

Case Histories

GEOTHERMAL ELECTRICITY PRODUCTION

Parex Resources Inc – Casanare (Colombia).

Abstract

Two Rank® LT3 machines have been delivered for operation in Casanare (Colombia) by Parex Resources Inc. The ORC machines are used for electricity generation with geothermal energy.



Parex Resources Inc

Parex Resources Inc is a Calgary based company actively engaged in crude oil exploration, development and production in Colombia. Parex holds interests in approximately 2.5 million gross acres over 24 onshore blocks in Colombia's Llanos and Magdalena Basins.



Parex is committed to meeting its responsibilities to protect the environment wherever it operates. Monitoring and reporting programs for the environment as well as inspections and assessments are designed to provide assurance that environmental and regulatory standards are met. Parex understands that energy conservation not only strengthens economic performance, but also reduces one of the factors contributing to climate change. Efforts are deployed to optimize the use of diesel, crude oil and gas in operations processes.

Electricity generation with geothermal energy

Geothermal energy is renewable energy obtained through the use of natural heat from the interior of the earth. Geothermal energy sources can be found in a wide range of temperatures, and can be used for power generation with Rank® equipment.

Construction of two new electrical generation units was completed for our client Parex Resources through use of our organic Rankine cycle (ORC) technology. These machines are intended to harness heat from a geothermal source.

New development – Rank® GEO

For this purpose, a new family of Rank® GEO machines has been developed which is specifically configured for the thermal levels commonly found in this source of renewable energy. These units can generate electricity at temperatures as low as 90°C (or lower, according to local conditions).



The range of Rank® GEO products has been customized to fit inside a 40-foot sea container. This way, the client can install the equipment directly in its final location without any need to construct an enclosure to house the equipment. The geothermal water heat exchanger, ORC machinery and the air coolers are all accommodated by the sea container. Consequently, the on-site installation to enable behind-the-fence generation is limited to 2 connections; the geothermal water-to-heat exchanger connection, and the connection of the electrical cable to the client's electrical network.

For Expander Tech, S.L. this represents the development of a new line of products destined for the geothermal sector and for Parex Resources, this is another step in their commitment to decarbonize their activities.

More info at: www.rank-orc.com