

## **Startup FlexEnergy Aims To Generate Power From Landfills**

*ENERGY: \$18M raised, pilot system, HQ expansion in works*

By Chris Casacchia

**Orange County Business Journal**, January 9, 2011-- 2011 could be a big year for Irvine's FlexEnergy LLC, a startup that's hoping to reach viability on a system that turns methane gas from landfills into electrical power.

The company has test projects in place, its first commercial deal in the works, a recent \$8 million round of funding and expansion plans for its headquarters.

FlexEnergy's near-term goal is to produce its Flex Powerstation, a turbine and other equipment that breaks down methane gases and converts them to electricity with nearly no emissions.

The Flex Powerstation, designed to be installed at landfills, goes for about \$800,000. It stands some 17 feet high and weighs 12 tons.

Each Flex Powerstation can produce 250 kilowatts of power daily, enough to power about 250 homes.

"This is a new industry that's using something that's wasted every day," said FlexEnergy Chief Executive Joe Perry, a physicist by training.

### **Market**

There are about 515 U.S. landfills that have high enough methane concentrations to produce commercial energy, according to the Environmental Protection Agency.

Those landfills and other sites, such as former oil fields, are FlexEnergy's starting market.

There's big competition: Houston's Waste Management Inc., the largest the trash hauler and landfill operator, dominates landfill energy. It has 110 projects that generate enough energy to power 400,000 homes a day.

FlexEnergy hopes to eventually provide power stations to Waste Management projects, according to Mike Levin, the company's director of government affairs.

Other rivals include General Electric Co. and Capstone Turbine Corp., which make equipment for converting landfill waste into energy.

A business that buys one of FlexEnergy's powerstations can use the energy itself and sell any extra power to a utility.

The powerstations also can extract energy from coal mines and old industrial plants. The company is concentrating on landfills because so many have been identified as ready for commercial power generation.

"It's an environmental cleanup that has financial viability," Perry said.

Late last year, Flex-Energy acquired the energy systems business of Ingersoll Rand Co. The division makes microturbines, microturbine systems and recuperators that go into power stations.

FlexEnergy's first commercial system is set to be installed in April at the Army's Fort Benning in Georgia.

The deal at Fort Benning follows a pilot plant set up last year at the Lamb Canyon Landfill in Riverside County, a project done with the County of Riverside Waste Management Department.

Testing is set to continue throughout this year on the system, which generates about 30 kilowatts a day.

Another pilot system is set to be installed in France later in the year, according to FlexEnergy.

The commercial deal and test projects come after 10 years of research and development, by FlexEnergy, one of several hopefuls in the county's fledgling clean technology sector.

Clean technology is a broad sector, including alternative energy, pollution control, recycling, green vehicles, energy-efficient lighting and other products and services.

The county is home to nearly 300 clean tech companies that employ about 20,000 people according to the Orange County Business Council and trade group CleanTech OC.

The sector has been buoyed by tax breaks and other incentives for businesses that convert to clean energy technology.

The local clean tech sector is attracting venture capital, with more than \$150 million invested in 2010.

FlexEnergy got a head start thanks to a research breakthrough on its process two years ago.

Since then, it has secured \$18 million in funding, including the recent \$8 million round.

Major backers include Irvine-based Sail Venture Partners, which has invested some \$50 million in local clean tech companies, and RNS Capital Partners, a Newport Beach private equity firm.

The latest round of \$8 million is set to help FlexEnergy roll out a commercial line this year and help fund a move to a larger headquarters.

The company is looking to relocate to a 35,000-square-foot space in Irvine from its current 8,000-square-foot headquarters by the end of the June “to support expansion in sales, marketing and engineering,” Perry said.

The added space also is set to house a distribution center for replacement parts for its systems.

FlexEnergy also plans to add more than 40 positions next year. A year ago, the company had eight employees. Today it has nearly 100.

Part of the company’s strategy has centered on improving its management and board.

In June, Stephen Johnson, former head of the EPA, joined FlexEnergy as a director.

Johnson also is an investor.

He made the decision after watching the pilot system in Riverside County.

“It’s truly a game-changing technology,” said Johnson, who served under President George W. Bush. “It really solved a number of the classic problems dealing with methane gas.”

The system can minimize air pollutants in congested cities and industrial sites, as well as provide energy in remote areas around the world, according to Johnson.

“Imagine putting up a system like this in a part of the developing world where there isn’t a power grid,” he said.

In late September, Levin, cofounder of CleanTech OC and until recently a partner in Bryan Cave LLP's office in Irvine, joined FlexEnergy as director of government affairs.

**Founder**

The company was founded by Edan Prabhu, a former executive at Southern California Edison Co. who managed the design and construction of a 20-megawatt geothermal power plant and served as a project engineer for nuclear power, coal, oil and gas fired plants.

Prabhu, who was on President Clinton's National Biomass Advisory Committee, now is a consultant at FlexEnergy.