

BESS+Renewable Energy Integrated Solution



Challenges

The unpredictability of renewable generation and significant electricity price volatility make revenue streams highly uncertain.



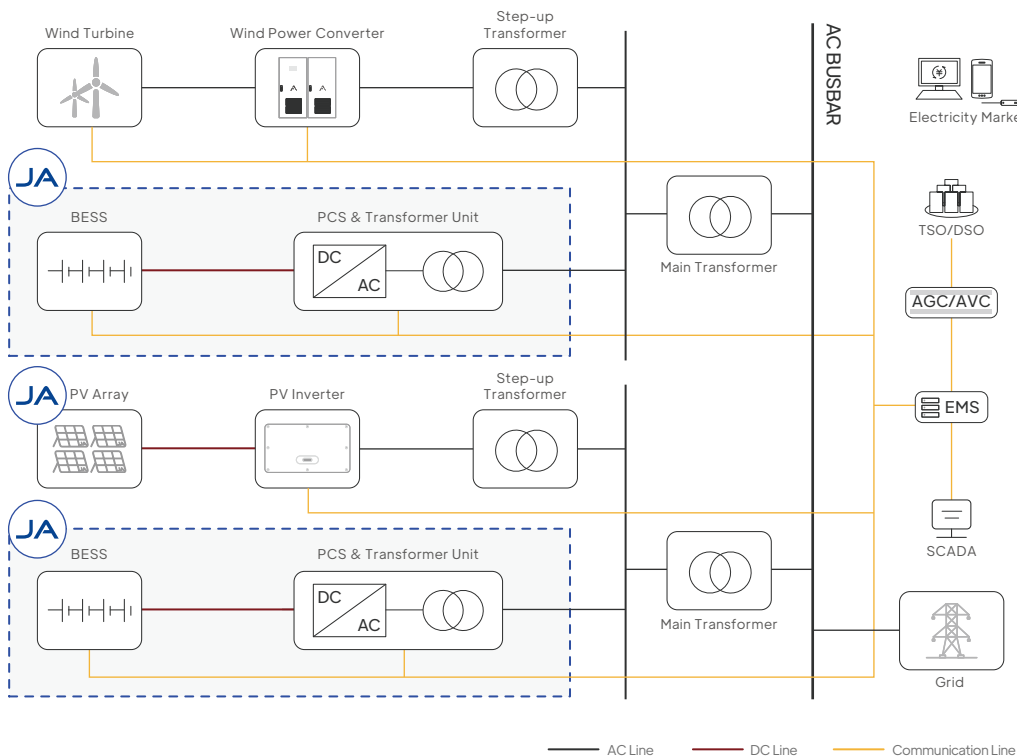
High curtailment rates due to grid integration challenges reduce profits.



The limited flexibility of renewable assets restricts the participation in ancillary services markets.



Solutions



Functions



Advanced dispatch alignment that ensures predictable generation and reduces output volatility.



Optimizes the synergy between renewables and energy storage for energy time-shifting.



Features AGC/AVC capabilities to enable rapid response to grid peak-shaving and frequency regulation demands.

Benefits

Participates in electricity markets to enhance project profitability.

Advanced frequency regulation and peak shaving capabilities of the renewable power plant that improves grid stability.

Increasing the integration capacity of renewable power plant for deeper decarbonization and greater environmental sustainability.

Advantages



Safety

- Multi-stage fuse protection with millisecond-level coordinated response and real-time insulation monitoring.
- Intelligent three-level fire alarm mechanism with pack-level detection and water suppression system.
- Real-time thermal runaway monitoring with multi-layers pressure release and explosion proof protection.



Cost Efficiency

- Long-life LFP batteries with high-precision SOX algorithms that maximize return on investment.
- Up to 88% system RTE with $\geq 93\%$ DC-side efficiency.
- Intelligent liquid-cooling system that maintains cell operation temp $\leq 35^\circ\text{C}$ with $\leq 3^\circ\text{C}$ temp control, reducing auxiliary power consumption by 10%



Reliability

- AI-driven predictive maintenance enables fault forecasting, reducing unplanned outages by 90%.
- Remote fault diagnostics and OTA upgrades, resolving over 90% of issues online.
- Modular design reduces key components replacement time and improves maintenance efficiency.

ITEM	SPECIFICATIONS
Cell capacity	LFP 314Ah
System configuration	12P*416S
Voltage range	1164.8~1497.6Vdc
Charge/discharge rate	0.5P
Nominal energy	5.015MWh
Nominal power	2.508MW
Dimensions (W×D×H)	6058×2438×2896mm
Weight	<42.5t
Round-trip efficiency	$\geq 93\%$
Protection level	IP55 (Battery compartment)
Cooling method	Intelligent liquid cooling
Fire protection system	Aerosol+Water fire suppression
Communication	CAN/RS485/Ethernet
Operating temp. range	$-30^\circ\text{C}\sim 50^\circ\text{C}$ (Derated at -45°C)
Storage humidity	0~95% (Non-condensing)
Noise	$\leq 75\text{dBA}$
Max. Operating altitude	4000m (Derated at 2000m)



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