FUELFIX
energy & emissions solutions
TANKS2GO

Case Study

Delivering a reliable and greener Fuel Storage Solution for South32 at Worsley Alumina mine. Fuelfix introduced its innovative hybrid-powered refuelling solution.

OVERVIEW

South32, the operator of the Worsley Alumina mine, has a history of successful collaborations with Fuelfix. Due to the positive outcomes of previous projects, South32 approached Fuelfix for their fuel facility extension project.

Go-Greener • Go-Greener • Go-Greener

LOCATION	Worsley Alumina mine, WA
YEAR	2024-2026
INDUSTRY	Mining
FOCUS	Operational Efficiency and Environmental Benefits
SOLUTION	Innovative hybrid powered fuel tank solutions

INITIAL BRIEF

South32 required two new fuel storage and dispensing facilities to be strategically set-up in 2 different locations on the mine site. The mining operator needed one independent stand-alone 30,000L self-bunded fuel tank at each location to facilitate the refuelling of heavy vehicles and machinery directly in the mine work areas.

CHALLENGE

Before partnering with Fuelfix, South32 depended on a fuel truck that travelled in a cycle from the fuel farm to various work sites four times within each 24-hour period. The truck followed a fixed schedule, stopping at designated refuelling points. This approach limited the amount of time and fuel available to each piece of machinery and often led to downtime, as vehicles were unable to refuel when necessary. In addition, some of the mobile plant equipment had to travel to the primary refuelling facility increasing downtime.

Given the 24/7 nature of the operation, minimising downtime was critical to decrease inefficiencies and unproductivity.

FUELFIX
energy & emissions solutions
TANKS2GO®

The client faced several challenges with the long and costly process of refuelling machinery and mining fleet using the fuel service truck. The key to the success of this project was the ability to supply an efficient refuelling station, strategically located on site to avoid unnecessary downtime related to fuel supply.

The remoteness of the site was another challenge, the client needed a fuel storage solution capable of operating completely off-grid, providing optimal performance and requiring very low maintenance.

To avoid the added cost, noise, maintenance and refuelling requirements that a diesel-powered generator would have introduced, Fuelfix & Tanks2Go determined the best solution would be the installation of a hybrid-powered fuel storage and refuelling solution. addressed these operational challenges through an innovative approach.

SOLUTION

Fuelfix offered one of its new innovative hybrid powered fuel tank solutions consisting of:

- 30,000L Self-Bunded Fuel Tanks with heavy vehicle Dispensing solution
- Two Hybrid Power Systems

Fuelfix solution's was provided in accordance with South32's specifications, with the two tanks strategically positioned on the mines northern and southern work sites. Fuelfix proposed integrating its hybrid generators to power the refuelling stations, offering significant operational and environmental advantages over traditional diesel generator-powered solutions.

Traditional refuelling stations rely on diesel generators operating 24/7. Fuelfix's hybrid power solution ensures the main power source is derived from the battery energy storage with the small diesel generator operates only when necessary, reducing fuel consumption and maintenance by up to 75%. This hybrid system ensures continuous power supply to remote sites no matter the operating conditions.

As hybrid power systems are relatively new and not widely adopted in the mining industry, Fuelfix worked closely with South32 to drive the implementation of the hybrid technology and provided training to service personnel on how to operate the new equipment, with a strong emphasis on ensuring the equipment and installation met stringent safety standards.

VERDICT

The system enables South32 to refuel machinery directly on the mine site when needed, minimising fuel truck trips. The hybrid power system provides an energy-independent solution, ideal for the remote location, and eliminates the need for regular servicing and refuelling.

Prominent Features of the Fuelfix hybrid refuelling solution:

- **Cost Benefits:** Lower fuel consumption, reduced maintenance costs, extended equipment lifespan.
- **Operational Benefits:** Significant reduction in maintenance and daily servicing requirements through reduced generators hours of operations.
- **Environmental Benefits:** Reduced emissions due to lower fuel consumption.
- **Safety Benefit:** Reduced truck and personal movements around the site.

On an annualised basis, our Go-Greener solution enabled South32 to:

Reduce generator runtime on both refuelling station **by 86%**, saving 46,000L of diesel

Lower fuel costs by approximately **76%** and **maintenance costs** by approximately **88%**

Cut CO2 emissions by **120 tonnes,** which is equivalent to the amount absorbed by approximately 4,800 trees in one year

"We are very happy with the refuelling solution installed by Fuelfix as well as the service and support provided by the team. This auto refuelling system paired with new technology is enabling significant reduction in fuel costs, maintenance of the power unit, and CO2 emissions. This system led the reduction of downtime which ultimately increased the site productivity and energy efficiency as well as safety with fewer service truck movements on site."

The system also helped highlighting and enabling strategic changes in the mine operations that leaded to less downtime overall on the site.

The solution provided by Fuelfix helped South32 achieve their business goals by increasing operational efficiency and productivity. The hybrid power systems ensured a reliable power source for the refuelling stations, delivering substantial benefits compared to traditional diesel generator options.

Two Pathways, **One** Goal

This project aligns with our Two Pathways, One Goal Strategy involves creating and implementing solutions that offer opportunities to lower carbon emissions while ensuring efficient operations and achieving better environmental results.

Contact Fuelfix and Tanks2Go today for flexible energy and emissions solutions to manage current fuel consumption and transition to green energy solutions.