



Questions every mine site should ask before implementing BEVs

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#### INTRODUCTION

Implementing Battery Electric Vehicles (BEVs) in mining operations is an important step toward decarbonisation, improving worker safety, and reducing operational costs. However, without the right preparation and cross-functional planning, outcomes can fall short of expectations.

This guide outlines 8 essential questions mining professionals should ask before initiating a BEV program, helping teams to prepare thoroughly and set up for success.

If you're keen to learn more about implementing BEVs, explore AusIMM's course on Mine Electrification.



### **8 QUESTIONS**

# **Every mine site should ask before implementing BEVs**

# Do we understand the technical specifications and compatibility of available BEVs?

Battery electric vehicles vary widely by manufacturer and configuration. Compare range, battery capacity, charging time, and handling. BEVs outperform their diesel equivalents on available torque, and speed but consider how this can practically be used to enhance productivity of your operations.

## Have we assessed our charging infrastructure readiness?

Electrification success depends on the right charging system. How will you decide what is the best charging profile for your operation, whether fast charging, on-board charging, battery swapping, or a combination of all the above. Assess electrical capacity and power reliability. Inadequate infrastructure can bottleneck productivity.

2



#### How will battery lifecycle and energy 3 storage be managed?

Plan for battery maintenance, replacement, and repurposing. Understand the benefits of doing this yourself versus acquiring a battery-as-a-service (BaaS) contract with the suppliers. Implement state-of-health monitoring and determine what end-of-life of battery means in the context of your operation.

#### Are safety and emergency response protocols in place for high-voltage systems?

BEVs pose electrical and thermal risks. Train your team in high-voltage safety, thermal event response, and proper personal protective equipment (PPE) use. Adapt emergency protocols before the first pieces of equipment arrive on site.



#### **5** What change management strategies will support the pilot?

Electrification requires cultural and operational change. Communicate goals clearly, involve stakeholders, and retrain teams. Use phased rollouts and feedback loops to manage resistance and support adoption.

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#### What data will we need to track on BEVs to optimise their performance?

Set KPIs, baseline data, and clear objectives. Define where and how BEVs will be used. Plan for performance tracking and regular reviews to optimise learnings.

#### Are we aligned with current and emerging 7 regulatory and compliance expectations?

Understand how BEVs align with your mine's safety and environmental requirements. Stay ahead of compliance updates and integrate electrification into your safety management system.



#### 8 What cross-functional teams will support implementation?

Electrification requires coordination across departments. Identify champions from engineering, safety, procurement, and operations to ensure alignment and rapid issue resolution.

To dive deeper into the planning, integration and risk management strategies behind electrifying your fleet, explore AusIMM's Associate Certificate in Mine Electrification. Learn from leading practitioners and gain the tools to make electrification a reality at your site.

"In our work with operations teams navigating battery electric vehicle adoption, we've consistently asked: What do you wish you'd known from the start? The responses were strikingly similar and too valuable to ignore." -**David Lyon, President, Zero Nexus and facilitator of the Mine Electrification Associate Certificate.** 



### **ASSOCIATE CERTIFICATE**

### **Mine Electrification**

Lead your organisation in the successful transition to battery electric vehicles (BEVs) by equipping your technical and training teams with the strategies and knowledge necessary to plan for a safe and efficient electric mining fleet. Understanding the complexities of electrification—from infrastructure requirements to operational integration—is crucial.

Our expert-led course is designed to empower your team, providing them with the tools to guide your decarbonisation roadmap effectively. By investing in this training, you will ensure that your workforce is prepared to implement and maintain BEV systems, driving both environmental and operational excellence in your mining operations.



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