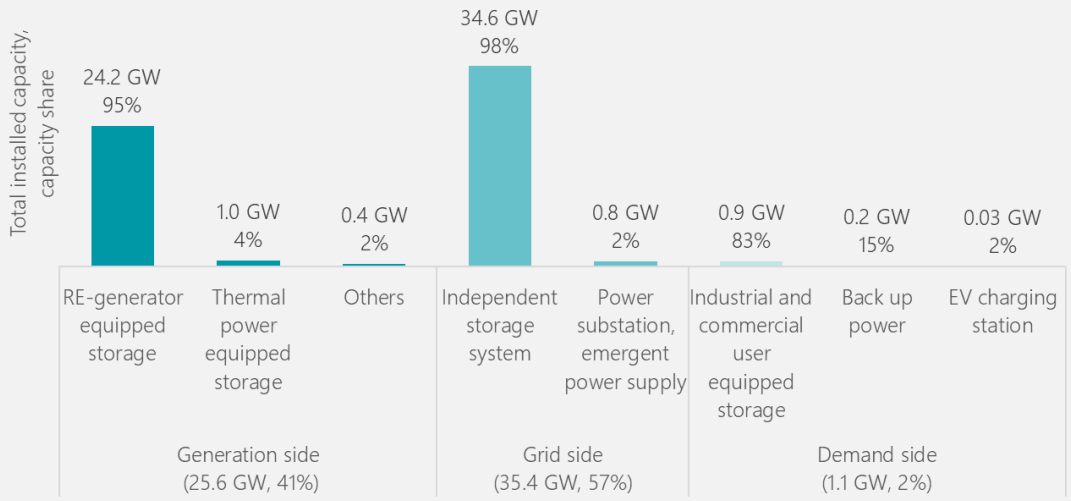
CEC releases 2024 electrochemical energy storage industry statistics

China Electricity Council (CEC) and the National Safety Monitoring Information Platform for Electrochemical Energy Storage Power Station jointly released the *Electrochemical Energy Storage Station Industry Statistics 2024* (CHN: 2024年度电化学储能电站行业统计数据), which systematically sorted out the capacity, generation, efficiency, and safety data of national electrochemical energy storage projects in 2024. Electrochemical energy storage shows a centralised and large-scale development trend overall, and its operating efficiency has been greatly improved. By 2024:

- Application scenarios: 62 GW of electrochemical energy storage stations have been put into operation, with the ratio of generation, grid, and user sides at 41%, 57%, and 2%, respectively. The main application scenarios are grid-side independent energy storage stations and RE-generator-equipped energy storage stations, with a total installed capacity of 35 GW and 24 GW, respectively, accounting for a total of 95%;
- Project scale: The total installed capacity of large, medium, and small-scale[11] energy storage stations are 40 GW, 21 GW, and 0.6 GW, respectively, of which large-scale stations (≥100 MW) account for 65%, an increase of 14 percentage points year-on-year;
- Energy storage duration: A 2-hour energy storage station is the most widely used, accounting for 67%. From the application scenarios, 50%, 82%, and 35% of RE-generator-equipped storage, grid-side independent storage, and industrial and commercial user-equipped storage stations have a storage duration of 2 hours, respectively; 43%, 17%, and 19% are 4 hours, respectively; and thermal power-equipped storage stations are mainly 1 hour or less.
- Grid-connection voltage level: 51% of projects are connected to grids of 220 kV and above grids, and 44% are connected to 35 kV~110 kV grids.
- Battery type: Lithium-ion batteries still dominate the application with a total battery energy of 136 GWh, accounting for 96% of the total energy, of which 99.9% are lithium iron phosphate; followed by lead-acid/lead-carbon batteries (2.93%), flow batteries (0.52%) and sodium-ion batteries (0.22%).
- Utilisation hours: The average annual utilisation hours of electrochemical energy storage reaches 991 hours, an increase of 300 hours year-on-year; 8 provinces[12] reach over 1,000 hours, of which Zhejiang and Jiangsu are the highest, reaching about 2,000 hours; benefiting from the introduction of dedicated dispatch policies for new-type energy storage, the average annual utilisation hours of RE-generator equipped storage and grid-side independent storage stations both increase by over 300 hours, reaching 766 hours and 995 hours respectively.

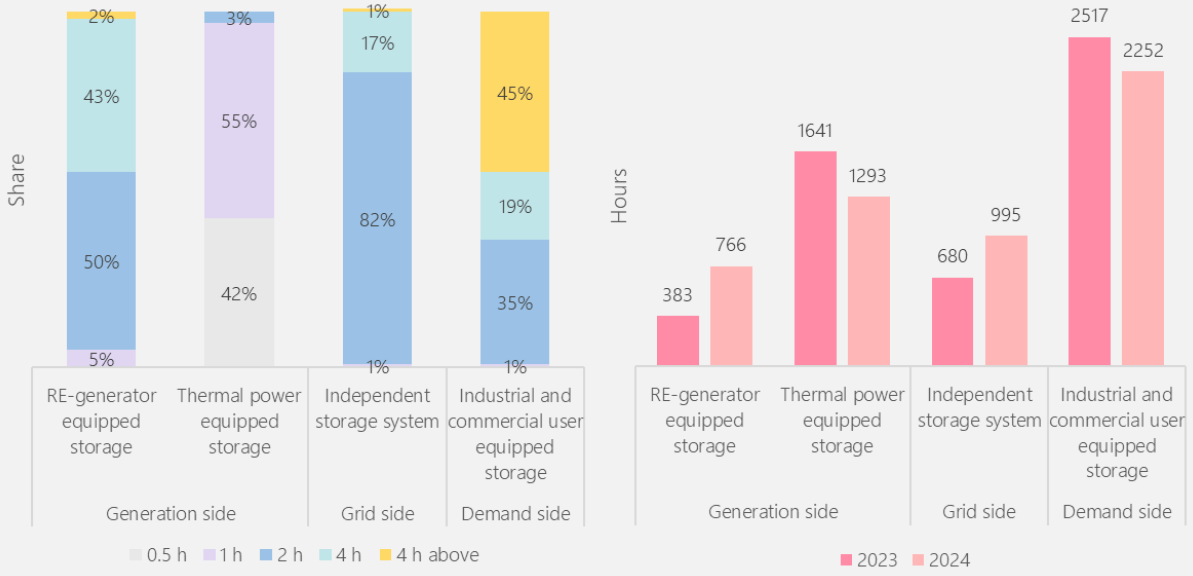
Distribution of electrochemical energy storage capacity by applications in 2024



Source: Calculated based on data from the CEC, accessed in April 2025

[11] Scales of energy storage stations: small: power <5MW; medium: 5MW≤power <100MW; large: power ≥100MW.
[12] Zhejiang, Jiangsu, Chongqing, Xinjiang, Guangdong, Tibet, Hubei and Ningxia.

2024 Distribution of storage duration by electrochemical energy storage applications (left);
2023-2024 Average annual utilisation hours by electrochemical energy storage applications (right)



Source: CEC, April 2025

2024 Distribution of electrochemical energy storage project scale, storage time, and grid-connected voltage level

Project size		Storage time		Grid-connected voltage level	
Large-scale(≥100M)	65%	0.5 hr	0.2%	220 kV and above	51%
Mid-scale (5MW≤ Power <100MW)	34%	1 hr	3%	35~110 kV	44%
Small-scale (< 5MW)	1%	2 hr	67%	6-20 kV	3%
		4 hr	27%	220 V/380 V	1%
		4 hr above	3%	Off-grid	0.3%

Source: CEC, April 2025