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Metro awards rights for methane plant

By MICHAEL ROLLINS
of The Oregonian staff

Biogas Technology Inc., a subsidiary of Northwest Natural Gas Co., was awarded the right Thursday by the Metropolitan Service District to recover and sell methane gas from the St. John's landfill.

The gas-recovery plant, which could be operating as soon as this fall, could bring up to \$9.3 million in revenue over the next 16 years, to be split between Metro and the city of Portland, which owns the landfill.

Biogas has developed a gas-recovery technique that uses a porous skin that separates the methane gas from carbon dioxide. That process is much less expensive than using the current method of water as the cleansing agent, said Doug Yocom, Northwest Natural Gas spokesman.

Methane gas is created at the landfill through the decomposition of biological waste.

The St. John's plant would produce 1.6 million cubic feet of gas a day when operating at peak efficiency, enough to heat about 7,500 homes.

Biogas also operates the Rossman's Landfill gas-recovery plant in Oregon City, the only such plant in the nation that uses the porous skin process.

John Van Bladeren, president of Biogas, said after Metro approval that his company would invest up to \$60 million in the next five years building gas-recovery plants at an estimated 40 plants nationwide.

He said Metro and the city of Portland were offered a favorable financing package to make certain Biogas received the St. John's contract. He did not list specifics but said, "it comes down to this. If you can't sell it in your own home, how can you sell it in Chicago."

He said Biogas would be making immediate moves to try and land gas-recovery contracts for five landfills in Chicago, the smallest of which is larger than St. John's. He said a recovery plant also was being considered for a landfill in Las Vegas, Nev., and a sewage treatment plant in Hillsboro.

He predicted a healthy future for Biogas, for the simple reason that people will produce garbage and sewage "to doomsday."

Metro councilors followed the advice of staff and consultants in choosing Biogas. The alternatives were for Metro to try and recover and sell the gas or for a local company with natural gas needs to try and recover the methane.

Councilors also heard from George Ward, a Portland consulting engineer, who praised Metros efforts to utilize the creation of methane gas in the landfill.

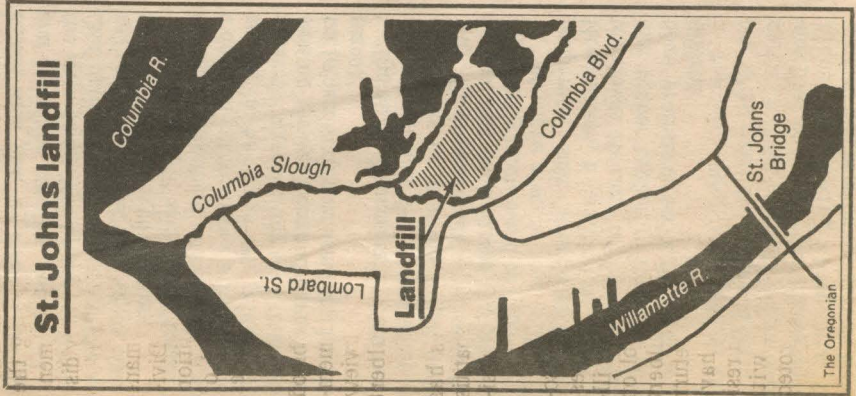
He said landfill planning should be taken one step further, with selective placement of organic wastes. This would create more methane gas in purer concentrations, he said. Landfill methane gas now is about 45 percent carbon dioxide, and Ward said that figure could be reduced to 30 percent.

In other matters, Metro councilors: — Approved steps to create and fill the position of a full-time development director and part-time development analyst for the Washington Park Zoo.

— Approved steps to create and fill a position of program coordinator for the zoo's naturalist program. This would allow a "sidewalk zoologist" program to be expanded within the zoo and out into the community.

— Passed a resolution affirming the right of the state to find a landfill site in the tri-county area.

— Postponed a vote on a resolution in support of a legislative bill that would have more rigidly delineated how the state could site a landfill in the area.



Gas from garbage project to expand

By JULIE TRIPP
of The Oregonian staff

With the success of its methane gas recovery project now demonstrated at the Rossman Landfill near Oregon City, the Northwest Natural Gas Co. subsidiary that extracts the gas from garbage now is expanding to four other area landfills, and to other national and international marketing.

BioGas Technology Inc., the subsidiary, is planning a \$60 million capital investment in the innovative system within the next five years.

Monday, a delegation of Chinese from Tianjin viewed the Rossman Landfill recovery plant, which has been operating since September and now produces up to 800,000 cubic feet of methane a day, enough to heat 3,700 homes.

Tianjin is a city of 8 million, and the Chinese are interested in the technology that BioGas uses to make the methane recovery economical. After a short visit at the site, the delegation leader told BioGas President John Van Bladeren that he would discuss the possibility of doing business with BioGas with his associates and would contact the company later.

The Israelis also are interested in the process and are sending a team to check it out within a month, said G. Paul Harding, operations supervisor of the plant.

Meanwhile, BioGas has reached a preliminary agreement with the Metropolitan Service District to build a gas recovery plant twice the size of the one in Oregon City at the St. Johns Landfill in Portland. Once fully developed, that site could extract 1.6 million cubic feet of gas a day, enough for 7,500 homes.

BioGas would sell the recovered gas to its parent company, providing royalties to the service district and to the city that could reach \$9 million over the life of the agreement. The city owns the St. Johns Landfill and the

district operates it.

In addition, BioGas is negotiating with landfill sites in Hillsboro, Salem, and in Longview and Vancouver, Wash., Van Bladeren said. Talks also are being held with landfill operators in Kansas City, Mo., Chicago, St. Louis, Reno, Nev., and in New Jersey.

The object of all the interest is the BioGas method of separating carbon dioxide from methane gas. Others in recent years have tried recovering methane from garbage dumps for use in pipelines, but by different and more expensive chemical washing methods.

BioGas is one of the first to use semipermeable membranes to filter the methane from the carbon dioxide. Using membranes manufactured by a Houston company, Separex Corp., the gas is less expensive to produce and is of higher purity.

The rest of the method is basic, once the separation hurdle is overcome. Methane gas is produced naturally from the decomposition of organic materials such as garbage, wood and solid wastes. As the 30,000 to 35,000 landfills in the nation are covered over with dirt, methane is being produced in all of them. It had been burned off in the past.

At the Rossman Landfill, however, BioGas has invested about \$1.4 million in the collection and recovery system, which is starting to pay for itself now. Wells have been dug into the landfill to tap the gas, and perforated plastic pipe and trenches gather the gas and move it to the plant. The gas is compressed and filtered through carbon before it enters the membrane to separate out the methane.

Once most of the carbon dioxide has been removed, the gas enters a Northwest Natural Gas pipeline and mingles with the company's other gas to heat homes throughout the state.

Van Bladeren has been contracted



GAS PLANT VISIT — John Van Bladeren, BioGas, explains process of extracting methane

ing on marketing the technology, through joint ventures with landfill owners or through outright ownership by BioGas. But in the future, he is looking at selling the carbon dioxide as well as the methane, for industrial uses such as quick-freezing in the food processing field.

For landfill operators, the system is a boon because royalties from the gas sales provide some income and objectionable smells from the dumps are reduced when the methane is "mined."

"It still doesn't smell like perfume here," Van Bladeren said while standing next to the old Rossman landfill, "but compared to what it was, it's a huge improvement."



GAS PLANT VISIT — John Van Bladeren, president of BioGas Technology, explains process of extracting methane gas from garbage at Ross-

man Landfill near Oregon City to Luke W.Y. Lee, interpreter for group, as delegation leader Ma Jun-Xin (left) listens and asks questions.

The Oregonian/BOB ELLIS