



BATTERY ENERGY STORAGE SYSTEM (BESS)



WHAT IS BATTERY ENERGY STORAGE SYSTEM



Introduction

A battery energy storage system (BESS), battery storage power station, battery energy grid storage (BEGS) or battery grid storage is a type of energy storage technology that uses a group of batteries in the grid to store electrical energy. Battery storage is the fastest responding dispatchable source of power on electric grids, and it is used to stabilise those grids, as battery storage can transition from standby to full power in under a second to deal with grid contingencies.

Energy management today means balancing a combination of carbon reduction, energy savings and resilience goals that are NOT mutually exclusive.

BESS Battery Energy Storage System expands our industrial solutions offering with a product focused on enabling energy savings & carbon reduction, and providing short duration site resilience and grid support.

BENEFITS



SOLAR INTEGRATION

Battery energy storage can be used to store electricity generated from renewable energy sources, such as solar, so that it can be used at a different time.



PEAK DEMAND MANAGEMENT

Battery energy storage can help reduce peak demand costs for a facility by charging with excess renewable electricity or during off-peak hours, and discharging during on-peak hours.



BACKUP POWER

Battery energy storage can provide backup power during outages, ensuring that critical infrastructure and services remain operational.

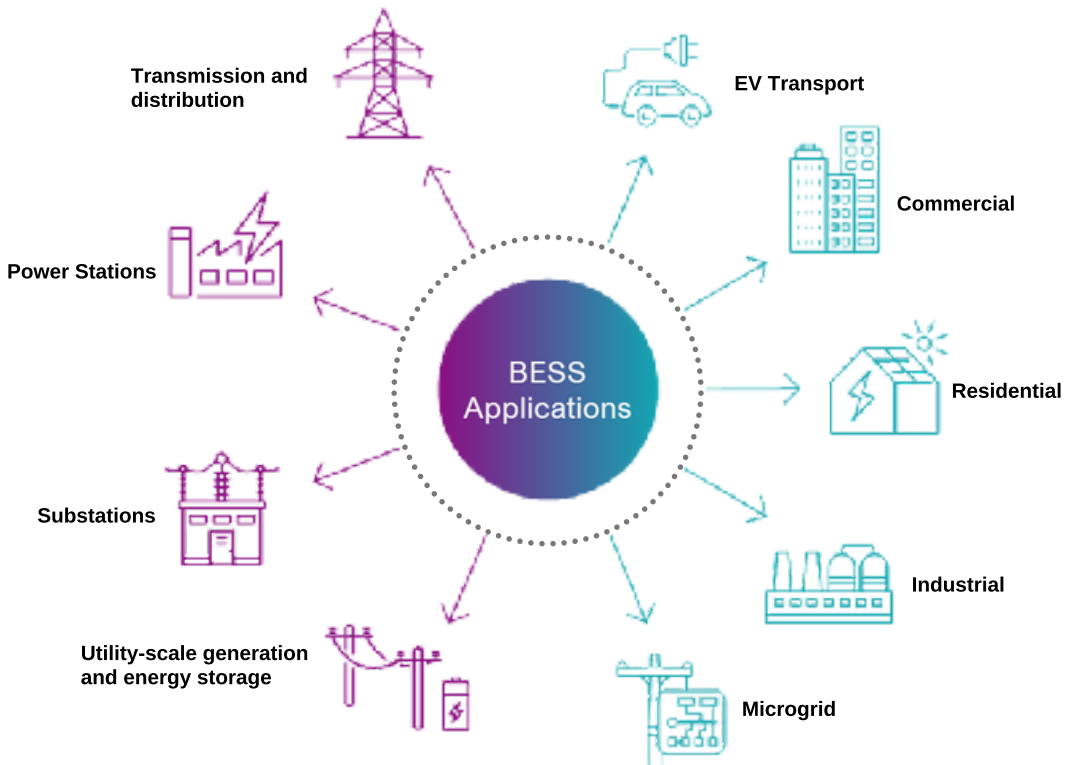


CARBON REDUCTION

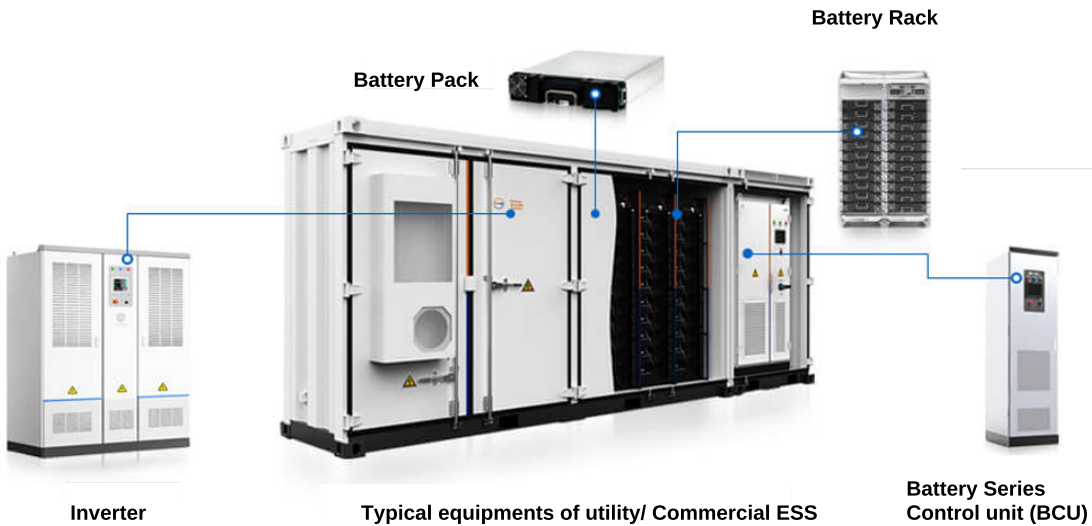
By collecting the sun's free energy and choosing when to deploy it, battery energy storage systems make it simple to reduce carbon emissions and contribute to ESG initiatives.



APPLICATIONS



BESS COMPONENTS



PCS

The Inverter converts the DC stored in the battery into AC (or DC), to meet the needs of the power system or loads.

BATTERY

- The Carrier of energy, including lithium-ion, sodium-ion, lead-acid, and others.
- BMS monitors, manages, and protects the battery

ENERGY MANAGEMENT SYSTEM (EMS)

- Monitoring the demands of BESS, the grid, and loads.
- EMS controls the charging and discharging strategies of BESS, ensuring the system operates safely and efficiently

ENCLOSURE

- Including Air Conditioning, electrical system, fire protection and others
- Used to accommodate, protect, and manage the various components of BESS, typically requiring a certain level of IP 54 protection.



FEATURES



1 SCALABILITY:

Scalable energy storage solutions for growing commercial and industrial needs.

2 SAFETY:

Ensures safety with multi-layered protection for reliable, high-demand operations.

3 REMOTE MONITORING:

Wired and wireless monitoring enables proactive management and cost control.

4 SLEEK DESIGN:

Powerful performance in a compact design, fitting into space-limited environments.

5 ENERGY EFFICIENCY:

Designed for longevity and reliability, offering efficient storage and discharge cycles.



BATTERY ENERGY STORAGE SYSTEM ECO-SYSTEM

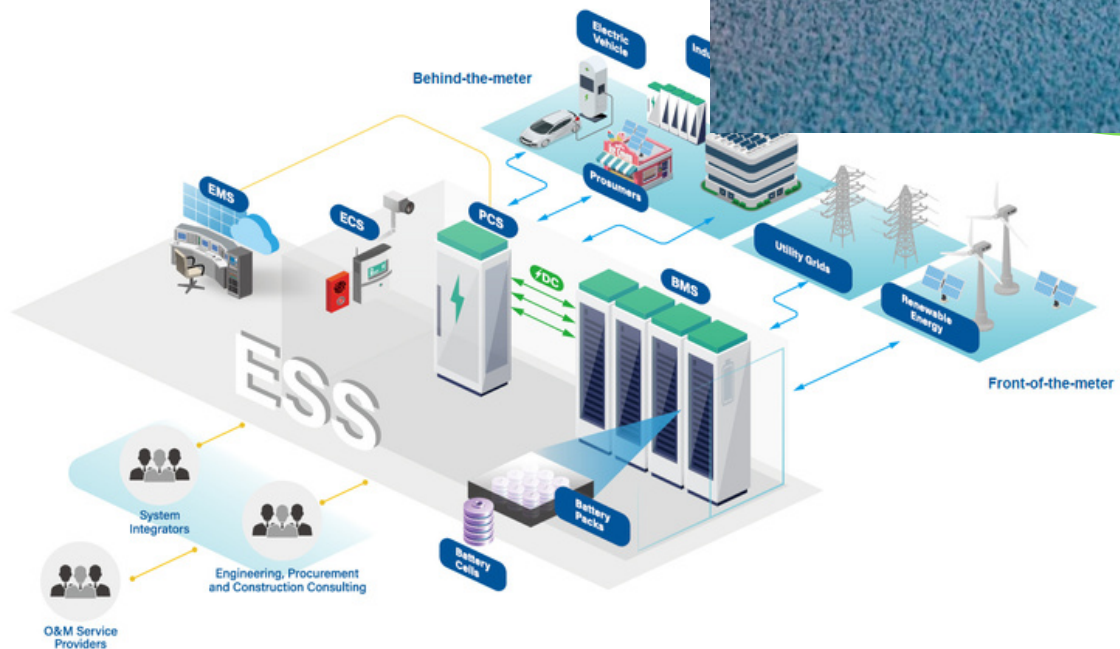
BMS : BATTERY MANAGEMENT SYSTEM

PCS : POWER CONVERSION SYSTEM

EMS : ENERGY MANAGEMENT SYSTEM

ECS : ENVIRONMENT CONTROL SYSTEM

ESS : ENERGY STORAGE SYSTEM



TYPE OF BESS

BESS DC

DC-Coupled Battery



Solar Panels



Inverter



Battery



Grid

BESS AC

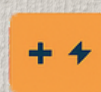
AC-Coupled Battery



Solar Panels



Inverter



Battery



Grid

PRODUCTS



**RESIDENTIAL STORAGE
SOLAR SYSTEM**
5 kWh ~ 5KWH



**ENERGY STORAGE
CONTAINER**
500 kWh ~ MWH



**PLUG & PLAY
STORAGE CABINET**
100 kWh ~ 300KWH

**ALL-IN-ONE HYBRID
COMPACT SYSTEMS**
50 kWh ~ 200KWH





HYBRID ECO SERIES BESS 20kWh ~ 200kWh

STREAMLINED STACKABLE INSTALLATION

A sleek, flat design that's floor-mounted, eliminating complex wiring and enabling quick, hassle-free setup.

PARALLEL-READY FOR SYSTEM GROWTH

Engineered for seamless parallel operation, battery units can be combined to achieve a capacity of up to 200kW, meeting the dynamic energy needs of any scale.

RAPID CHARGING FOR PEAK PERFORMANCE

Engineered for high-speed charging capabilities to ensure optimal performance and energy availability.

ASSURED SAFETY AND DURABILITY

Combine with high safety standards to provide with 10 year design life for performance

INTEGRATED PERFORMANCE TUNING

Deeply synchronized with inverters for critical data collection, assessment, and verification, ensuring optimal system harmony and efficiency.

BESS shipped with the batteries ,a PV inverter making it easy for completing your renewable energy project.

Multiple functionality modes allows simple switching between Grid, PV, or Genset enabling better user control and stability.

All system systems are offered in 400VAC 3 phase.

Micro-grid, Backup power, Renewable integration, islanding, Residential, Hotel & Resort, Commercial & industrial

Lithium Iron Phosphate (LiFePO4) battery systems connected at high voltage come with >5000 life cycle and up to 90% DOD (Depth of Discharge) @ 0.5C

battery energy storage solution is the ideal fit for large residential or light commercial applications

Powerful Performance Capabilities

INTEGRATING POWER, PRECISION, AND EFFICIENCY

PV Side

150%-160% DC

Oversizing

Boosts solar energy capture

Low Voltage Start-up

Extends operating hours

Grid Side

Smart power export limitation

Optimizes grid feed-in for enhanced efficiency



Battery Side

High-current

Charging/Discharging

Enables rapid charge and discharge

Grid Side

Smart power export limitation

Optimizes grid feed-in for enhanced efficiency

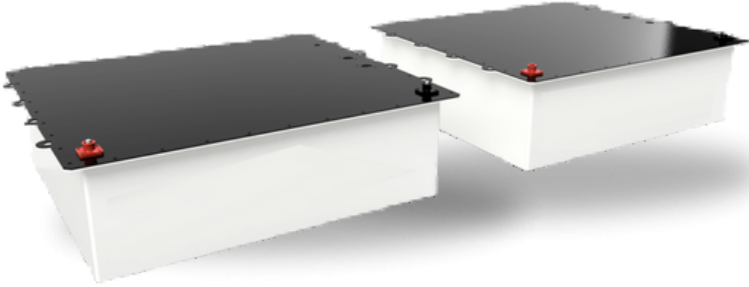
Backup Side

20ms transfer time

Ensures the power continuity power with reliability

IP65 Battery Modules Enclosure

LITHIUM-BASED BATTERY SYSTEMS WITH LIQUID IMMERSION TECHNOLOGY FOR HIGHLY EFFICIENT THERMAL MANAGEMENT



Built for Extreme Weather
(-30 to 50 °C) using IP65
container



Rapid Charging and
Discharging



Inbuilt Fire-Suppressing
Technology



Quick Installation



Long-life | Low Maintenance



Remote Diagnostics and
Usage Statistics

Liquid Cooled Lithium Battery Module Design

BATTERY MANAGEMENT SYSTEM (BMS) WITH DIAGNOSTICS AND
USAGE STATISTICS CAN | RS485

- Metal IP65 Enclosure with fully customizable Mountings
- LFP Prismatic Cell Module Assembly with Patented Mechanical Compression Assembly and Pressure Venting System
- Liquid Immersion System for Battery Thermal Management and Fire Suppression
- IP65 Battery Connectors

POWER REIMAGINED
ENGINEERING THE FUTURE OF ENERGY



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Reliable Energy, Limitless Possibilities

