

Mining Update 04/22



As we start into 2023, we set our goals for the year ahead

At ABB, we remain committed to overcoming the challenges facing the mining industry, while improving the world beyond it.

The global mining industry is undergoing one of the most significant transformations of our generation – and that is to become zero-carbon. To answer this imperative, ABB developed **eMine™**, a purposeful approach, method and integrated portfolio of electrification and automation systems designed to accelerate the decarbonization of the mining sector.

There must be a transformation. And ABB is committed to working with mines and industry players to bring about that transformation.

LET'S TALK



Top 12 learnings mined
from a year of all-electric
and zero-emission
explorations

Top 12 learnings mined from 2022

ABB's experts share important insights from 12 months of fruitful learnings. Read the top learnings mined from a year of all-electric and zero-emission explorations.

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Transition your mining hauling trucks from diesel to electric

At ABB, we are committed to helping our customers through their energy transition, converting existing mines from fossil fuel to all-electric with ABB eMine™.

A key component of the eMine™ portfolio is the Trolley System. We believe in the trolley technology, which has existed for decades and is now back as a key technology to transition mining hauling trucks from diesel to electric.

[WATCH THE VIDEO](#)



Interested in mining EV charging?

Have you always thought it impossible to have an electric operation powered by renewable energy in remote locations?

Check our ABB eMine™ Grid-to-Wheel solution. Our electrified long-hauling process is a fully integrated infrastructure composed of on-premise solar generation, with an inverter and battery energy storage system and a charging station underpinned by our ABB Ability™ digital ecosystem.

LET'S TALK



ABB no.1 global market leader in Distributed Control

Analyst report on DCS confirms ABB global market leadership for 23rd consecutive year

ABB is once again setting the pace in DCS solutions, topping the chart for market share for the 23rd time running in ARC Advisory Group's latest report. The ARC Advisory Group market report covering the period 2021 shows that ABB's DCS has maintained a leading position in a market worth more than \$15 billion.

ABB continues to lead by enabling real-time insights, supporting the acceleration of digital transformation across the industry.

[LEARN MORE ABOUT DCS IN MINE AUTOMATION](#)



Future trends in automation in mining

Marcos Hilla, Global Product line manager Automation, ABB, recently signed an eBook called 'Journey to autonomous mining in 2022 and beyond' which is [available here](#).

He recently spoke to Jax Jacobsen from Mining Magazine about the mining automation trends presented in the eBook.

[WATCH THE FULL INTERVIEW](#)



ABB provides power management system for BHP in Canada

Our ABB Ability™ System 800xA Power Control Library will help BHP on its journey towards an automated, electrified and digitalized site where engineers can monitor and quickly troubleshoot disturbances. The system will cover the electrical substation equipment remotely, reducing the time taken for fault diagnosis and problem solving.

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ABB and Perenti agree to jointly explore solutions to help mining customers decarbonize operations

Together, we'll explore approaches to support net zero emissions targets for underground and open-pit mines to help mining companies make greater impact in the energy transition. Specifically, we hope to address electrification solutions in mine hauling operations, power distribution, energy efficiency and power management.

Mark Norwell, Managing Director and CEO, Perenti, commented: "ABB and Perenti share a vision to develop energy efficient solutions for the mining industry. By combining our experience across mining operations and digital solutions with ABB's leading technologies we are focused on supporting the decarbonization of mining through electrification. We look forward to working with ABB on this exciting new venture."

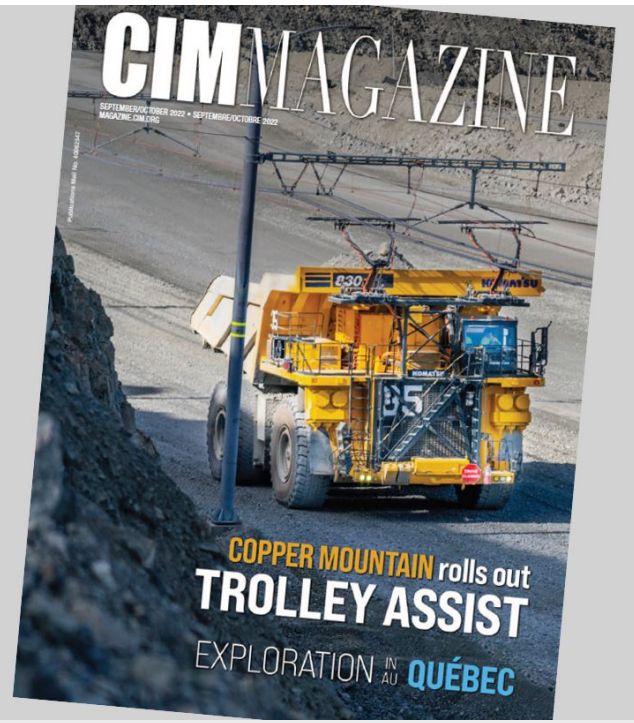
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All in on eMine™ trolley system

CIM Magazine interviewed Gil Clausen, Copper Mountain's president and chief executive officer, and ABB's Sachin Jari and George Shahata to talk about how trolley assist will play a key role in helping Copper Mountain reach its ambitious goal of net-zero carbon emissions by 2035.

[READ THE ARTICLE](#)



Read the Expert

The progress to electrification is slow but inevitable and is set to transform asset and resource-heavy mining operations globally over the coming decades.



Mehrzad Ashnagaran
Global product line manager mine electrification
ABB

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OPERATIONS MANAGEMENT

INNOVATION IN ELECTRIFICATION

Electrification is the key enabler of the digital transition from emission-heavy mines to decarbonised, sustainable operations, as Mehrzad Ashnagaran explains

Electrification, automation, digitalisation, these defining technology trends that are set to transform asset and resource-heavy mining operations globally over the coming decades. Mine operators now have at their disposal a range of electrification solutions combined with digital tools – the industrial internet of things (IIoT), artificial intelligence (AI) and advanced data analysis, among them – that offer complete visualisation of the entire production chain, improving productivity, reducing costly downtime and facilitating predictive rather than reactive maintenance.

Meanwhile, the 2022 UN Climate Change conference, COP27, saw world leaders agree to limit global temperature rise and reduce greenhouse gas (GHG) emissions from heavy industry and wider society, in line with global treaties such as the 2015 Paris Agreement on climate change and the 2021 Glasgow Climate Pact.

ABB believes that integrated electrification with automation and digital is the key enabler of the transition from mines powered by fossil fuels to clean, energy-efficient operations powered by renewables. Mine design with integrated electrification and digital – from hauls to grinding and from conveyors to vehicles – to optimise all processes and equipment, paving the way for the electric mine of the future that incorporates optimal design and operations for more efficient, sustainable energy and resource consumption.

CHARGING AHEAD

The progress to electrification is slow but inevitable. Mining will continue to play a key role in the transition to a more sustainable world by providing commodities required for electric cars, solar panels and wind turbines. However, the sector is responsible for around 4-7% of GHG emissions, much of it from diesel trucks. Hybrid vehicles that run on

trolley lines and automated ventilation on demand systems are just two examples of innovations that limit energy use and keep workers safe.

Looking to be a cornerstone of this transition, ABB's pilot eMine FastCharge starts to become the world's fastest and only fully automated charging system for mining haul trucks, providing up to 600kW of power.

Offering ultra-fast charging to maximise productivity and digitally enabled to optimise energy usage, FastCharge – part of the ABB Ability online portfolio – can be readily integrated into a mine's work schedule for lower CAPEX/OPEX, and monitored and controlled for optimised charging in real time.

Importantly, FastCharge uses open automotive industry standards and is interoperable, meaning it can connect with all trucks in response to demands for more standardised, vendor-agnostic solutions built around alliances of technical suppliers and OEMs. The company believes this



Panorama of the Copper Mountain site near Princeton, British Columbia, Canada



ABB's Gearless Mill Drive Ring Motor factory in Bilbao

If you have a chance to visit our Ring Motor plant located in Bilbao, you'll understand what excellence means.

Building on over 130 years of experience in the mining industry, ABB's factory provides the engineering and manufacturing of ring motors, the main component of ABB's Gearless Mill Drive (GMD) systems.

ABB integrates all manufacturing processes, from design and engineering to after-sales services, under one roof. The extensive network of local suppliers and proximity to the port of Bilbao makes it a perfect location to guarantee the complex shipment of GMDs to the mines.

[FIND OUT MORE](#)



ABB named a Visionary in the 2022 Gartner® Magic Quadrant™

Gartner has recognized ABB as Visionary in the 2022 Gartner® Magic Quadrant™ for Industrial IoT Platforms. The recognition is based on the Gartner evaluation of ABB Ability™ Genix Industrial Analytics and AI Suite, as well as ABB's Completeness of Vision and Ability to Execute.

[READ THE FULL REPORT](#)



Better decisions for connected mining

Welcome to connected mining - ABB digital solutions help Gold Fields meet the challenge of mining in remote locations with an integrated digital infrastructure for safer, more reliable gold mining operations.

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