

Asia Pacific 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 Asia Pacific battery energy storage system (BESS) market is projected to experience significant growth, with an expected market size of approximately US\$ 77,016.66 million by 2031, up from US\$ 10,057.03 million in 2024. This growth translates to a compound annual growth rate (CAGR) of 27.4% from 2025 to 2031.

Executive Summary and Market Analysis

The BESS market in the Asia Pacific region is categorized into several key countries, including Australia, South Korea, India, China, Japan, and other nations in the Rest of Asia Pacific. The growth of this market is primarily driven by factors such as increasing urbanization, industrialization, and the ongoing efforts to deploy renewable energy sources, particularly wind and solar power. Many countries in the region are focusing on energy transition goals, aiming to reduce their reliance on fossil fuels and modernize their power grids.

Developing economies like India, China, Thailand, Vietnam, Singapore, Taiwan, and New Zealand are witnessing a steady rise in energy consumption. The growing demand for electricity in sectors such as manufacturing, oil and gas, and other industries is further fueling the expansion of the BESS market in Asia Pacific. Additionally, the automotive sector's growth, with countries like China, India, Australia, Japan, and South

Korea reporting an average increase of 13% in vehicle production from 2022 to 2023, is expected to drive the demand for battery energy storage systems. This surge in vehicle production will likely increase electricity demand, necessitating the optimization of energy operations during peak consumption times.

Strategic Insights

Market Segmentation Analysis

The BESS 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, with lithium-ion batteries holding a significant market share in 2024.

By Connection Type: The market is categorized into on-grid and off-grid systems, with on-grid systems dominating the market in 2024.

By End User: The end-user segments include commercial, residential, and utilities, with the utilities segment accounting for the largest share in 2024.

Market Outlook

Given that over 70% of greenhouse gas emissions originate from the energy sector, battery energy storage systems are crucial in mitigating CO2 emissions. BESS enhances the utilization of renewable energy during peak demand periods, thereby reducing dependence on fossil fuels. The load optimization capabilities of BESS ensure that energy is used efficiently, minimizing waste and lowering emissions. Furthermore, BESS facilitates the integration of renewable energy sources like solar and wind into the power grid, prioritizing renewable energy when available and reducing reliance on fossil fuels, which are major contributors to carbon emissions.

Governments across the Asia Pacific region are actively promoting the increase of renewable power generation installations, which is expected to further stimulate the growth of BESS. For example, in 2023, the Indian government announced plans to bid for 50 GW of renewable energy capacity annually over the next five years, aiming for a total of 300 GW by 2030. Similarly, Japan has set a target to expand its offshore wind capacity from 0.14 GW in 2022 to 10 GW by 2030. China has also made significant strides, achieving its renewable energy installation targets six years ahead of schedule,

with substantial BESS installations completed in 2023. These initiatives are likely to create lucrative opportunities for BESS installations in the region during the forecast period.

Country Insights

The Asia Pacific BESS market includes key countries such as China, Japan, India, Australia, South Korea, and others. China is the largest market player as of 2024, having consistently expanded its energy generation and storage capabilities. The country has been actively developing solar and wind farms to meet its renewable capacity commitments. In 2023, China completed its scheduled renewable capacity installations, achieving its targets six years early. The declining costs of lithium iron phosphate (LFP) BESS systems, now around US\$ 100/KWh, have further accelerated BESS deployment in China.

Recent developments in China include:

In 2024, China Power Construction Group completed a tender for a 16GWh BESS supply.

RelyEZ launched the 'GridUltra 5016', a two-hour 5 MWh battery system for utility-scale and commercial applications.

A pioneering large-scale energy storage project utilizing sodium-ion technology was initiated in Hubei province, with a capacity of 50MW/100MWh, marking a significant advancement in energy storage solutions.

Company Profiles

Key players in the Asia Pacific BESS 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, including expansion, product innovation, and mergers and acquisitions, to enhance their market presence and offer innovative products to consumers.

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