Sodium-ion battery energy storage cost per kilowatt-hour

How much does a sodium ion battery cost?
This is around 40-80 USD/kWhfor a Na-ion cell compared to an average of 120 USD/kWh for a Li-ion cell. Sodium-ion batteries also offer advantages in terms of sustainability,compared to Li-ion batteries. The large abundance of sodium opens the door for more diverse sourcing.

What is a sodium ion battery?
Overall, we provide a broad and interdisciplinary perspective on modern batteries and future directions for this field, with a focus on sodium-ion batteries. Sodium-ion batteries are an appealing alternative to lithium-ion batteries because they use raw materials that are less expensive, more abundant and less toxic.

How much will sodium ion batteries cost in 2028?
Assuming a similar capex cost to Li-ion-based battery energy storage systems (BESS) at $300/kWh,sodium-ion batteries' 57% improvement rate will see them increasingly more affordable than Li-ion cells,reaching around $10/kWhby 2028.

Are sodium ion batteries a good investment?
Analysing 30 LDES technologies, the research found sodium-ion batteries to hold the most promise due to their fast improvement rate - around 57% in 2024. They offer more efficiency in round-trip energy use, greater operational flexibility and lose less energy during storage and supply.

Are sodium ion batteries a viable alternative to lithium-ion?
Sodium-ion batteries,developed by CATL,are a sustainable alternative to lithium-ion technology. They offer lower costs,inherent safety,and suitability for EVs and renewable energy systems. With a potential cost reduction to $10/kWh,sodium-ion batteries use sodium's abundance and safety to address energy storage challenges.

Will sodium-ion batteries dominate the future of long-duration energy storage?
With costs fast declining,sodium-ion batteries look set to dominate the future of long-duration energy storage,finds AI-based analysis that predicts technological breakthroughs based on global patent data. Sodium-ion batteries' rapid development could see long-duration energy storage (LDES) enter mainstream use as early as 2027.

Jul 1, 2014 · Lithium ion battery cell price Average price of battery cells per kilowatt-hour in US dollars, not adjusted for inflation. The data includes an ...

Jul 1, 2024 · The average cost for sodium-ion cells in 2024 is $87 per kilowatt-hour (kWh), slightly cheaper than Lithium-ion cells at $89/kWh. Assuming similar capital expenditures,

sodium-ion ...

6 days ago · A challenge for sodium-based batteries is that they now cost more per kilowatt-hour than lithium-iron-phosphate batteries.

Mar 13, 2018 · Moreover, we compare the calculated production costs of exemplary sodium-ion and lithium-ion batteries and highlight the most relevant parameters for optimization.

Breaking Down Lithium Battery Energy Storage Cost Per Kilowatt-Hour in 2024 When my neighbor Dave installed solar panels last month, he nearly choked on his coffee when hearing ...

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Sep 15, 2025 · CATL"s announced sodium-ion battery pricing of $19 per kilowatt hour represents a 65% reduction from current lithium iron ...

May 23, 2025 · Understanding Sodium-Ion Battery Pricing Sodium-ion batteries are becoming increasingly competitive in the energy storage market. As reported by poweringautos , the ...

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Aug 6, 2024 · Sodium-ion batteries and lead-acid batteries broadly hold the greatest potential for cost reductions (roughly -$0.31/kWh LCOS), followed by pumped storage hydropower, ...

Aug 21, 2025 · Nevertheless, the story says CATL is now claiming its sodium ion batteries -- called Naxtra -- will eventually cost as little as $10 per kWh.

Jun 20, 2023 · The national laboratory is forecasting price decreases, most likely starting this year, through to 2050. Image: NREL. The US National ...

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