

Energy Storage

Modular, scalable architecture with best in class power conversion and battery technologies



Today's New Energy Landscape presents many opportunities and challenges. With Schneider Electric's EcoStruxure™ architecture and new Battery Energy Storage System (BESS), you can now realize new opportunities and creatively solve challenges.

No Distributed Energy Resource is more flexible and can deliver more value to your site than a BESS. By storing energy, it can decouple energy production from energy consumption, enabling you to determine how best to minimize costs, optimize sustainable energy consumption, and generate revenue. Schneider's BESS is a fully self-contained solution built upon a flexible, scalable and highly-efficient architecture.

Save Money

Demand Charge Reduction: Demand charges are a function of peak power demand and can represent as much as 50-70% of your energy bill. Reducing your peak demand could save 10-20% on your energy costs.

Time-of-use/Tariff Management: Charge your batteries during off-peak rate hours and discharge storage during mid/high-peak rate hours.

Renewable Self Consumption: A BESS helps you store excess energy produced by on-site renewables to be used when local consumption outstrips renewable output. Charging a BESS from your renewable resource can save money with the federal solar Investment Tax Credit.

Provide Resilience

Renewable Firming: Renewable production isn't consistent and a BESS will smooth the power intermittencies from solar or wind, providing a steadier output.

Resilience/Back-up Power: In the event of a grid outage, a BESS can provide backup power, especially when combined with on-site renewable resources.



Today's **New Energy Landscape** provides numerous opportunities for Battery Energy Storage Systems to save money, add resilience, and generate revenue. Industry experts recommend **value stacking** use cases to gain incremental value.

Participate in Income Generating Opportunities

Ancillary Market Participation: Several Federal Energy Regulation Commission (FERC) orders have paved the way for BESS to participate in markets such as frequency regulation and wholesale energy.

Demand Response: BESS allows for participation in Demand Response programs to alleviate demand on the system.

Support “Islanding”

Microgrids: An integral part of your microgrid, a BESS can become your “anchor resource” when islanding, ensuring full utilization of your renewable assets and stabilization of your microgrid.

Standard Configurations Available

Schneider Electric offers standardized configurations from 125 kW to 1 MW for 2-4 hour systems. These standard blocks can be used to create larger systems. Furthermore, during deployment, these standardized cabinet designs can be easily forklifted into place, without the need of a crane.

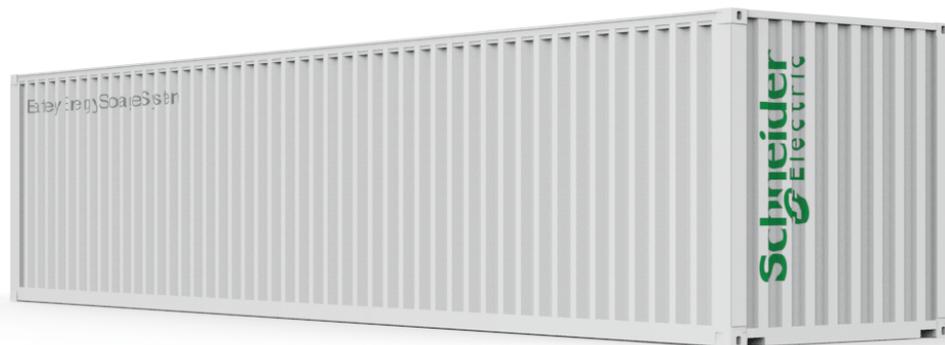
Examples of standardized configurations below:



125 kW/250 kWh system



250 kW/500 kWh system



ISO containers for systems > 1.5 MWh

Provide Incremental Power

The expansion of Electric Vehicle (EV) and subsequent fleet management requires more charging stations at increasingly higher power levels. These power requirements often exceed a site's existing utility service. A strategically deployed BESS can add the additional power required, while also reducing site demand charges.

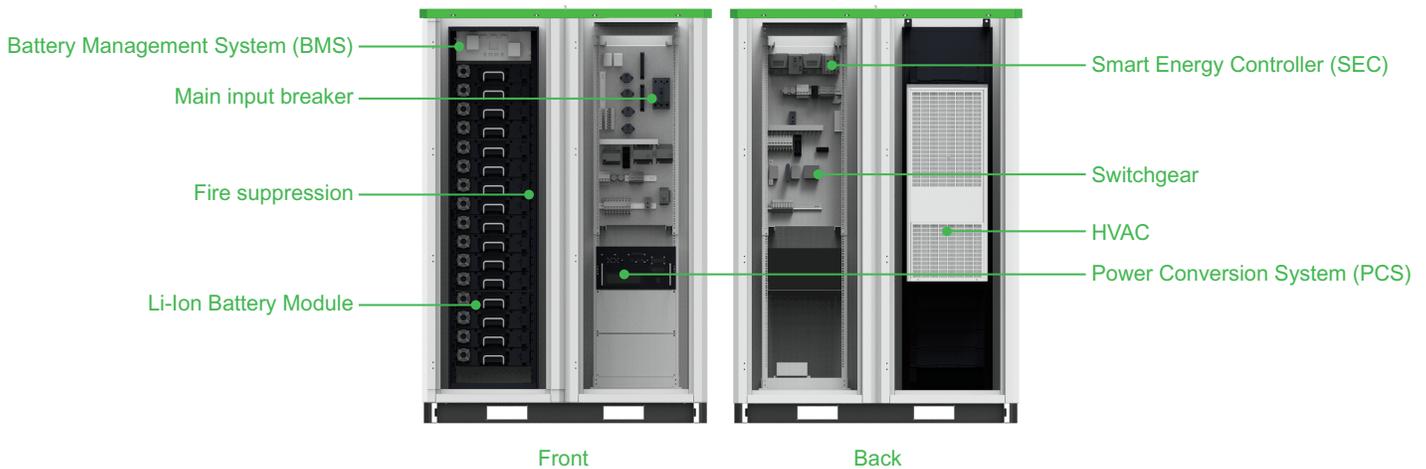
Customizable solutions

can also be created leveraging the scalable, modular design.

Contact Schneider Electric via schneider-electric.us/microgrid for more information.

The Schneider Electric Solution

Schneider offers a fully-integrated system including Power Conversion System (PCS), batteries, HVAC, fire detection, fire suppression, system and battery management. The Schneider Electric BESS utilizes a scalable and modular design in an outdoor-rated NEMA enclosure for easy installation and commissioning.



Modular Design:

Schneider's modular design helps provide easier and faster commissioning and servicing. The battery, PCS, and HVAC units are sectionalized. Reach vital components by accessible panels. Each 6U, 125kW PCS sits on sliding rails for quick and easy replacement.

Distributed System Availability:

Schneider's PCS, can be paralleled on the DC and the AC side for ultimate flexibility. For larger installed systems, the PCS can improve system availability with minimal extra installed capacity. Portions of the system can be taken offline for maintenance and repair without impacting a customer's availability guarantee. Furthermore, with individual cabinet HVAC and fire suppression, unexpected degradation or failure of a single battery or HVAC unit will not render the entire system unusable. The overall system can remain operational while maintenance and repair are completed on a single PCS or battery string.

Best-in-class Density:

A fully integrated, outdoor-rated NEMA system of 250 kW/570 kWh, including PCSs, batteries, controls, switchgear, HVAC, fire detection, and suppression, fits in a small 68 ft² footprint.

High Efficiency:

Schneider's BESS transformerless system is highly efficient with round trip efficiency exceeding 90%.

Standardized Configurations:

Fully self-contained and integrated systems of 250 kW/570 kWh building blocks can easily be installed by forklift. No cranes required. Systems can be deployed in modular NEMA outdoor rated cabinet configurations or in containers for larger installations of 2 MWh or more.

Four-quadrant and Multi-mode Operation:

The system uses a four-quadrant inverter, capable of providing KW and KVAR, while also able to transfer from **grid-tie** to **grid-forming** operation.

Remote and Local Monitoring and Control:

When combined with Schneider's **EcoStruxure Micogrid Advisor™** cloud-connected software platform using Model Predictive Control, you will optimize your energy consumption while right-sizing your storage solution.

"Customer-sited, behind-the-meter (BTM) energy storage can technically provide the largest number of services to the electricity grid at large"

- Rocky Mountain Institute

Schneider's **flexible** and **modular BESS**, with its compact footprint, is ideally suited for BTM deployment

System Specification

Configuration	125 kW/250 kWh	250 kW/500 kWh	500 kW/1 MWh	1 MW/2 MWh
Nameplate Power	125 kW	250 kW	500 kW	1000 kW
Nameplate Energy	253 kWh	570 kWh	1140 kWh	2089 kWh
Battery	Lithium Ion Nickel Manganese Cobalt Oxide (NMC), 0.5 C rate (2C rate batteries also available)			
	Battery voltage 714-999.6 VDC			
	15-20 years calendar life, 4000-5000 cycles			
	(Calendar and cycle life is application and temperature dependent)			
AC Voltage	480/400* VAC (+/-10%), 3-Phase			
	Note: 600VAC connection needs an external NEMA 3R 600VAC to 480VAC Transformer			
Communications	Protocol: Modbus TCP Ethernet Port: Copper RJ45 Port (< 100 m distance), Fiber Port (up to 4 km)			
Operating Temp. Range	-20° C to 50° C			
	Note: Cold weather package available for extremely cold weather conditions (< -20° C)			
Round Trip Efficiency	> 90% or better (at 25° C) based on C rate			
Certifications	BEES: Designed to be compliant with UL9540			
	Power Conversion System: UL1741 incl. supplement SA, CSA 22.2, IEC 62109-1, AS4777.2, EMC: EN61800-3, Harmonics: IEEE 1547, IEEE 519			
	Battery: UL1973, UL1642, UN38.3			
Warranty	Standard: 3 years			
	Extended Warranty: 4 to 10 years (available)			
Cabinet Rating	Power Cabinet: NEMA 3R / IP44 or NEMA 4 / IP66 (salt air and industrial environment)			
	Battery Cabinet: NEMA 4 / IP66, with self contained HVAC and fire suppression			
Single Cabinet Dimensions (W x H x D)	34" x 101" x 68"			
	864 mm x 2565 mm x 1727 mm			
Derating of power by ~ 17% for 400 VAC systems				

Learn more at

schneider-electric.us/microgrid

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