Vertiv™ EnergyCore Grid

Utility-scale energy storage for mission-critical businesses seeking to improve operational stability, increase use of renewables, and reduce cost.

EnergyCore Grid is a battery energy storage system that provides grid stability and energy flexibility to provide reliable operation for demanding commercial and industrial applications.

Bringing Greater Control to Mission-Critical Power Operations

Mission-critical businesses need continuous power flow to support vital operations. These organizations include hyperscalers and cloud services companies, digital service providers, hospital systems, manufacturers, utilities, and more. Facilities and power management teams at these organizations seek to increase their clarity into – and control over – their power network and energy usage, thereby enhancing operational reliability.

The Vertiv™ EnergyCore Grid utilizes UL9540A lithium-ion batteries to deliver utility-scale energy storage, functioning as an always-on power supply. This system enables facilities and power management teams to smooth out power usage and seamlessly transition to battery-enabled power whenever needed. Consequently, organizations can continuously reduce operational expenses, such as peak demand charges, and engage in energy arbitrage and other services to enhance profitability.

Vertiv™ EnergyCore Grid is available with an optional integrated energy management system that provides intelligent controls, enabling ancillary services. Organizations gain greater control over how traditional and renewable energy is captured, stored, and used. As a result, they can sell energy back to the grid, creating new revenue streams.

Common Applications Include:

- Peak shaving, and load shifting.
- Ancillary services (voltage and frequency).
- Integrating renewable energy sources.
- Spinning reserve – UPS style.
- Enhancing utility transmission and distribution reliability.
- Microgrid support.

Vertiv EnergyCore Grid BESS Solution Benefits

Easily configure the solution:

The Vertiv™ EnergyCore Grid features a modular architecture, allowing customers to configure components from prequalified Tier 1 suppliers to meet their specific requirements. Organizations can tailor their system for particular applications by purchasing the optional Vertiv™ EMS and optimizing its dispatch algorithms.

Gain a highly scalable design for energy storage:

Vertiv™ EnergyCore Grid brings repeatability and predictability to large energy storage deployments. The scalable design makes it more efficient to permit projects and delivery and deploy systems, reducing implementation risks. Maintaining consistency across project locations also simplifies worker training, daily operations, and solution maintenance.

Reduce risks with safety features:

Vertiv™ EnergyCore Grid is equipped with comprehensive safety features. Its factory-built design ensures consistent quality controls, enhancing worker safety.

Built at state-of-the-art facilities, the Vertiv™ EnergyCore Grid is integrated with our Vertiv™ EMS to optimize its applications. With decades of experience, we are the partner of choice for mission-critical businesses seeking to develop energy storage capabilities for grid power continuity.

Vertiv Offers

- Scalable energy storage building blocks: 1.0-1.5 MW that can scale up to more than 100 MW of power output.
- Intelligent energy controls.
- Fast procurement and contracting process.
- Simple system design, engineering, and permitting.
- Rapid delivery, and commissioning.
- The latest safety features.

Technical Specifications

System Specifications

Rated AC Power (50°C)	Project sizes starting at 1MW
Discharge Duration	1 – 6 hours, typical for LFP due to costs
Grid Frequency	50 Hz and 60 Hz
Reactive Power	Four-quadrant control, 0.8 leading to 0.8 lagging at rated power (reactive capability available over full real power range) *
Efficiency	92.5% round-trip efficiency (excluding transformer)
Availability	>99%
Altitude	>2000 m
Seismic Rating	Seismic options available
System Response Time	Max capacity change in 2 ms
Standard Temperature Range	-25°C to 55°C

Power Conversion System (PCS)

Dimensions (H x W x D)	89.8 x 39.4 x 64.4 in / 2281 x 1000 x 1636 mm
Weight	3020 lb / 1370 kg

Battery Cabinet

Dimensions (H x W x D)	92.5 x 54.8 x 52.9 / 2348 x 1390 x 1345 mm
Weight (total) lb/kg	8047 lb / 3650 kg (unpacked weight)
IP Rating	IP55
Cooling	Liquid-cooled
Battery Chemistry	Lithium-ion ferrophosphate (LFP)
Safety Features	State-of-the-art safety features, including a fast stop, fire detection and suppression system (solid aerosol), gas detection (carbon monoxide), deflagration panels, lockable disconnect switch, open door sensor, gas spring damper, and sliding door lock.

Battery Container

Dimensions (H x W x D)	114.1 x 95.9 x 238.5 in / 2896 x 2438 x 6058 mm...
Weight (total) lb/kg	36 tons
IP Rating	IP55
Cooling	Liquid-cooled
Battery Chemistry	Lithium-ion ferrophosphate (LFP)
Safety Features	State-of-the-art safety features, including a fast stop, fire detection and suppression system (solid aerosol), gas detection (carbon monoxide), lockable disconnect switch, open door sensor, gas spring damper, and sliding door lock.

Vertiv™ EnergyCore Grid DERMs

Fully scalable onsite control system for comprehensive control of Hybrid Power Assets.

Operations Modes

Automatic Dispatch, Manual Dispatch and HMI interface.

System KPI's

- Real/Reactive Power, State of Charge, Battery Voltage, E-Stop, Node Status, and more.
- External Control Interface.
- SCADA and EMS are integrated, along with native Modbus TCP/IP.

Market Dispatch

Frequency dispatch, Demand Response, Peak Shaving, Black Start, and more.

Vertiv™ EMS

Vertiv EMS integrates power and energy into one common usable system.

Forecasting

System can help achieve improved operations and energy efficiency.

Optimization

Automatically control DER onsite assets to achieve the best possible outcome from grid services to renewable energy integration.

Market Interface and Bidding

Work with System Aggregators and local markets to determine best possible times to perform grid interactions.

Integrate with Building Management Systems, ERP, Planned & Predictive Maintenance, and so on.

Contact us to learn more about Vertiv™ EnergyCore Grid BESS.

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