

The Challenge

International brewing company, Ambev (a division of AB InBev) operates in 19 countries throughout Latin America and Canada. Based in Brazil, Ambev produces 30 brands of beer, soft drinks, tea, sports and energy drinks, juice and water, and is one of the largest independent PepsiCo bottlers in the world. Given the scale and environmental impact of their operations, the company has established a series of sustainability goals, one of which is a 25% reduction in carbon emissions by 2025.

To help achieve this ambitious target, Ambev partnered with Luming Intelligência Energética, an energy solutions company, to implement biogas-based, microturbine systems at some of its manufacturing plants. These installations were the first of their kind in Brazil and marked an important environmental step forward for the region as well as the industry.

The Solution

The production of beverages at Ambev's brewing plants made them ideal candidates for a biogas-based system. Water that is used in manufacturing must be treated at Industrial Effluent Treatment Stations before it can be returned to the external environment. This treatment process produces biogas, which previously had been released into the air. The new systems capture the biogas and use it to power a microturbine, which in turn, generates energy for the factory and its manufacturing processes.

Two prototype units were implemented: one C65 microturbine at the malt production facility in Porto Alegre and one C200R microturbine at the brewery of Águas Claras do Sul. Following their success, the systems were replicated in two other plants in the states of São Paulo and Paraná. Together, these four breweries produce 449,000 kWh of energy every month, enough to supply about 2,800 households.

Power Profile

Customer

Ambev

Location

Brazil

Commissioned

Viamão - April 2019

Porto Alegre - July 2019

Guarulhos - November 2019

Ponta Grossa - January 2020

Fuel

Biogas

Technologies

- 1 C65 Microturbine - Porto Alegre
- 1 C200R Microturbine - Viamão
- 2 C200S Microturbines - Guarulhos, Ponta Grossa

Capstone Turbine Distributor

Luming Intelligência Energética



“The partnership with Luming is very important not only because it brings us closer to reaching our goal, but because it reflects exactly the type of initiative we are most looking for: innovative projects that improve our processes within the breweries in a way that is beneficial to the environment.”

— Anderson Carneiro de Souza, Energy and Fluids Specialist
Ambev Brewery



Pictured on the left is a C200S microturbine installed at the Ponta Grossa brewery in January 2020. The photo on the right shows a C200R at the brewery of Águas Claras do Sul Grossa.

The Results

The microturbine systems provide a number of benefits. Capturing the emissions helps improve air quality and reduces some of the key pollutants contributing to climate change. In fact, the installations have reduced CO₂ emissions by 482 tons per year—the equivalent of planting more than 2,800 trees. Further, in converting the biogas to a renewable fuel, the manufacturing facilities actually achieve a negative carbon footprint.

Beyond meeting environmental goals, the systems reduce Ambev’s dependency on the power grid. As a result, energy costs are lower and the plants experience improved power reliability, which also helps maintain product quality and consistency.

Anderson Carneiro de Souza, Specialist in Energy and Fluids of the Ambev Brewery said, “The partnership with Luming is very important not only because it brings us closer to reaching our goal, but because it reflects exactly the type of initiative we are most looking for: innovative projects that improve our processes within the breweries in a way that is beneficial to the environment and that put us in contact with pioneering startups that help us grow together.”

Microturbine systems like this one have immense potential in Brazil, where opportunities for converting waste streams into energy are extensive. Luming’s partnership with Ambev provided upfront capital investment and a financial model that made the project not only feasible but beneficial to both parties.

According to Rael Mairesse, Luming’s executive partner, “Ambev’s example opens the way for other companies looking for environmental gain and cost reduction by rethinking what is now considered waste, and seeing it as raw material for fuel.” ■

Capstone C65 Microturbine



A C65 Microturbine provides up to 65kW of electric power while the UL-Certified C65 provides up to an additional 150kW of thermal power for CHP applications.

Capstone C200S Microturbine



A C200S provides up to 200kW of electric power and contains the world’s largest single-unit air bearing microturbine.