

Dresser-Rand® Environmental Solutions



Turning Biogas into Power for South Africa

Johannesburg, South Africa Case Study

*Dresser-Rand
containerized CHP
biogas gen-set solution
for Johannesburg Water,
South Africa.*

The Opportunity

Johannesburg, located in the Gauteng Province, is an area of great potential in South Africa. With a population of more than 4 million, Johannesburg is the largest city in the world not situated on a river, lake or coastline. The city, once known for its gold mining, is now a center for various services and heavy industries, including steel and cement production.

Due to increasing demand for power and heat, Johannesburg Water and Northern Works WWT wanted to expand biogas production for use beyond firing boilers. In light of rising electricity costs and pollution concerns, the project became a reality.

The Solution

Johannesburg Water partnered with Dresser-Rand to expand and upgrade Northern Works WWT. Dresser-Rand boasts the largest installation base in its category and this is the first reference (for power generation and CHP using sewage biogas) in South Africa amongst worldwide gen-set suppliers.

The project employs a high performance anaerobic digestion process, followed by a thorough gas cleaning. This results in a massive production of biogas, which is then fed to the CHP biogas gen-set to generate 1.2MWe of combined heat and power. The heat and power produced is used in the digestion process and for grid export via Eskom to increase power supply. All of the biogas generated is used for power and heat supply, which helps minimize the impact of increased electricity costs.



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Benefits

- Creates a reliable source of power and heat from an existing gas resource, plus the simultaneous disposal of this problem gas.
- Reduces maintenance and operation costs
- Minimizes energy costs
- Brings growth and development opportunities to South Africa
- Highly profitable operation for the client with an excellent overall efficiency and investment recovery over a short period of time
- Avoids the liberation of methane into the atmosphere
- Maximum availability and reliability even in severe environmental conditions



The Company

Dresser-Rand acquired Grupo Guascor S.L. in May 2011. Through this acquisition, Dresser-Rand now offers customized energy solution-based renewable energy and power systems with specific expertise in distributed generation. Dresser-Rand is among the largest suppliers of rotating equipment solutions to the worldwide oil, gas, petrochemical, and process industries. The company operates manufacturing facilities in the United States, France, United Kingdom, Spain, Germany, Norway and India, and maintains a network of 49 service and support centers (including 6 engineering and R&D centers) covering more than 150 countries. Dresser-Rand has principal offices in Paris, France, and Houston, Texas.

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