



Case Study

Providing efficient and low maintenance lighting solutions at Carmichael Mine Airport with our innovative hybrid and solar lighting tower.

OVERVIEW

Mining operations are expected to be more efficient in their use of hydrocarbons and are looking for tangible strategies to immediately reduce their scope 1 and scope 2 CO2 emissions, whilst maintaining operational reliability and cost efficiency.

Bravus Mining and Resources, a prominent player in the mining industry and long-standing customer of Fuelfix approached us to provide effective and low-emissions lighting solutions for the Labona Aerodrome, facilitating after dark flights.

CHALLENGE

Bravus is a well-established company in the mining industry, known for its commitment to safety, efficiency, and innovation. The Carmichael Mine site is one of their key operations, contributing significantly to their overall production. However, as winter approached, the shorter days necessitated a robust lighting solution to ensure the safety and efficiency of outgoing and incoming flights at the Labona Aerodrome.

The existing lighting at the aerodrome was minimal and posing potential risks for after dark outgoing and incoming flights. The challenge was to find an easy to operate, cost-effective, and movable solution that would not interfere with the flight path or blind the pilots during take-off and landing whilst providing adequate lighting to passengers, site staffs and pilots when the planes were parked-up. Operating in harsh mine environments posed additional challenges, requiring fail safe and robust solutions that could withstand extreme conditions and ensure operational reliability at all times, without frequent maintenance or refuelling.



LOCATION	Carmichael Mine, QLD
YEAR	2024
INDUSTRY	Coal Mining
FOCUS	Provide Lighting to the Carmichael Mine Airport (Labona Aerodrome) for after dark flights.
SOLUTION	SL21 Lighting Tower & HLT270 Lighting Tower

Fuelfix was appointed by the client to provide a dependable and greener lighting solution with the overarching goal to improve operational efficiencies and safety at their on-site airport facilities:

- reducing fuel consumption and CO2 emissions,
- reducing maintenance and operational costs,
- ensuring safety and security on site at all hours of the day.

SOLUTION

Fuelfix hybrid lighting towers (HL270) and solar lighting towers (SL21) have illuminated major projects across some of the most challenging environments across Australia and were the ideal lighting solution to address Bravus' challenge at their Carmichael Mine site.

These lighting solutions were chosen for their significant light output, safe positioning and 'set and forget' capabilities. The built-in sensors automatically turn the lights on and off, responding to the changing light conditions.

SL21:

Working solely on solar and requiring no maintenance, our solar light towers can provide maximum lighting for up to 26 hours with zero emissions and noise.

The lighting towers were strategically positioned to provide maximum light coverage without interfering with the flight path and the automatic sensors were calibrated to respond accurately to the changing light conditions, ensuring optimal performance at all times.



HL270:

Overcoming the constraints of traditional diesel-powered systems, our hybrid lighting towers utilise a highly efficient diesel generator and the latest in LiFePO4 battery technology to deliver the most efficient power system for lighting applications.

What made these lighting towers exceptional was their ability to operate predominantly on battery power, the system automatically switched between diesel and battery power to maximise reliability and minimise fuel usage and CO2 emissions.

The generator was only engaged to charge the battery, which then powered the lighting system, reducing the manual workload associated with maintenance and refuelling requirements.

The intuitive operating system also required minimal training and offered remote monitoring capabilities.

VERDICT

The implementation process was smooth and efficient, thanks to the expertise and experience of the Fuelfix technicians. The team worked closely with Bravus' representatives including the Aerodrome Operations Supervisor to understand their specific needs and tailor the solution accordingly.

The deployment of Fuelfix's lighting towers had a transformative impact on the Carmichael Mine Airport operations, leading to operational efficiencies and significant cost savings.

The client was impressed with the capabilities of the lights, which met their need for adequate on-site lighting and offered additional benefits in terms of CO2 emissions and fuel savings. The solar lighting tower required no maintenance or refuelling, and the hybrid lighting tower's fuel tank would last at least six months before needing a refill, based on the client's utilisation rates.

In the words of the client, "The lights are awesome, we love them!"

This project is another testament to Fuelfix's commitment to providing 'Go-Greener' solutions that meet the unique needs of their clients.



The feedback from Bravus has been overwhelmingly positive. The lighting towers have improved working conditions on-site and enhanced the experience for passengers, site staff, and pilots. The lights have significantly increased safety at the airport, enabling operations at all hours of the day.

THE PATHWAY TO A CLEAN ENERGY FUTURE

The mining, resources and energy sector is where the Fuelfix lighting towers really shine, delivering a superior solution while addressing the challenges posed by traditional diesel-powered lighting systems.

Fuelfix's solution not only meets environmental and compliance objectives but also enhances operational efficiency, making it a strategic choice for Bravus' sustainable and cost-effective mining operations.

This project is in line with our [Two Pathways, One Goal Strategy](#) which includes designing and delivering solutions that provide opportunities to reduce carbon emissions and maintain efficient operations with better environmental outcomes.

