



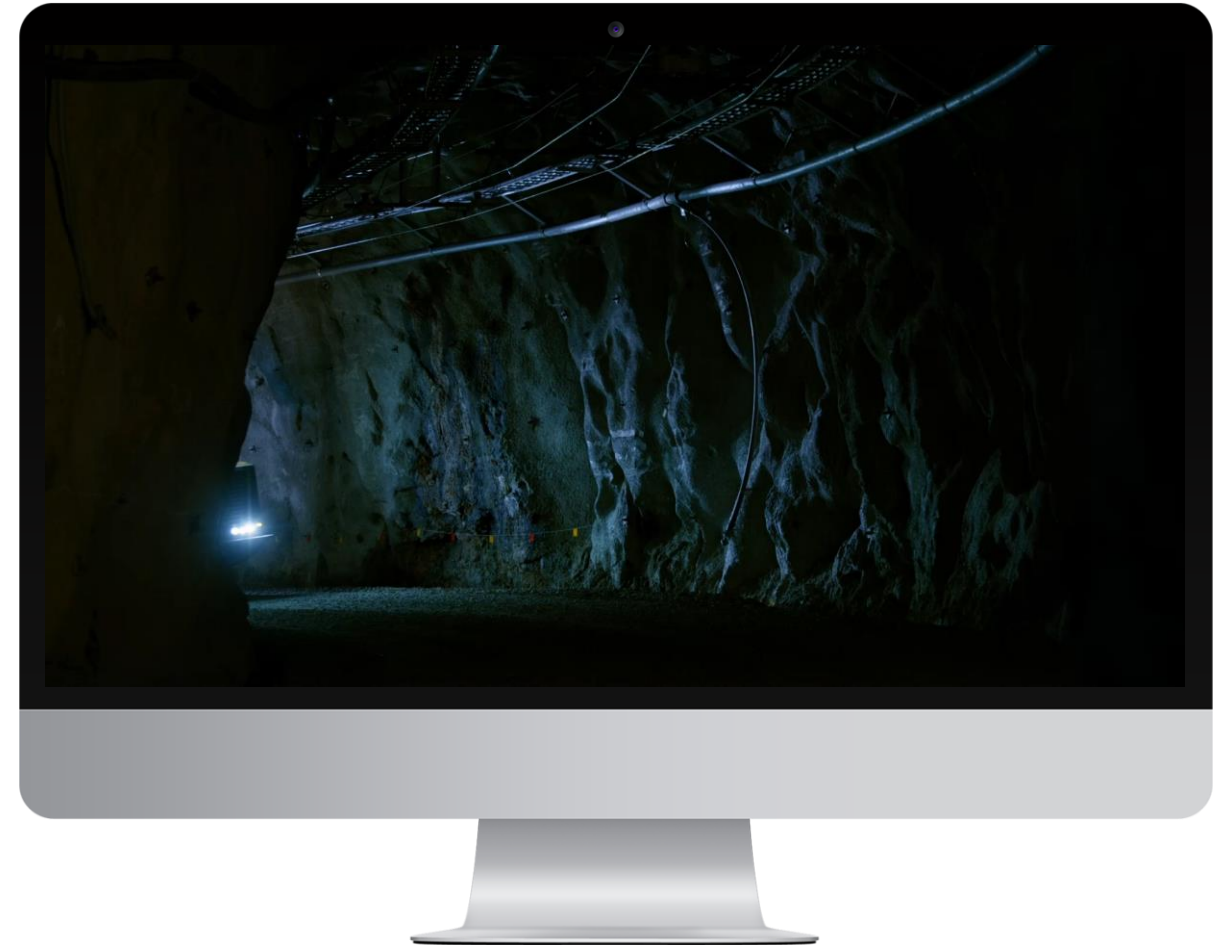
Boliden, Epiroc and ABB make first battery-electric truck trolley system for underground mining a reality



See the battery-electric truck trolley system in real life!

“Over the past three years, we have worked in close collaboration with the ABB and Epiroc teams to bring the electric mine of the future one step closer. The most important thing for us is of course that the technology works in our own operations, but we also see added value that we together with our partners can drive technology development so that the system can be used in other mines. We are proud to have taken this concept to a live installment.”

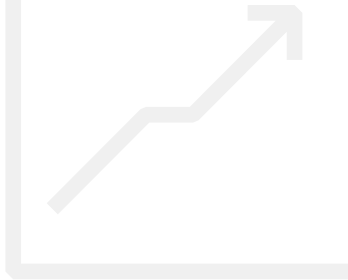
Peter Bergman,
General Manager Boliden Area, Boliden



Develop a battery-electric trolley truck system at Boliden's Kristineberg mine

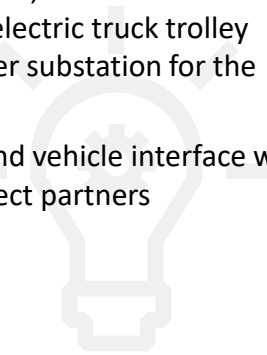
Challenge

- Enable heavy transportation with electric driven battery vehicles for underground mining
- Integrate EV truck with automation
- “We also see added value that we together with our partners can drive technology development so that the system can be used in other mines.” said Peter Bergman, General Manager Boliden Area, Boliden



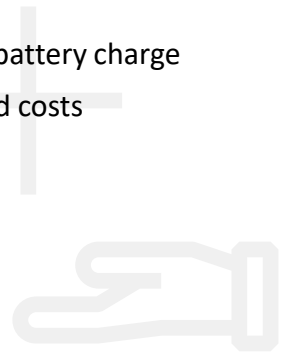
Solution

- Develop an underground battery-electric trolley truck system
- The system builds on Epiroc's proven battery-electric Minetruck MT42 SG, highly suitable for long haul ramps. It features a trolley pantograph which is connected to an overhead contact power line
- Building on its eMine™ solution, ABB created the infrastructure, including the electric truck trolley system design and the rectifier substation for the test track
- The definition of standards and vehicle interface was jointly developed by the project partners



Benefits

- Significant reduction in CO₂ emissions
- Enhance safety and work environment with no exhaust, less noise and vibration
- Improved productivity through 50% increased speed up ramp
- Reduced total cost per ton, diesel vs electricity + battery usage
- Unlimited range, no need for battery charge
- Reduced ventilation needs and costs



Supported by Vinnova, the project contributes to Boliden's vision to be the most climate friendly and respected metals provider in the world.

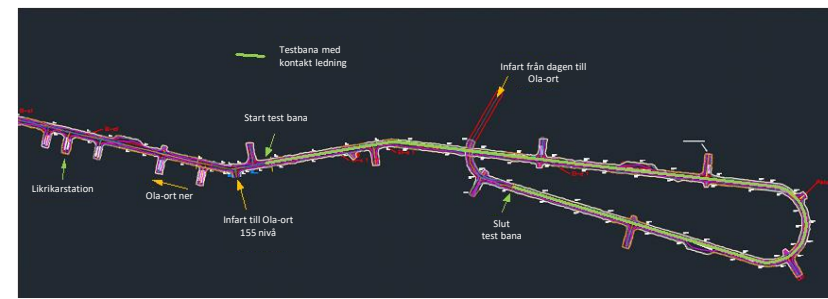
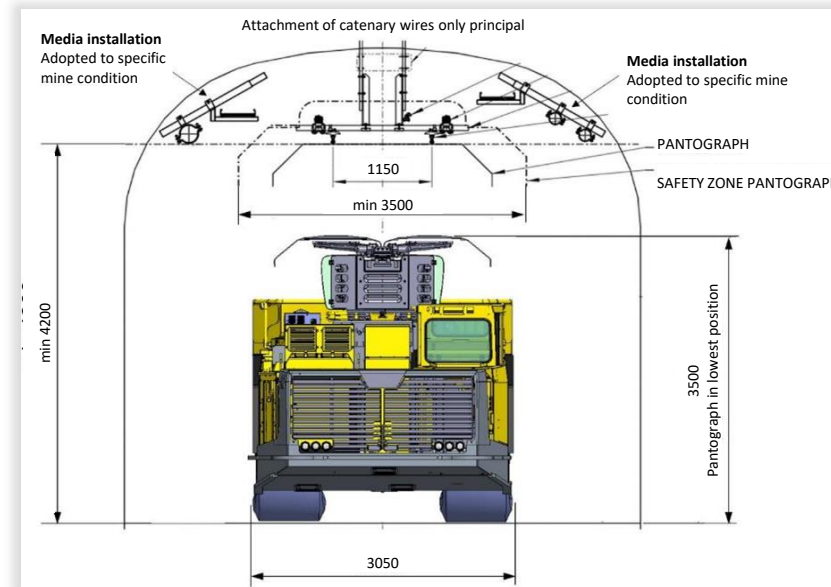
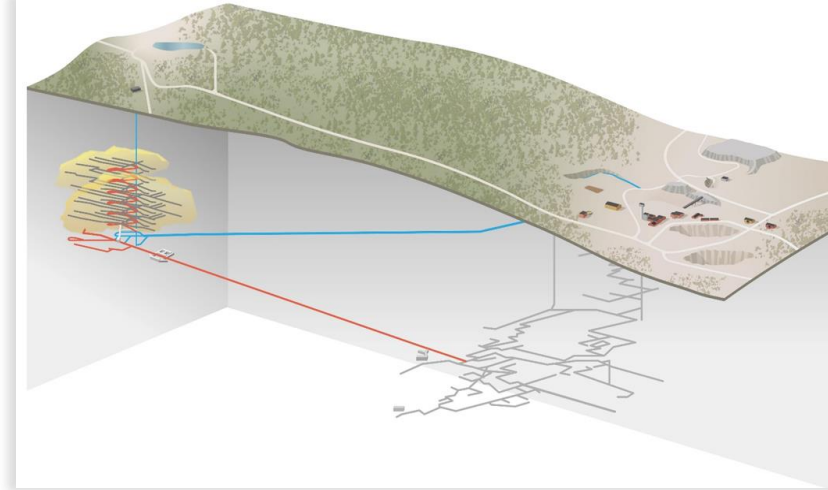
Boliden Rävliiden underground mine



Rävliiden is an expansion of Boliden Kristineberg Mine, a satellite orebody



The **first fully battery-electric** truck trolley system has been deployed on an 800-meter-long underground mine test track in Sweden, with a 1:7 percent incline

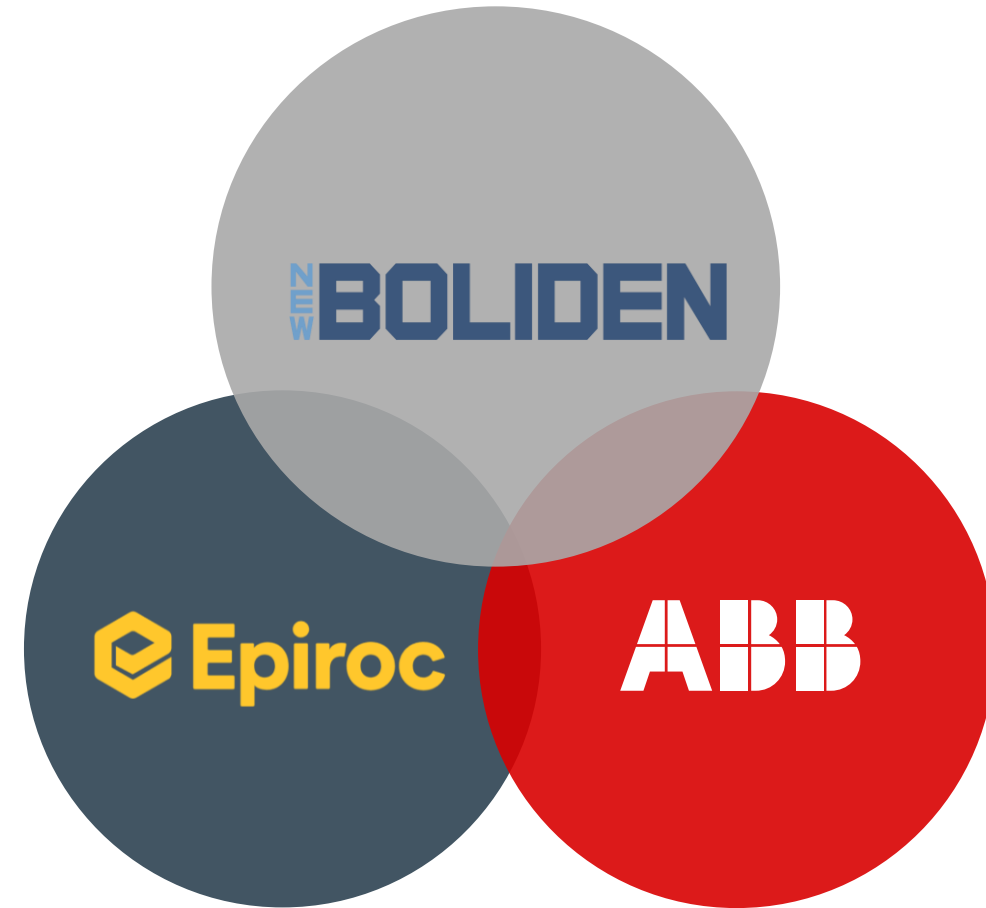


All three partners have clear corporate goals that support **more sustainable** operations, aiming to **help mines** improve sustainable production and **meet growing metals demand** around the world. We are working together to fast-track the **development of new emissions-reducing systems**, with the goal of electrifying and automating the whole mining operation.

Our joint development and co-creation approach leverages the domain expertise of key suppliers to meet a wider range of our customer needs.



Key technical suppliers (KTS) working together





Q&A





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