

Global Flywheel Energy Storage (FES) Market Growth 2024-2030

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Abstracts

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According to our LPI (LP Information) latest study, the global Flywheel Energy Storage (FES) market size was valued at US\$ 150 million in 2023. With growing demand in downstream market, the Flywheel Energy Storage (FES) is forecast to a readjusted size of US\$ 193.8 million by 2030 with a CAGR of 3.7% during review period.

The research report highlights the growth potential of the global Flywheel Energy Storage (FES) market. Flywheel Energy Storage (FES) are expected to show stable growth in the future market. However, product differentiation, reducing costs, and supply chain optimization remain crucial for the widespread adoption of Flywheel Energy Storage (FES). Market players need to invest in research and development, forge strategic partnerships, and align their offerings with evolving consumer preferences to capitalize on the immense opportunities presented by the Flywheel Energy Storage (FES) market.

Flywheel energy storage (FES) works by accelerating a rotor (flywheel) to a very high speed and maintaining the energy in the system as rotational energy. When energy is extracted from the system, the flywheel's rotational speed is reduced as a consequence of the principle of conservation of energy; adding energy to the system correspondingly results in an increase in the speed of the flywheel.

Most FES systems use electricity to accelerate and decelerate the flywheel, but devices that directly use mechanical energy are being developed.

In February 2023, the Standardization Administration of China and the National Energy

Administration issued the Guidelines on the Construction of New Energy Storage Standard System, which included 205 new energy storage standards. In the 14th Five-Year Plan and the 2035 Vision Target Outline, the energy storage industry, energy storage capacity, energy storage projects have been made requirements. In 2021, China issued the Guiding Opinions on Accelerating the Development of New Energy Storage, which specified a clear path for the development of energy storage industry. According to the data of CEC, the cumulative installed capacity of electrochemical energy storage power stations that put into operation was mainly distributed in the power side, and the total energy is 6.80 GWh, which accounted for 48.40% by the end of 2022.

According to CNESA, by the end of 2022, the cumulative installed capacity of power energy storage projects which has put into operation in the world was 237.2GW, with an annual growth rate of 15%. The cumulative installed capacity of new energy storage reached 45.7GW, which has nearly twice of the same period last year, with an annual growth rate of 80%. The lithium-ion battery occupied an absolute dominant position, with an annual growth rate of more than 85%. The global energy storage market developed rapidly, and the installed capacity of new power energy storage projects is 30.7GW, with a year-on-year growth of 98%. China, Europe and the United States continued to lead the development of the global energy storage market, collectively accounting for 86% of the global market.

According to CNESA statistics, by the end of 2022, the total installed capacity of power energy storage projects put into operation in China was 59.8GW, accounting for 25% of the total global market scale, with an annual growth rate of 38%. The cumulative installed capacity of new energy storage exceeded 10GW for the first time, reaching 13.1GW / 27.1, GWh. And the annual growth rate of power scale reached 128%, while the annual growth rate of energy scale reached 141%. The installed capacity of newly added power energy storage projects in China reached 16.5GW for the first time, among which the new capacity of pumped storage was 9.1GW. Among the new energy storage, lithium-ion battery occupied an absolute dominant position, accounting for 115%.

Key Features:

The report on Flywheel Energy Storage (FES) market reflects various aspects and provide valuable insights into the industry.

Market Size and Growth: The research report provide an overview of the current size

and growth of the Flywheel Energy Storage (FES) market. It may include historical data, market segmentation by Type (e.g., Steel Rims, Composite Rims), and regional breakdowns.

Market Drivers and Challenges: The report can identify and analyse the factors driving the growth of the Flywheel Energy Storage (FES) market, such as government regulations, environmental concerns, technological advancements, and changing consumer preferences. It can also highlight the challenges faced by the industry, including infrastructure limitations, range anxiety, and high upfront costs.

Competitive Landscape: The research report provides analysis of the competitive landscape within the Flywheel Energy Storage (FES) market. It includes profiles of key players, their market share, strategies, and product offerings. The report can also highlight emerging players and their potential impact on the market.

Technological Developments: The research report can delve into the latest technological developments in the Flywheel Energy Storage (FES) industry. This include advancements in Flywheel Energy Storage (FES) technology, Flywheel Energy Storage (FES) new entrants, Flywheel Energy Storage (FES) new investment, and other innovations that are shaping the future of Flywheel Energy Storage (FES).

Downstream Procumbent Preference: The report can shed light on customer procumbent behaviour and adoption trends in the Flywheel Energy Storage (FES) market. It includes factors influencing customer ' purchasing decisions, preferences for Flywheel Energy Storage (FES) product.

Government Policies and Incentives: The research report analyse the impact of government policies and incentives on the Flywheel Energy Storage (FES) market. This may include an assessment of regulatory frameworks, subsidies, tax incentives, and other measures aimed at promoting Flywheel Energy Storage (FES) market. The report also evaluates the effectiveness of these policies in driving market growth.

Environmental Impact and Sustainability: The research report assess the environmental impact and sustainability aspects of the Flywheel Energy Storage (FES) market.

Market Forecasts and Future Outlook: Based on the analysis conducted, the research report provide market forecasts and outlook for the Flywheel Energy Storage (FES) industry. This includes projections of market size, growth rates, regional trends, and predictions on technological advancements and policy developments.

Recommendations and Opportunities: The report conclude with recommendations for industry stakeholders, policymakers, and investors. It highlights potential opportunities for market players to capitalize on emerging trends, overcome challenges, and contribute to the growth and development of the Flywheel Energy Storage (FES) market.

Market Segmentation:

Flywheel Energy Storage (FES) market is split by Type and by Application. For the period 2019-2030, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value.

Segmentation by type

Steel Rims

Composite Rims

Others

Segmentation by application

Transportation

UPS

Wind Turbines

Automobile

Others

This report also splits the market by region:

Americas

United States

Canada

Mexico

Brazil

APAC

China

Japan

Korea

Southeast Asia

India

Australia

Europe

Germany

France

UK

Italy

Russia

Middle East & Africa

Egypt

South Africa

Israel

Turkey

GCC Countries

The below companies that are profiled have been selected based on inputs gathered from primary experts and analyzing the company's coverage, product portfolio, its market penetration.

Beacon Power

Active Power

Siemens

Calnetix Technologies

Alstom Transport

POWERTHRU

AFS Trinity Power

Amber Kinetics

CCM

GKN Hybrid Power

Gloyer-Taylor Laboratories LLC

Kinetic Traction Systems

Piller Group

STORNETIC

Temporal Power

Key Questions Addressed in this Report

What is the 10-year outlook for the global Flywheel Energy Storage (FES) market?

What factors are driving Flywheel Energy Storage (FES) market growth, globally and by region?

Which technologies are poised for the fastest growth by market and region?

How do Flywheel Energy Storage (FES) market opportunities vary by end market size?

How does Flywheel Energy Storage (FES) break out type, application?

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