

Energy efficiency for the mining industry

Doing more with less



The need to use energy more efficiently has never been more critical in today's mining landscape, which is marked by cost and price uncertainty, prolific regulation, and pressure to develop increasingly remote locations. ABB combines 120 years of energy expertise with a broad portfolio of products, systems and services to help mine operators do more with less.

ABB helps industrial and utility customers improve energy efficiency in two ways:

- By providing specialists capable of appraising how energy is used and identifying areas for improvement.
- By providing equipment, systems and solutions to monitor and report on energy usage, reduce energy consumption and losses, improve productivity and manage equipment and processes more effectively.

ABB has a wide range of solutions to improve the energy efficiency of underground and open-pit mines, ventilation, materials transport, minerals processing, and energy intensive auxiliary systems such as water pumping.

On-site industrial and power generation energy efficiency assessments

Our approach is flexible and allows for each customer's particular starting point. Projects are taken through the entire journey from assessment to commissioning, and can realize 5-20% savings in energy and utility usage.

Motor / Drive system assessments and solutions

Motors account for around 29% of on-site mining energy losses. ABB has a simple, methodical appraisal process to identify and realize energy savings opportunities through the proper sizing and maintenance of motors, premium efficiency motors, and variable speed drives for applications with varying loads.

cpmPlus Energy Manager for industry helps you understand how and where you use energy, and provides tools for reporting and optimizing energy efficiency.

Variable speed drives and premium-efficiency motor systems increase energy efficiency and reduce maintenance wear and downtime.

Underground mine ventilation solutions improve efficiency and reduce costs associated with underground air handling.

Electrical systems for electric trucks that offer improved air quality and reduced energy requirements for underground materials transport.

Hoists with regenerative braking and energy storage systems enhance energy efficiency for underground materials handling systems while boosting capacity and productivity.

Automation and electric integration solutions help you optimize energy use for the complete mining operation, integrate all power distribution into one plant operator environment, and more accurately match energy supply and demand.

Conveyor system solutions improve energy efficiency and productivity, and include AC drives and premium-efficiency motors, Active Front End to recover braking energy, integrated electrification and automation, and systems for inverse starting route operation and load optimization.

AC drives to increase the availability and efficiency of mining assets such as shovels and draglines, while providing excellent power quality and better control of current and torque.

Grinding solutions such as gearless mill drives, ring-gear mill drives, and drives for high-pressure grinding rolls help lower your beneficiation energy requirements.

Power quality solutions ensure stable, reliable power while reducing energy losses, process interruptions and equipment damage or failure. This includes site assessment services and solutions for active filtering, dynamic voltage control and power factor correction.

ABB has a complete portfolio of low loss **“green” distribution transformers** designed for reliability and durability as well as energy efficiency. This includes high efficiency amorphous metal core transformers with 40-70% lower no-load losses to EcoDry transformers for reduction of no-load losses and lower losses on large average loads of energy intensive mining applications. ABB’s experts can help you create a transformer strategy that provides lower total lifecycle costs and sustainable energy savings.



ABB’s specialists can help you analyze where and how you use energy.

ABB offers services based on its extensive mining application expertise such as shovel and dragline retrofits, which allow you to increase the productivity, availability and energy efficiency of your existing assets instead of adding new assets. We also have a full suite of services including lifecycle, engineering, and ABB’s Full Service.

Our energy experts can also help improve the energy efficiency of your infrastructure and support processes, from intelligent building automation systems to water pumping, treatment and removal, and boiler efficiency.

In addition, ABB has a broad portfolio of solutions to reduce the energy cost of bringing your products to market including rail infrastructure and rolling stock, coal terminal and material handling optimization for ports, and shore-to-ship power.