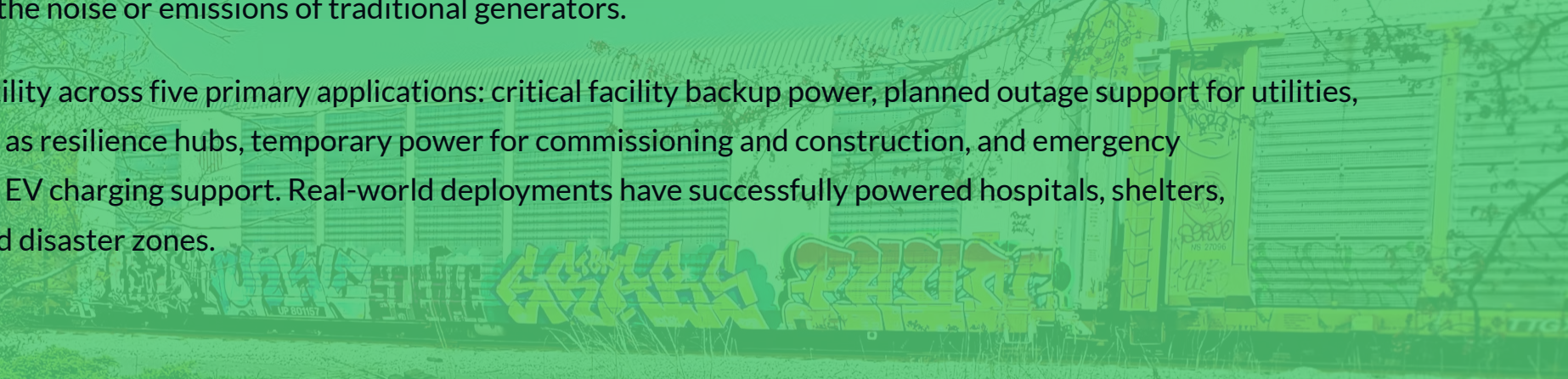


GreenGrid 90K Mobile Battery Energy Storage System

The GreenGrid 90K MBESS is a trailer-mounted battery energy storage system with 90 kWh usable capacity, delivering up to 20 kVA continuous three-phase output. This unit provides instant, clean backup power for critical facilities, microgrids, and remote sites without the noise or emissions of traditional generators.

Engineered for versatility across five primary applications: critical facility backup power, planned outage support for utilities, disaster deployments as resilience hubs, temporary power for commissioning and construction, and emergency communications with EV charging support. Real-world deployments have successfully powered hospitals, shelters, construction sites, and disaster zones.



Critical Facility Backup Power

In grid outages, critical facilities such as hospitals, emergency shelters, fire stations, and data centers cannot afford extended power loss. The GreenGrid 90K offers a cleaner, quieter alternative to diesel generators, ensuring uninterrupted power for life-safety and mission-critical loads. With 90 kWh storage and 20 kVA output, a single unit can keep essential circuits online for several hours to a full day, depending on load requirements.

Hospital Resilience

Kaiser Permanente's Ontario Medical Center deployed a microgrid with fuel cells and battery storage to ensure 10 hours of full backup power, demonstrating that battery-based backup can fully support hospital loads for extended periods without diesel generators.

Puerto Rico Hospitals

After Hurricane Maria caused the second-largest blackout in world history, eight Puerto Rican hospitals installed solar + battery microgrids using SimpliPhi Li-ion batteries to provide robust backup solutions, keeping vaccine refrigerators and critical devices running.

Community Shelters

PG&E's Foresthill microgrid uses a 750 kW mobile Tesla Megapack battery to supply an entire downtown circuit including a high school, gas station, and fire station during fire-prevention outages, proving battery systems can replace diesel generators.

Planned Outage Support for Utility Operations

Utilities regularly perform planned maintenance outages to repair aging transmission lines, upgrade substations, or implement wildfire safety shutoffs. During these planned outages, hundreds or thousands of customers can be without power for 8-24+ hours. The GreenGrid 90K offers a cleaner, faster-deployed alternative for planned outage support, positioning MBESS units in affected neighborhoods to keep power on for essential services.

SDG&E Mobile BESS Trial

San Diego Gas & Electric demonstrated a 250 kW/560 kWh Mobile BESS unit to support a rural feeder during a scheduled upgrade, successfully replacing a 500 kW diesel genset. The trial highlighted the importance of mobility, fast interconnection, and seamless transfer back to grid.



1

2

PSPS Community Microgrids

During wildfire season, PG&E rolled out mobile Tesla Megapacks for PSPS events. The Foresthill Community Microgrid powers 2,000 customers entirely on batteries for up to 48 hours, with PG&E noting that using solar plus energy storage reduces reliance on backup diesel.

Disaster Deployments for Resilience Hubs

In the wake of natural disasters, one urgent need is establishing resilience hubs or community emergency centers where people can access power, communications, refrigeration, and shelter. The GreenGrid 90K MBESS is ideal for disaster response because it is self-contained and rapidly deployable to any location accessible by road. With its integrated solar input, the unit can recharge itself during daylight, extending operations without fuel.



Hurricane Helene Response

The North Georgia United Methodist Conference deployed a mobile solar microgrid trailer (16 kW solar, 38.4 kWh battery) to Camp Tygart near Valdosta, GA. The trailer powered lights, freezers and refrigerators at the church camp for 5 days continuously until the grid was restored, freeing up limited fossil fuels for other critical needs.



Hurricane Ida Recovery

The nonprofit Footprint Project deployed a trailer-mounted solar microgrid at a church in southern Louisiana serving as a community aid center. The microgrid ultimately powered that community center for six months during recovery, demonstrating long-term deployment capabilities when fuel deliveries were hampered.



Western Wildfires

In recent California wildfires, mobile solar-powered trailers were used to run small resilience hubs in rural towns impacted by wildfire outages. The trailers powered refrigeration for food and medicine and charging stations at community centers, providing critical services during extended power outages.

Temporary Power for Commissioning & Construction

Construction projects and commissioning activities often require temporary power before a permanent utility connection is in place. The GreenGrid 90K offers clean temporary power on construction sites and for commissioning critical systems. It can deliver up to 20 kVA for equipment testing and provides stable voltage/frequency important for sensitive electronics during commissioning. For construction site use, an MBESS can drastically cut fuel usage by operating as a hybrid system.



Data Center Construction

A Nevada data center project deployed two POWR2 POWRBANK XPRO mobile BESS units with a 180 kVA diesel genset. Generator runtime was reduced by 87.5% (from continuous operation to ~3 hours/day), saving ~3,528 gallons of diesel and \$13,759 in fuel cost monthly - an 88% emissions reduction.



Industrial Commissioning

A Texas oilfield installation used a trailer-mounted BESS (300 kW) to commission a remote pipeline pump station before grid power was available. The BESS handled surge currents for motor starts and provided stable voltage source, then relocated to the next site after commissioning was complete.



Event & Film Production

The event industry has begun using battery trailers to provide temporary power for concerts and film shoots to avoid generator noise and emissions. Companies like Zenobé in the UK provide portable battery power services to construction and remote sites, marketing significant cost and emissions cuts.

Emergency Communications and EV Charging

This use case combines two growing needs in modern emergency response: powering communications infrastructure and providing electric vehicle charging when the grid is down. Communications sites often have battery backups lasting only 4-8 hours. A mobile MBESS can be deployed to recharge telecom batteries or directly power communication hubs for extended operations. As EV adoption grows, there is a recognized need for mobile EV charging solutions during evacuations or power outages.

Communication Power

After Hurricane Ida, some Louisiana cell sites ran out of generator fuel within 1-2 days, dropping communications. A battery unit paired with solar could have extended those runtimes. The GreenGrid 90K's 120/208 V output can readily hook into telecom power systems.



EV Charging Support

During California wildfire PSPS outages, a challenge emerged for EV drivers with no power to charge vehicles for evacuation. Sacramento Municipal Utility District tested a mobile battery with Level 2 chargers to support EV drivers at community centers during PSPS events.

Military Applications

The U.S. Army is exploring mobile microgrids for forward bases that include EV charging for electric tactical vehicles. A Center for Renewable Energy study assessed a Mobile Renewable Backup system providing resilient power and EV charging during blackouts.

Runtime Performance and Technical Specifications

The runtime of the GreenGrid 90K MBESS depends on the load profile and the usable energy storage available. With 90 kWh usable capacity and 20 kVA continuous output, the system provides predictable performance across various load scenarios. All calculations use UL 9540 certified values as the basis for accurate planning and deployment.

18

Hours at 5kW Load

Small clinic, several fridges and lights - ideal for extended backup power scenarios

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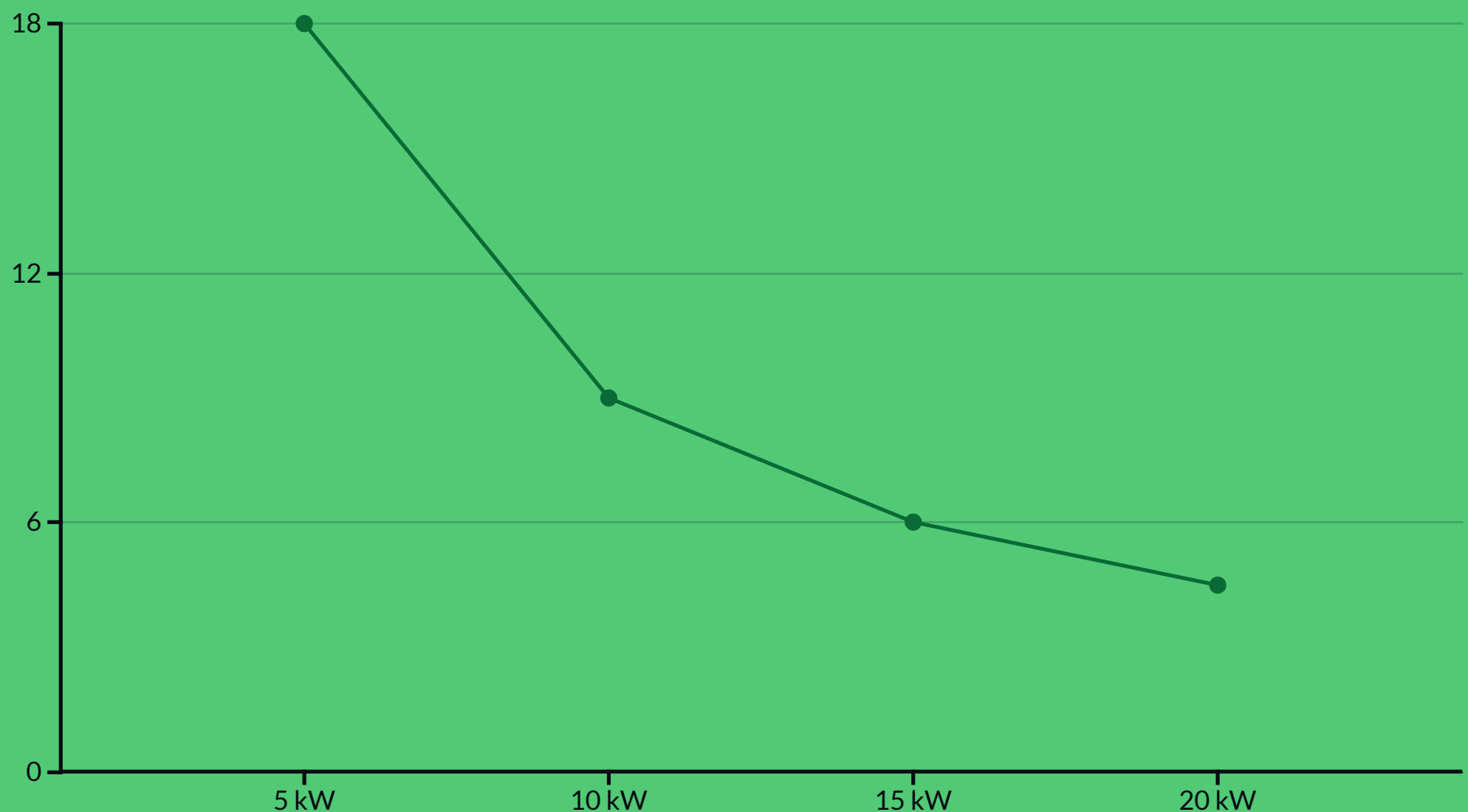
Hours at 10kW Load

Construction site trailer, large home backup - balanced power and duration

6

Hours at 15kW Load

Emergency shelter with HVAC, network center - maximum continuous output



Safety, Compliance, and Protection Systems

Safety is paramount in the design and deployment of the GreenGrid 90K MBESS. The system meets all relevant safety standards through a multi-layered safety philosophy, addressing cell-level risks up to system-level hazards. The approach follows rigorous certification requirements and includes comprehensive protection mechanisms.



UL 9540 Certified

Listed as a complete Energy Storage System with 20 kVA discharge, 90 kWh capacity, 10 kA SCCR, and NEMA 3R rating. All critical safety functions including automatic disconnects and venting were evaluated and approved.



UL 9540A Fire Testing

Thermal runaway fire propagation test showed no propagation beyond the initiating module and no external fire. Gas venting was controlled below flammable limits, giving authorities confidence for installation near buildings.



Comprehensive Protection

Multiple protection layers include 250A DC breaker, BMS monitoring, surge protection, arc-flash analysis showing $< 1.2 \text{ cal/cm}^2$ incident energy (Category 1 PPE), and emergency stop systems.

Deployment and Operational Excellence

Deploying a GreenGrid 90K MBESS is designed to be straightforward with careful planning and adherence to procedure. The system features rapid deployment capabilities, plug-and-play connections, and comprehensive operational controls. A two-person crew can deploy the MBESS and restore power in 15-30 minutes after arriving on site.

01

Rapid Positioning

Towable trailer with standard hitch and electric brakes.
Integrated leveling jacks for stability. Can be maneuvered into position on various terrains and stabilized quickly.

02

Quick Connections

Color-coded Cam-Lok connectors for AC output. Multiple NEMA outlets available. Onboard controls with pre-configured settings for different use modes. Tool-less cable connections.

03

Automated Operation

System performs self-checks then energizes. HMI screen displays status including State of Charge, output voltage, and load. Remote monitoring via web platform or app with cellular/GPS modem.

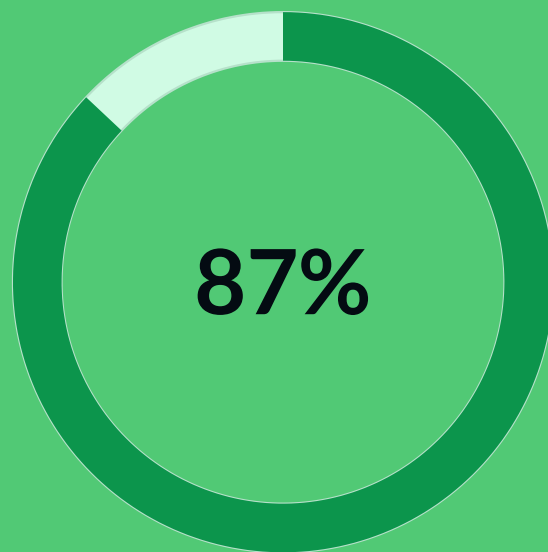
04

Flexible Recharging

Multiple recharge options: grid connection, generator input, or solar PV. 3-stage charging profile for LiFePO₄ batteries. Can charge while supplying loads for continuous operation.

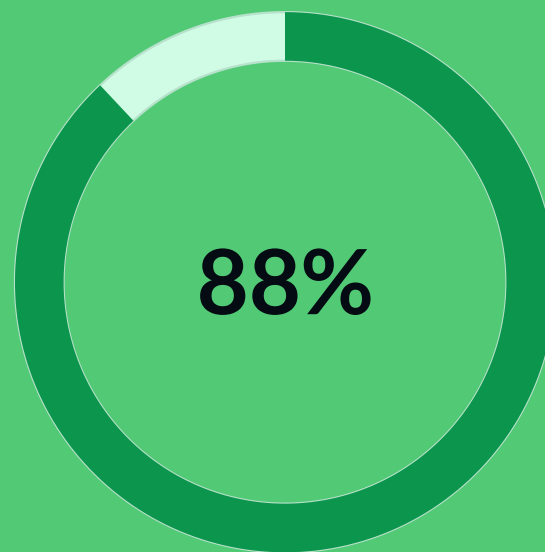
Commercial Model and Investment Value

The GreenGrid 90K MBESS is offered as a commercially flexible solution with a base price of approximately \$225,000 USD. This turnkey package includes the 90 kWh battery system, 20 kVA inverter, trailer, integrated PV charger, onboard Level 2 EV charger, cable kit, commissioning service, and comprehensive warranty coverage.



Fuel Savings

Generator runtime reduction demonstrated in construction applications



Emissions Reduction

Carbon footprint decrease compared to traditional diesel generators



Year Warranty

Standard coverage on battery and inverter systems

Flexible Acquisition Models

- Direct purchase for utilities and government agencies
- Lease or rental programs for seasonal needs
- Energy-as-a-Service with guaranteed performance
- Custom configurations for specific requirements

The system offers excellent lifecycle value with minimal O&M costs, 15-20 year battery life in standby use, and strong residual value due to mobility. Federal Investment Tax Credit and FEMA grants may apply, with financing options available through energy service companies.

