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Sodium ion energy storage cost per kilowatt-hour



Overview

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.

How much does a sodium ion battery cost?

This is around 40-80 USD/kWh for 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.

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/kWh by 2028.

Why do we use sodium ion batteries in grid storage?

a) Grid Storage and Large-Scale Energy Storage. One of the most compelling reasons for using sodium-ion batteries (SIBs) in grid storage is the abundance and cost effectiveness of sodium. Sodium is the sixth most rich element in the Earth's crust, making it significantly cheaper and more sustainable than lithium.

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Additionally, the use of affordable and non-critical materials such as iron-based cathodes (e.g., Prussian blue analogues) and carbon-based anodes further lowers production ...

CATL's sodium-ion batteries promise \$10/kWh storage and 90% lower costs. See how they could transform EVs and grid energy worldwide fast.

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Engineers at CATL -- the world's largest EV battery maker -- have unveiled mass-produced sodium-ion batteries priced at just \$10 per kilowatt-hour, according to a 2025 ...

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 ...

Sodium EV batteries currently cost \$19 per kilowatt hour, a 65% reduction from lithium phosphate batteries' \$55 per kilowatt hour cost for large orders. 03:37 ? New sodium-ion ...

The cost of a Na-ion battery cell is expected to be around \$40-80/kWh compared to an average of \$120/kWh for a Li-ion cell. Na-ion batteries are safer (operating temperature ...

CATL's announced sodium-ion battery pricing of \$19 per kilowatt hour represents a 65% reduction from current lithium iron phosphate costs of \$55-\$70/kWh, not the 90% cost ...

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Clean electricity generation paired with the first grid-level sodium battery energy storage system can bring costs down to just \$0.028 per kWh. The 10 MWh storage capacity is ...

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With global energy storage demand projected to reach 1.2 TWh by 2030 according to the 2024 Global Energy Storage Monitor, sodium-ion batteries are emerging as the dark horse of ...

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