Energy Storage Systems Market Study

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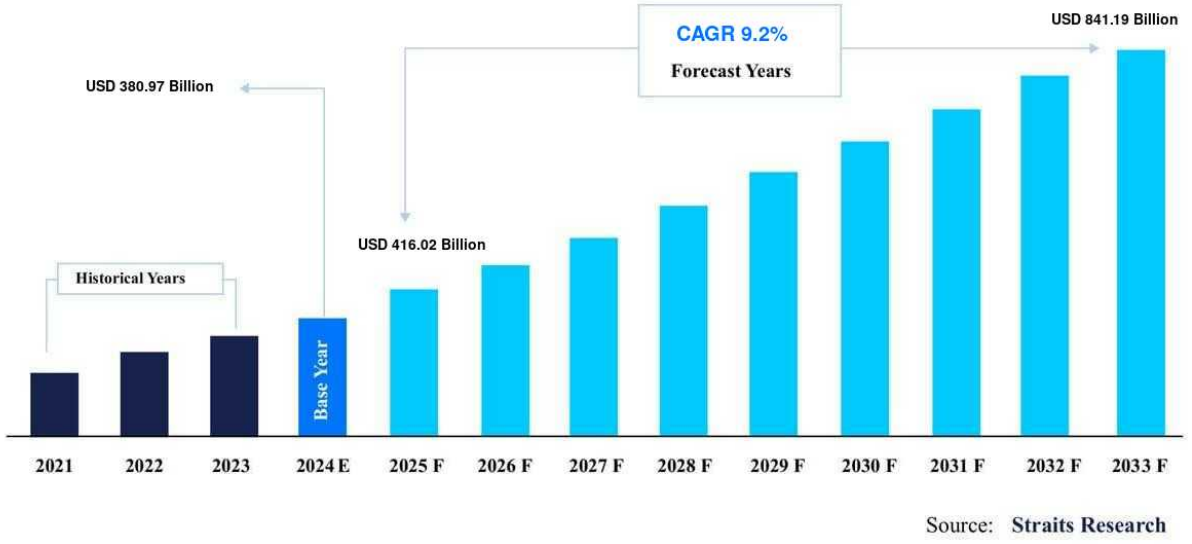

Company Profiles

GENERAL ELECTRIC | LG Chem | Langley Holdings plc | Altairnano | Electrovaya | Hitachi Chemical Co | Maxwell Technologies Inc. | Saft | The Furukawa Battery Co. | Ecoult | Kokam | Fluence | Samsung SDI Co.

Note: More company profiles available on full reports.

Emerging Countries

United States | Germany | China

Emerging Companies

GENERAL ELECTRIC | LG Chem | Langley Holdings plc

Top 5 Company Market Share

Total

48%

Top 5 company market share

Market Trends

Growth Trends

- Increase in the adoption of renewable energy sources.
- Growing demand for energy storage in grid services.
- Advancements in battery technology boost the efficiency of energy storage systems.
- Increasing investment in electric vehicle infrastructure is driving the demand for energy storage systems.
- Growth of decentralized power generation systems (like solar panels in residential areas).
- There is a surge in demand for energy-efficient solutions to stabilize the power grid.

Factors considered while calculating market size and share

- Current and projected product demand.
- Total number of potential customers and/or end-users within a specified market.
- Availability and variety of energy storage systems on the market.
- Adoption rate of energy storage systems by companies and consumers.
- Competitive landscape and market penetration of various competitors.
- Pricing trends and strategies in the market.
- Revenue generation from sales and after-sales services of energy storage systems.

Key Market Indicators

- Total sales and overall revenue generated from energy storage systems.
- Market value and volume of the energy storage systems industry.
- Forecasted revenue growth rate of the industry.
- Market segmentation by type of energy storage systems (chemical, mechanical, electrical, thermal, etc).
- Market segmentation by applications (grid storage, transportation, residential, commercial, etc).
- Growth in related industries (renewable energy, grid infrastructure, electric vehicles, etc).

Lack of long-term energy storage

Several energy technologies rely on the efficiency of thermal energy storage. Surplus electricity generated via solar and wind needs to be stored using batteries. This stored energy is later used to meet residential and commercial buildings' heating and cooling requirements and industrial processes. The primary flaw in renewable energy systems is the gap between resource demand and availability.

Thermal storage systems allow the bridging of this gap by stocking up energy. However, it cannot be stored for long, owing to the inability of these systems to hold the energy for over a half-year cycle. The stored heat then gets dissipated due to the inefficiency of the technology. The stored energy in advanced energy storage systems reduces with time owing to heat loss as the systems used presently are still developing.

Market Trends

Growing demand for efficient and competitive energy resources

Electricity derived from fossil fuels may be replaced reasonably with clean and renewable energy. Its usage may lessen our reliance on fossil fuels, cut greenhouse gas emissions, reduce air pollution, and diversify our energy sources. Various countries in Europe and North America have undertaken initiatives to enhance renewable power generation by 2050 to achieve a sustainable future with the help of clean energy. Pollution is a rising concern for governments in various countries across the globe as it affects human beings and animals.

China was the only country in this context since the air quality has drastically reduced. In Bangladesh, smoldering waste is dumped in the open, which causes the surrounding air to become toxic and harms humans and animals. The city of New Delhi in India is regarded as one of the most polluted cities in the world. In April 2017, the government of India enforced Bharat Stage IV norms to regulate air pollution and automobile emissions. The government of India has also adopted initiatives to promote incentives in the energy storage sector.

Integration of renewable energy

Integrating sustainable energy sources, like solar and wind power, into the global energy mix is a key driver for adopting energy storage systems. Renewable energy generation is characterized by its intermittent nature, depending on weather conditions and time of day. This intermittency challenges grid operators to maintain a stable and reliable electricity supply. Energy storage systems offer a solution to address this challenge by capturing and storing excess energy generated during high renewable energy production periods. This stored energy can then be released during high demand or low renewable energy generation. By effectively time-shifting energy, energy storage systems enable a more balanced and reliable integration of renewable energy into the grid.

Additionally, energy storage systems enhance the flexibility and reliability of renewable energy sources. They can smooth out the variability of renewable energy output, addressing the intermittent nature of these sources. This stability is crucial for grid operators to maintain a consistent power supply and balance the grid's overall generation and demand.

Market Segments

By Technology

Pumped Hydro Storage (PHS) holds the largest market share at 60-65%, remaining the dominant technology in energy storage. This is due to its proven ability to store large amounts of energy efficiently and provide grid stability, making it a key solution for balancing supply and demand.

60-65%

Pumped Hydro Storage

Regional Overview

North America

North America is the global leader in the energy storage market, with the U.S. holding the largest share of 30-35%. This dominance is driven by robust investments in renewable energy and energy storage technologies, as well as favorable government policies that support grid modernization and the shift toward more sustainable energy solutions.

30-35%

United States Market Share

Europe

Europe's energy storage market is growing quickly, fueled by the European Union's ambitious renewable energy targets. Germany leads the region with a 10-12% market share, backed by significant investments in grid balancing technologies and the integration of renewable energy sources.

10-12%

Germany Market Share

APAC

The Asia Pacific region, led by China with a 20-25% market share, is experiencing rapid growth driven by substantial investments in renewable energy, especially in solar and wind power. Additionally, the region benefits from supportive policies that encourage the adoption of energy storage solutions

20-25%

China Market Share

Regional Overview

Middle East and Africa

The Middle East & Africa region is at the nascent stage of energy storage development. The UAE leads the region with its focus on renewable energy adoption, including solar and energy storage projects

XX%

United Arab Emirates Market Share

LATAM

Latin America is still in the early stages of the energy storage market but is projected to grow as governments prioritize expanding renewable energy infrastructure, particularly in countries like Brazil and Chile.

XX%

Brazil Market Share

Company Profiles

Companies	Websites	Headquaters	Establisheds	Key Executives	Revenues
GENERAL ELECTRIC	https://www.ge.com/	Boston, MA, USA	1892	H. Lawrence Culp Jr., CEO	$24.4 Billion
LG Chem	https://www.lgchem.com/	Seoul, South Korea	1947	Hak Cheol Shin, CEO	$35 Billion
Langley Holdings plc	https://www.langleyholdings.com/	Nottingham, UK	1975	Peter M. Head, CEO	$1 Billion
Altairnano	https://www.altairnano.com/	Reno, NV, USA	2000	Alan M. J. Smith, CEO	$10 Million
Electrovaya	https://www.electrovaya.com/	Ontario, Canada	1996	Dr. Sankar Das Gupta, CEO	$35 Million

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