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India Lithium-ion Energy Storage Solution Market, By Type (On-Grid and Off-Grid), By End User (Solar, Power Plants, Stationary, Wind, Industrial and Others) By Region, Competition, Forecast & Opportunities, 2021-2031F

https://marketpublishers.com/r/I6E544B634B8EN.html
Date: May 2025
Pages: 86
Price: US$ 3,500.00 (Single User License)
ID: I6E544B634B8EN

Abstracts

Market Overview

India’s Lithium-ion Energy Storage Solution Market was valued at USD 611 million in 2025 and is projected t%li%reach USD 988 million by 2031, growing at a CAGR of 8.18% during the forecast period. Lithium-ion energy storage systems are advanced, rechargeable solutions designed t%li%store electricity and release it when required, offering high energy density, long life cycles, and rapid charging capabilities. These systems are widely adopted across residential, commercial, and industrial segments, enabling energy reliability and efficiency in applications ranging from renewable energy integration t%li%backup power.

These storage solutions are particularly critical in managing variable energy supply from sources like solar and wind by capturing surplus generation during peak output periods and delivering it during low production or high demand intervals. Their applications extend t%li%grid balancing, electric vehicle charging infrastructure, and off-grid power systems. Lithium-ion systems are compact, low-maintenance, highly efficient (typically exceeding 90%), and environmentally friendlier than conventional alternatives, making them a central component in India’s energy transition strategy.

Key Market Drivers

Growing Renewable Energy Integration

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The increasing integration of renewable energy sources int%li%India’s energy mix is a primary driver of the lithium-ion energy storage market. With an expanding renewable portfolio—particularly solar and wind—India is focused on decarbonizing its power sector and enhancing energy reliability. However, the intermittent nature of renewables necessitates robust energy storage t%li%stabilize the grid and ensure continuous power delivery.

Lithium-ion storage systems enable energy developers t%li%store excess power generated during peak sunlight or wind periods and dispatch it during demand surges or when generation drops. This not only improves energy reliability but als%li%supports India’s broader environmental goals. Policies such as solar park development schemes, production-linked incentives for battery manufacturing, and regulatory encouragement for hybrid renewable-storage projects have made lithium-ion storage systems integral t%li%clean energy deployment. The declining cost of lithium-ion batteries further enhances their adoption, making energy storage a financially viable solution for utility-scale and distributed energy projects. As of early 2025, India’s renewable energy installed capacity reached approximately 180 GW, with solar and wind contributing 80 GW and 45 GW respectively.

Key Market Challenges

High Initial Capital Costs

The major challenge hindering the broader adoption of lithium-ion energy storage systems in India is their high initial capital requirement. Although battery prices have declined significantly in recent years, lithium-ion systems still involve substantial upfront investment, including expenses for the battery modules, power electronics, control systems, and installation.

This cost factor limits penetration, especially in cost-sensitive markets such as residential and small commercial segments. The high investment barrier can delay project timelines or deter adoption in rural and semi-urban areas where financial resources are limited. Additionally, the total cost of ownership includes operational and maintenance considerations that further add t%li%the financial burden for end users.

T%li%overcome this, stakeholders must explore solutions like public-private partnerships, subsidies, concessional financing, and domestic battery production. Incentivizing local manufacturing and research int%li%cost-effective battery chemistries

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could als%li%support affordability and scalability of lithium-ion systems across wider market segments.

Key Market Trends

Accelerated Growth in Utility-Scale Energy Storage Projects

India is witnessing a surge in utility-scale lithium-ion energy storage projects, driven by the need t%li%stabilize the national grid and accommodate the rising share of renewable energy. Large-scale storage solutions are increasingly deployed t%li%enhance grid resilience, reduce transmission congestion, and enable efficient renewable energy dispatch.

Supportive government programs such as the Green Energy Corridor and the National Energy Storage Mission are fostering an enabling environment for utility-scale deployment. These initiatives aim t%li%strengthen transmission infrastructure while encouraging private sector participation in large-scale battery installations.

Falling battery costs and technological advancements are improving project viability, encouraging investments and international collaborations. Partnerships between Indian developers and global technology providers are bringing best-in-class systems t%li%the Indian market. These trends are expected t%li%continue, with more storage projects co-located with solar and wind farms, further strengthening India’s transition toward a clean and reliable energy future.

Key Market Players

Tata Power Solar Systems Ltd

Exide Industries Ltd.

Luminous Power Technologies Pvt. Ltd.

Sterling and Wilson

Waaree Energies Ltd.

Delta Electronics India

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SUN Mobility

Coslight India Telecom Pvt. Ltd.

Report Scope:

In this report, the India Lithium-ion Energy Storage Solution Market has been segmented int%li%the following categories, in addition t%li%the industry trends which have als%li%been detailed below:

India Lithium-ion Energy Storage Solution Market, By Type:

On-Grid

Off-Grid

India Lithium-ion Energy Storage Solution Market, By End User:

Solar

Power Plants

Stationary

Wind

Industrial

Others

India Lithium-ion Energy Storage Solution Market, By Region:

North India

South India

East India

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West India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Lithium-ion Energy Storage Solution Market.

Available Customizations:

India Lithium-ion Energy Storage Solution Market report with the given market data, TechSci Research offers customizations according t%li%a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up t%li%five).

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