

How ABB is helping drive mining's energy transition

 By [Sindy Peters](#)

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Mining is a significant carbon emissions contributor, with the global metals and mining industry contributing to about [8% of the global carbon footprint](#). Transformation of its operations to achieve emission-free, energy-efficient mines is urgent in addressing the climate crisis.



Source: Supplied

Global technology company ABB believes its Ability eMine solution - which makes the all-electric mine possible - can help accelerate decarbonisation in the mining sector. Erik Pretorius, head of sales for Africa and Australia at ABB, shared with us how the technology works, its impact on mining's carbon emissions, and how it can optimise a mine's operations.

■ Share with us briefly what the ABB Ability eMine solution entails and how it works.

eMine makes the all-electric mine possible with fully integrated electrification and digital systems from mine to port. Today, the all-electric mine challenge is on electrification of mining trucks and we at ABB are committed to push the technology frontier for the full mining process.

We support our customers from the earlier stage of mine design to help them get full value of electrification, helping design the hauling process in the most optimised way with electrical solutions that match mine constraints and help meet production targets.

Supplying power to mining vehicles with fit-for-purpose electrification solutions to achieve the most optimised electrified process, ABB Ability eMine charging systems and ABB Ability eMine Trolley system are our flagship technologies.



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■ ***Can you give us an estimate of by how much the solution can reduce a mine's carbon emissions?***

Electrifying a single mining truck reduces carbon emissions enough to save 3,000m² of Arctic ice per year. It eliminates the same amount of CO₂ that it would take 46,000 trees to absorb and even helps coral reefs by lowering the oceans' CO₂ absorption by up to 1,000 tons per year.

■ ***South Africa has been experiencing an energy crisis for many years now - could this solution be integrated with alternative energy sources to avoid further pressure on the power grid?***

ABB Ability eMine addresses the complete vertical integration of the electrical and digital infrastructure in the mining industry. This includes placing focus on the integration of renewable energy, improving power quality and managing electrical flow better through intelligent energy management systems. All in an effort to enhance overall energy efficiency.

■ ***How does the solution optimise mine operations?***

ABB Ability eMine places emphasis on operations, maintenance, and production management improvement through a suite of digital apps under ABB Ability OMS. Short Interval Control, Fleet Management Systems, Advanced Process Control, and Asset Condition Monitoring and Improvement Systems are but some of the apps that show strong, immediate, but also sustainable returns.

■ ***How long do the trucks typically take to charge and how does this impact mine productivity?***

ABB Ability FastCharge is the world's first automatic 600kW fast-charger for mine vehicles. Currently in pilot phase, this solution aims to reduce standing time during charging cycles as would otherwise be the case with smaller power, more conventional chargers.

Coupled with the enhanced work performance that electric vehicles hold over conventional diesel machines, the overall impact is significant in improving turn-around times, tonnage hauled and the work environment that operators function within.



Erik Pretorius, head of sales for Africa and Australia at ABB

ABOUT SINDY PETERS

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