

Felsineo La Mortadella

Food Manufacturer

The Challenge

Leading producer of quality meats, Felsineo, was founded in 1947 as a small shop in the Italian province of Bologna. In the 1970s, the small business owners decided to move away from producing multiple types of meat sausage and instead become the exclusive producer of mortadella, a finely ground, heat-cured pork sausage. The product has since become vastly popular and the company is now the leading brand of mortadella in the region.

Over the years, as the business expanded with the export of products to other countries, Felsineo decided it was time to upgrade the power generation system at their primary manufacturing facility in Bologna with one that could handle an increase in the production of saturated steam for sausage making. Felsineo also sought to increase their operational efficiency and reduce their overall carbon footprint.

The Solution

In 2014, Felsineo turned to IBT Group, Capstone's Italian distributor, for a clean-and-green microturbine-led combined heat and power (CHP) system that could recover the thermal energy from the exhaust and turn it into steam for making mortadella. The natural gas-fueled C1000 microturbine was installed onsite along with a gas compressor and post-combustion steam generator solution.



Thanks to Capstone's reliable technology, we were able to achieve an overall efficiency of greater than 80 percent implementing an innovative application that joins cogeneration with a technologically advanced heat recovery system."

— Ilario Vigani, President
IBT Group

Power Profile

Customer

Felsineo La Mortadella

Location

Bologna, Italy

Commissioned

June 2014

Fuel

Pipeline Natural Gas

Technologies

- Capstone C1000 Microturbine for Grid Connect CHP
- Natural Gas Compressor
- 3-ton Saturated Steam Generator with Duct Burner

Capstone Green Energy Distributor

IBT Group

A photograph of an industrial facility, likely a food processing plant, with large metal structures and pipes. The image is overlaid with a green tint. The text "Smarter Energy for a Cleaner Future" is written in white at the bottom right.

**Smarter Energy
for a Cleaner Future**



A Capstone C1000 system saves the facility about €300,000 per year.

Capstone microturbines produce a large volume of clean and oxygen-rich exhaust which can be used as the primary combustion air in a steam generation system. Clean exhaust from the steam generator is captured to make hot water for the building via heat exchanger, further boosting the overall system efficiency to close to 80 percent. The microturbine at Felsineo, coupled with a post-combustor burner and steam boiler, allows the customer to generate their own steam at 10 bar, significantly improving their operational efficiency as well as their bottom line.

The Results

In order to meet the customer's steam requirement, the microturbine consumes about 316 Smc per hour at full power and the integrated duct burner on the steam generator consumes about 122 Smc per hour. Additionally, the microturbine generates the full one-megawatt of power to ensure the electrical load of the facility is comfortably met. Felsineo is Capstone's first microturbine project to utilize a post-combustion steam solution, and one that successfully satisfied both the electrical and thermal demands of the facility.

"This was our first project in Italy involving post combustion technology and, therefore, was crucial in terms of creating an important market reference," said Ilario Vigani, President at IBT Group. "With our greatest satisfaction, thanks to Capstone's reliable technology, we were able to achieve an overall efficiency of greater than 80 percent implementing an innovative application that joins cogeneration with a technologically advanced heat recovery system. This ensures the highest level of efficiency, and therefore savings, in those food industry processes that require thermal energy in the form of saturated steam."

Today, Felsineo saves about €300,000 per year of operation with an energy savings of 170 TOE (tonnes of oil equivalent)

per year, which translates to approximately 478 tons of CO₂ not released into the atmosphere. The overall efficiency of the manufacturing facility has improved by 30 percent and the power plant runs quietly and continuously year round. A crucial partnership with the steam generator supplier helped to solidify the Felsineo project as an important reference with significant results and excellent customer satisfaction.

"For Felsineo, Mortadella is not just a product, it is a set of values," said Andrea Raimondi, President at Felsineo. "Felsineo is all about loving good food, carrying on tradition, guaranteeing high quality standards as well as a healthy living, and enjoying life through food and everything it represents. These are the same values that we share with Capstone, a very reliable partner that has helped us achieve a significant yearly saving in terms of primary energy."

Capstone C1000 Microturbine



A C1000 provides up to 1MW of power and can be paralleled up to 30MW of clean-and-green power.