

BESS+Thermal Power Integrated Solution



Challenges

Insufficient operational flexibility for rapid grid frequency response and peak shaving demands.



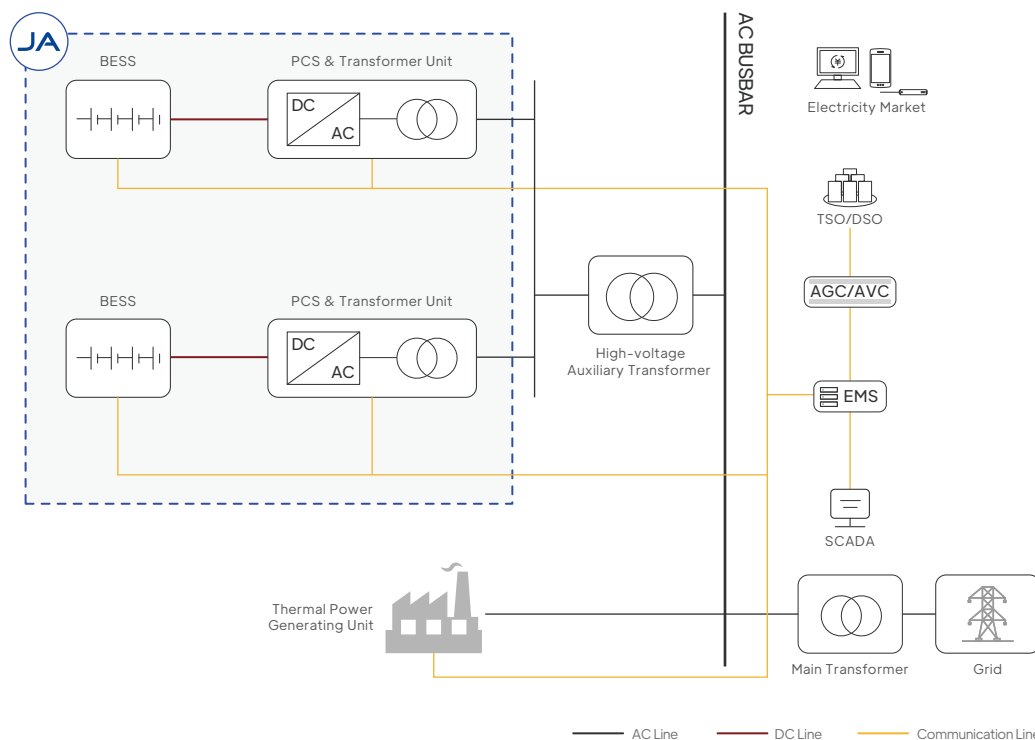
Thermal power units revenue losses due to negative electricity prices.



High carbon emissions, which create significant environmental compliance pressures.



Solutions



Functions



Co-optimized control of BESS and thermal power units to enhance grid ancillary services capability.



Decoupling control of heat and electricity generation to improve operational flexibility.



Supporting the optimal operation of thermal power units to increase generation efficiency.

Benefits

Enhanced frequency regulation and peak-shaving capability, unlocking additional plant revenue.

Heat-Electricity decoupling that shields operations from negative electricity pricing and secures stable returns.

Reduced fuel consumption and carbon emissions that enable sustainable and compliant operations.

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)



JA SOLAR TECHNOLOGY CO., LTD.

✉ ess@jasolar.com

🌐 www.jasolar.com/energystorage