

Renewable-power plant planned for Apex landfill

\$35 million facility makes energy from methane gas

BY TONY ILLIA

Republic Services is turning refuse into renewable energy.

The Phoenix-based disposal company recently announced plans to build a \$35 million methane gas-powered plant atop the Apex landfill about 19 miles northeast of Las Vegas. The 2,200-acre Apex waste repository is the country's largest landfill, with the capacity to safely store Southern Nevada's discarded debris for next 200 years.

"Using landfill gas for electric power production provides an additional source of clean, domestically fueled energy production," Republic Services Southern Nevada President Joe Burkel said. "This is an invaluable opportunity to use the gas produced at the landfill for energy generation and further endorses our mission to reduce our carbon footprint as a company."

Republic has tapped Energenic to design, build, maintain and operate the 11-megawatt power plant. Energenic is a joint-venture between Mays Landing, N.J.-based DCO Energy LLC and Marina Energy LLC, a unit of Folsom, N.J.-based South Jersey Industries. The project already has a 20-year deal with NV Energy to buy the plant's power. The electricity will initially cost 9 cents per kilowatt hour and gradually increase to 11 cents per kilowatt hour by 2030.



COURTESY OF REPUBLIC SERVICES

A new \$35 million methane-gas power plant at the Apex landfill will generate enough electricity for 9,600 homes while saving the equivalent of 83,800 passenger vehicles of greenhouse emissions annually.

The plant will generate roughly 96 million kilowatts of electricity a year or enough power for 9,600 average households. NV Energy must get one-quarter of their electricity from renewable energy sources by 2025, as per a state mandate. The methane plant will connect to a new substation that links up to NV Energy's 12.5-kilovolt electrical distribution system; it's the same system that now powers the Apex operation.

The project will create 25 construction jobs, plus 3 permanent positions upon completion. The plant, on 1.5 acres, uses landfill gas to fuel two Solar Centaur 60 combustion turbines manufactured by Solar Turbines, a subsidiary of Caterpillar Inc. Methane gas will be drawn from 36 vertical and horizontal wells up to 300 feet deep that tie into a header system to treat sulfur content. Next, gas is filtered for moisture and particulates then is compressed and injected into 5.5-megawatt air-cooled turbines that generate electricity. Emissions are treated by a selective catalytic reduction process that removes harmful nitrogen oxides from the exhaust plume.

"Landfill gas to energy technology is a crucial component to our clean energy future," Energenic President Frank DiCola said. "This will be one of the few landfill-gas facilities in the country with postemission treatment making. This a very green project."

The plant will capture 60 percent to 90 percent of the methane gas created by the landfill during its operational life. Apex stores nearly 50 million tons of rotting trash, with

another 9,000 tons or so being added every day. Construction is expected to last about eight months, with commercial plant operation starting later this year. There are now 500 operating landfill-gas energy projects nationwide that combined reduce greenhouse emissions comparable to 18 million passenger vehicles and reduce carbon dioxide emissions the equivalent of 216 barrels of consumed oil.

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FAST FACTS

Project cost: \$35 million

Power: 11 megawatts

Wells: 36

Turbines: Two

Kilowatts: 96 million hours annually

Size: 1.5 acres

Jobs: 28

Finish: Late 2011

Construction: Eight months