



Project Background

A Battery Energy Storage System provides reliable support for a wide range of site electrical loads, making it an ideal solution for construction projects that require continuous, dependable power.

In this case study, the construction site required a full 24/7 power supply to support round-the-clock operations. Critical equipment, lighting, and security systems had to remain in operation at all times to meet strict safety and site management requirements. Located in the centre of a residential area, the site also faced tight space constraints and heightened sensitivity to noise, making conventional diesel generation less suitable.



The Challenge

Operating a construction site continuously in a dense residential area poses unique power challenges. The client needed a solution that could **provide uninterrupted energy while meeting strict safety, noise, and space requirements.**

Key challenges included:

- 24/7 non-stop operation
- Residential location
- Space constraints
- Noise and safety requirements at the site

AEE Solution

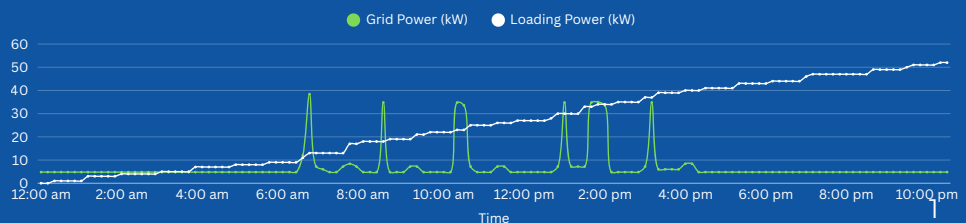
To address these challenges, we replaced a 350 kVA diesel generator with our compact, high-capacity BESS solution, designed to operate continuously on a 24/7 basis.



Our BESS delivered the reliable energy needed to support the entire site, including machinery, lighting, and surveillance systems, while offering a more compact and site-friendly alternative to traditional diesel generation. Its smaller footprint made it especially suitable for the restricted site conditions, while its quiet operation helped meet the demands of a residential environment.



- AEE Model: AEE-350
- Capacity: 375 kWh
- Grid Input: 90A (39kW)
- Operating duration: 24/7





Results and Performance

Opting for a Battery Energy Storage System in place of a diesel generator **lessens reliance on diesel, offering a more dependable and environmentally friendly on-site power solution.** This reduces the risk of issues related to fuel supply, price changes, and periods of generator inactivity.



Residential-Site Ready

Designed to meet strict site safety and noise requirements, our BESS provided a practical power solution for construction in sensitive residential surroundings.



Whisper-Quiet Operation

With low-noise operation, the system supported site activities and essential services during night hours without the disruption associated with diesel generators.



Battery Longevity

Our BESS delivered continuous energy supply for critical daily operations, ensuring uninterrupted support for site machinery, lighting, and surveillance systems.



Compact, High-Capacity Design

The system combined a small physical footprint with strong energy capacity, making it ideal for tight construction sites where space is limited but power demand remains high.

Category	Traditional Diesel	AEE Compact BESS Solution	Result
General Capacity Required	100kVa	Grid support	No Genset required
Runtime (hrs /day)	24hrs (Genset Operation)	24 hrs (BESS operation)	/
Fuel Consumption (L/day)	480 L/day	0	↓100%
Operation Cost (\$/day)	Diesel: AUD 1,042 /day*	Electricity: AUD 230 /day*	↓78%
CO2 Emission (kg/day)	1,260 kg/day	0 kg/day	↓1,260 kg
Maintenance Cost (monthly)	High (continuous running)	Low	↓80%
Payback Period	/	9 months	

*Based on diesel price and electricity price in Hong Kong, with 1 AUD = 5.53 HKD

If we apply the case study to Australia, the operational cost saved per day will be AUD 936, payback period will be 7 months. (Operational cost saved per day: traditional diesel per day AUD 1,200 - electricity price per day AUD 264)

Project Significance

This project showcases our BESS's capability to deliver stable, round-the-clock power in challenging urban environments. It effectively supports machinery, lights, surveillance, and safety systems, offering a reliable alternative to diesel generation. BESS enhances site safety, reduces environmental impact, and optimizes limited space while maintaining continuous operations with quiet performance and compact design.

Get in Touch



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