orbit acquired the equipment and intellectual

property from Organic Biotechnologies in 2004. Orbit has raised \$2 million to date from individual investors, plus nearly \$2.5 million in grant funding. The majority of Orbit is owned by Alpha Gamma Technologies, a Raleigh company also led by Shareef.

Anaerobic digesters have been around since the 1970s, but they haven't found widespread adoption, says Joe Rudek, a senior scientist at the Environmental Defense Fund. But he says prospects for the technology are brighter now. Utilities in North Carolina are turning to more alternative sources of energy following a

legislative directive last year requiring that 12.5 percent of utilities' power generation come from renewable sources by 2021. The law says that at least 0.2 percent of that renewable energy must come from swine waste.

Rudek says the technology is proven. Operators now are trying to show that it's economically viable.

Sarah Liehr, a North Carolina State University professor in the Department of Biological and Agricultural Engineering, is researching the economic potential of the Clinton facility. She says Orbit's operation is particularly interesting because it will

have economic value beyond the electricity production. The process' other byproduct is compost, which can be sold.

Shareef says Orbit expects a third revenue stream from the process. He says the company will collect "tipping fees," which is money a waste producer would pay a landfill to take its waste. Shareef says that Orbit's tipping fees will be competitively less than what a landfill would charge. But he says Orbit will still make money because the organic waste will be a fuel for anaerobic digestion whose byproducts – methane and compost – would have more value than waste sitting in a landfill.