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TURNING WASTE INTO ENERGY AT A FRUIT CANNERY

Jenbacher engines power 1st combined heat and power plant to run on biogas in the Philippines

Background

Del Monte Philippines, Inc. (DMPI) is a leading producer, distributor, and marketer of premium-quality healthy food and beverage products. In operation in the Philippines for approximately a hundred years, it is a market leader in the packaged pineapple and mixed fruit, ready-to-drink juices (excluding stand-up-pouches), tomato sauce, and spaghetti sauce categories. With more than 4,000 full-time employees, the company operates a fully integrated pineapple operation on its 28,000-hectare pineapple plantation. The company's four factories process 600,000 to 700,000 metric tons of pineapple each year.

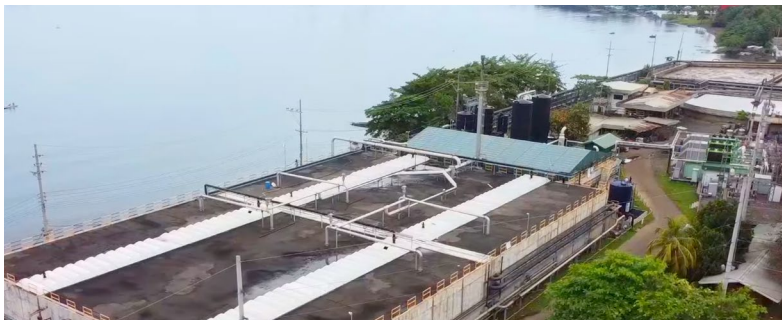
In 2015, the electricity grid needed for the fruit cannery manufacturing plant was unreliable, and blackouts were frequent. Faced with an energy shortage that year, DMPI turned to INNIO Group's Jenbacher combined heat and power (CHP) technology for reliable—and more efficient—heat and power as well as a sustainable way to deal with pineapple waste.

Manufacturing waste provides necessary heat and investment returns

Recognizing that a traditional wastewater treatment facility would bring no return on investment (ROI), DMPI chose to build a biogas digester and CHP plant that would generate savings through electricity and heat generation. INNIO's authorized Jenbacher distributor DESCO, Inc. assisted in the feasibility study preparation and provided engineering, procurement, and construction (EPC).

»At Del Monte Philippines, sustainability is not just a business strategy but a way of life. Operating sustainably ensures our company nourishes families and enriches lives, every day. Our goal is to promote sustainability to achieve our business objectives, environmental stewardship, and social responsibility. That is why we have selected the Jenbacher solution, which uses process wastewater as an energy source to generate reliable power and heat for our fruit cannery.«

Engr. Bienvenido F. Nacua, Senior Manager,
Plantation Engineering & Maintainance Group, Del Monte Phlippines, Inc.



Today, manufacturing wastewater from the pineapple processing is converted to biogas for the facility's new CHP plant. Installed in 2015, two Jenbacher J420 engines running on biogas provide 1,411 kW of electricity and 1,594 kW of thermal energy that preheats the boiler feedwater. Biogas also powers a Jenbacher J320 that was added in 2019 to provide an additional 1,059 kW of electricity.

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Results

Located far from the grid, the CHP plant operates in island mode, saving the expense of grid connection. Even during an energy shortage elsewhere, the plant provides both electricity and heat, and the containerized units' compact design means a smaller footprint. The CHP plant provides ROI, with an estimated 25% savings in electricity and 9% savings in boiler fuel.[1]

[1] **Source:** https://manilastandard.net/business/221850/ge-turns-del-monte-s-wastes-into-green-energy.html

Customer benefits

DMPI is benefiting from its CHP plant, which runs on biogas created from pineapple processing wastewater:

- The CHP system helps DMPI meet its sustainability goals—with an 85% total efficiency for the two J420 engines.
- The biogas digester and power plant provide ROI, while a traditional wastewater facility would have offered no investment return.
- Already available organic waste is harnessedand used as an energy source, potentially reducing greenhouse gas emissions and avoiding the need to dispose of the biowaste.
- The Jenbacher containerized solution's compact footprint consumes a minimum amount of space on site and ensures quick and easy installation.

Key technical data

Installed engines	2x J420, 1x J320
Electrical output	3.88 MW
Thermal output	3.19 MW
Total efficiency	up to 85%
Energy source	Biogas
Commissioning	2015, 2019



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