



Cascading Energy Storage System

35kV Direct Grid Connection, Zero Paralleling, Zero Circulating Current, Maximize Every MWh



CHINT GLOBAL INTERNATIONAL PTE. LTD.

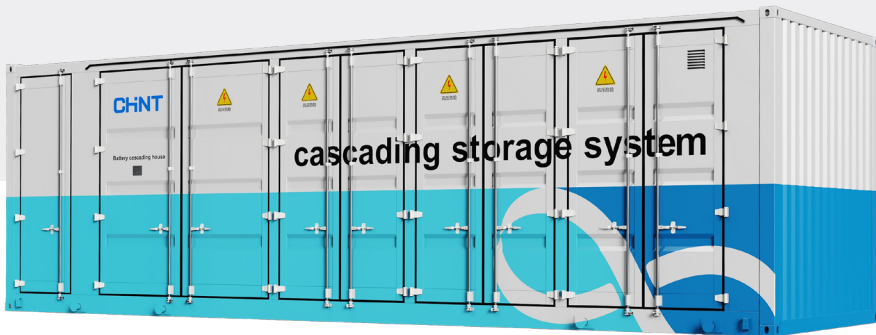
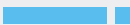
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Cascading Energy Storage System

Powered by Cascaded H-Bridge (CHB) technology, CHINT MV Cascading BESS enables direct 6–35kV medium-voltage grid integration without step-up transformers. A single system delivers up to 50.6MWh of energy capacity in nine containers, with a maximum power output of 25MW per unit, making it an ideal solution for large-scale grid-side energy storage projects.



Higher Efficiency · Lower Loss

≥ 90% round-trip efficiency, 5–10% higher than LV designs. Single 25MW unit simplifies control and reduces equipment count.



No Transformer · Less Hardware

Eliminates step-up transformers, reduces MV cabling by 80%, cuts construction costs by 20%, and significantly shrinks site footprint.



Zero Paralleling · Longer Life

Battery clusters are pure-series connected — no circulating current, no DC resistance mismatch issues. Capacity degradation matches single-cell behavior over time.



Grid-Forming · <20ms Response

Sub-20ms response for primary frequency regulation, inertial support, and wide-band oscillation suppression. Operates stably at SCR ≤ 1.1 with black-start capability.

Key Specifications

Parameter	Value
Grid Connection Voltage	6–35 kV direct (no transformer)
Unit Power	25 MW
Single System Capacity	50.6 MWh (9 containers)
System Efficiency	≥ 90%
Cell Capacity	314 Ah
Battery Module Configuration	1P48S, 48.23 kWh / 132 V
Battery Cluster Configuration	7 modules in series, 337.6 kWh / 1,075 V
Battery Cluster Count	174 clusters (58 per phase, 3-phase total)
Battery Connection	Pure series, zero parallel
Response Time	<20 ms
Overload Capability	1.2× / 2 min, 1.5× / 10 s, 2× / 10 s, 3× / 10 s

Application Scenarios



Utility-Scale BESS & Renewable Integration

Peak shaving, frequency regulation, wind/solar smoothing — direct MV grid connection without transformers.



Weak Grid & Islanded Microgrids

Grid-forming control down to SCR ≤ 1.1; black-start and voltage-source operation for isolated systems.



Industrial & C&I Sites

Peak shaving, frequency regulation, wind/solar smoothing — direct MV grid connection without transformers.