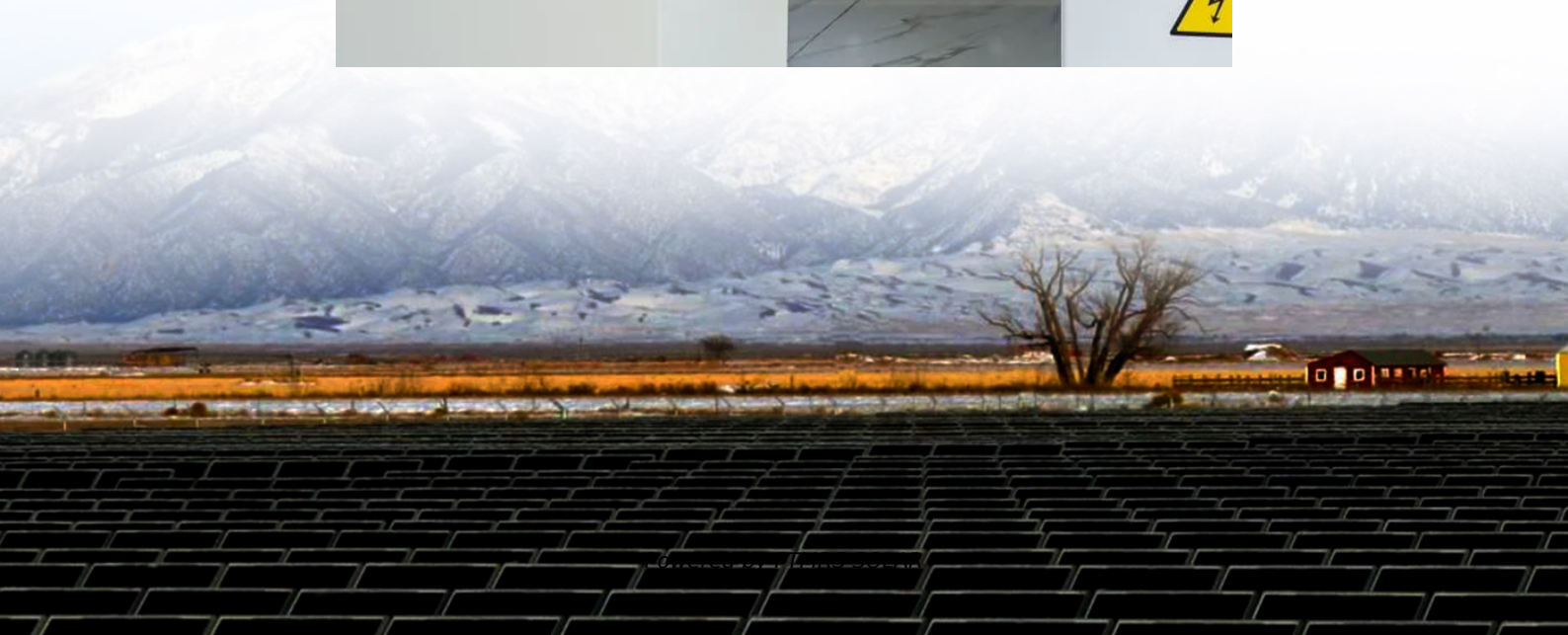


# **The biggest bottleneck of battery energy storage**





## Overview

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Why are battery energy storage systems (BESS) costs falling?

A growing industry trend towards larger battery cell sizes and higher energy density containers is contributing significantly to falling battery energy storage system (BESS) costs.

Are energy storage systems reducing the cost of batteries?

The scale of the reduction suggests that in addition to the falling cost of batteries—BNEF's recent Lithium-ion Battery Price Survey found that battery pack prices fell 20% year-on-year to 2024, again the biggest drop recorded to date—energy storage system providers are working on cost reduction in other areas, Kikuma said.

Is China a leader in the EV battery industry?

Over the past year, China has strengthened its position as a global leader in the EV battery sector. In October 2024, CATL introduced the Freevoy battery, which combines lithium-ion and sodium-ion technologies. Around the same time, competitor BYD announced the commercial availability of sodium-ion batteries for energy storage applications.

How can EV batteries improve the circular economy?

Advancing the circular economy for EV batteries will require policies that support comprehensive recycling and reuse. These policies should aim to improve energy efficiency in material recovery while encouraging low-emission operations.



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Current bottlenecks in energy storage

Annual added battery energy storage system (BESS) capacity, % 7 Residential Note: Figures may not sum to 100%, because of rounding. Source: McKinsey Energy Storage Insights BESS ...

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