Capital energy storage market

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Growth is set against the backdrop of the lowest-ever prices, especially in China, where turnkey energy storage system costs in February were 43% lower than a year ago, at a record low of $115/kWh for two-hour energy storage systems.

BNEF reports that last year"s record global additions of 45 GW (97 GWh) will be followed by continued robust growth. In 2024, global energy storage is set to add more than 100 GWh of capacity. The uptick will be largely driven by the growth in China, which will once again be the largest energy storage market globally.

The next-largest market will be the US, where state targets, utility procurements and attractive merchant economics in places like Texas drive the market. In Europe, the Middle East and Africa, residential batteries will continue to be the largest source of storage demand, led by Germany and Italy, as well as markets like Austria, Switzerland, Belgium, Sweden, Spain and the UK.

Out to 2030, the global energy storage market is bolstered by an annual growth rate of 21% to 137 GW and 442 GWh by 2030, according to BNEF forecasts. In the same period, global solar and wind markets are expected to see compound annual growth rates of 9% and 7% respectively.

Much of the growth in energy storage investment is being driven by mandates and targeted subsidies, ranging from solar and wind co-location mandates in China, to the Inflation Reduction Act and state-level policies in the US. New support schemes are also emerging across Europe, Australia, Japan, South Korea and Latin America.

Falling energy storage costs, as seen in China, will be key to support more economic deployments globally. The main enabler of these falling costs has been lithium iron phosphate (LFP) batteries, which use no nickel and continue to take market share from lithium-ion batteries using nickel manganese cobalt (NMC).

The growth in LFP"s market share is made possible by a scale-up in manufacturing capacity led by Chinese battery makers. Battery makers outside China, many of which historically specialised in nickel-based lithium-ion batteries, are also looking to start manufacturing energy storage system products using LFP. Major examples include South Korea-based LG Energy Solution and Samsung SDI, Panasonic in Japan and Norway-based Freyr. BNEF expects NMC to hold a market share of only around 1% by 2030.

Rapid expansion of batteries will be crucial to meet COP28 climate and energy security goalsMeanwhile, growth in batteries outpaced almost all other clean energy technologies in 2023 as falling costs, innovation and supportive industrial policies helped drive up demand, according to a new report from the International Energy Agency (IEA).

The report finds that in less than 15 years, battery costs have fallen by more than 90%. Today, the energy sector (including transport) accounts for over 90% of overall battery demand. In 2023 alone, battery deployment in the power sector increased by more than 130% year-on-year, adding a total of 42 GW to electricity systems around the world. In the transport sector, batteries have enabled electric car sales to surge from three million in 2020 to almost 14 million last year, with further strong growth expected in the coming years.

Battery deployment will need to scale up significantly between now and the end of the decade to enable the world to get on track for its energy and climate goals, the IEA warns. In this scenario, overall energy storage capacity will increase sixfold by 2030 worldwide, with batteries accounting for 90% of the increase and pumped hydropower for most of the rest.

In line with the goals set at COP28, to triple global renewable energy capacity by 2030, 1,500 GW of energy storage will be required, including 1,200 GW from batteries. A shortfall in deploying enough batteries would risk stalling clean energy transitions in the power sector.

To scale up batteries globally, the report found that costs need to come down further without compromising quality and technology. Ensuring energy security also requires greater diversity in supply chains, including extracting and processing the critical minerals used in batteries, and manufacturing of the batteries themselves. Countries are already tackling these issues through ambitious industrial programmes to support local manufacturing capacity with targeted policies in the US, European Union (EU) and India among others.

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