



Optimizing the Electric Mine	1
Electrical Infrastructure Setup	1
Charging Methodology	2
The Path to Automation	2

Your equipment selection, how your infrastructure is set up, and how you do things like your ore handling and logistics will all provide essential information on what you need to do to optimize.

The Mayhew Performance team takes a **hands on approach**. We spend time onsite with you to see how you do things and make sure you're making the optimal choices.

OPTIMIZING THE ELECTRIC MINE

In an industry where every second counts and where things are becoming more and more interconnected, optimizing to get the most out of your electric mine is a key part of your operational readiness.

ELECTRICAL INFRASTRUCTURE SETUP

Many mines realize too late that they don't have enough power to support their electric vehicles. Key factors to consider include:

How does your **OEM selection and fleet composition** affect the infrastructure requirements? Is it a mixed fleet of BEV and diesel? Multiple BEV OEMs? Does your vehicle have onboard charging or battery swapping? These factors will affect when and where your BEVs are pulling from the grid and inform essential decision-making on adding new electrical infrastructure or optimizing what you have.

Is your power source on or off grid?
This will affect how flexible you are, and you'll be working with different constraints.

Have you done your due diligence on power distribution? You need to accommodate production equipment, ancillary equipment, and all other processes that use the electrical system (e.g., dewatering, ventilation).





Don't forget:

No matter how well you set everything up, your people need to know how to work with the new equipment.

Cross training and expanding skillsets will also be a key piece of the puzzle.



CHARGING METHODOLOGY

Your charging methodology will be critical for BEV performance. Depending on your equipment selection, you might be charging on-board, off-board, or by swapping batteries. Based on how you charge, you can decide what infrastructure would be ideal to enable optimal BEV performance and meet your daily production targets. Key infrastructure design options include:

Centralized charging

A dedicated multi-bay charging facility for charging all batteries.

Typically requires equipment standardization

Could reduce charging infrastructure requirements

Needs to be strategically located

Decentralized charging

Single-bay charging stations at multiple dedicated locations.

Potential to accommodate mixed fleets (different chargers for different equipment)

Charging location flexibility

Opportunity charging

Charging during existing downtime with ancillary equipment connected to existing infrastructure.

Makes use of existing downtime, limited productivity impacts

Logistical challenges, might not work for all equipment options

THE PATH TO AUTOMATION

As BEV adoption grows, many are evaluating automation options to increase overall safety and productivity. While it might not always be possible (yet), optimizing your BEV fleet and infrastructure sets the stage for automation down the road.

Automation or remote operation underground also requires a strong communications backbone (LTE and/or Wi-Fi), IT systems, control rooms, and trained personnel.

Thinking about optimizing your BEVs within their broader operational context from day one is essential for your future success. At Mayhew Performance, we draw on our extensive practical experience to help you take the long-term view.

ABOUT

Mayhew Performance LTD. (MPL) was founded by Mike and Nicole Mayhew in 2020 with over 150 years of combined experience in mining operations. MPL is a boutique consulting firm specializing in green engineering, GHG evaluations, BEV studies, risk management, and health & safety. MPL is committed to Net Zero by 2025

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