

Installation of mini-CHP and boiler plant for Kalinkovichi dairy plant

The Private Production Unitary Enterprise Kalinkovichi Dairy Plant, situated in Kalinkovichi in the Gomel region, is one of the largest milk processing plants in Belarus. Its history began in 1975. Currently, the production capacity can handle up to 458 tons of milk per shift. The plant produces more than 60 kinds of natural dairy products. The main product – powdered milk – is fully exported while over 50 percent of the total production is exported.

Originally, the heat to the dairy was provided by an old municipal HOB (heat only boiler) plant, which is in operation since 1978 and also serves energy to the neighbouring residential settlements. The electricity to the dairy was supplied from the grid of regional distribution company Gomelenergo.

The project replaced the existing energy supply with a mini-CHP (combined heat and power production) and boiler plant installation. Electricity supply from grid complements the mini-CHP in peak consumption periods. The project was implemented using a novel concept known as a BOOT (build–own–operate–transfer) scheme by a foreign private company Torsti Ltd. within an investment agreement signed with the Republic of Belarus.

Torsti Ltd., as the owner of the project, invested to build the installation and supplies electricity and heat to the dairy plant based on long-term agreements with the plant. Kalinkovichi Dairy Plant is the only buyer of heat and electricity generated by the project. The CHP and the steam boilers will be transferred to the Kalinkovichi Dairy Plant after 8 years of operation as part of the contract.

Project highlights

Location	Kalinkovichi / Gomel region
Type of project	Industrial energy efficiency The technological solution is the combined generation of heat and electricity (CHP unit with gas engine, power output of 0.77 MWe and heat output of 0.92 MWt) and two steam condensing boilers using natural gas (6.55 MWt each)
Project results	Reduced energy costs and cash savings
Total project cost	USD 2.93 million
Total loan	USD 1.67 million (from OJSC BPS-Sberbank within BelSEFF)
Payback	2.4 years
Savings	Energy: 23 percent Total cash savings: USD 2,94 million per year
CO₂ emission reduction	Approximately 2,905 tonnes per year

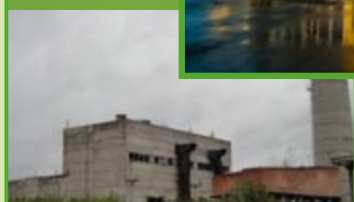
New CHP and boiler house



New mini-CHP plant



Old HOB



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The technical assistance for the project included an analysis of the proposed technology, the financial and technical parameters and risks. It was provided by the BelSEFF Facility consultant (a consortium of KPMG Česká republika, s.r.o. and ENVIROS, s.r.o., Czech Republic) and financed by the Ministry of Finance of the Czech Republic through the Official Development Assistance trust fund.