

# **Battery Energy Storage System Market Size and Forecast (2021 - 2031), Global and Regional Share, Trend, and Growth Opportunity Analysis Report Coverage: By Type (Lithium Ion and Others), Connection Type (On-Grid and Off-Grid), End User (Commercial, Utilities, and Residential), and Geography**

<https://marketpublishers.com/r/B73061AA87C5EN.html>

Date: April 2025

Pages: 272

Price: US\$ 4,450.00 (Single User License)

ID: B73061AA87C5EN

## **Abstracts**

Battery Energy Storage System Market size was valued at US\$ 41.97 million in 2024 and is expected to reach US\$ 143.28 billion by 2031. Global Battery Energy Storage System Market is estimated to record a CAGR of 17.91% from 2025 to 2031.

The Global Battery Energy Storage System Market is segmented into North America, Europe, Asia Pacific, and Rest of World. According to the Global Wind Energy Council (GWEC) report, Asia Pacific is set to become a leader in offshore wind, with an estimated growth in its share in power generation capacity from 24% in 2019 to 42% by 2025. As per the Wood Mackenzie projections, Asia Pacific is likely to add 122 GW of new wind capacity by 2030, surpassing Europe and the US's estimated new wind capacity. Furthermore, Taiwan, South Korea, Japan, Vietnam, and India are projected to rank among the world's top 20 largest offshore wind markets, with a combined new capacity of 29 GW from 2021 to 2030. Moreover, the Karara Wind Farm involves the construction of a wind farm with a capacity of 103 MW and an investment of US\$ 183 million, which is expected to be completed by Q4 2024. Similarly, in Q3 of 2021, the Golmud Solar CSP Power Plant 3,300 MW project started in China with an investment of US\$ 3,030 million. The project is estimated to be completed by Q4 2024.

China is expanding its battery energy storage capacities across the country. The

country is already 6 years ahead with the completed installation in 2023 of the scheduled capacity of renewables that was expected to be completed by the end of 2030. This has boosted a sudden increase in the installation of BESS in China. Furthermore, rural areas in countries such as India, Indonesia, and Australia often face critical power supply challenges, which results in rising demand for the adoption of energy storage systems for emergencies. This is further driving the growth of the battery energy storage system market in Asia Pacific.

Based on end users, the Global Battery Energy Storage System Market is segmented into residential, commercial, and utilities. Utility-scale battery storage is also known as large-scale battery storage or grid battery storage. These enable the transition to a global energy mix that includes an increased share of renewable energy generation. Utility-scale battery energy storage systems (BESS) enable greater penetration of variable renewable power into the grid by storing excess energy generated and smoothing energy output during capacity hardening. Combined with renewable energy producers such as wind, hydro, or solar photovoltaic (PV) energy, BESS unlocks the full potential of renewable power by providing more reliable and far more cost-effective electricity on isolated and off-grid networks.

BYD Co. Ltd; Saft America Inc.; CATL; Tesla Inc.; Samsung SDI Co Ltd; Panasonic Holdings Corp; AES Corp; NextEra Energy, Inc.; Ameresco Inc.; ESS, Inc.; Siemens AG; EOS Energy Enterprises Inc.; KORE Power Inc.; General Electric Co; LG Chem Ltd.; SAFT Groupe SA; and ESS Inc. are among the prominent players profiled in Global Battery Energy Storage System Market report. Several other major players were also studied and analyzed in Global Battery Energy Storage System Market report to get a holistic view of the market and its ecosystem.

The overall Global Battery Energy Storage System Market share has been derived using both primary and secondary sources. Exhaustive secondary research has been conducted using internal and external sources to obtain qualitative and quantitative information related to the Global Battery Energy Storage System Market. The process also helps obtain an overview and forecast of the market with respect to all the market segments. Also, multiple primary interviews have been conducted with industry participants to validate the data and gain analytical insights. This process includes industry experts such as VPs, business development managers, market intelligence managers, and national sales managers, along with external consultants such as valuation experts, research analysts, and key opinion leaders, specializing in Global Battery Energy Storage System Market.

## Contents

### 1. INTRODUCTION

- 1.1 The Insight Partners Research Report Guidance
- 1.2 Market Segmentation

### 2. EXECUTIVE SUMMARY

- 2.1 Key Insights
- 2.2 Market Attractiveness

### 3. RESEARCH METHODOLOGY

- 3.1 Secondary Research
- 3.2 Primary Research
  - 3.2.1 Hypothesis formulation:
  - 3.2.2 Macro-economic factor analysis:
  - 3.2.3 Developing base number:
  - 3.2.4 Data Triangulation:
  - 3.2.5 Country level data:

### 4. BATTERY ENERGY STORAGE SYSTEM MARKET LANDSCAPE

- 4.1 Overview
- 4.2 PEST Analysis
- 4.3 Ecosystem Analysis
  - 4.3.1 List of Vendors in the Value Chain
- 4.4 The US (Premium Insights)
  - 4.4.1 Key Strategies and Developments in the Battery Energy Storage System Supply Chain
    - 4.4.1.1 Flexibility in Supply Chains:
    - 4.4.1.2 Collaboration with Domestic Raw Material Suppliers:
    - 4.4.1.3 Emphasis on Product Features:
    - 4.4.1.4 Efficient Sales and Operations Planning (S&OP)
    - 4.4.1.5 Integration of Automation
  - 4.4.2 Key BESS Logistic Challenges
  - 4.4.3 Role of BESS in Vehicle Electrification
  - 4.4.4 Geopolitical Scenario Analysis

#### 4.5 Supply Chain Analysis (The US)

##### 4.5.1 Supply Chain Risk Assessment for BESS

#### 4.6 BESS Cost Analysis (The US)

#### 4.7 List of End-to-End BESS Providers (The US)

#### 4.8 The US Battery Energy Storage System Installation Capacity Forecast, by Geography

##### 4.8.1 Microgrid Construction and Charging Station Analysis (The US)

### **5. BATTERY ENERGY STORAGE SYSTEM MARKET – KEY MARKET DYNAMICS**

#### 5.1 Battery Energy Storage System Market – Key Market Dynamics

#### 5.2 Market Drivers

##### 5.2.1 Growing Focus on Establishing Vigorous Storage Infrastructure

##### 5.2.2 Mounting Demand for Energy

#### 5.3 Market Restraints

##### 5.3.1 Scarcity of Raw Materials

#### 5.4 Market Opportunities

##### 5.4.1 Growing Investment in Renewable Power Generation

#### 5.5 Future Trends

##### 5.5.1 Role of Battery Energy Storage System in Energy Transitions

#### 5.6 Impact of Drivers and Restraints:

### **6. BATTERY ENERGY STORAGE SYSTEM MARKET – GLOBAL MARKET ANALYSIS**

#### 6.1 Battery Energy Storage System Market Revenue (US\$ million), 2021–2031

#### 6.2 Battery Energy Storage System Market Forecast Analysis

### **7. BATTERY ENERGY STORAGE SYSTEM MARKET ANALYSIS – BY TYPE**

#### 7.1 Lithium Ion

##### 7.1.1 Overview

##### 7.1.2 Lithium Ion: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

#### 7.2 Others

##### 7.2.1 Overview

##### 7.2.2 Others: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

## **8. BATTERY ENERGY STORAGE SYSTEM MARKET ANALYSIS – BY CONNECTION TYPE**

### **8.1 On-Grid**

#### **8.1.1 Overview**

8.1.2 On-Grid: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

### **8.2 Off-Grid**

#### **8.2.1 Overview**

8.2.2 Off-Grid: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

## **9. BATTERY ENERGY STORAGE SYSTEM MARKET ANALYSIS – BY END USER**

### **9.1 Commercial**

#### **9.1.1 Overview**

9.1.2 Commercial: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

### **9.2 Utilities**

#### **9.2.1 Overview**

9.2.2 Utilities: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

### **9.3 Residential**

#### **9.3.1 Overview**

9.3.2 Residential: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

## **10. BATTERY ENERGY STORAGE SYSTEM MARKET – GEOGRAPHICAL ANALYSIS**

### **10.1 Overview**

### **10.2 North America**

#### **10.2.1 North America Battery Energy Storage System Market Overview**

10.2.2 North America: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

#### **10.2.3 North America: Battery Energy Storage System Market Breakdown, by Type**

10.2.3.1 North America: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Type

#### **10.2.4 North America: Battery Energy Storage System Market Breakdown, by**

## Connection Type

10.2.4.1 North America: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Connection Type

10.2.5 North America: Battery Energy Storage System Market Breakdown, by End User

10.2.5.1 North America: Battery Energy Storage System Market – Revenue and Forecast Analysis – by End User

10.2.6 North America: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.2.6.1 North America: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.2.6.2 United States: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.2.6.2.1 United States: Battery Energy Storage System Market Breakdown, by Type

10.2.6.2.2 United States: Battery Energy Storage System Market Breakdown, by Connection Type

10.2.6.2.3 United States: Battery Energy Storage System Market Breakdown, by End User

10.2.6.3 Canada: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.2.6.3.1 Canada: Battery Energy Storage System Market Breakdown, by Type

10.2.6.3.2 Canada: Battery Energy Storage System Market Breakdown, by Connection Type

10.2.6.3.3 Canada: Battery Energy Storage System Market Breakdown, by End User

10.2.6.4 Mexico: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.2.6.4.1 Mexico: Battery Energy Storage System Market Breakdown, by Type

10.2.6.4.2 Mexico: Battery Energy Storage System Market Breakdown, by Connection Type

10.2.6.4.3 Mexico: Battery Energy Storage System Market Breakdown, by End User

## 10.3 Europe

10.3.1 Europe Battery Energy Storage System Market Overview

10.3.2 Europe: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.3.3 Europe: Battery Energy Storage System Market Breakdown, by Type

10.3.3.1 Europe: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Type



#### 10.3.4 Europe: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.4.1 Europe: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Connection Type

#### 10.3.5 Europe: Battery Energy Storage System Market Breakdown, by End User

10.3.5.1 Europe: Battery Energy Storage System Market – Revenue and Forecast Analysis – by End User

10.3.6 Europe: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.3.6.1 Europe: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.3.6.2 Germany: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.3.6.2.1 Germany: Battery Energy Storage System Market Breakdown, by Type

10.3.6.2.2 Germany: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.6.2.3 Germany: Battery Energy Storage System Market Breakdown, by End User

10.3.6.3 Italy: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.3.6.3.1 Italy: Battery Energy Storage System Market Breakdown, by Type

10.3.6.3.2 Italy: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.6.3.3 Italy: Battery Energy Storage System Market Breakdown, by End User

10.3.6.4 France: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.3.6.4.1 France: Battery Energy Storage System Market Breakdown, by Type

10.3.6.4.2 France: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.6.4.3 France: Battery Energy Storage System Market Breakdown, by End User

10.3.6.5 United Kingdom: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.3.6.5.1 United Kingdom: Battery Energy Storage System Market Breakdown, by Type

10.3.6.5.2 United Kingdom: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.6.5.3 United Kingdom: Battery Energy Storage System Market Breakdown, by End User

10.3.6.6 Rest of Europe: Battery Energy Storage System Market – Revenue and

Forecast to 2031 (US\$ million)

10.3.6.6.1 Rest of Europe: Battery Energy Storage System Market Breakdown, by Type

10.3.6.6.2 Rest of Europe: Battery Energy Storage System Market Breakdown, by Connection Type

10.3.6.6.3 Rest of Europe: Battery Energy Storage System Market Breakdown, by End User

10.4 Asia Pacific

10.4.1 Asia Pacific Battery Energy Storage System Market Overview

10.4.2 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.3 Asia Pacific: Battery Energy Storage System Market Breakdown, by Type

10.4.3.1 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Type

10.4.4 Asia Pacific: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.4.1 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Connection Type

10.4.5 Asia Pacific: Battery Energy Storage System Market Breakdown, by End User

10.4.5.1 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast Analysis – by End User

10.4.6 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.4.6.1 Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.4.6.2 Australia: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.6.2.1 Australia: Battery Energy Storage System Market Breakdown, by Type

10.4.6.2.2 Australia: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.2.3 Australia: Battery Energy Storage System Market Breakdown, by End User

10.4.6.3 China: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.6.3.1 China: Battery Energy Storage System Market Breakdown, by Type

10.4.6.3.2 China: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.3.3 China: Battery Energy Storage System Market Breakdown, by End User

10.4.6.4 India: Battery Energy Storage System Market – Revenue and Forecast to



## 2031 (US\$ Million)

10.4.6.4.1 India: Battery Energy Storage System Market Breakdown, by Type

10.4.6.4.2 India: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.4.3 India: Battery Energy Storage System Market Breakdown, by End User

10.4.6.5 Japan: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.6.5.1 Japan: Battery Energy Storage System Market Breakdown, by Type

10.4.6.5.2 Japan: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.5.3 Japan: Battery Energy Storage System Market Breakdown, by End User

10.4.6.6 South Korea: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.6.6.1 South Korea: Battery Energy Storage System Market Breakdown, by Type

10.4.6.6.2 South Korea: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.6.3 South Korea: Battery Energy Storage System Market Breakdown, by End User

10.4.6.7 Rest of Asia Pacific: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ million)

10.4.6.7.1 Rest of Asia Pacific: Battery Energy Storage System Market Breakdown, by Type

10.4.6.7.2 Rest of Asia Pacific: Battery Energy Storage System Market Breakdown, by Connection Type

10.4.6.7.3 Rest of Asia Pacific: Battery Energy Storage System Market Breakdown, by End User

## 10.5 Rest of World

10.5.1 Rest of World Battery Energy Storage System Market Overview

10.5.2 Rest of World: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ Million)

10.5.3 Rest of World: Battery Energy Storage System Market Breakdown, by Type

10.5.3.1 Rest of World: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Type

10.5.4 Rest of World: Battery Energy Storage System Market Breakdown, by Connection Type

10.5.4.1 Rest of World: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Connection Type

10.5.5 Rest of World: Battery Energy Storage System Market Breakdown, by End User

10.5.5.1 Rest of World: Battery Energy Storage System Market – Revenue and Forecast Analysis – by End User

10.5.6 Rest of World: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.5.6.1 Rest of World: Battery Energy Storage System Market – Revenue and Forecast Analysis – by Country

10.5.6.2 Middle East and Africa: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ Million)

10.5.6.2.1 Middle East and Africa: Battery Energy Storage System Market Breakdown, by Type

10.5.6.2.2 Middle East and Africa: Battery Energy Storage System Market Breakdown, by Connection Type

10.5.6.2.3 Middle East and Africa: Battery Energy Storage System Market Breakdown, by End User

10.5.6.3 South America: Battery Energy Storage System Market – Revenue and Forecast to 2031 (US\$ Million)

10.5.6.3.1 South America: Battery Energy Storage System Market Breakdown, by Type

10.5.6.3.2 South America: Battery Energy Storage System Market Breakdown, by Connection Type

10.5.6.3.3 South America: Battery Energy Storage System Market Breakdown, by End User

## **11. COMPETITIVE LANDSCAPE**

11.1 Heat Map Analysis of Key Players

11.2 Company Positioning & Concentration

## **12. INDUSTRY LANDSCAPE**

12.1 Overview

12.2 Market Initiative

12.3 Product Development

## **13. COMPANY PROFILES**

13.1 Panasonic Holdings Corp

13.1.1 Key Facts

13.1.2 Business Description

- 13.1.3 Products and Services
- 13.1.4 Financial Overview
- 13.1.5 SWOT Analysis
- 13.1.6 Key Developments
- 13.2 BYD Co Ltd
  - 13.2.1 Key Facts
  - 13.2.2 Business Description
  - 13.2.3 Products and Services
  - 13.2.4 Financial Overview
  - 13.2.5 SWOT Analysis
  - 13.2.6 Key Developments
- 13.3 Contemporary Amperex Technology Co Ltd
  - 13.3.1 Key Facts
  - 13.3.2 Business Description
  - 13.3.3 Products and Services
  - 13.3.4 Financial Overview
  - 13.3.5 SWOT Analysis
  - 13.3.6 Key Developments
- 13.4 Tesla Inc
  - 13.4.1 Key Facts
  - 13.4.2 Business Description
  - 13.4.3 Financial Overview
  - 13.4.4 SWOT Analysis
  - 13.4.5 Key Developments
- 13.5 Samsung SDI Co Ltd
  - 13.5.1 Key Facts
  - 13.5.2 Business Description
  - 13.5.3 Products and Services
  - 13.5.4 Financial Overview
  - 13.5.5 SWOT Analysis
  - 13.5.6 Key Developments
- 13.6 AES Corp
  - 13.6.1 Key Facts
  - 13.6.2 Business Description
  - 13.6.3 Products and Services
  - 13.6.4 Financial Overview
  - 13.6.5 SWOT Analysis
  - 13.6.6 Key Developments
- 13.7 Ameresco Inc

- 13.7.1 Key Facts
- 13.7.2 Business Description
- 13.7.3 Products and Services
- 13.7.4 Financial Overview
- 13.7.5 SWOT Analysis
- 13.7.6 Key Developments
- 13.8 NextEra Energy Inc
  - 13.8.1 Key Facts
  - 13.8.2 Business Description
  - 13.8.3 Products and Services
  - 13.8.4 Financial Overview
  - 13.8.5 SWOT Analysis
  - 13.8.6 Key Developments
- 13.9 ESS Inc.
  - 13.9.1 Key Facts
  - 13.9.2 Business Description
  - 13.9.3 Products and Services
  - 13.9.4 Financial Overview
  - 13.9.5 SWOT Analysis
  - 13.9.6 Key Developments
- 13.10 Saft Groupe SA
  - 13.10.1 Key Facts
  - 13.10.2 Business Description
  - 13.10.3 Products and Services
  - 13.10.4 Financial Overview
  - 13.10.5 SWOT Analysis
  - 13.10.6 Key Developments
- 13.11 LG Chem Ltd
  - 13.11.1 Key Facts
  - 13.11.2 Business Description
  - 13.11.3 Products and Services
  - 13.11.4 Financial Overview
  - 13.11.5 SWOT Analysis
  - 13.11.6 Key Developments
- 13.12 General Electric Co
  - 13.12.1 Key Facts
  - 13.12.2 Business Description
  - 13.12.3 Products and Services
  - 13.12.4 Financial Overview

13.12.5 SWOT Analysis

13.12.6 Key Developments

13.13 KORE Power Inc

13.13.1 Key Facts

13.13.2 Business Description

13.13.3 Products and Services

13.13.4 Financial Overview

13.13.5 SWOT Analysis

13.13.6 Key Developments

13.14 Eos Energy Enterprises Inc

13.14.1 Key Facts

13.14.2 Business Description

13.14.3 Products and Services

13.14.4 Financial Overview

13.14.5 SWOT Analysis

13.14.6 Key Developments

13.15 Siemens AG

13.15.1 Key Facts

13.15.2 Business Description

13.15.3 Products and Services

13.15.4 Financial Overview

13.15.5 SWOT Analysis

13.15.6 Key Developments

## **14. APPENDIX**

14.1 About The Insight Partners

## I would like to order

Product name: Battery Energy Storage System Market Size and Forecast (2021 - 2031), Global and Regional Share, Trend, and Growth Opportunity Analysis Report Coverage: By Type (Lithium Ion and Others), Connection Type (On-Grid and Off-Grid), End User (Commercial, Utilities, and Residential), and Geography

Product link: <https://marketpublishers.com/r/B73061AA87C5EN.html>

Price: US\$ 4,450.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/B73061AA87C5EN.html>