



FACTSHEETS SERIES ON CHINA ENERGY TRANSITION UPDATE

CHINA'S ACCELERATING GROWTH IN NEW TYPE ENERGY STORAGE

By the end of 2023, China had completed and put into operation a cumulative installed capacity of new type energy storage projects reaching 31.4GW / 66.9GWh, with an average storage duration of 2.1 hours. The newly added installed capacity in 2023 was approximately 22.6GW / 48.7GWh, which is three times that for 2022 (7.3GW / 15.9GWh).

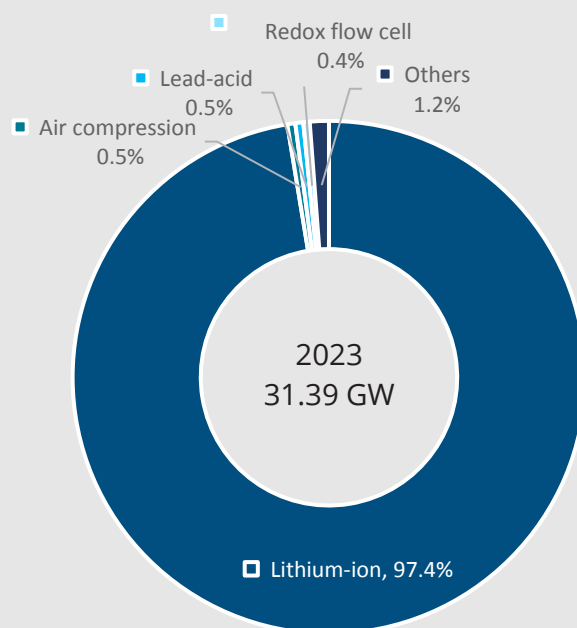
In terms of storage types, the dominant advantage of lithium-ion batteries continues to expand, accounting for 97.4% of the new type storage installation. Other types, such as air compression, and redox flow cell, have also achieved some breakthroughs, but their proportions remain low. In terms of application, equipping energy storage in renewable electricity generation projects is the main application field for new type energy storage, with a cumulative installed capacity ratio accounting for more than 90% (49% in generation-side storage, 43% in grid-side storage). Vehicle-to-Grid (V2G) has become the main form of user-side storage, with the cumulative installed capacity ratio reduced to around 8%.¹

The Coverage and Intensity of Policies Continuing to Increase

Technological breakthrough and industrial application of new type storage are included in the 2023 energy work of the National Energy Administration (NEA).² Energy electric industry is required to develop safe and economical new types of energy storage batteries. Research fields will focus on long-life and high-safety battery, large-scale, high-capacity, and high-efficiency energy storage, mobile energy storage for vehicles, etc.³

For promoting the entry of new type storage into the power market, the NEA has clarified the scope⁴ of storage connected in power system scheduling, and the management and technical requirements for grid connection and scheduling.⁵ China accelerates the construction of the spot power market and encourages new entities such as storage, virtual power plants, and load aggregators to participate in the power market.

Figure 1 China's cumulative installed capacity of new type energy storage by 2023



Source: National Energy Administration, Jan 2024

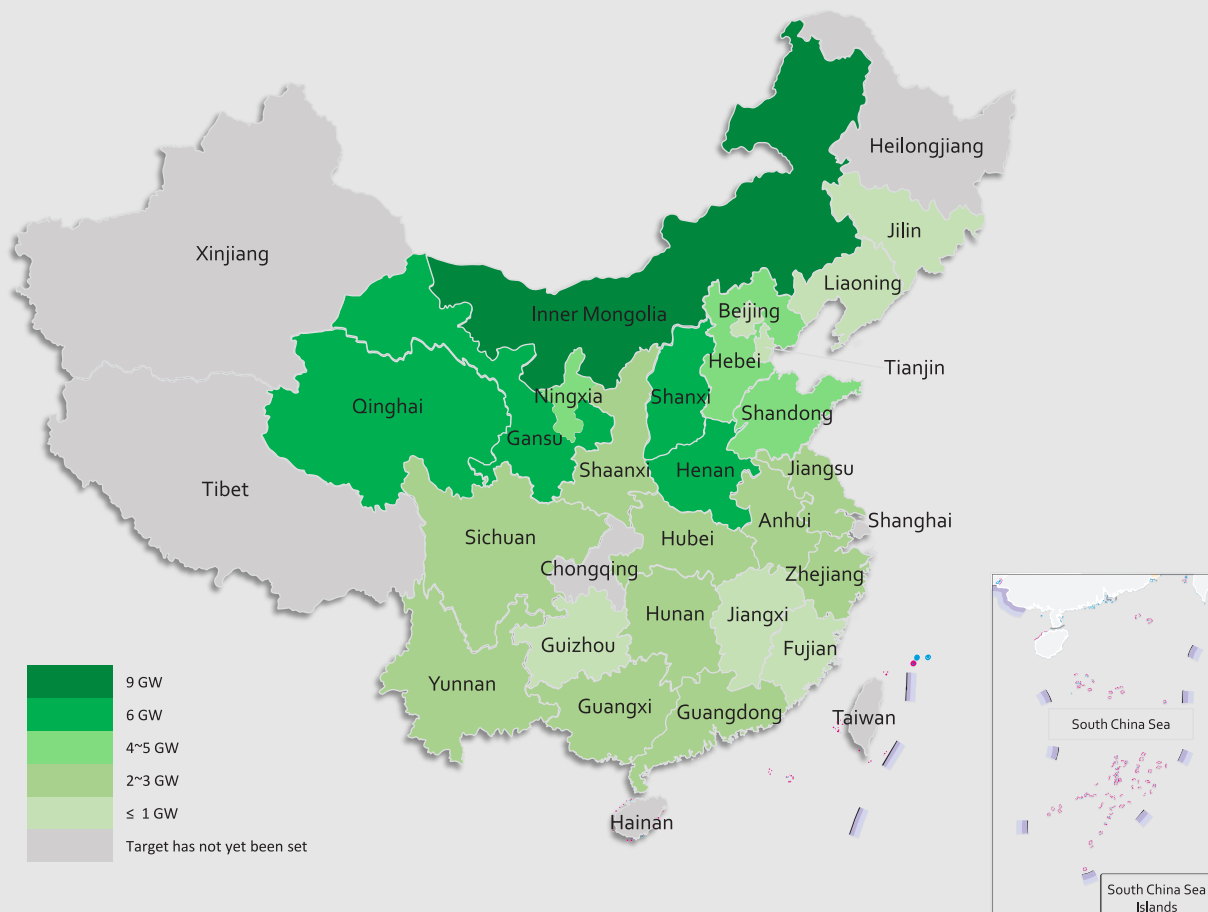
Time-of-use price signals are formed through marketization. The new entities are promoted to play an active role in peak shaving and valley filling, and power quality optimizing. New methods such as "new energy + storage" are in active exploration.⁶

Standards for storage technology and products can support the commercial development of the storage industry. For that purpose, policies on standard system and product certification were introduced. The "Guidelines for the Construction of a New Type Energy Storage Standard System" issued by the Standardization Administration and NEA propose to accelerate the formulation and revision of standards for storage power stations, and to carry out preliminary research on standards such as safety and

emergency management.⁷ Lithium batteries and other products are now under mandatory product certification (CCC certification) management.⁸

The "14th Five-Year Plan" has specified development goals for energy storage also on the provincial level. During the "14th FYP" period, 25 provinces and cities plan to complete 77.65 GW new type storage installation. That scale is more than twice the "14th FYP" target (30 GW) set by the NEA. Shanxi Province, Gansu Province, and Qinghai Province have abundant wind and solar power resources. To mitigate the volatility and instability of new energy power generation such as wind and solar, the storage installation target is relatively high.

Figure 2 China's provincial "14th Five-Year Plan" on new type storage installation (as of May 2024)



Source: GIZ, May 2024

Local governments have also introduced a series of policies to promote the construction of new type energy storage in conjunction with new energy power generation. In terms of storage allocation policies, Xinjiang, Tibet, Inner Mongolia, and Gansu regions are required to equip

a certain proportion of storage facilities in new energy projects. Among them, Tibet has the highest storage allocation ratio, reaching 20%, followed by Xinjiang and Gansu, with a ratio of 15% while the storage allocation ratio in Inner Mongolia is 10%.

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Note: All the data quoted in this paper are from official sources to the extent possible. Due to different statistical methods, some data differ from each other, and individual revisions have been made compared with last year's version, or adjustments have been made according to the actual situation. For data that does not affect the overall judgment, the original cited data is retained.

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Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ)
GmbH,
Tayuan Diplomatic Office Building 2-5,
14 Liangmahe South Street, Chaoyang
District, 100600, Beijing, P.R, China
markus.wypior@giz.de
www.energypartnership.cn

Author:

Markus Wypior, GIZ
HUANG Yijing, GIZ

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