

CHEMICAL CASE STUDY

Shymkent oil refinery, Kazakhstan

ABB solutions and services are helping modernize a major oil refinery.



Sensors, data and advanced analytics will monitor and assess the real-time health of the plant's assets, with operator PetroKazakhstan Oil Products (PKOP) to gain critical, real-time insights into their assets and production processes.

01 Shymkent Oil Refinery.

Photo credit:
PetroKazakhstan Oil
Products (PKOP)

Project background

Shymkent is run by PetroKazakhstan Oil Products (PKOP), a joint venture between China National Petroleum Corporation (CNPC) and Kazakhstan's national oil and gas company KazMunayGas (KMG). The government's new "Digital Kazakhstan" campaign fosters the digitalization of industries using cutting-edge technologies to increase productivity. Shymkent's digital plant project is a critical part of the country's modernization of a key oil refinery.

Project overview

Shymkent currently follows an hourly-based, reactive maintenance system. To reduce costs, streamline operations, enhance safety and drive efficiency, Shymkent will adopt a predictive maintenance strategy, where maintenance activities are carried out based on the actual condition of assets and equipment. Digital infrastructure will enhance the maintenance and management of the plant's assets, with maintenance downtime intervals anticipated to reduce from annually to every three years.

ABB solutions and services

- **ABB Ability™**: our unified, cross-industry digital offering – extending from device to edge to cloud – with devices, systems, solutions, services and a platform enabling our customers to know more, do more, do better, together
- **ABB Ability™ Ellipse® APM**: asset performance management including condition monitoring and diagnostics
- **ABB Ability™ Asset Suite ER and ABB pRIME Toolkit+®**: reliability management for criticality analysis using Risk Based Inspection (RBI) and Reliability Centered Maintenance techniques to suggest new maintenance strategies
- **Maximo Integration**: interfacing with existing ERP for management of maintenance, assets, and work orders
- **Consulting**: criticality analysis and change management

Key motivators for the customer

- Deep experience and knowledge of extending refinery turnaround periods
- Global technical resources and collaborative support from leading ABB experts
- Single-source digital platform provider: no third-party Intellectual Property (IP) issues