

SATEC Leads vast saving of US\$10M to Large Scale Industrial Application

Severstal: a major player mainly operating in the steel and mining industry

For Severstal, choosing SATEC's PM175 for their new project has proven to be a success story. Severstal is the largest steel producer in Russia and one of the largest in the world, with an annual revenue of US\$6.7 billion (2020).

Severstal owns major industrial facilities in Russia, Ukraine, Kazakhstan, France, Italy and the United States, as well as in several African countries. The company also has mining assets in Russia and the USA. Its vast steel plants are located in the Russian city of Cherepovets and their power consumption is 6.3 billion kWh annually.

 SATEC

Quantity
520 × PM175



System Integrator
ENPRO (Moscow)

The Wholesale Market of Electricity and Power



Inefficient technological regimes, energy losses and outdated equipment contributed to high electric power expenses. Additionally, Severstal was not at the time a participant of the Russian Whole-sale Market of Electricity and Power (WMEP).

WMEP is operated by the Noncommercial Partnership ATS (Administrator of the Trading System). WMEP enables purchasing power at the most attractive spot prices, based on seasons, time of use and changing power demand. However, The ATS has established for large producers and consumers of power strict guidelines for entering the market and being a recognized participant, which includes an advanced energy metering system with direct data transfer to the ATS office in Moscow. Likewise, an advanced telemetry system with real time information about main electrical parameter for each WMEP entry point is mandatory as well.

8 Month ROI

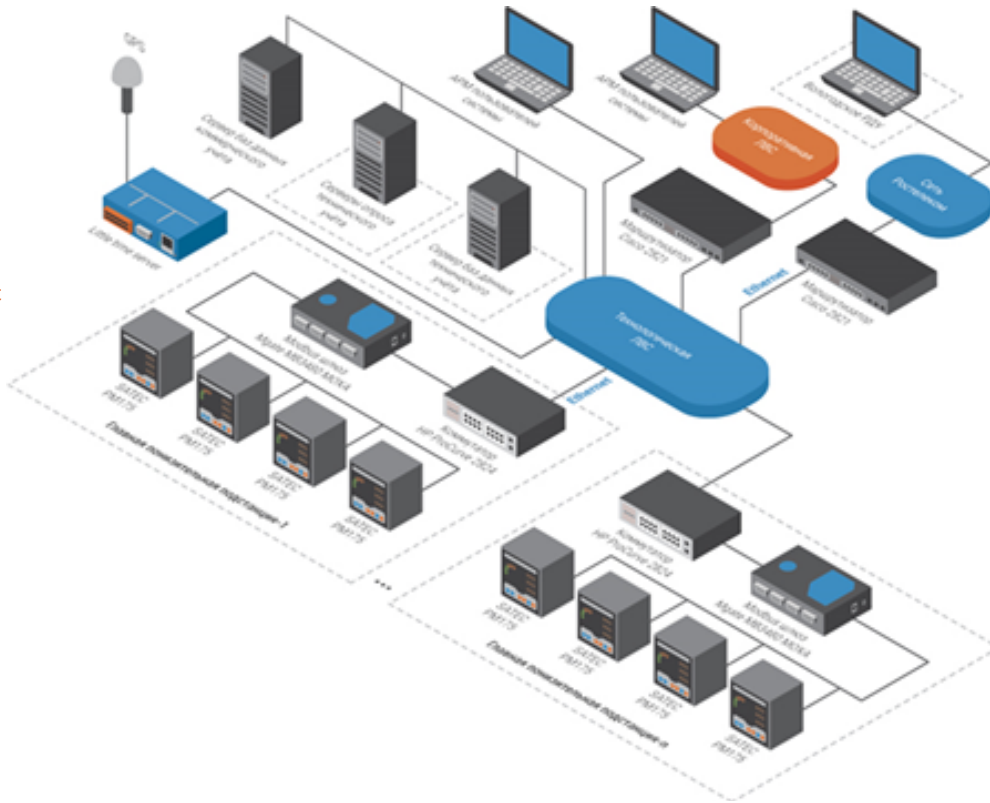
Exceeding the ATS requirements, SATEC's PM175 Power Quality Analyzers were selected and several hundred SATEC devices were installed in the Severstal sites in the city of Cherepovets as a part of multi-million retrofit project. The system installed was much more reliable, easier for servicing, required less personnel (mainly thanks to the reliability of SATEC devices) and ROI was reached at the staggeringly short period of 8 months.

Expenses for energy-related servicing alone, dropped by around US\$ 100 thousands, annually. Severstal dispatchers could now obtain real time electric parameters. As a result, technological control became more efficient and power losses were dramatically reduced. Altogether, combined with the benefits of participation in the Wholesale Market (WMEP), this project had roughly a US\$10 million impact.



PM175 Substation Installation

EMS System Layout



The Energy Management System

An IBM system including 3,650 servers and software was provided by the Russian developer Prosoft. The network was based on fiber-optic rings and Ethernet optical switches HP2824. Moxa MGate 3480 Modbus bridges were used, as well as protocol converters. Small groups of SATEC PM175 devices, linked by RS-485 bus were connected to

the MGate input channels. As a result, the typical cycle of full volume information transfer is about half a second.

The project was executed by the Russian engineering firm ENPRO, a long standing SATEC partner.

Find out more about the PM175 Power Quality Analyzer at www.satec-global.com

About SATEC

As a global leader with more than three decades of expertise in development of energy management and efficiency technologies, we are committed to empower consumers with flexible, scalable energy intelligence solutions focused on delivering business intelligence that drive energy efficiencies and improve reliability across multiple user applications worldwide while contributing to a sustainable planet.