Underground Mining Prioritization Workshop | 2022

These outcomes are from the Underground Mining Prioritization Workshop held on September 7, 2022. Participants discussed and identified priority focus areas and developing an existing plan based on those priority areas. In those plans they pinpointed the key challenges and opportunities and mapped out initial actions to move forward. Some of the main priority focus areas discussed included:

- Sharing best practices for quick wins
- Training personnel and workforce challenges
- Technology adoption to help with decarbonization initiatives and efficiency

Priority Focus Areas
• Early wins: best practice definition, sharing, and implementation. • On-going safety and risk elimination/mitigation for new technology. • Underground mining is more advanced with electrification but there is still a lot to work on (e.g., measuring and benchmarking). • Investigating new technologies to enable the more carbon friendly methods of mining (e.g., conversion of autonomous and electrification). • Adoption of new technology (i.e., BEV rollout to industry standard and getting past capex curve). • Excavation methods (i.e., continuous methods that work and are cost effective, maintenance, change mine design). • Lack of clear leadership in the industry to determine what the future looks like (i.e., risk aversion). • Production measurement for drilling and defining down to the steps. • Trained personnel and workforce challenges: training, meeting global requirements, and lack of senior personnel.

Key Challenges and Requirements	Next Steps
Best Practices • Preventative maintenance (i.e., decrease interval between maintenance cycles). • Sharing and collecting work done before (e.g., Peter K updating the Rob Burst Handbook). • Industry accepted practice vs industry “best” practice. • Use of data and predicting how the data will be needed and for what. • Change management and operating in the future? (e.g., people, blending technology, access to data). **Ground Support** • Use of modelling support. • Ground falling is a number one safety issue. • Dynamic support for burst-prone ground. **Vertical Excavation** • Where is shaft sinking going (and been)? • Making a large expansion below shaft. • Niche but critical because it drives project schedule.	• Underground time usage model: tied with ISO, IREDES, etc. • Whitepapers and case studies: What is the story and challenge, how was it addressed, what worked, what failed? • Start with having the discussion, education, and awareness. • Develop a model to enable the benchmarking (start with the maintenance side then operational).

Note that this document captures some key discussions among a small cross-section of industry participants during a priorities workshop held on September 7, 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.