

Cryogel Z Chosen for Innovative Biogas Plant in Brazil



CASE STUDY

DETAILS

Owner: Gás Verde S.A.
Engineer: FirmGreen
Insulation Contractor:
Isolex Isolantes Térmicos

CHALLENGES

- Restricted space in a number of areas required reduced insulation thickness while still providing the required condensation control for piping and equipment with operating temperatures ranging from 6°C to -56°C.
- A tight project schedule required an insulation that could be installed quickly, while allowing for ease of maintenance over the project life.

SOLUTIONS

- Aspen Aerogels' **Cryogel® Z** was installed in thicknesses ranging from 10 mm to 50 mm.
- The project included piping that ranged in diameter from 0.5" to 12", as well as equipment, heat exchangers, and a gas fractionation tower.

BENEFITS

- Cryogel Z was selected for its reduced thickness, with easy installation, easy maintenance, and fire performance also important contributing factors in the owner's decision.



Background

Located adjacent to the Novo Gramacho landfill featured in the film *Wasteland*, the Gás Verde biogas purification plant treats raw landfill gas to produce clean methane and food-grade liquid CO₂. The landfill, operated by Companhia Municipal de Limpeza Urbana, was upgraded to enclose the open waste with impermeable membranes and a drainage system including wells to draw off the methane gas. The purification plant, designed by FirmGreen, Inc. of California, is expected to treat 12,000 standard cubic feet per minute of landfill gas. The plant is projected to produce 90 million Nm³ of biogas over 20 years.

Until its decommissioning in 2012, the Novo Gramacho landfill was received over 3 million metric tons of waste per year. Through decomposition, the landfill emitted up to 119 million m³ of methane into the environment. The conversion of the landfill gas to usable methane is expected to reduce CO₂ emissions by almost 6 million tons, while providing 2.4 MW of renewable electricity. The plant will provide gas through a pipeline to the nearby Petrobras refinery.

