TRAILBLAZER
RESOURCES TECHNOLOGY & CRITICAL MINERALS

JAMES COOK UNIVERSITY AUSTRALIA

Resources Technology and Critical Minerals Trailblazer

Transforming how industry, universities and research work together

Supporting optimization of resource operations by developing new technologies

Equipping innovators with the skills and knowledge to transform the sector

Project

Off-Grid EV Charging Solution with Cyclone-Resistant Solar Carport for Remote Mining Operations

RESEARCH → INDUSTRY COLLABORATION → IMPACT

Curtin University

IN COLLABORATION WITH

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

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Off-Grid EV Charging Solution with Cyclone-Resistant Solar Carport for Remote Mining Operations

Project Description

Problem

High diesel fuel cost and emissions in remote mining transport operations.

Limited off-grid EV charging and energy infrastructure for remote sites.

Uncertainty around practical electrification pathways for mining and critical mineral operations.

Aims

Develop an off-grid EV charging solution with integrated solar, battery storage and smart energy management.
Assess energy infrastructure options for mining transport electrification.
Build a functional prototype to validate performance and feasibility.
Deliver feasibility, technical and operational reports to support future commercial deployment.

Partnerships

Collaborators

James Cook University – Engineering

Industry – My Energy Group

Project Lead

Dr Yang Du, JCU

Contributions

Industry ~ $1.2m

Trailblazer ~ $0.25m

Total Project Value ~ $1.45m

June 2026
For further information on JCU Trailblazer projects please send enquiries to: EGRU@jcu.edu.au

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