India Battery Energy Storage Systems Market, By Battery Type (Lithium-ion, Advanced Lead Acid, Flow Batteries, Others), By Connection Type (On-Grid, Off-grid), By Application (Front of the Meter, Behind the Meter), By End User (Commercial, Industrial, Residential) By Region, Competition, Forecast & Opportunities, 2021-2031F

Market Report | 2025-05-16 | 85 pages | TechSci Research

AVAILABLE LICENSES:

- Single User License $3500.00
- Multi-User License $4500.00
- Custom Research License $7000.00

Report description:

Market Overview
India Battery Energy Storage Systems Market was valued at USD 4.17 Billion in 2025 and is projected to reach USD 6.35 Billion by 2031, growing at a CAGR of 7.10% during the forecast period. Battery Energy Storage Systems (BESS) are advanced technologies that store electrical energy for later use, playing a vital role in enhancing the reliability and efficiency of modern power grids. These systems are crucial for stabilizing energy supply and demand, especially as India increases its reliance on intermittent renewable sources like solar and wind. BESS help mitigate grid fluctuations by capturing excess energy during periods of low consumption and delivering it during peak demand or generation shortfalls.
Comprised of rechargeable batteries, power conversion units, and intelligent control systems, BESS support a wide range of applications from grid stabilization to emergency backup. Common battery types include lithium-ion, flow, and sodium-sulfur, each offering unique performance characteristics. With the rising integration of renewable energy and increased focus on decentralized power solutions, BESS are being adopted across residential, commercial, and industrial segments. Their deployment is essential for India's transition to a low-carbon, flexible energy infrastructure.
Key Market Drivers
Growth of Renewable Energy Sources in India
The rapid expansion of renewable energy generation is a key driver for the adoption of battery energy storage systems in India. With a target of reaching 500 GW of non-fossil energy capacity by 2030, India is significantly investing in solar and wind power

projects. However, these sources are inherently variable, creating challenges in maintaining consistent power supply.
Battery energy storage systems bridge this gap by storing surplus energy during periods of excess generation and dispatching it when production dips or demand rises. This enables more efficient use of renewable assets and reduces energy curtailment. Integration of BESS with solar and wind farms ensures grid reliability, promotes energy independence, and supports decarbonization goals.
Government incentives, policy frameworks, and public-private partnerships are further encouraging the deployment of energy storage technologies. As renewable generation scales up, BESS will be increasingly critical to enhancing grid flexibility and delivering sustainable energy access across urban and rural regions.
Key Market Challenges
High Initial Capital Costs
One of the major challenges limiting wider adoption of BESS in India is the high upfront capital investment required for deployment. While battery prices have declined significantly in recent years, energy storage systems remain a capital-intensive technology, particularly for large-scale or grid-level applications.
Residential and commercial users often face financial barriers due to the high purchase and installation costs, even when long-term benefits such as operational savings and reliability are considered. Additionally, expenses related to infrastructure upgrades, integration with existing systems, and ongoing maintenance add to the total cost of ownership.
Access to affordable financing is limited, especially for smaller firms or rural utilities. Although government incentives and subsidies aim to lower these barriers, they are often not sufficient to make BESS cost-competitive for all stakeholders. Until further technological advancements drive down costs, and financing mechanisms become more accessible, the adoption of BESS will be slower than expected in price-sensitive segments.
Key Market Trends
Increased Focus on Grid-Scale Energy Storage
A growing trend in the Indian BESS market is the emphasis on grid-scale storage solutions to enhance power system stability and enable greater integration of renewables. Grid-connected BESS facilities are being deployed to store energy during periods of excess supply and release it during peak demand or when renewable output declines.
These systems support frequency regulation, voltage control, and load balancing, reducing reliance on traditional peaker plants and fossil-based generation. They also provide ancillary services that are crucial for maintaining grid reliability in a renewable-heavy energy mix. As India's grid evolves with higher renewable penetration, the role of grid-scale storage becomes increasingly critical.
Government-backed initiatives and pilot programs are laying the groundwork for widespread deployment, while private sector investment is accelerating innovation and capacity building. As the economics of scale improve and regulatory frameworks evolve, grid-scale BESS is expected to dominate new energy storage installations across the country.
Key Market Players
- LG Energy Solution Ltd.
- Samsung SDI Co., Ltd.
- Contemporary Amperex Technology Co., Limited (CATL)
- BYD Company Limited
- Panasonic Corporation
- Hitachi Energy Ltd.
- Siemens Energy AG
- ABB Ltd.
Report Scope:
In this report, the India Battery Energy Storage Systems Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:
- India Battery Energy Storage Systems Market, By Battery Type:
o Lithium-ion
o Advanced Lead Acid

o Flow Batteries
o Others
- India Battery Energy Storage Systems Market, By Connection Type:
o On-Grid
o Off-Grid
- India Battery Energy Storage Systems Market, By Application:
o Front of the Meter
o Behind the Meter
- India Battery Energy Storage Systems Market, By End User:
o Commercial
o Industrial
o Residential
- India Battery Energy Storage Systems Market, By Region:
o South India
o North India
o West India
o East India
Competitive Landscape
Company Profiles: Detailed analysis of the major companies present in the India Battery Energy Storage Systems Market.
Available Customizations:
India Battery Energy Storage Systems Market report with the given market data, TechSci Research offers customizations according to 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 to five).

Table of Contents:

1. Product Overview
1.1. Market Definition
1.2. Scope of the Market
1.2.1. Markets Covered
1.2.2. Years Considered for Study
1.3. Key Market Segmentations
2. Research Methodology
2.1. Objective of the Study
2.2. Baseline Methodology
2.3. Formulation of the Scope
2.4. Assumptions and Limitations
2.5. Sources of Research
2.5.1. Secondary Research
2.5.2. Primary Research
2.6. Approach for the Market Study
2.6.1. The Bottom-Up Approach
2.6.2. The Top-Down Approach
2.7. Methodology Followed for Calculation of Market Size & Market Shares
2.8. Forecasting Methodology
2.8.1. Data Triangulation & Validation

3. Executive Summary
3.1. Overview of the Market
3.2. Overview of Key Market Segmentations
3.3. Overview of Key Market Players
3.4. Overview of Key Regions/Countries
3.5. Overview of Market Drivers, Challenges, and Trends
4. Voice of Customer
5. India Battery Energy Storage Systems Market Outlook
5.1. Market Size & Forecast
5.1.1. By Value
5.2. Market Share & Forecast
5.2.1. By Battery Type (Lithium-ion, Advanced Lead Acid, Flow Batteries, Others)
5.2.2. By Connection Type (On-Grid, Off-grid)
5.2.3. By Application (Front of the Meter, Behind the Meter)
5.2.4. By End User (Commercial, Industrial, Residential)
5.2.5. By Region (South India, North India, West India, East India)
5.2.6. By Company (2025)
5.3. Market Map
6. South India Battery Energy Storage Systems Market Outlook
6.1. Market Size & Forecast
6.1.1. By Value
6.2. Market Share & Forecast
6.2.1. By Battery Type
6.2.2. By Connection Type
6.2.3. By Application
6.2.4. By End User
7. North India Battery Energy Storage Systems Market Outlook
7.1. Market Size & Forecast
7.1.1. By Value
7.2. Market Share & Forecast
7.2.1. By Battery Type
7.2.2. By Connection Type
7.2.3. By Application
7.2.4. By End User
8. West India Battery Energy Storage Systems Market Outlook
8.1. Market Size & Forecast
8.1.1. By Value
8.2. Market Share & Forecast
8.2.1. By Battery Type
8.2.2. By Connection Type
8.2.3. By Application
8.2.4. By End User
9. East India Battery Energy Storage Systems Market Outlook
9.1. Market Size & Forecast
9.1.1. By Value
9.2. Market Share & Forecast
9.2.1. By Battery Type

9.2.2. By Connection Type
9.2.3. By Application
9.2.4. By End User
10. Market Dynamics
10.1. Drivers
10.2. Challenges
11. Market Trends & Developments
11.1. Merger & Acquisition (If Any)
11.2. Product Launches (If Any)
11.3. Recent Developments
12. Policy and Regulatory Landscape
13. India Economic Profile
14. Company Profiles
14.1. LG Energy Solution Ltd.
14.2. Samsung SDI Co., Ltd.
14.3. Contemporary Amperex Technology Co., Limited (CATL)
14.4. BYD Company Limited
14.5. Panasonic Corporation
14.6. Hitachi Energy Ltd.
14.7. Siemens Energy AG
14.8. ABB Ltd.
15. Strategic Recommendations
16. About Us & Disclaimer

India Battery Energy Storage Systems Market, By Battery Type (Lithium-ion, Advanced Lead Acid, Flow Batteries, Others), By Connection Type (On-Grid, Off-grid), By Application (Front of the Meter, Behind the Meter), By End User (Commercial, Industrial, Residential) By Region, Competition, Forecast & Opportunities, 2021-2031F

Market Report | 2025-05-16 | 85 pages | TechSci Research

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$3500.00
	Multi-User License	$4500.00
	Custom Research License	$7000.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	

Address*		City*	
Zip Code*		Country*	
		Date	2025-06-17
		Signature	