

TURNING FLARE GAS INTO POWER

for lower energy costs, greater reliability, and reduced emissions

Background

COPOWER LTDA has developed engineering, procurement, and construction (EPC) projects and signed Power Purchase Agreements (PPAs) related to solar, diesel, and gas power plants for more than 20 years. Since 2016, the company has relied on three Jenbacher J420 engines from INNIO Group at La Cira, an oil and gas field in Colombia.

COPOWER was tasked by La Cira's operator and a major oil and gas company in Colombia to reduce the oil production facility's carbon footprint to boost the site's energy independence, reduce its energy costs, and offer greater reliability.

To achieve these goals, COPOWER chose INNIO Group's Jenbacher technology and an innovative use of the associated petroleum gas (APG)—an unwanted oil by-product—that routinely was being flared at the upstream La Cira site.

A cost-saving, reliable solution

In 2020, COPOWER turned to Pegsa Ltda., INNIO Group's authorized Jenbacher distributor in Colombia, to provide the technical support and services for eight new J420 units to run on APG as well as upgrades for the three J420 units that had been in place since 2016. The earlier units, which had been running on biogas, were upgraded to the latest Jenbacher control system, DIA.NE XT4, and their gas trains were replaced to allow operation on flare gas rather than biogas to meet the changed application requirements.

Backed by more than 25 years of operational experience using APG, the efficient Jenbacher engines have proven their ability to operate smoothly despite fluctuations in gas composition.

»We cut our energy costs substantially while also greatly reducing environmentally harmful emissions associated with flare gas. That makes the La Cira project a clear success. Even better: Pegsa delivered short lead times on the installation of the new Jenbacher units and quick upgrades of the existing units. Based on the excellent service we received, we opted for a multi-year service agreement to help us lower our long-term maintenance costs and take advantage of performance upgrades in the future.«

Jorge Urquijo,
General Manager, COPOWER LTDA



Results

Delivering more than 14.6 MW of effective power running on APG, the project's 11 Jenbacher engines are saving about 30% when compared to power consumption costs from the grid! The engines run continuously to meet the company's power requirements, reaching more than 95% availability.

Equally important, the company is closing in on its environmental goals by putting its flare gas to use to power its operations, significantly cutting greenhouse gas emissions in the process.

¹ according to the customer

Key technical data

Installed engines	11 x J420
Energy source	Flare gas
Electrical output	14.6 MW
Electrical efficiency	40.8%
Years of commissioning	2016, 2022

Customer benefits

- The Jenbacher engines run continuously to deliver 14.6 MW of on-site power to meet the facility's needs without being depending from the grid.
- Total power costs are about 30% lower than they would be with power from the grid.¹
- Availability has reached more than 95%.
- By harnessing the APG for power generation, routine gas flaring at the site has been reduced substantially, reducing greenhouse emissions.



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