SATEC

CASE STUDY

Pharma Plant

Implementation of an Automated Energy Monitoring System in a Pharmaceutical Plant

The Client

A Russian-based multinational pharmaceutical manufacturer, exporting over 400 generic and proprietary drugs.

The company has six manufacturing facilities in several locations in Russia.

Objectives

- Optimizing production efficiency
- Analyzing the share of electricity expenses in the production costs of each pill/product

244
three-phase metering points

$150K
Annual Savings

8 months
ROI

Proposed Solution

Implementing an Energy Monitoring System for the automation of electricity metering at each stage of the production cycle.

Implementation

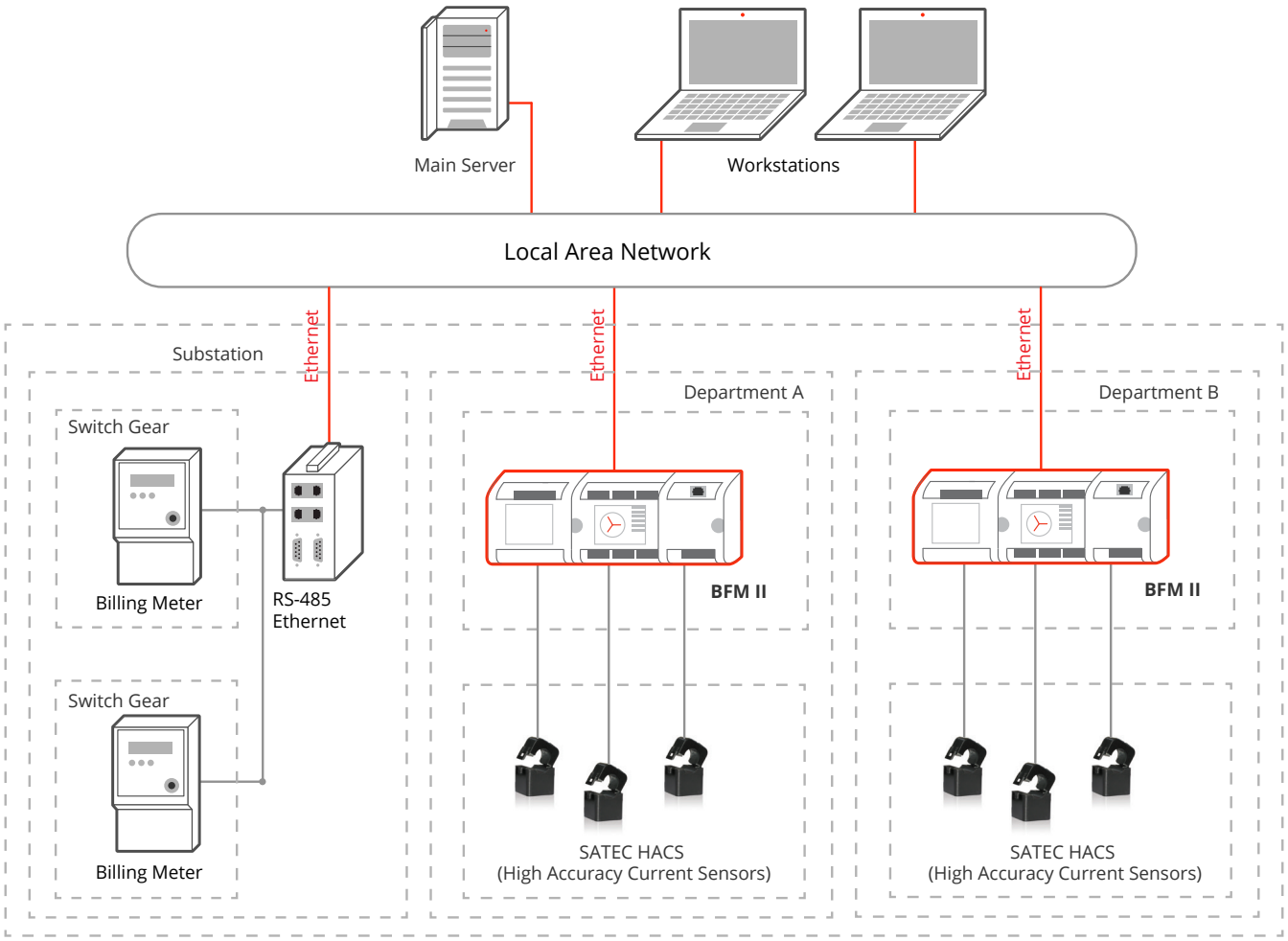
The Russian ENPRO company (system integrator) offered a solution based on SEDMAX Software and multifunction SATEC meters (BFM II and SATEC EM133).

9 SATEC BFM II multi-channel meters were installed, monitoring altogether 148 loads in 5 sections of one plant.

In a different plant location, 96 SATEC EM133 three-phase meters were installed, monitoring 96 three-phase loads. SEDMAX software was installed as top-level software in the two factories.

Delivered

1. Real-time streaming of electrical power parameters
2. Integrating energy consumption data in SAP for the analysis of the actual cost of electricity involved in the production of each batch of pills, in actual machinery as well as supporting infrastructure.



Gained Insight and Financial ROI

The analysis indicated a gap between planned and actual consumption data:

- Energy consumption of manufacturing machinery turned out 10-15% less than predicted
- Energy consumption of engineering and auxiliary infrastructure: 10-15% higher than predicted

Using the EMS system (metering of steam, gases, compressed air, heating, ventilation, air conditioning systems), the client concluded that it is possible to reduce the consumption of electricity for the maintenance of engineering systems, within GMP standards, allowing an annual saving of USD150K.

Main advantages of BFM II meters for retrofit modernisation of existing industrial plants

1. Enabling remote metering, up to 200m from metering point (load)
2. Clamp-on current sensors (XXX/40 mA), allowing retrofit installation without cutting power. No need for production shutdown during installation
3. Built-in ETH communication
4. Built-in harmonics monitoring/control

SATEC devices used in this solution

BFM II

The Branch Feeder Monitor II is a modular multi-channel power and energy meter, monitoring up to 54 single-phase / 18 three-phase current channels.

A "one-CT" system, featuring integral current transformers rated up to 3000A, it is a highly accurate device, tested for Class 0.5S accuracy.

It can be equipped with up to 72 digital inputs, relay outputs and a cellular modem.

Available communication protocols: Modbus RTU, DNP3 and IEC 60870-5-101/104.

EM133

The EM133 is a DIN-rail mounted power meter. It is a Class 0.5S, MID certified energy meter (kWh) fit for tariff billing.

2 digital inputs and 1 SSR relay output allow control functionality, such as load-shedding.

Cellular or ETH interface and Modbus, DNP3 and IEC 60870-5-101/104 protocols enable communication with SCADA.