Energy storage in china

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In China, generation-side and grid-side energy storage dominate, making up 97% of newly deployed energy storage capacity in 2023. 2023 was a breakthrough year for industrial and commercial energy storage in China. Projections show significant growth for the future.

Energy storage is crucial for China"s green transition, as the country needs an advanced, efficient, and affordable energy storage system to respond to the challenge in power generation. According to Trend Force, China"s energy storage market is expected to break through 100 gigawatt hours (GWh) by 2025. It is set to become the world"s ...

The China Energy Storage Alliance is a non-profit industry association dedicated to promoting energy storage technology in China.

The Chinese energy storage industry experienced rapid growth in recent years, with accumulated installed capacity soaring from 32.3 GW in 2019 to 59.4 GW in 2022. China"s energy storage market size surpassed USD 93.9 billion last year and is anticipated to grow at a compound annual growth rate (CAGR) of 18.9% from 2023 to 2032.

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Energy storage is crucial for China"s green transition, as the country needs an advanced, efficient, and affordable energy storage system to respond to the challenge in power generation. According to Trend Force, China"s energy storage market is expected to break through 100 gigawatt hours (GWh) by 2025. It is set to become the world"s fastest-growing energy storage market, overtaking Europe and the United States.

Energy storage refers to the process or device that captures energy produced for use at a later time to reduce imbalances between energy demand and production. It can provide a rich spectrum of benefits to the electric grid, to electricity end-users, and to society as a whole. As for China, energy storage offers sustainable solutions for more efficient use of energy.

While China"s renewable energy sector presents vast potential, the blistering pace of plant installation is not matched with their usage capacity, leading more and more clean energy to be wasted. Some provinces in the northwest region with rich wind and solar resources generally have an oversupply of electricity. Analysis shows that nearly 12 percent of power generated by wind turbines in Inner Mongolia and 10 percent of solar power in Qinghai this year has been wasted. In Gansu, due to low consumption capacity, the overall utilization rate of energy may drop below 90 percent, compared with 96.83 percent in 2021.

By saving surplus energy and releasing when the demand is higher, the energy storage sector will balance out

the variability in power generation from renewables. In doing so, it will integrate more renewable sources into China"s energy systems and further facilitate the transition towards a carbon-neutral economy.

China"s renewable sector is currently experiencing rapid growth. According to data from the National Energy Administration (NEA), as of April, the country"s installed power generation capacity was about 2.41 billion kilowatts (KW), a year-on-year increase of 7.9 percent. China is aiming for 50 percent of its electricity generation from renewable power by 2025, a 42-percent increase from now. China also has one of the largest battery energy storage markets, with a total capacity around 70GW with a market value of US$1.2 billion in 2021, which is projected to increase to 170 GW with $6 billion by 2025.

On March 21, 2022, the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) jointly released the Implementation Plan for the Development of New Energy Storage Technologies during the 14th Five-Year Plan Period (the 14th FYP for Energy Storage), which calls for a wider ecosystem of government and private entities to build the energy storage sector and emphasizes the role of market forces, including generation utilities and independent service providers, in investing in storage projects. By 2030, China plans to build up domestic capabilities in all core energy storage technologies to meet the needs of the future power system.

In the long run, energy storage will play an increasingly important role in China"s renewable sector. The 14th FYP for Energy Storage advocates for new technology breakthroughs and commercialization of the storage industry. Following the plan, more than 20 provinces have already announced plans to install energy storage systems over the past year, with the combined capacity of over 40 gigawatts.

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