



Industry Needs and Priorities in the Electric Mine

During the industry needs and priorities in the electric mine workshop held on September 27, 2022, participants discussed their needs and priorities as they pertain to an electric mine. The key priorities discussed included:

- Change management
- Education
- Cross industry collaboration
- Electric mine design and simulation

| Priorities | Challenges and Requirements | Next steps |
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| Electric Mine Design and Simulation | <ul style="list-style-type: none"> • A fully electric mine requires significant change in the electric infrastructure and the associated costs. • Grid optimization: assess different scenarios of power availability (e.g., how to build a local power grid, how to optimize solar, hydro, utility, wind, etc., storage vs selling back to the grid). • No clear path of migration today from an existing mine to an electric mine (i.e., transition considerations) • Having an electric mine is not a static process (i.e., need to think about the different ways to optimize the energy consumption, how to build the microgrid together with utility solar or hydro). • Need for standard interface between the grid and the vehicles (both static charging where we start to come to the limit of the standard that many OEMs have adopted (the CS 2.0) and standards for dynamic charging and a form of trolley or other charging systems when on the move). The benefit of having an industry accepted standard is that it is a holistic approach and that in generally increases safety level and reduces cost. • Design for simulation to change how the mines are designed and created to be more aligned with an electric mine. | <ul style="list-style-type: none"> • Landscape and determining what to do next. • More communication to create standardization (e.g., around chargers). • Getting into the details and see alignment on priorities to standardize them. • Fill in the gaps in guidelines as a group (i.e., gap analysis). • Determine the specifics (e.g., is change management behavioural change or technological change?). • Guidelines on holistic trolley system and trolley design (OEM independent). • Identify other opportunities beyond vehicles and a means for target prioritization (i.e., replacing gas). |
| Change Management | <ul style="list-style-type: none"> • To be successful change management is needed to bring in technology. • How to justify and optimize. | |
| Education | <ul style="list-style-type: none"> • Operational practices, skills, and sharing to maintain and operate the systems. | |
| Cross Industry Collaboration | <ul style="list-style-type: none"> • Collaborate across the industry to see what is going on (e.g., working with Electric Mine Consortium, ICMM). | |

Note that this document captures some key discussions among a small cross-section of industry participants during a needs and priorities roundtable held on September 27, 2022. It is intended to be one of many inputs into the working group and is not intended as industry guidance or a formal report.