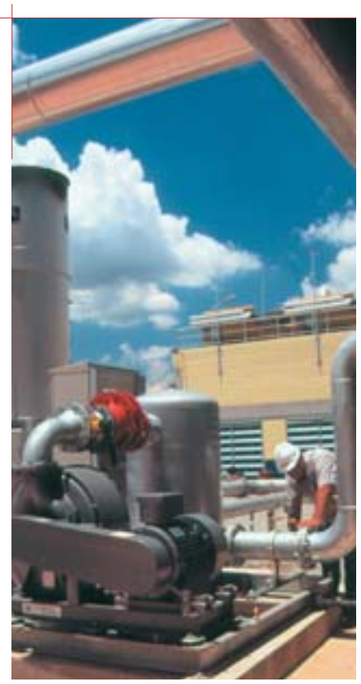
Winning Energy from Garbage

Bacteria Having a Ball

Bandeirantes... It sounds like a beautiful dance, but it is the name of a landfill in São Paulo. The city's ten million inhabitants produce over seven hundred truckloads of solid waste every day. More than half of that goes to the Bandeirantes landfill. But with garbage, you can do beautiful things.



This mobile blower removes solid and liquid parts from the biogas before it enters the power plant

"Most of São Paulo's garbage is not separated into recyclables and non-recyclables," explains the plant's operation manager, Julio Cesar do Prado Jr. "That makes this garbage very 'rich': ideal food for a special type of bacteria. When these bacteria degrade garbage, they produce biogas. Biogas is primarily a mixture of carbon dioxide and methane. Many people cook with methane gas, but power plants can use it to produce energy. And that is what they are doing in São Paulo."

São Paulo opened the bidding for the rights to use the biogas at the Bandeirantes landfill in 1996. "Together with the contractor that operates the landfill, we won that bid," says Bertram Shayer, one of the directors of the newly founded company Biogás. "Nevertheless, we had to wait until last year for better business conditions. Dutch Van der Wiel Stortgas BV joined the venture then." The new company, which invested 3.5 million euros in this project, has a twelve-year contract for gas delivery, worth 32 million euros. "Biogás will collect twelve thousand cubic meters of gas per hour, 24 hours per day, 365 days per year. This is enough to produce electricity for 400,000 people," Bertram says.

LESS GLOBAL WARMING

"But there are other benefits," adds Manoel Antonio, author of the project concept. "After fifteen years of operation, the new plant will have prevented eight million tons of methane and carbon dioxide from being released to the atmosphere. That is very good in terms of slowing global warming. The plant will also provide a boost for the energy sector in general. Some areas of São Paulo, as well as other areas of Brazil have had occasional blackouts. This is the result of insufficient investment in the sector for years. With a brand new plant, there will certainly be no blackouts in its surrounding areas."

PROUD AND ENTHUSIASTIC

The Biogás project was officially opened in January, as part of São Paulo's 450th anniversary celebrations. Bertram is proud and enthusiastic: "It is the one of the world's largest projects in which biogas is used for energy. Hard to believe that we completed the entire project, including the energy plant, in just three months! Just before Christmas."

The official opening of 'Bandeirantes'. From left to right: (yes, we did get the name), Marta Suplicy (mayor of São Paulo City) and Antonio Rocha (CEO ARCADIS LOGOS).

A radiator cools the water that will be used to keep the engine at the right temperature

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The Biogas team. Back row, from left to right: Paulo Nascimento, Rodrigo Cabral, Irlei Joel Ferreira. Front row, from left to right: Hugo Paixão Costa, Bertram Shayer, Andréa Aronne Souza, Matsuo Furushima, Julio Cesar do Prado Jr.

The Bandeirantes landfill