

Sodium-ion battery for energy storage commercialization





Overview

Sodium-ion batteries have gained significant attention in 2025 as the push for cost-effective and sustainable energy storage solutions intensifies. This innovative battery technology is emerging as a viable contender against Lithium-ion batteries, offering both economic and environmental benefits. Are sodium-ion batteries the future of energy storage?

Sodium-ion batteries are being leveraged across multiple industries. Utility companies are at the forefront of their deployment, as demonstrated by HiNa Battery's 100MWh energy storage project. These batteries provide an affordable alternative for renewable energy grid storage, helping stabilize energy supply.

Are lithium ion batteries a viable energy storage device?

Energy storage devices such as Li-ion batteries (LIBs) and sodium-based batteries (SBBs) are promising due to high energy density, cyclic life, rapid development and commercialization in the last few years, and widespread applicability in residential, industrial, e-mobility and electronic sectors.

Are sodium-ion batteries competitive?

As of 2025, sodium-ion batteries are well-positioned to achieve cost parity with lithium-iron-phosphate (LFP) batteries, a key milestone for market competitiveness. With ongoing innovations and substantial investments, their adoption in energy storage systems, renewable grids, and budget EVs is expected to soar in the coming years.

What is a sodium ion battery?

This material delivers impressive energy density and stability, promoting scalability for both grid storage and EVs. The second-generation sodium-ion batteries introduced by Contemporary Amperex Technology Co., Limited (CATL) achieve energy densities of up to 200 Wh/kg, a significant improvement from earlier versions.



Are sodium-ion batteries on the verge of commercialisation?

September 11, 2023 by Carlos Ruiz, Martina Lyons, Isaac Elizondo Garcia and Zhaoyu Wu Sodium-ion (Na-ion) batteries, a much more abundant and cheaper alternative to the standard Lithium-ion, are on the verge of commercialisation, explain Carlos Ruiz, Martina Lyons, Isaac Elizondo Garcia and Zhaoyu Wu at IRENA.

Are sodium ion batteries a good choice?

While these numbers are comparable to some lower-end Li-ion batteries, they are still behind other commercially available Li-ion chemistries, e.g. Tesla batteries in the range of 250 Wh/kg. These characteristics make sodium-ion batteries suitable for use in a number of applications.



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Exploring the limitations and unlocking the potential of sodium-ion

The increasing demand for sustainable energy solutions led to the advancement of alternative energy storage devices beyond lithium-ion batteries (LIBs). Sodium-ion batteries ...

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[What's Currently Happening in Sodium-Ion Batteries? 2025](#)

Sodium-ion batteries have gained significant attention in 2025 as the push for cost-effective and sustainable energy storage solutions intensifies. This innovative battery ...

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Sodium-Ion Batteries: From Research to Commercialization, ...

Sodium-ion batteries: from research to commercialization, reports IDTechEx. Among the existing energy storage technologies, lithium-ion batteries (LIBs) have unmatched ...

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Sodium-Ion Batteries: From Academic Research to Practical Commercialization

From the perspective of sodium-ion battery future practical application, this review will identify the factors that are restricting its commercialization, and evaluate the existing ...



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[Hard carbon for sodium storage: Mechanism and performance](#)

For sodium-ion battery anode materials, hard carbon is the material most likely to be used commercially. However, there is still much work to be done before its commercialization. This ...

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[Sodium-ion Batteries 2025-2035: Technology, ...](#)

This has intensified the search for alternative energy storage chemistries, with sodium-ion batteries (SIBs or Na-ion batteries) emerging as a key solution. ...

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Advancing sodium-ion batteries toward commercialization: A ...

This review starts with the key characteristics of polyanionic materials, followed by a thorough summary of recent advancements in phosphate and sulfate-based cathodes, ...

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Sodium-Ion Batteries: From Research to Commercialization

Sodium-ion batteries are an emerging battery technology, on the cusp of commercialization, with promising cost, safety, sustainability, and performance benefits when ...

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Sodium-ion batteries ready for commercialisation: for grids, ...

Sodium-ion batteries show great promise and could become a good alternative for specific applications, helping to alleviate supply chain bottlenecks and accelerate the energy ...

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Sodium-Ion Batteries: From Academic Research to Practical ...

From the perspective of sodium-ion battery future practical application, this review will identify the factors that are restricting its commercialization, and evaluate the existing ...

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Are you exploring sodium-ion battery technologies for your next energy storage project? Whether you need monitoring expertise or want to partner with experienced battery ...

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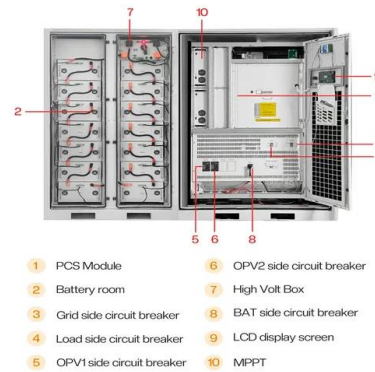
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Solid-State vs Sodium-Ion: The Future of Energy Storage

Solid-state batteries and sodium-ion batteries are gaining attention in the race to dethrone Lithium-ion technology. The advancements taking place in the energy storage ...

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Toward Emerging Sodium-Based Energy Storage ...

As one of the potential alternatives to current lithium-ion batteries, sodium-based energy storage technologies including sodium batteries and capacitors are ...

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Advancing sodium-ion batteries toward commercialization: A ...

Sodium-ion batteries (SIBs) are considered as a promising supplement to lithium-ion batteries for large-scale energy storage applications due to the abundance and cost ...

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A Perspective on Pathways Toward Commercial Sodium-Ion ...

Sodium-ion batteries (SIBs) are emerging as a promising alternative due to the high abundance and low cost of sodium and other raw materials. Nevertheless, the ...

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[Advancing hard carbon anode for sodium-ion batteries: ...](#)

The development of sodium-ion battery technology has played a pivotal role in driving innovation within the energy storage field. Over the past several years, ranging from laboratories to ...

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[Recent Advances in Sodium-Ion Battery Materials](#)

Due to the wide abundance and low cost of sodium resources and their similar electrochemistry to the established lithium-ion batteries, sodium-ion batteries (SIBs) have attracted considerable ...

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Can Sodium-ion Batteries Disrupt the Energy Storage Industry

Fast-paced electrochemical innovation and other experimentation have Na-ion batteries ready for increased commercial deployment, greater performance gains, and further ...

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Sodium-based batteries: development, commercialization journey ...

Energy storage devices such as Li-ion batteries (LIBs) and sodium-based batteries (SBBs) are promising due to high energy density, cyclic life, rapid development and ...

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