

Powering the Future of Construction

Mobile Battery Energy Storage Systems for Modern Construction Needs





The Construction Industry's Energy Challenge

Current Pain Points

- Diesel generators dominate temporary power, producing excessive noise and emissions
- Strict urban noise ordinances limit night work capabilities
- Rising fuel costs and frequent maintenance drain budgets
- ESG goals and regulatory compliance create pressure to decarbonize

87%

Fuel Reduction

Potential savings in diesel consumption with hybrid BESS systems

70%

Cost Savings

Reduction in operating expenses versus traditional generators



Introducing GreenGrid 90K Mobile BESS

The GreenGrid 90K is a 90 kWh/20 kVA mobile battery energy storage system engineered to deliver silent, clean and compliant power at construction sites. Instead of relying on noisy diesel generators and complex fuel logistics, builders can deploy this trailer-mounted battery to energize switchgear, office trailers, cranes and electric equipment.



Zero Emissions

Completely clean operation with no exhaust fumes or carbon footprint



Silent Power

Virtually no audible noise for urban and night operations



Fast Deploy

Rapid setup with simple cam-lock connections and minimal training



Low Maintenance

Minimal service requirements compared to diesel generators

Technical Specifications

Usable Energy	90 kWh
Continuous Output	20 kVA at 208V (77A)
Output Configurations	208Y/120V three-phase 120/240V split-phase
PV Input	4 MPPT trackers, 120-500 Vdc
Charging Power	Up to 10 kW at 208V
Operating Range	0-40°C outdoor rated
Dimensions	15' L × 5' W × 8'4" H
Weight	~5,000 lbs

Eligible for 30% tax credit

Safety & Certifications



UL 9540 Listed

AC-ESS certification



UL 9540A

Fire testing complete



UL 1741SA

Grid-interactive inverter

Lithium-iron-phosphate (LFP) chemistry eliminates thermal-runaway concerns while providing long cycle life and integrated battery management.

Five Key Construction Applications

01

Electrical Commissioning Power

Stable, clean power for energizing switchgear, relay checkout and load-bank tests without voltage fluctuations

02

Temporary Site Power

Office trailers, pumps, tower cranes, lighting and tools powered with dual voltage modes

03

Night Work Operations

Silent power for urban sites with strict noise ordinances, enabling 24/7 construction schedules

04

Hybrid Generator Systems

Pair with downsized gensets to reduce runtime by 50-90% and eliminate light-loading damage

05

EV & Equipment Charging

Level-2 charging hub for electric excavators, forklifts and crew vehicles without grid upgrades

Case Study: WestConnex Tunnel Project

Project Overview

The WestConnex M4-M5 tunnels in New South Wales required continuous power for 16 temporary sheds housing fans, HVAC and lighting during commissioning. A 45 kVA BESS combined with a 100 kW generator replaced around-the-clock diesel operation.

12-Month Results

- Generator runtime reduced from 24 hours to **6 hours per day**
- Fuel savings of **53,091 liters**
- Prevented **143 tonnes of CO₂** emissions
- Delivered **\$78,677 AUD in savings**



Fewer Refueling Visits

Reduced logistics and downtime



Less Maintenance

Fewer service interventions required



Fuel Reduction

Overall diesel consumption decrease

📄 "The BESS sustained 10-25 kW loads with clean power and allowed indoor commissioning without fume extraction. Site engineers praised the system for its reliability and quiet operation."

Hybrid Operations: Maximum Efficiency

Pairing the GreenGrid 90K with a downsized generator creates a hybrid system that delivers the best of both worlds: extended autonomy with minimal fuel consumption and emissions.



Battery Handles Base Load

BESS supplies continuous power for lights, tools, trailers and equipment



Generator Recharges

Small genset runs only when needed to top up battery, operating in optimal efficiency range



Dramatic Savings

50-90% reduction in runtime, fuel costs and maintenance while eliminating wet stacking

Toronto Mid-Rise

- 71% less generator runtime
- 38% fuel reduction
- \$10,271 monthly savings
- 87% fewer maintenance visits

Auckland Airport

- Tower crane powered 7 months
- 29,890 liters diesel saved
- 80 tonnes CO₂ avoided
- Continuous crane operation

Earlswood Complex

- Generator ran <12% of time
- 55-58 liters saved daily
- 148-157 kg CO₂ cut per day
- Zero noise complaints

Electrifying Heavy Equipment

The Future is Electric

As construction equipment electrifies, the GreenGrid 90K serves as a portable charging hub for excavators, forklifts and crew vehicles. The integrated EV charger provides Level-2 AC charging without costly infrastructure upgrades.

Komatsu PC210E Pilot Results

A 20-ton electric excavator charged overnight from a mobile BESS delivered an **eight-hour runtime**. Over a 40-hour week, this approach reduced diesel consumption by **98 gallons** and prevented **2,200 lb of emissions**.

Battery-Buffered Fast Charging

In grid-constrained locations, mobile BESS units buffer DC fast chargers, reducing capital costs by **65%** and shortening project timelines by **2-5 years** compared to waiting for substation upgrades.

Commanding the Electric Jobsite Future

Unleash the full potential of your operations with the GreenGrid 90K EV charging hub, enabling contractors to **rapidly electrify fleets**, **circumvent costly infrastructure delays**, **drive sustainable practices**, and **command the future** of the electric jobsite.



Volvo EC230

5 hours runtime per charge

Komatsu PC210E

8 hours runtime per charge

Ready to Transform Your Construction Power?

Why Choose GreenGrid 90K



Proven Performance

Deployed on major infrastructure projects worldwide with documented fuel savings of 50-90%



Code Compliant

UL 9540 listed with complete fire testing and NFPA 70E compliance for safe operation



Rapid Deployment

Simple cam-lock connections and remote monitoring enable fast setup with minimal training



ESG Leadership

Meet sustainability goals while reducing operating costs and improving site safety



Get Started Today

Contact our sales team for a live demonstration and comprehensive specification package including electrical drawings, arc-flash study and IFC compliance guidance.

sales@powerupconnect.com