

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

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## **Abstracts**

The North American battery energy storage system (BESS) market is projected to grow significantly, reaching an estimated value of approximately US\$ 23,475.02 million by 2031, up from US\$ 20,057.56 million in 2024. This growth reflects a compound annual growth rate (CAGR) of 2.8% from 2025 to 2031.

### **Executive Summary and Market Analysis**

According to the National Institute of Standards and Technology (NIST), the manufacturing sector in the United States was valued at US\$ 2.3 trillion in 2023, contributing 10.2% to the nation's GDP. The U.S. ranks as the second-largest manufacturing economy globally, following China, and is a leader in producing fabricated metal products. The expansion of the manufacturing and industrial sectors is driving energy demand across North America, which in turn is propelling the growth of the battery energy storage system market.

The aerospace and defense sectors in North America are also experiencing robust growth, supported by a stable economy, advanced infrastructure, high technology adoption, and increased government investments. In 2023, commercial aviation alone accounted for approximately US\$ 1.37 trillion, or about 5% of the U.S. GDP. With over 26,000 daily flights transporting 2.6 million passengers to nearly 80 countries, the

demand for energy in airports, fueling stations, and commercial buildings is rising, thereby increasing the need for battery energy storage systems in the region.

## Strategic Insights

### Market Segmentation Analysis

The North American battery energy storage system market can be segmented based on type, connection type, and end user:

**By Type:** The market is divided into lithium-ion batteries and other types. The lithium-ion segment is expected to dominate the market in 2024 due to its efficiency and widespread adoption.

**By Connection Type:** The market is categorized into on-grid and off-grid systems, with the on-grid segment anticipated to hold a larger market share in 2024.

**By End User:** The market is segmented into commercial, residential, and utility sectors, with utilities expected to account for the largest share in 2024.

## Market Outlook

The increasing integration of renewable energy sources, such as wind and solar, necessitates reliable energy storage solutions to manage intermittency and maintain grid stability. Both government and private sector investments in robust storage systems are on the rise, supporting energy transition goals, reducing carbon emissions, and enhancing energy security. Advanced battery technologies, including solid-state batteries and lithium-ion batteries, are gaining traction due to their efficiency and scalability.

The evolving global energy landscape is driving demand for energy storage infrastructure. Energy storage systems are crucial for balancing energy supply and demand, allowing for energy to be stored and utilized as needed. The importance of battery energy storage is underscored by the need for a stable energy supply. Innovations in energy storage systems and increased research and development in energy management are further propelling the market. For instance, the U.S.-based consortium Stor4Build, co-led by the National Renewable Energy Laboratory (NREL)

and the U.S. Department of Energy (DoE), is focused on optimizing and deploying storage technologies for buildings.

In January 2024, Plus Power announced the commencement of operations at its Kapolei Energy Storage facility in Oahu, Hawaii, which features a grid-scale battery energy storage system aimed at transitioning the state's electric power from coal to renewable sources like solar and wind. Additionally, in June 2024, Plus Power began managing seven large-scale battery energy storage plants across Arizona and Texas, totaling 1,325 MW/3,500 MWh. Such initiatives highlight the growing emphasis on developing robust storage infrastructure, which is a key driver of the battery energy storage system market in the U.S.

## Country Insights

The North American battery energy storage system market includes the U.S., Canada, and Mexico, with the U.S. holding the largest market share in 2024. The increasing awareness of renewable energy adoption and rising investments in solar and wind energy projects are driving the demand for lithium-ion batteries in the U.S. In 2023, the U.S. saw a remarkable 37% growth in renewable installations compared to 2021, and a 51% increase compared to 2022. In the first half of 2024, approximately 14.1 gigawatt-hours (GW-hours) of energy storage were added to the electric grid.

The demand for backup power during outages and limited grid access is expected to further boost the battery energy storage system market in the U.S. The rise in the use of BESS in microgrids and off-grid systems is also projected to enhance market growth from 2023 to 2031. Furthermore, significant investments in solar and wind power projects, particularly in Texas, which installed around 6,500 MW of solar energy systems in 2023, are anticipated to fuel market growth in the coming years.

## Company Profiles

Key players in the North American battery energy storage system market include Panasonic Holdings Corp, BYD Co Ltd, Contemporary Amperex Technology Co Ltd, Tesla Inc, Samsung SDI Co Ltd, AES Corp, Ameresco Inc, NextEra Energy Inc, ESS Inc, Saft Groupe SA, LG Chem Ltd, General Electric Co, KORE Power Inc, Eos Energy Enterprises Inc, and Siemens AG. These companies are employing various strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence and offer innovative solutions to consumers.

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