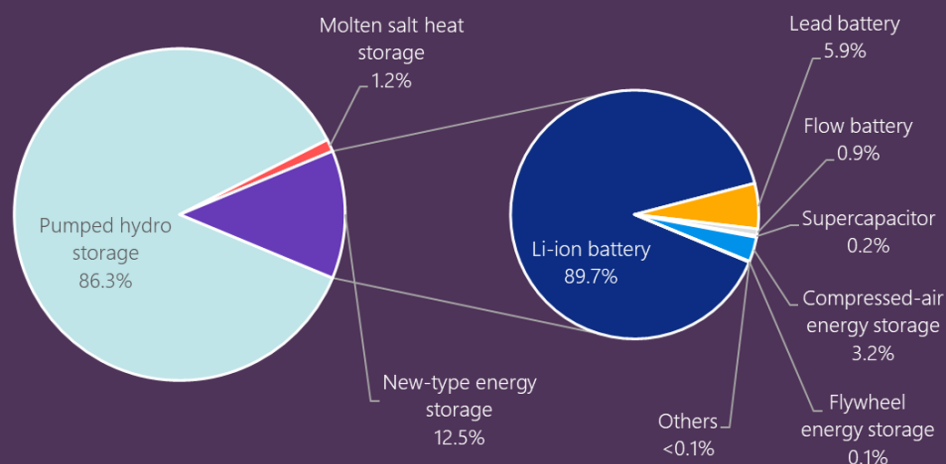


CNESA reviews the development status of energy storage industry in 2021

The energy storage industry in China is undergoing a transition from the initial stage of commercialization to large-scale development. In 2021, the central and local governments issued a total of more than 300 supportive policies, ushering in an unprecedented upsurge in investment in the energy storage industry. The newly installed electric energy storage capacity exceeded 10 GW for the first time, a year-on-year increase of 231%. The main body of the market increment was mostly the new-type energy storage, mainly the supporting energy storage equipment for renewable energy power generation projects and independent energy storage facilities on the power supply side. The 100-megawatt project has become the mainstream project. In addition to lithium batteries, China has put into operation a 100-megawatt compressed air energy storage project for the first time.

According to statistics from the China Energy Storage Alliance (CNESA), by 2021, the total capacity of electric energy storage projects in operation in China has reached 46.1 GW, accounting for 22% of the global market size, a year-on-year increase of 30%. The cumulative installed capacity of pumped hydro storage, electrochemical energy storage and compressed air energy storage increased the most, reaching 25%, 63% and 15 times respectively.¹²

2021 Cumulative installed capacity of electric energy storage facilities by technology



Source: China Energy Storage Alliance (CNESA), May 2022

China has initially established an energy storage policy system

For the conventional energy storage technology of pumped hydro storage, the NEA issued the *Mid-and Long-Term Development Plan for Pumped Storage (2021-2035)* in September 2021, which clarifies the cumulative installed capacity of pumped hydro storage aims to reach 62 GW and 120 GW by 2025 and 2030 respectively, and formulates a reserve project list of 421 GW of key projects¹³ and 305 GW of reserve projects^{14,15}. For new-type energy storage, the central government issued the *Guidance on Accelerating the Development of New-type Energy Storage* and the *14th Five-Year Implementation Plan for New-type Energy Storage Development* in July 2021 and January 2022 respectively, clarifying that by 2025, new-type energy storage will enter large-scale development, with a total installed capacity of more than 30 GW; Market-oriented development will be fully realized by 2030.¹⁶

In addition, 14 of the 32 provinces have released provincial energy storage plans, and the total installed capacity target exceeds the national target; more than 20 provinces have put forward binding requirements for the allocation of energy storage equipment for newly built renewable energy power generation projects, which laid the foundation for the large-scale development of new-type energy storage. However, the business model and market mechanism of energy storage still need improvements. For example, the ancillary service market needs a reasonable cost-sharing mechanism to reflect the market value of being reserves of flexible resources such as energy storage.

References

¹² “《储能产业研究白皮书2022》”, China Energy Storage Alliance, 26 April 2022, accessed at <http://www.esresearch.com.cn/#/resReport/Rdetail>.

¹³ Key projects are with mature construction conditions and qualify for ecological red-line requirements

¹⁴ Reserve projects are yet to be qualify for the ecological red-line requirements, but with potential to breakthrough the environmental constraints in the future.

¹⁵ “抽水蓄能中长期发展规划（2021-2035年）”, National Energy Administration, 9 September 2021, accessed at http://zfxqk.nea.gov.cn/2021-09/17/c_13110193456.htm.

¹⁶ “国家发展改革委 国家能源局关于加快推动新型储能发展的指导意见, 发改能源规〔2021〕1051号”, National Development and Reform Commission and National Energy Administration, 15 July 2021, accessed at http://www.gov.cn/zhengce/zhengceku/2021-07/24/content_5627088.htm; “关于印发《“十四五”新型储能发展实施方案》的通知, 发改能源[2022]209号”, National Development and Reform Commission and National Energy Administration, 22 February 2022, accessed at https://www.sohu.com/a/525162072_120112874.