ConnectPoint for PGE GiEK S.A.

Production Monitoring and Reporting System

PGE GiEK (Mining and Conventional Power Generation) Company is one of the companies forming the PGE Capital Group - the largest company in Poland's power sector. The company's core business is coal mining and electricity generation. PGE GiEK is composed of 7 Branches located in 5 provinces.

PGE GiEK S.A. Branches:

Dolna Odra Power Plant Complex
(Dolna Odra Power Plant, Szczecin Power Plant, Pomorzany Power Plant)

Bełchatów Power Plant

Brown Coal Mine Bełchatów

Headquarters

Turów Power Plant

Brown Coal Mine Turów

Opole Power Plant

Rybnik Power Plant

Needs

PGE GiEK wanted to improve the efficiency of the coal mining process, electricity generation and service provision while maintaining high environmental standards and principles of social responsibility.

The company's main objective was to implement an integrated system for monitoring and analysing production in real-time from all branches located in different regions of Poland and the head office. Moreover, it wanted to implement a fully automated reporting process for the management, the market and mandatory reporting to the authorities.

PGE GiEK is the leader in coal mining - its share in the domestic market is approx. 87%. It is also the largest electricity producer in Poland, satisfying in certain months more than 36% of the domestic demand.

Industry challenges

Multi-branch companies need an effective way to monitor each branch, as well as access to aggregated information on the performance of the entire organisation. A barrier to effective operation is the long time it takes to create a report for managers and the board, as this requires consolidation of data from local applications. Energy companies are additionally faced with rapidly changing regulations and therefore changing reporting requirements to authorities.

Solution provided by ConnectPoint

Within the public procurement procedure framework, PGE GiEK S.A. selected a system based on an OSIsoft solution. The implementation plan covered seven divisions and the headquarters, with a target of 300 users.

System for Monitoring Production (SMP) was designed, realised and implemented by ConnectPoint within the consortium. The delivered solution was based on two main tools; PI System by OSIsoft and SmartRDM, ConnectPoint own solution.

The SMP implementation also includes further maintenance of the system by ConnectPoint.

Production Monitoring System (SMP) is based on OSIsoft PI and performs the following tasks:

» collects, consolidates and processes data in real-time in the Data Repository from 250,000 measuring points, industrial automation systems, OT and IT systems from the Company's seven geographically dispersed branches and business systems; these include production, emission, environmental and failure data;

» presents data in the form of automatically generated reports - including a calculated desired KPIs;

» measures the efficiency of various processes and is used to benchmark generating units;

» visualises and monitors production through 270 synoptic screens built for the SMP in PI Vision.

Infrastucture Monitoring

250k
Measuring points in HA monitored in real time

41
Monitored power units

2
Monitored heating boilers

270
Real-time visualisations of production processes

Automatic Reporting

120
Reports recipients daily

800
Analytical formulas run daily in real-time

Smart RDM product is responsible for:

» Effective management of the company's production reporting;
» Making available reports prepared in different reporting tools (Power BI etc.);
» Distributing reports to the right recipients on time;
» Consistent presentation of the reporting data management process in a single platform;
» The process of verifying and validating report data before publishing the report with the possibility of manual entry or correction and their automatic integration in the Central Data Repository;
» Monitoring production in the Company thanks to access to OSIsoft PI Vision synoptic screens on the SmartRDM portal.

SmartRDM presents predefined and parameterised reports such as:

» Daily report;
» Monthly Report;
» Daily report on the status of Generating Units,
» A report with KPIs for the entire company;
» Monthly environmental report;
» Daily report on electricity production;
» Emergency incidents report;
» A report for the external institutions.

About ConnectPoint

ConnectPoint is an IT company that supports the process of digitalisation in industry, energy sector and public utility segment. It specialises in IT/OT and IoT integration and combine industry knowledge with expertise in the field of OT, Big Data, GIS, Business Intelligence and Machine Learning. It builds systems that allow for effective cooperation between Operations, IT and Business.

Implementation benefits for PGE

The obtained analyses and reports have significantly improved PGE's operational efficiency and accelerated decision-making processes. The company has gained a secure and scalable system, which is a consolidated source of data used for cross-sectional analyses for the whole company and automatic reporting of production status. As a result, it has become possible to manage the entire company more effectively by tracking events, collecting information and, consequently, better production planning and preventing failures.