

At a glance

Location

Slutsk, Belarus Republic

Commissioned

December 2013

Fuel

High Pressure Natural Gas

Technologies

- Four Capstone C1000 microturbines
- Combined Heat and Power (CHP) application

Customer

- Slutsk Cheese Factory, a manufacturer of dairy food products
- Building: A 160,000-square-meter (1,722,225-square-foot) manufacturing facility

Results

- The cogeneration system generates 4MW of electricity year-round
- Steam generators are used to produce 4.8MW of thermal energy for use in technological processes and space heating
- The CHP system covers 100 percent of the site's heat and electricity needs with an estimated cost savings of 50 percent
- The expected payback period is 4 years

Slutsk Cheese Factory

The state-owned Slutsk Cheese Factory was founded in 1935 and is one of the largest cheese production facilities in Belarus. A manufacturer of cheese, milk, ice cream and other dairy products, Slutsk Cheese Factory has grown its customer base significantly while taking into consideration the modern characteristics of today's dairy food market.



Empowering the End User

With an ever-growing line of products and an increase in its energy consumption, Slutsk Cheese Factory turned to BPC Engineering and Capstone Turbine to design a combined heat and power (CHP) installation to upgrade their facility. The company's plan to increase the export of goods to key markets in Russia and around the world led to its goal of increasing energy efficiency and providing a competitive advantage for the factory. BPC Engineering was key to the management of the project as they performed the equipment supply, installation supervision, and pre-commissioning.

"The Factory is expanding its production and seeks for comprehensive modernization and energy supply for its new production capacities," said Alexander Skorokhodov, CEO of BPC Engineering. "The onsite CHP plant not only cut energy cost by half but also fully covered needs in thermal energy. As a result, the Factory stopped buying heat from the nearby plant and increased its power and heat supply efficiency through eliminating transportation losses."

For years, Slutsk Cheese Factory had used a boiler house from a nearby meat-processing plant to generate heat for its facility. The heat from the boilers did not meet technological requirements for cheese making and there was significant heat loss using the existing pipeline during heat transfer – which amounted to about 1,300-tons of heat annually.

Growing the Customer's Energy Production Capabilities

Today, the microturbine systems are running smoothly and efficiently in a covered area outdoors. The heat produced by the 4MW CHP plant is connected to steam generators held in a nearby building. The microturbine-based power plant allows Slutsk Cheese Factory to cut primary energy costs through low labor costs, highly automated operation, and low quantity of spare parts and consumables. The total thermal output including heat from the microturbines is about 10 Gcal per hour.

The CHP plant now covers all of the Factory's heating and electricity requirements. The electricity produced is used to power production lines and other factory equipment. The captured heat is used in technological processes and for space heating during the colder months of the year. It is expected that the CHP plant will cut the Factory's electricity and heating costs by 50 percent, with an expected payback period of just four years. ■



Four natural gas fired Capstone C1000 microturbines operating in a CHP application produce 4MW of clean and reliable power as well as 4.8MW of thermal energy for the Slutsk Cheese Factory.

*“After the completion of the project, the
Factory fully covered its needs in electricity
and heat.”*

*— Anatoly Stetsko, General Director
Slutsk Cheese Factory*