JENBACHER

DELIVERING RELIABLE AND EFFICIENT ELECTRICITY, HEAT, AND COLD WATER

Trigeneration solution for plastic industry

Background

Oben Holding Group produces polypropylene, polyester, and nylon films used for flexible packaging; coated films for the graphic industry; and thermoformed polypropylene products. It opened its first manufacturing plant more than 25 years ago in Quito, Ecuador. Today, with more than 450,000 metric tons of annual capacity and a portfolio of more than 400 products, Oben can be found in over 15 countries across the Americas and Europe.

When Oben decided to open a new biaxially oriented polypropylene (BOPP) plant in Colombia, it realized the energy marketer could only supply 3 MW of grid power—and the project required 13 MW to ensure the availability of the plant's electricity, heat, and cold water for reliable operations.



An efficient trigeneration solution

Oben turned to Pegsa LTDA, INNIO Group's authorized Jenbacher distributor and service provider in Colombia, for a combined cooling, heat, and power (CCHP) solution that would meet the plant's energy needs, including its thermal requirements. Three J624 units were installed in Barranquilla plant, north of Colombia—the first from the Jenbacher J624 engines ever installed in Colombia. The initial unit was commissioned in 2020 with successive engine installations in 2021 and 2023.

With the Jenbacher engines for power generation, the equipment's exhaust gases are used to heat thermal oil while the CCHP module integrated in the equipment generates cold water to be used in Oben's manufacturing process.

The Jenbacher trigeneration solutions use absorption chiller technology that, with no moving parts, offers significant benefits compared to compression chiller technology. It is nearly silent, and reduced component wear results in lower operating and life-cycle expenses. Because it uses water as a refrigerant, the absorption system does not release any harmful substances into the atmosphere, helping to improve overall energy efficiency as well as the plant's environmental footprint. Jenbacher CCHP systems can in general be complemented with electrical chillers to meet peak cooling demands.

»We are pleased with the high efficiency of the Jenbacher technology, both electrical and thermal. And we appreciate the fact that service support is available right here in Colombia.«

John Fragoso, Plant manager, Oben Holding Group

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Results

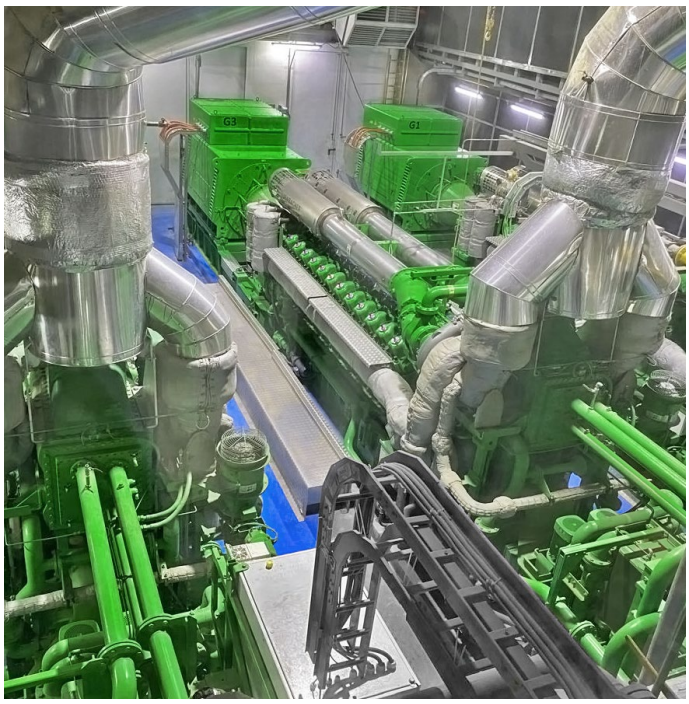
INNIO Group's Jenbacher J624 trigeneration system is meeting Oben's needs for reliable electricity, heat, and cold water. And, after just three years, the plant is so successful that Oben already is undergoing an expansion process with new production lines.

Customer benefits

- Reliable electricity, heat, and cold water
- Lower operating and life-cycle expenses compared to compression chillers
- Improved overall energy efficiency and environmental footprint with three absorption chillers
- The ability to expand, even when the grid cannot supply enough power to support an expansion project

Key technical data

Installed engines	3 x J624
Energy source	Pipeline gas
Electrical output	4,379 kW
Thermal output	2,548 kW
Total efficiency	70.6%
Year of commissioning	2020, 2021, 2023



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