The information and statistics presented in this section and other sections of this document, unless otherwise indicated, were extracted from different official government publications and other publications, and from the industry report prepared by Frost & Sullivan, an independent market research and consulting company that was commissioned by us, in connection with this [REDACTED]. The information from official government sources has not been independently verified by us, the Joint Sponsors, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], any of their respective directors, supervisors and advisors, or any other persons or parties involved in the [REDACTED], and no representation is given as to its accuracy.

SOURCES OF INFORMATION

We have engaged Frost & Sullivan, an independent market research consultant, to analyze the global and China energy storage market and prepare a report for use in this document, for which we have agreed to pay an engagement fee of RMB**[REDACTED]**. Frost & Sullivan is an independent global consulting firm founded in 1961 in New York and its services include, among others, industry consulting, market strategic consulting and corporate training. Frost & Sullivan has conducted detailed primary research which involved discussing the status of the industry with certain leading industry participants and conducting interviews with relevant parties. Frost & Sullivan has also conducted secondary research which involved reviewing company reports, independent research reports and data based on its own research database. Frost & Sullivan obtained the figures for the estimated total market size from historical data analysis plotted against macroeconomic data as well as considered the above-mentioned industry key drivers. Its market engineering forecasting methodology integrates several forecasting techniques with the market engineering measurement-based system and relies on the expertise of the analyst team in integrating the critical market elements investigated during the research phase of the project. These elements primarily include expert-opinion forecasting methodology, integration of market drivers and restraints, integration with the market challenges, integration of the market engineering measurement trends and integration of econometric variables. The Frost & Sullivan Report is compiled based on the following assumptions: (i) the social, economic and political environment of the globe and mainland China is likely to remain stable in the forecast period; and (ii) related industry key drivers are likely to drive the market in the forecast period.

Unless otherwise stated, all data and forecasts contained in this section have been derived from the Frost & Sullivan Report and were based on desktop research, expert interviews, and analysis and estimates by Frost & Sullivan. Our Directors confirm that, having exercised reasonable care, there have been no adverse changes in market information, taken as a whole since the date of the Frost & Sullivan Report, that would materially limit, contradict, or adversely affect these data.

OVERVIEW OF THE GLOBAL AND CHINA ENERGY STORAGE MARKET

Definition and Classification of Energy Storage

Energy storage refers to the storage of electric energy, encompassing technologies and measures that use chemical or physical methods to store electricity and release it when needed.

Energy storage technologies mainly encompass electrochemical and mechanical energy storage technologies. Electrochemical energy storage technologies can be further categorized into lithium-ion battery, lead-acid battery, sodium-ion battery, and other types. Mechanical energy storage technologies can be further divided into flywheel energy storage and compressed air energy storage. Energy storage technologies have broad applications in telecom and data center side, as well as in the electrical side, which is further divided into the power side and user side.

In 2024, the market size of the global energy storage market by added installed capacity reached approximately 268.3 GWh. Electrochemical energy storage technologies such as lithium-ion batteries, lead-acid batteries, and sodium-ion batteries, dominate the market by occupying over 99% of the energy storage market share by added installed capacity.

Overview of Energy Storage Batteries by Product

Different characteristics align lithium-ion and lead-acid batteries with distinct downstream market segments in the energy storage market. While lead-acid batteries remain a safe, reliable and cost-effective choice for traditional applications, the performance characteristics of lithium-ion batteries are driving their adoption in more diversified scenarios.

Differing requirements of core customers in telecom base stations and data centers drive the distinct usage and applications of lithium-ion and lead-acid batteries, as each technology aligns with specific performance characteristics suited to their needs. Lead-acid batteries, with high safety level and mature recycling value chain, dominate traditional applications like emergency backup power. Meanwhile, lithium-ion batteries, with their advantages in energy density, life cycle, and adaptability, are increasingly being adopted for high energy consuming base stations and evolving data center energy needs, especially for sustainable electricity supply.

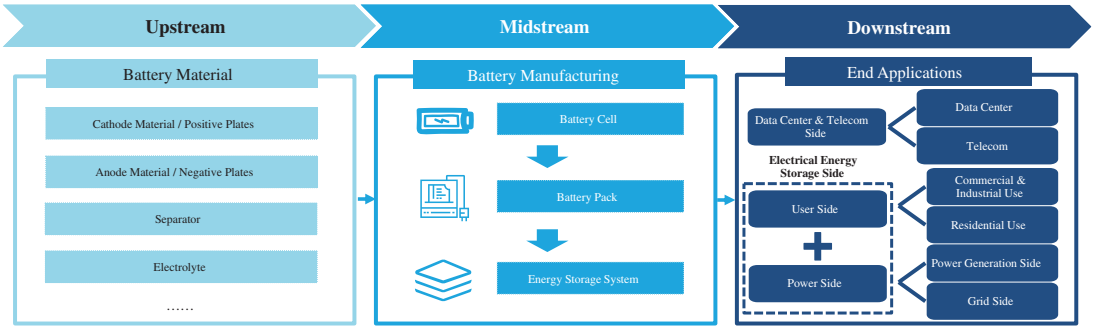
Energy Storage Industry Value Chain

The upstream of the energy storage industry primarily focuses on lithium-ion and lead-acid battery raw materials, including cathode material/positive plates, anode material/negative plates, separator, electrolyte, and other key elements. These materials significantly influence the overall quality and performance of batteries.

The midstream of the energy storage industry mainly involves battery cells, battery packs, and energy storage systems. Battery manufacturing is a multi-step process that includes electrode manufacturing, cell assembly, training, aging and testing. Battery cells are assembled through notching, stacking and pouch assembly. Battery packs are assembled from these cells, incorporating additional components for safety and performance. Energy storage systems involve developing backend systems to precisely control and monitor batteries, ultimately integrating these systems with battery packs into final products.

The downstream segment covers end applications, including the data center, telecom, and electrical energy storage. For data centers and telecom applications, these new information infrastructures are characterized by high power consumption and stable power supply, thus boosting energy storage demand. Among the electrical energy storage side, commercial, industrial, and residential use can effectively achieve power supply and demand balance and reduce the load pressure from the power side.

Value Chain Analysis of Energy Storage Market

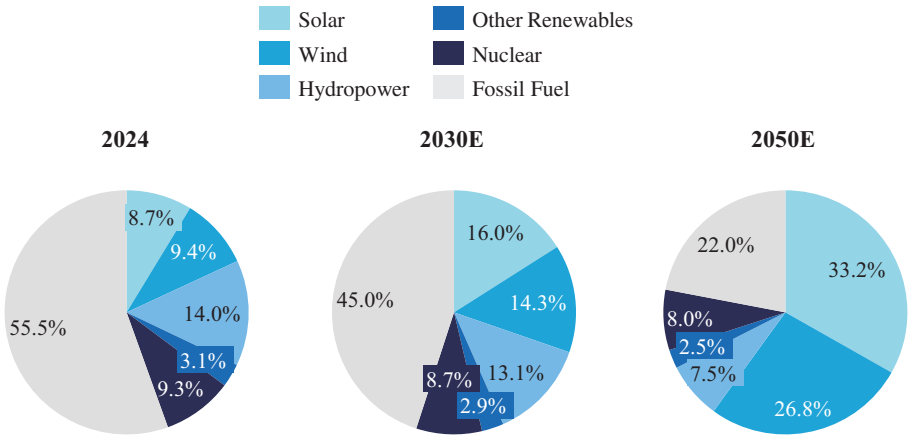


Source: Frost & Sullivan

Market Size of Global and China Energy Storage Market by Added Installed Capacity

Under the global coalition for carbon neutrality, reducing greenhouse gas emissions and promoting the development of renewable energy has become an international consensus. At the same time, geopolitical tensions and fluctuations in fossil fuel prices have also prompted countries to seek more stable and sustainable energy supplies. With continuous technological advancements, the cost of renewable energy has been steadily decreasing in recent years, further driving market demand for renewable energy. In 2024, the proportion of renewable energy power generation surpassed 35% of the global total power generation for the first time. Looking ahead, with the accelerating of energy structure transformation to solar and wind energy and continuous development of renewable energy technologies, it is projected that the market share of renewable energy power generation among the global power generation structure will reach over 45% by 2030 and approximately 70% by 2050, respectively.

Proportion of Clean Energy among the Global Power Generation Structure, 2024, 2030E & 2050E

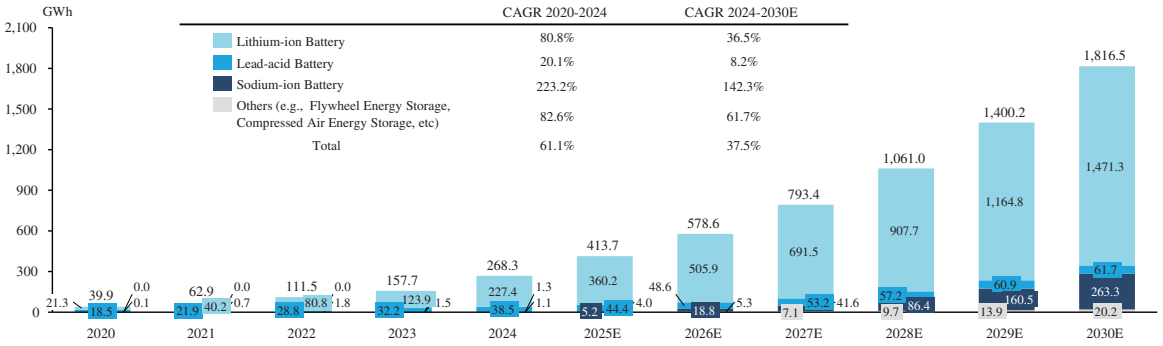


Source: International Energy Agency (IEA), Frost & Sullivan

The market size of global energy storage by added installed capacity increased from 39.9 GWh in 2020 to 268.3 GWh in 2024 at a CAGR of 61.1%. Energy storage plays a key role in many countries' energy strategy by meeting the demands for stability, cost-effectiveness, and environmental sustainability. It strengthens energy self-sufficiency, flexibility, and security, while also contributing to lower electricity costs. As such, driven by the supportive government policies, cost reduction of energy storage batteries, the growing adoption of renewable energy, as well as the heightened awareness of energy storage, it is forecasted that the market size of global energy storage by added installed capacity will increase from 268.3 GWh in 2024 to 1,816.5 GWh in 2030, representing a CAGR of 37.5%.

In 2024, energy storage market in Asia Pacific (excluding mainland China) and EMEA regions reached added installed capacity of 26.5 GWh and 35.0 GWh, occupying 9.9% and 13.0% of the total global market, respectively. Countries in these regions have introduced and implemented multiple measures to promote the development of the energy storage market. For example, India has launched a subsidy program worth up to 4 GWh to enhance the flexibility of its energy system and facilitate a higher integration of renewable energy into the grid. While Southeast Asia has made significant strides in renewable energy generation, the region's power grid infrastructure has been relatively slow to develop. Thus, energy storage batteries are necessary to provide grid regulation and expansion. In the European market, lithium-ion energy storage battery has been increasingly dominating the market. For the Nordic market, the initiative of European countries sharing reserve capacity effectively utilizes energy storage systems, which will reduce costs for both energy storage system operators and consumers, thereby promoting the development of the Nordic energy storage market. For the African market, energy storage market is still in its infancy. African abundant renewable energy resources will facilitate the rapid growth of the energy storage industry.

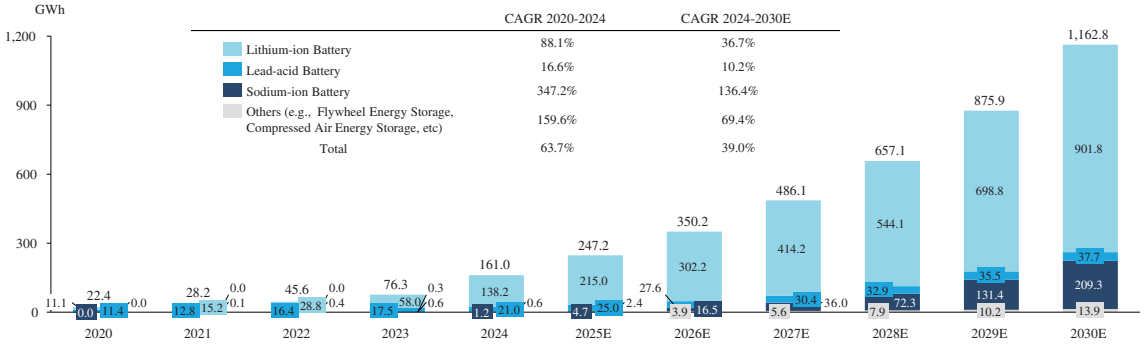
Added Installed Capacity of Global Energy Storage, Breakdown of Energy Storage Technologies, 2020-2030E



Source: International Energy Agency (IEA), China Energy Storage Alliance(CNESA), Frost & Sullivan

Supported by the massive downstream demand, mature industrial chain layout and favorable policies, China has solidified its position as the global leader in energy storage installation, boasting an impressive added installed capacity of 161.0 GWh in 2024, which constituted approximately 60.0% of the total added installed capacity worldwide in the same year. Looking ahead to 2030, China is projected to maintain its dominance, accounting for approximately 64.0% of the total added installed capacity of energy storage globally.

Added Installed Capacity of China Energy Storage, Breakdown of Energy Storage Technologies, 2020-2030E



Source: China Energy Storage Alliance (CNESA), Frost & Sullivan

Supply-demand Dynamics of Energy Storage Battery

The upstream industries of lithium-ion and lead-acid energy storage battery providers involve with the supply of main raw material including lithium carbonate and lead ingots, respectively. Lithium carbonate production is primarily driven by downstream demand, and most companies adopt a make-to-order model. With the surging demand for downstream new energy vehicles and energy storage systems, China's lithium carbonate production volume witnessed an significant increase from 171 thousand tons in 2020 to 379 thousand tons in 2022, primarily driven by robust downstream demand. At the beginning, the growth rate of production capacity is lower than demand, and the supply shortage led to an increase in the price from RMB48.0 thousand per ton in 2020 to over RMB482.4 thousand per ton in 2022. In 2023, China's lithium carbonate production volume further increased to 518 thousand tons, while price decreased to RMB272.3 thousand per ton following with the balance between supply and demand. Furthermore, the growth momentum continued in 2024, with lithium carbonate production volume amounted to 696 thousand tons in 2024. The production of lead ingots is primarily influenced by national policies, the release of smelting capacity, and downstream demand. With the establishment of a nationwide lead resource recycling system and a recycling lead system, China's lead ingot production volume has shown a steady year-on-year growth trend. In 2023, China's lead ingot production volume reached approximately 6.6 million tons, compared with 5.6 million tons in 2020, representing a CAGR of 5.6% from 2020 to 2023. The price remained relatively stable within the range from RMB14.0 thousand per ton to RMB17.5 thousand per ton. In 2024, global capacity contraction of mining and smelting led to the increase of lead ingot price to RMB16.9 thousand per ton compared to RMB15.6 thousand per ton in 2023.

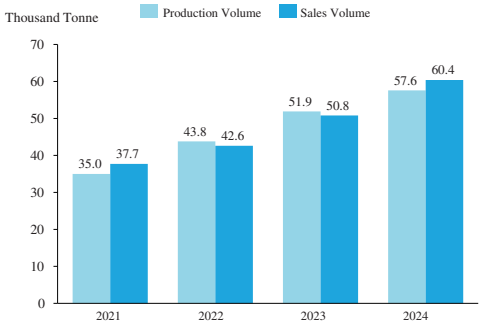
The downstream market demand for lithium-ion and lead-acid energy storage batteries in the energy storage industry is primarily driven by the energy transition to a low-carbon energy system, the growth in the number of telecom base stations and data center racks. During the energy transition, energy storage technologies play a crucial role in minimizing energy waste caused by fluctuations in renewable energy supply. In 2024, the proportion of renewable energy power generation surpassed 35% of the global total power generation for the first time. Looking ahead, with the accelerating of energy structure transformation to solar and wind energy and continuous development of renewable energy technologies, it is projected that the market share of renewable energy power generation among the global power generation structure will reach over 45% by 2030. Thus, fueled by the sustained growth in market demand of transition to low-carbon energy system, it is forecast that the market size of global electrical energy storage by added installed capacity will increase from 207.9 GWh in 2024 to 1,506.8 GWh in 2030, representing a CAGR of 39.1%.

In the telecom industry, since the inception of 5G telecom base stations, they have rapidly become the mainstream in global telecom base station market, depending on its faster speeds, lower latency, increased capacity as well as enhanced connectivity. Thus in 2024, the cumulative volume of global 5G telecom base stations has reached 6.5 million units, presenting a CAGR of 56.5% from approximately 1.1 million units in 2020. Till 2030, the cumulative volume of global 5G telecom base stations is expected to reach 22.4 million units, presenting a CAGR of 22.8% from 2024. As the demand for replacement of existing telecom base stations rises, the added installed capacity of global telecom energy storage is expected to reach 100.2 GWh in 2030, representing a CAGR of 14.8% from 43.9 GWh in 2024.

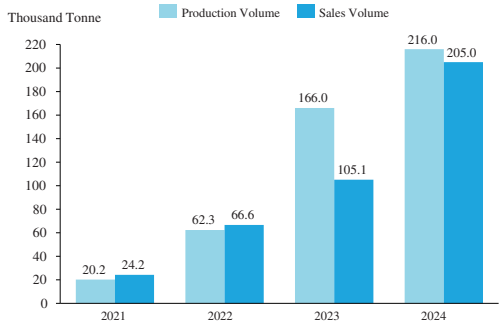
The surge in demand for data center energy storage batteries is propelled by the proliferation of artificial intelligence (AI) and big data analytics, driven by the increasing complexity and scale of AI algorithms. Consequently, the global number of data center racks surged from 12.5 million units in 2020 to 33.9 million units in 2024, exhibiting a CAGR of 28.3%. With the rapid advancement of AI technology and increase in computational capacity from data center racks, it is anticipated that the global number of data center racks will reach 181.3 million units by 2030, growing at a CAGR of 32.3% from 2024. To ensure reliable power supply and enhance energy efficiency through sustainable energy supply, added installed capacity of global data center energy storage is expected to further increase to 209.4 GWh by 2030 from 16.5 GWh in 2024, representing a CAGR of 52.7% from 2024 to 2030.

The following chart sets forth the amount of demand and supply of energy storage batteries in global market during the years indicated.

Global Telecom and Data Center Energy Storage Battery Production and Sales Volume, 2021-2024



Global Electrical Energy Storage Lithium-ion Battery Production and Sales Volume, 2021-2024

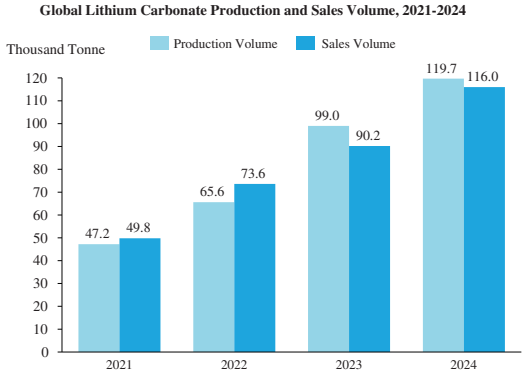


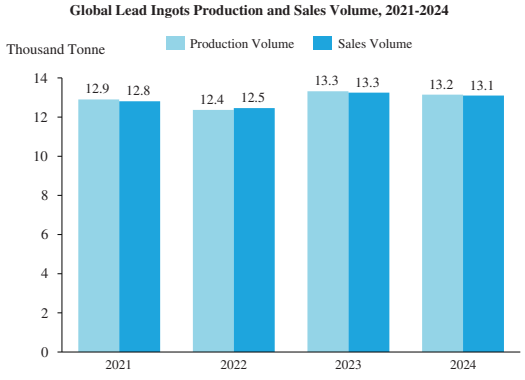
Notes: Proportion for global production volume and sales volume of electrical energy storage lead-acid battery is relatively small.

Source: China Energy Storage Alliance (CNESA), Interviews with Industry Experts, Frost & Sullivan

Within the telecom base and data center energy storage segment, the ratio of sales volume to production volume ("sale-to-production ratio") remained above 97% during the Track Record Period. For electrical energy storage lithium-ion batteries, the sale-to-production ratio varied during this period, with a notable dip in 2023. This was primarily due to supply expansion driven by strong demand growth in prior years, coupled with a lag in adjusting production levels to align with the slower demand growth seen in 2023. Additionally, timing mismatches related to the construction cycle contributed to the lower ratio. This supply-demand dynamic gradually returned to normal in 2024, as evidenced by the sales-to-production ratio reaching 94.9% in the 2024.

The following chart sets forth the amount of demand and supply of primary raw materials in global market during the years indicated.





Source: National Bureau of Statistics, China Non-Ferrous Metals Fabrication Industry Association (CNFA), Shanghai Metals Market (SMM), Interviews with industry experts, Frost & Sullivan

OVERVIEW OF GLOBAL AND CHINA TELECOM AND DATA CENTER ENERGY STORAGE MARKET

The telecom and data center industries are highly interrelated in terms of technological foundation, application scenarios, and market demand, mutually supporting each other to drive the development of the modern information society. The telecom industry is responsible for data transmission and exchange, ensuring that information is transmitted quickly and reliably, while data center processes and analyzes these large volumes of data. Both telecom and data center require extensive infrastructure, high bandwidth, and low-latency network support, and rely on technological innovation and security protection. With the increase in smart devices and internet users, market demand drives the development of these two industries, which together support intelligent decision-making, optimize network performance, and improve service quality. The development of telecom and data center energy storage industry is crucial for various purposes, including (i) ensuring the stable operation of data centers and telecom networks, preventing data loss and communication interruptions; (ii) enhancing energy efficiency and reducing energy waste; (iii) lowering operating costs by storing electricity during off-peak hours and using it during peak times; supporting the application of renewable energy by providing stable power supply, thus contributing to green development; responding to emergencies and unexpected situations to ensure business continuity and reliability; and (iv) promoting the development of smart grids, enabling flexible power scheduling and management to provide more reliable power guarantees for the telecom and data center industries.

Overview of Global and China Telecom Energy Storage Market

Telecom energy storage refers to the use of energy storage systems to provide backup power or supplementary energy to ensure the continuous operation of telecom base stations. Energy storage solutions, especially energy storage systems, are crucial for maintaining communication networks during power outages or fluctuations, ensuring uninterrupted connectivity and reliable communication services. With the rapid proliferation and iterative advancement of technologies such as mobile communication, the Internet of Things (IoT), big data, AI, and 5G, user demand for telecom networks continues to grow. In 2024, the cumulative volume of global 5G telecom base stations has reached 6.5 million units, presenting a CAGR of 56.5% from 2020. China alone accounted for 65.1% of the cumulative volume of global 5G telecom base stations in 2024. In line with the expansion of telecom base stations, power demand also increases dramatically. In recent years, some countries and regions have faced issues with unstable power supply, including power outages and voltage fluctuations, impacting the normal operation of telecom base stations. To ensure the reliability, stability, and continuity of telecom networks, the demand for stable and reliable power supplies for base stations has also increased.

Specifically, as the main driver of global 5G base stations' growth, the construction of China's new 5G base station experienced a decline from 2022 to 2024 according to MIIT, falling from 887 thousand units to 874 thousand units. This led to a decrease in added installed capacity of energy storage for newly built 5G telecom base stations in China, slowing down the growth of China's 5G telecom base station energy storage markets.

Market Size of Global and China Telecom Energy Storage Market

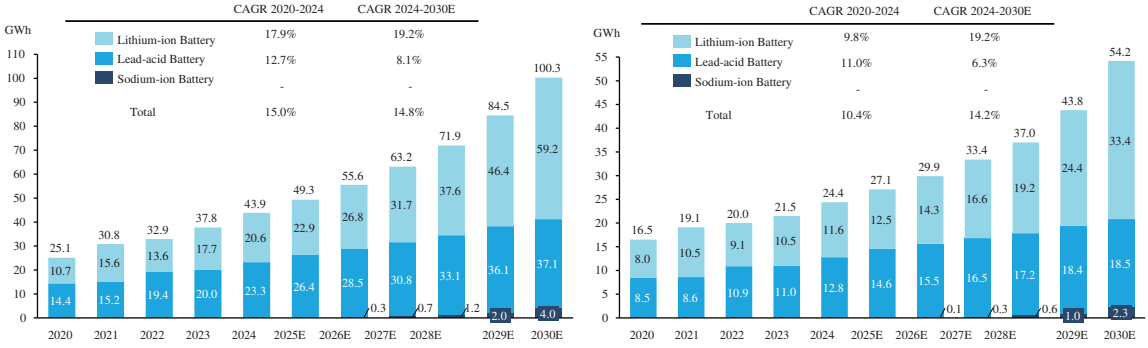
The added installed capacity of global telecom energy storage increased from 25.1 GWh in 2020 to 43.9 GWh in 2024, representing a CAGR of 15.0%. By 2030, the added installed capacity of global telecom energy storage is expected to reach 100.2 GWh, representing a CAGR of 14.8% from 2024. China is a significant market in telecom energy storage industry, driven by its extensive telecom infrastructure and rapid technological advancements. In 2024, China alone accounted for 55.8% of the global increase in added installed telecom energy storage capacity.

The added installed capacity of China telecom energy storage increased from 16.5 GWh in 2020 to 24.5 GWh in 2024, representing a CAGR of 10.4%. By 2030, the added installed capacity of China telecom energy storage is expected to reach 54.2 GWh, representing a CAGR of 14.2% from 2024. Among this market, the added installed capacity of energy storage for newly built 5G telecom base stations in China fell from 15.3 GWh in 2022 to 12.8 GWh in 2024. This caused the growth of this sector in China to be slower than the global market, with China's share dropping from 68.1% in 2022 to 59.6% in 2024 and thus resulting in China's share of added installed capacity of telecom energy storage in global market declining from 60.8% in 2022 to 55.8% in 2024.

In populous Asia Pacific nations like India and Indonesia, telecom energy storage is indispensable given the impending rapid deployment of telecom base stations and the inadequacy of existing power grids. Thus, the added installed capacity of telecom energy storage in Asia Pacific excluding mainland China is expected to increase from 10.9 GWh in 2024 to 27.9 GWh in 2030, representing a CAGR of 16.9%.

In the EMEA market, the development of 5G and overall telecom industry in Europe is mature and gradually advancing, while other EMEA regions are still in the early stages of 5G commercialization, possessing significant development potential. Thus, the added installed capacity of telecom energy storage in EMEA is expected to increase from 5.4 GWh in 2024 to 11.6 GWh in 2030, representing a CAGR of 13.7%.

Added Installed Capacity of Telecom Energy Storage (Global and Mainland China), Breakdown of Energy Storage Technologies, 2020-2030E



Source: China Energy Storage Alliance (CNESA), Interviews with Industry Experts, Frost & Sullivan

In terms of technical routes, lead-acid batteries have previously taken a larger share of the market for global telecom energy storage with relatively good reliability and temperature tolerance. Recently, with the fast construction of 5G telecom base stations, the proportion of lithium-ion batteries is increasing steadily to meet the needs of 5G base station construction with higher speed and larger capacity. Lithium-ion batteries generally have higher energy density, faster charging speeds, and lower self-discharge rate. Looking ahead, lead-acid batteries, with strengths in wide temperature range adaptability, good reliability, high safety level, and mature technology, are projected to grow alongside with lithium-ion batteries in the telecom energy storage industry. The established recycling system of lead-acid batteries supports its shift towards low-carbon development. By 2030, it is forecasted that lithium-ion batteries will account for 59.1% of the global telecom energy storage market by added installed capacity, while lead-acid batteries will maintain with market share of 37.0% in global market.

Thus, in the telecom energy storage market, lithium-ion batteries are increasingly implemented in base stations requiring high discharge rate and high energy consuming application scenarios. Lead-acid batteries still maintain its position in telecom energy storage market especially in some central area depending on their safety, reliability and maturity. In 2024, the market shares of lithium-ion batteries and lead-acid batteries in China's telecom energy

storage market by added installed capacity reached 47.5% and 52.5%, respectively. By 2030, the market shares of lithium-ion batteries and lead-acid batteries by added installed capacity in China are expected to reach 61.7% and 34.1%, respectively.

Overview of Global and China Data Center Energy Storage Market

The development of data center energy storage is significantly shaped by the increasing energy demands of data centers, fueled by the rise of AI and big data analytics. The escalating complexity and scale of AI algorithms necessitate immense computational resources, leading to heightened energy consumption across traditional and modern computing platforms like cloud and edge computing.

The global number of data center racks surged from 12.5 million units in 2020 to 33.9 million units in 2024, exhibiting a CAGR of 28.3%. With the rapid advancement of AI technology and its expanding applications across various industries, it is anticipated that the global number of data center racks will reach 181.3 million units by 2030, growing at a CAGR of 32.3% from 2024. China, serving as a primary driver of global data center expansion, accounted for 32.2% of global number of data center racks in 2024. With additional support from the government, it is projected that the number of data center racks in China will reach 61.3 million by 2030, representing a CAGR of 33.3%.

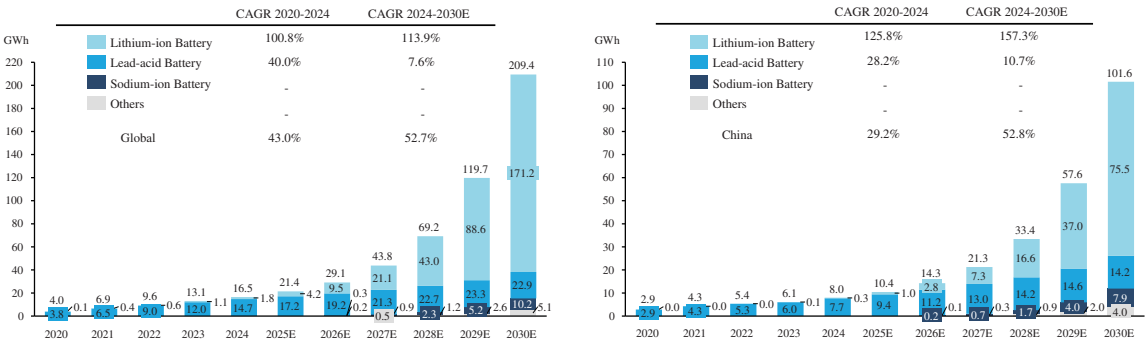
The increase in computational capacity from data center racks has exerted significant pressure on the energy requirements for data centers. The proportion of data center electricity demand in the global electricity demand is expected to increase from 4.0% in 2024 to 10.1% in 2030. Such a surge in energy needs poses challenges to existing energy supply systems, necessitating the adoption of energy storage technologies to ensure the stability of the power supply and enhancing energy efficiency within data centers. As the focus within the data center sector shifts towards addressing these energy challenges alongside computational demands, energy storage supports data center operations and contributes to broader goal of sustainable electricity supply by improving energy efficiency and facilitating integration with renewable energy sources. The growth of the data center energy storage sector is thus essential for the sustainable development of data center infrastructure.

Market Size of Global and China Data Center Energy Storage Market

In the data center industry, there's a growing emphasis on deploying energy storage solutions to ensure reliable power supply and enhance energy efficiency through sustainable energy supply. Added installed capacity of global data center energy storage increased from 4.0 GWh in 2020 to 16.5 GWh in 2024, representing a CAGR of 43.0%, and it is expected to further increase to 209.4 GWh by 2030, representing a CAGR of 52.7% from 2024 to 2030. The added installed capacity of China data center energy storage increased from 2.9 GWh in 2020 to 8.0 GWh in 2024, representing a CAGR of 29.2%, and it is expected to further increase to 101.6 GWh by 2030, representing a CAGR of 52.8% from 2024 to 2030. The accelerated deployment of data centers and enhanced demand for sustainable energy supply will further fuel the robust

growth of the data center energy storage market in Asia Pacific excluding mainland China and EMEA. The added installed capacity of data center energy storage in Asia Pacific excluding mainland China and EMEA is expected to increase from 1.7 GWh and 1.3 GWh in 2024 to 22.1 GWh and 10.9 GWh by 2030, representing CAGRs of 52.7% and 42.8%, respectively.

Added Installed Capacity of Data Center Energy Storage (Global and China), Breakdown of Energy Storage Technologies, 2020-2030E



Source: Interviews with Industry Experts, Frost & Sullivan

Lead-acid batteries are relatively mature in technology and industry value chain with high safety level compared to other battery types, making them suitable for multiple application scenarios in data centers, especially under the scenario with high instantaneous discharge rate. In 2024, lead-acid batteries still dominated the data center energy storage market, with global market share of 89.2% by added installed capacity. Looking ahead, the global data center energy storage market is poised for significant expansion. The accelerating global demand for data center, together with lead-acid battery's high technological maturity and superior instantaneous discharge, will continue to drive steady market growth of lead-acid batteries, achieving the CAGR of 7.6% in the global data center energy storage market by added installed capacity from 2024 to 2030. By 2030, proportion for added installed capacity of lithium-ion battery among data center energy storage market is expected to account for 81.8% globally, driving by renewable energy initiatives utilization for electricity peak shaving and valley filling. Besides lithium-ion batteries, other battery types, such as sodium-ion batteries, which are still in the early stages of adoption but offer benefits like abundant resources and lower costs, show promising potential as technology advances.

Therefore, in the data center energy storage market, lead-acid batteries are valued for their high safety level and mature technology to provide reliable backup power, particularly for large-scale data center applications. Lithium-ion batteries are valued for their longer life cycle to handle peak shaving and valley filling, supporting the sustainable electricity supply. In 2024, the market shares of lithium-ion batteries and lead-acid batteries in China's data center energy storage market by added installed capacity reached 3.3% and 96.7%, respectively. By 2030, the market shares of lithium-ion batteries and lead-acid batteries by added installed capacity in China are expected to 74.3% and 14.0%, respectively.

OVERVIEW OF GLOBAL AND CHINA ELECTRICAL ENERGY STORAGE INDUSTRY

The electrical energy storage industry includes (i) the power side, including power generation side and grid side, and (ii) the user side, including commercial, industrial, and residential uses. Power generation and grid-side energy storage have higher capacity and larger scales, and they have experienced rapid development over the past few years as their economies of scale have been readily formed. User-side energy storage features low capacity and is usually applied with distributed power generation equipment. Meanwhile, user-side energy storage generally requires precise management, which can adapt to the different consumption habits of the downstream users and enhance energy consumption efficiency.

In line with the development trend of global energy storage industry, the market size of global electrical energy storage by added installed capacity increased from 10.8 GWh in 2020 to 207.9 GWh in 2024 at a CAGR of 109.5%. It is forecast that the market size of global electrical energy storage by added installed capacity will increase to 1,506.8 GWh in 2030, representing a CAGR of 39.1% from 2024 to 2030. The market size of China electrical energy storage by added installed capacity increased from 3.1 GWh in 2020 to 128.6 GWh in 2024 at a CAGR of 153.8%. It is expected that the market size of China electrical energy storage by added installed capacity will increase to 1,007.0 GWh in 2030, representing a CAGR of 40.9% from 2024 to 2030. In the realm of energy storage technologies, lithium-ion batteries will remain as the predominant types, representing 82.4% of the total added installed capacity of the global electrical energy storage industry in 2030, followed by sodium-ion batteries.

MARKET DRIVERS OF GLOBAL AND CHINA ENERGY STORAGE MARKET

Industry Demand from Telecom Networks and Data Centers: In the era of 5G telecom, artificial intelligence (AI), and big data, the industry's demand for energy storage is driven by the significant increase in power requirements needed for the vast transmission, storage, and processing of data from telecom networks and data centers.

On the one hand, there will be increased demand from telecom networks, driven by its rapid expansion and development. As modern communication infrastructure evolves, the demand for energy increases, necessitating robust solutions to ensure continuous and reliable service delivery. Furthermore, within the telecom energy storage industry, the commercial rollout and expansion of 5G networks have significantly amplified the power requirements of communication bases. Known for its ultra-fast response times and minimal latency (under one millisecond), 5G technology has become the dominant station type in markets like China. By 2030, China is expected to deploy an additional 8.0 million 5G base stations, bringing the total to approximately 12.2 million.

On the other hand, there will be increased demand from data centers, attributable to the relevant workloads, such as AI and high-performance computing (HPC). Implementing these workloads often requires changes to rack and backup power infrastructure to ensure efficient, secure, and continuous power supply. In the future, with widespread deployment, accelerated adoption, and application of AI will further accelerate the implementation of data centers. It is projected that the global number of data center racks will reach 181.3 million units by 2030, growing at a CAGR of 32.3% from 2024.

Energy Transition: The energy transition aims to shift to a low-carbon energy system by enhancing energy efficiency, decarbonizing power generation, and electrifying the economy to achieve net-zero carbon dioxide emissions. Key pathways involve transitioning from traditional high-pollution energy sources to renewable energy like solar, wind, hydropower, etc.. Energy storage technologies play a crucial role in minimizing energy waste caused by fluctuations in renewable energy supply. The energy transition is a global growing trend. At the end of 2024, more than 150 countries have made commitments to reach carbon neutrality in the mid-21st century, covering over 80% of global carbon dioxide emissions. In particular, China has set the "dual carbon" target, aiming to achieve peak carbon dioxide emissions before 2030 and strive to reach carbon neutrality before 2060. These initiatives taken by multiple countries have accelerated the development of the new energy and energy storage markets. Specifically, in telecom and data center energy storage sector, electricity costs constitute a significant portion of operational expenses for data centers and telecom operations, accounting for approximately 60% and 30% of their total operating costs, respectively. The integration of renewable energy infrastructures, such as PV, is reducing electricity expenses, while energy storage systems ensure uninterrupted operation for base stations and data centers.

Regulatory Support: Regulatory frameworks and government support mechanisms, such as subsidies, tax incentives, and financial incentives for investments in energy storage projects, reduce upfront costs and accelerate market uptake, thus driving the adoption and deployment of energy storage systems. In European Union, energy storage has played an important role in the European Green Deal and the Fit for 55 policy package, a set of policy initiatives aimed at ensuring the steps to carbon neutrality. These measures accelerate the adoption for the installation of renewable energy plants and co-located energy storage. Regulatory reforms in China, such as streamlined permitting processes and grid interconnection standards, further facilitate the deployment of energy storage systems, enabling faster project development and implementation. For example, in August 2021, the PRC National Development and Reform Commission and the National Energy Administration issued the "Notice on encouraging renewable electricity generation enterprises to self-build or purchase peak shaving capacity to increase the grid-connected scale" (《關於鼓勵可再生能源發電企業自建或購買調峰能力增加並網規模的通知》), encouraging power generation enterprises to increase the grid-connected scale of renewable energy power generation installations through self-building or purchasing peak adjusting energy storage capabilities. As of December 31, 2024, more than 20 provinces, autonomous regions, and municipalities in China have issued regional policies related to the mandatory deployment of energy storage alongside renewable energy projects. Operators of telecom base stations and data

centers, with their extensive site resources and reliance on substantial energy storage for backup power, are poised to reap significant benefits from this policy. Data centers, in particular, are under increasing pressure to address their high energy consumption and rapidly growing demand for computing power by promoting green electricity usage and reducing carbon emissions. Thus, the installed data center energy storage capacity equipped with sustainable electricity supply functions is projected to reach 80.3 GWh by 2030, with a CAGR of 204.9% from 2024. In addition, the bidding policies of the Chinese telecom base station industry have undergone several major changes from 2020 to 2024, which have continued to impact the mechanisms and costs of energy storage projects. Furthermore, government-funded research and development programs spur technological innovation in energy storage technologies, driving down costs and improving performance.

Increased Efficiency and Declining Costs: Increased efficiency and declining costs of electric energy storage technologies are primary drivers behind their increasing adoption and integration into modern energy systems. Technological advancements, including improvements in battery materials & structure, manufacturing processes, and energy management systems, have led to higher efficiency, longer lifespan, and enhanced safety features, contributing to the cost reductions in energy storage products. Driven by growing demand and larger production facilities, economies of scale allow manufacturers to spread fixed costs. For instance, the average price of lithium-ion batteries decreased from RMB1.57/Wh in 2022 to RMB0.63/Wh in 2024, dropped by 64.3%. These declining costs make energy storage solutions increasingly viable for a wide range of applications, accelerating the transition towards a more sustainable, flexible, and resilient energy system.

DEVELOPMENT TRENDS OF GLOBAL AND CHINA ENERGY STORAGE MARKET

AI and Big Data Technology Stimulate Market Demand: Integrating AI and big data technology into various sectors has catalyzed a surge in market demand for computational power and energy, stimulating the growth of the data center energy storage market. The share of global electricity demand attributed to the electricity demand from data centers is expected to rise from 4.0% in 2024 to 10.1% in 2030. AI and big data applications, known for their intensive data processing needs, require vast amounts of computational power and continuous and reliable energy sources to operate efficiently. This dependency on constant power supplies makes energy storage a critical component in the infrastructure supporting these technologies.

Diversification and Parallel Development of Technical Routes: Since lithium-ion batteries boast higher energy density and longer life cycle and lead-acid batteries are relatively more mature in industry value chain, the energy storage industry, especially in data center and telecom sectors, will witness the parallel development of lithium-ion, lead-acid and other multiple battery technologies, providing diversification of battery options and further improving energy storage performance. Lithium-ion battery will contribute to the major growth potential while lead-acid battery will still represent as one of the mainstream applications. Among other technical routes of batteries, sodium-ion batteries are expected to increase their energy storage market share due to their rich raw material resources, suitability for cold regions and high efficiency.

Continual Improvement on Battery Performance and Cost Reductions Through Technological Advancements: The continuous advancements in technology and corresponding reductions in costs have significantly enhanced the performance and reliability of energy storage technologies, leading to decreased costs. This improvement in competitiveness promotes further market development and the application of energy storage solutions. One of the breakthroughs in this domain is the development of battery discharge rate in different working environment, since the energy storage system in data center requires superior high-rate performance to satisfy instantaneous backup power demand in a short time period. Further, leading market participants engage in the research and development of solid-state battery technology, providing safer, higher energy density and longer life cycle options to meet diverse customer requirements. These technologies help lower energy costs and carbon footprints, supporting the broad application in energy storage markets.

ENTRY BARRIER OF GLOBAL AND CHINA ENERGY STORAGE MARKET

Customer Recognition Barriers: In the energy storage industries, customer recognition barriers can be critical for new entrants, especially when the primary downstream customers in the telecom and data center energy storage market include large telecom state-owned operators and equipment manufacturers, and large technology companies. These organizations command vast customer resources and substantial market shares, setting stringent requirements for their suppliers across multiple dimensions. They expect high product quality, cost-effectiveness, reliable delivery capacities, robust service support, compliance with regulations, and commitment to sustainability. To successfully navigate these barriers and secure trust and collaboration opportunities from such large-scale customers, suppliers must not only offer products and services that meet these high standards but also demonstrate reasonable pricing and cost structures to meet their customized needs.

Capital Investment Barriers: Capital investment barriers in the energy storage industries are primarily due to the substantial financial outlay required for equipment procurement, system integration, and ongoing operations and maintenance. The initial costs associated with setting up production capacity of advanced energy storage systems that can handle the high demands of telecom and data center products are considerable. These systems not only need to be robust to ensure continuity in telecom and data center markets, but they also need to be sophisticated enough to integrate seamlessly with existing digital and energy infrastructures. Additionally, the operational costs, including the maintenance of complex systems that are essential for energy efficiency and reliability, further escalate the investment needed. Consequently, only enterprises with robust financial backing are typically able to enter the market and compete effectively.

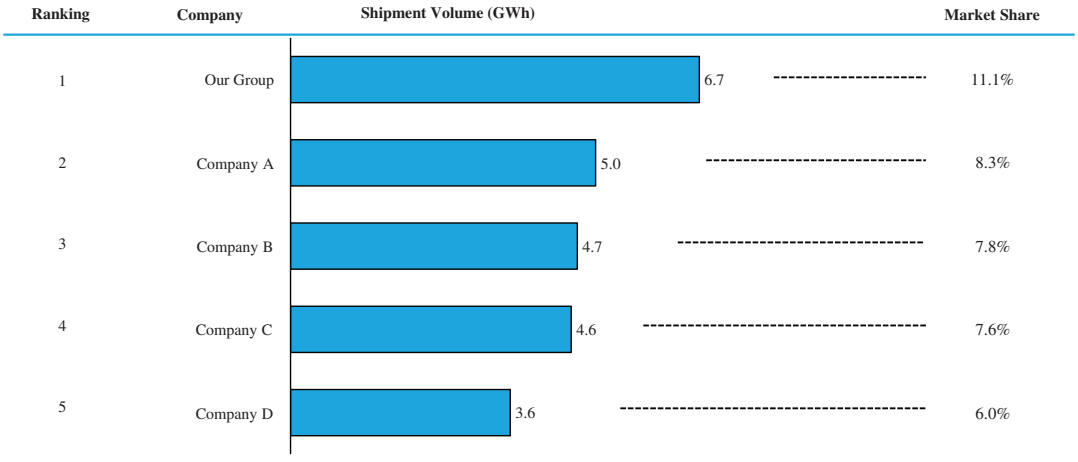
Technological Barriers: The energy storage industry faces significant technological barriers that stem primarily on sophisticated battery technology, energy management systems, and intelligent control algorithms. Companies that possess core technologies and patents enjoy significant competitive advantages in the market, delivering superior high-rate performance with better safety level and cost-effectiveness. Additionally, developing or acquiring these technologies entails substantial investment in research and development, often coupled with the need to navigate global complex patent landscapes and regulatory standards. The integration of these technologies into existing infrastructure demands not only technical adaptability but also compatibility with diverse global energy storage standards. As a result, the technological complexity not only restricts market entry but also challenges the scalability and adaptability of solutions within this sector.

COMPETITIVE LANDSCAPE OF THE GLOBAL ENERGY STORAGE MARKET

Competitive Landscape of the Global Telecom and Data Center Energy Storage Market

According to Frost & Sullivan, the global telecom and data center energy storage battery market is competitive. In 2024, the total global added installed capacity for energy storage batteries in telecom and data center application reached 60.4 GWh, with the top five players holding a combined market share of approximately 40.7%. Our Group achieved a shipment volume of 6.7 GWh, ranking the first among global telecom and data center energy storage battery providers, with the market share of 11.1%.

Top 5 Global Telecom and Data Center Energy Storage Battery Providers, 2024

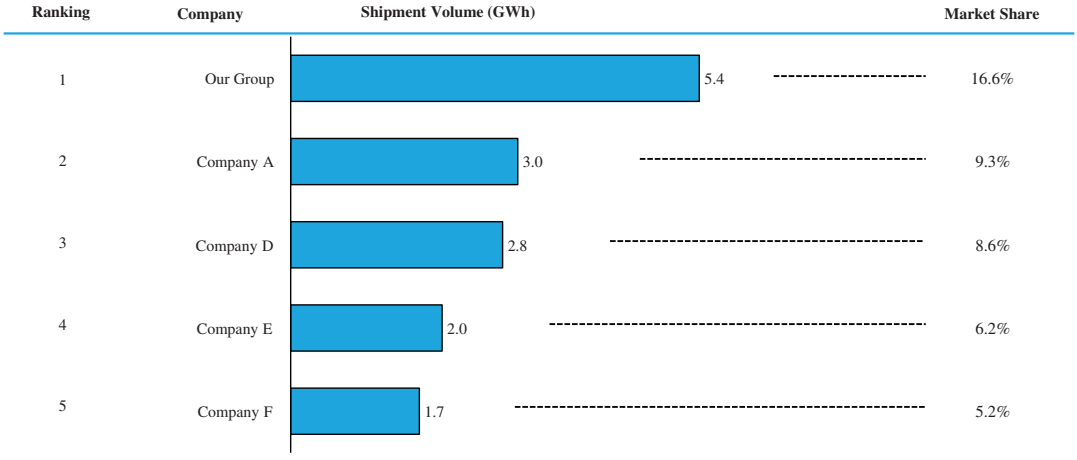


Source: Interviews with Industry Experts, Frost & Sullivan

According to Frost & Sullivan, the telecom and data center energy storage battery market in China is relatively competitive. In 2024, the total in China added installed capacity for energy storage batteries in telecom and data center application reached 32.4 GWh, with the top five players holding a combined market share of approximately 45.9%. Our Group achieved a shipment volume of 5.4 GWh, ranking the first among telecom and data center energy storage battery providers in China, with the market share of 16.6%.

According to Frost & Sullivan, in 2024, we ranked first in terms of shipment volumes in the global telecom base station energy storage market. In 2024, our market share in the global telecom market reached 9.2%. According to Frost & Sullivan, in 2024, we ranked first among Chinese companies in terms of shipment volumes in the global data center energy storage market. In 2024, our market share in the global data center market reached 16.1%.

Top 5 Telecom and Data Center Energy Storage Battery Providers in China, 2024



Notes:

(1) Sales to Chinese energy storage battery customers are counted as shipment volume in China.

(2) Established in 1999, Company A is a Chinese company with its shares listed on the Hong Kong Stock Exchange. The company is a global leader in battery manufacturing, focusing on the production of lithium batteries and lead-acid batteries.

(3) Established in 1947, Company B is a listed Indian-based company specializing in the production and sales of lead-acid batteries, with its products widely used in automotive, industrial, and renewable energy sectors.

(4) Established in 2000, Company C is a U.S.-based company with its shares listed on the New York Stock Exchange, specializing in the design, manufacturing, and sales of lithium-ion and lead-acid batteries and power systems, with its products widely used in telecommunications, data centers, industrial equipment, and renewable energy sectors.

(5) Established in 1994, Company D is a Chinese company with its shares listed on the Shenzhen Stock Exchange, specializing in the research, production, and sales of lead-acid and lithium batteries, with its products widely used in power, energy storage, and industrial sectors.

(6) Established in 1998, Company E is a Chinese company with its shares listed on the Shenzhen Stock Exchange, specializing in providing backup power, energy storage solutions, power supply systems, and renewable energy system solutions, with its lithium-ion and lead-acid battery products widely used in telecom, data center, and power sectors.

(7) Established in 1996, Company F is headquartered in China with its shares listed on the Shanghai Stock Exchange. The company is specializing in integrated power transmission and distribution, with its products focusing on lithium-ion energy storage battery solutions.

Source: Interviews with Industry Experts, Frost & Sullivan

Competitive Landscape of the Global Electrical Energy Storage Market

The global electrical energy storage market is characterized by a relatively fragmented competitive landscape, with more than 10,000 existing and startup companies in the industry, covering products including energy storage batteries, battery management systems, power conversion system, etc.

Success in this market is driven by several key factors: (i) customer recognition plays a crucial role, as trusted brands in this market are more likely to secure long-term customers; (ii) product reliability is also paramount, as energy storage battery must meet high standards of performance and safety; (iii) maintaining a cost advantage is vital for staying competitive, particularly in a price-sensitive market; and (iv) the ability to expand into international markets is essential for growth, as global demand for energy storage solutions continues to rise, driven by the transition to renewable energy and the need for grid stability.

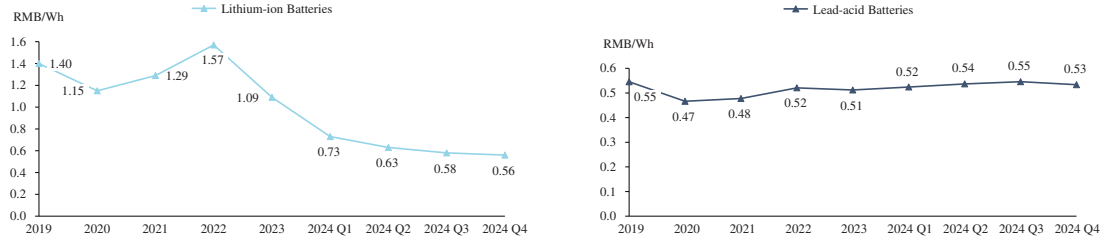
Our Group has established various competitive strengths in the global energy storage market. According to Frost & Sullivan, in 2024, we ranked the twelfth among global energy storage battery providers in terms of added installed capacity, achieving a market share of 2.5%. For details, see "Business — Our Strengths" in this document.

BATTERY AND RAW MATERIALS PRICE ANALYSIS

The price of lithium carbonate significantly affects the average selling price of lithium-ion batteries. Similar to the trend of lithium carbonate, the average market prices of lithium-ion batteries decrease from RMB1.57/Wh in 2022 to RMB0.63/Wh in 2024. In the future, the price of lithium carbonate is expected to be relatively stabilized following with a slight decrease due to softening demand sentiments in the long term. Regarding the future price trend of lithium-ion batteries, more advanced battery technology and improved economies of scale will play a significant role in further reducing costs. Thus, it is expected that the average price of lithium-ion batteries will be at the range from RMB0.55/Wh to RMB0.75/Wh in the next two years, while the price fluctuation trajectory is similar to that of raw materials, especially lithium carbonate.

The price of lead ingots significantly affects the average selling price of the Group's lead-acid battery products. Similar to the trend of lead ingots, the average market prices of lead-acid batteries fluctuate from RMB0.47/Wh in 2020 to RMB0.54/Wh in 2024. Compared to lithium-ion batteries, lead-acid batteries enjoy a stable recycling supply chain. With current recycling costs of lead-acid batteries remaining at RMB0.25/Wh to RMB0.30/Wh, future prices will be largely influenced by the recycling system and lead ingot prices, thus the price of lead-acid batteries is likely to exhibit a gentle decrease due to its relatively low recycling costs. The average price of lead-acid batteries is expected to be relatively stable and remain at the range from RMB0.46/Wh to RMB0.56/Wh in the next two years, while the price fluctuation trajectory is similar to that of raw materials, especially lead ingots.

Average Price Trends of Lithium-ion Batteries and Lead-acid Batteries (China), 2019-2024 Q4



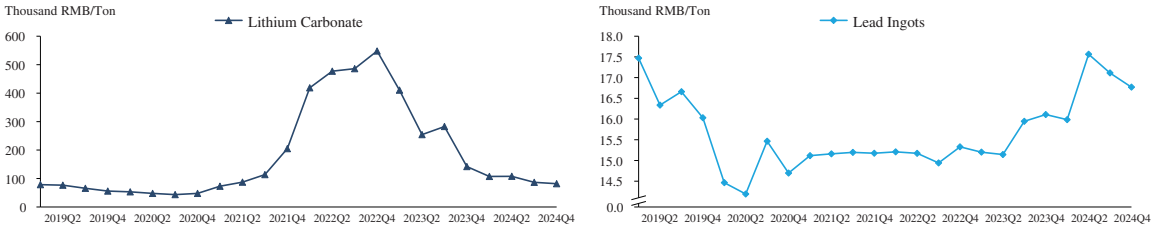
Note: The average price of lithium-ion batteries refer to the average price of 2-hour lithium-ion battery energy storage system.

Source: Frost & Sullivan

The prices of key raw materials are primarily driven by market supply and demand, as well as inventory levels. For lithium carbonate, main raw material of lithium-ion batteries, due to the limited and slow-growing production capacity and surge in demand from ESS and NEVs from 2020 to 2022, the average price escalated from RMB48.0 thousand per ton to over RMB482.4 thousand per ton. The surge in demand for ESS has been driven by a combination of renewable energy transformation and electrification, mature technology and cost decrease, and favorable policies, in both China and overseas. Attributable to the balancing between supply and demand, the average price of lithium carbonate dropped to RMB272.3 thousand per ton in 2023. The price plunged mainly due to the increase in capacity and inventory level of lithium carbonate. Further in 2024, continuous rise in inventory level of lithium carbonate accelerated the drop in average price of lithium carbonate to RMB95.9 thousand per ton. As the supply and demand relationship gradually reaches equilibrium in the future, production capacity utilization rates of this industry will rise. Under the premise of economic stability, the price of lithium carbonate will tend to be stabilized and decrease slightly, and it is expected to fluctuate within the range of RMB70 thousand per ton to RMB110 thousand per ton in the next two years.

Lead ingots, the primary raw material of lead-acid battery, account for nearly 60% of the total cost of lead-acid batteries, substantially influencing the price of lead-acid battery. After the short-term price drop of lead ingots in 2019, from 2020 to 2023, the price of lead ingots has shown a steady increase and price of lead ingot maintained at the price range from RMB14.0 thousand per ton to RMB17.5 thousand per ton. In 2024, due to the tight supply-demand relationship of lead ingots and the continued growth of lead demand in the battery industry, rise in the average price of lead ingots to RMB16.9 thousand per ton led to the increase in the price of lead-acid batteries. With the continuous establishment of the lead recycling system, the price of lead ingots is projected to decrease steadily and revert to the price level between 2020 and 2023.

Average Price Trends of Main Raw Materials of Lithium-ion Batteries and Lead-acid Batteries in China, 2019 Q1-2024 Q4



Source: Frost & Sullivan