+357 96 030922
info@marketpublishers.com

Tubular Battery Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Product Type (Lead-Acid Tubular Batteries, Lithium-Ion Tubular Batteries, Gel Tubular Batteries, Maintenance-Free Tubular Batteries), By Application (Residential, Commercial, Industrial, Utilities), By Region, By Competition, 2020-2030F

https://marketpublishers.com/r/T3916B3FFDE0EN.html
Date: July 2025
Pages: 188
Price: US$ 4,500.00 (Single User License)
ID: T3916B3FFDE0EN

Abstracts

Market Overview

The Global Tubular Battery Market was valued at USD 17.1 billion in 2024 and is expected to reach USD 21.6 billion by 2030 with a CAGR of 3.8% through 2030. The global tubular battery market is experiencing steady growth, driven by rising demand for reliable and long-lasting energy storage solutions across various sectors. One of the key drivers is the increasing adoption of renewable energy systems, particularly solar power, where tubular batteries are widely used for their deep cycle performance, durability, and ability to operate in off-grid environments. Additionally, the growing need for uninterrupted power supply (UPS) systems in industrial, commercial, and residential applications is fueling demand for these batteries. Expanding telecom infrastructure, especially with the global rollout of 5G, also requires dependable backup power, further boosting market growth.

Governments worldwide are supporting energy storage through incentives and policies aimed at improving grid stability and promoting rural electrification, particularly in emerging economies. Technological advancements in tubular battery design and materials have enhanced efficiency, reduced maintenance, and extended lifespan, making them more competitive compared to other battery types. Moreover, their cost-

+357 96 030922
info@marketpublishers.com

effectiveness in comparison to lithium-ion batteries in certain applications makes them a preferred choice for power backup. Overall, the global tubular battery market is being propelled by a combination of infrastructure growth, renewable energy expansion, technological innovation, and the rising need for power reliability.

Key Market Drivers

Rising Demand for Renewable Energy Storage

The transition towards clean and renewable energy sources is a major catalyst for the global tubular battery market. As solar and wind energy gain traction worldwide, the need for efficient energy storage solutions becomes increasingly vital to balance the intermittent nature of these sources. Tubular batteries are especially suitable for off-grid and hybrid renewable energy systems because they offer deep cycle capabilities, long service life, and reliability under fluctuating load conditions.

In rural and semi-urban areas, especially in countries like India, Bangladesh, Kenya, and Nigeria, tubular batteries are extensively used in solar home systems, solar street lighting, and microgrids. Their ability to discharge deeply without damaging the battery makes them more reliable for long-duration energy needs compared to traditional flat plate or lithium-ion batteries in certain conditions. Moreover, tubular batteries operate well in extreme temperature conditions, further enhancing their suitability for renewable projects in tropical and remote regions.

Government policies and incentives—such as solar subsidies, net metering, and energy access initiatives—are boosting solar installations, directly translating to higher demand for tubular batteries. For instance, India’s PM-KUSUM scheme and the World Bank’s off-grid electrification projects in Africa actively promote battery-backed solar setups. The affordability and robustness of tubular batteries make them a top choice in these initiatives. Technological improvements in lead-acid chemistry, along with enhanced grid compatibility and smart charge controllers, are further refining their application in solar-based systems.

As countries aim to meet their climate targets and enhance energy security, renewable energy adoption will continue to grow. This sustained expansion in clean energy infrastructure will drive the demand for tubular batteries, establishing them as a cornerstone technology for off-grid and backup energy storage solutions in the renewable space. Global energy storage capacity is projected to surpass 1000 GWh by 2030, up from around 200 GWh in 2022. The global energy storage market is estimated

+357 96 030922
info@marketpublishers.com

to reach between 400 to 600 billion dollars by 2040. Battery storage installations grew by more than 70 percent in 2023, with lithium-ion batteries accounting for over 90 percent of new capacity. To support increased solar and wind power, the world may require 150 to 200 gigawatts of storage annually by 2030. Over 130 countries have set renewable energy goals, many of which include energy storage as a critical component for grid stability

Key Market Challenges

Competition from Advanced Battery Technologies

One of the major challenges facing the global tubular battery market is the increasing competition from advanced battery technologies, particularly lithium-ion (Li-ion) batteries. Li-ion batteries offer numerous advantages over tubular lead-acid batteries, including higher energy density, lighter weight, faster charging, longer cycle life, and better performance in compact spaces. As the cost of lithium-ion technology continues to decline due to advancements in manufacturing, economies of scale, and innovations in battery chemistry, the preference for Li-ion batteries is growing across sectors like electric vehicles (EVs), residential energy storage systems, and industrial applications.

Governments and large-scale renewable energy projects are increasingly adopting lithium-based energy storage systems, especially in developed regions such as North America, Europe, and parts of Asia-Pacific. Tubular batteries, though reliable and cost-effective, struggle to compete in scenarios where space, weight, and high energy throughput are critical. Moreover, Li-ion batteries support smart grid compatibility and remote monitoring more effectively, making them more attractive for modern, technology-driven infrastructure.

This shift toward lithium-based solutions limits the growth potential of tubular batteries, particularly in high-end or space-constrained applications. While tubular batteries still dominate in cost-sensitive and rural markets, the rapid pace of lithium-ion adoption is narrowing their market share. Additionally, lithium-ion batteries attract more R&D investments, which continuously improve their performance and cost-efficiency, further widening the technology gap.

To address this challenge, tubular battery manufacturers need to invest in product innovation, integrate digital features, and position themselves strongly in niche applications such as off-grid solar, rural backup power, and large industrial UPS systems where durability and cost remain top priorities. However, the competition from

+357 96 030922
info@marketpublishers.com

newer chemistries remains a long-term threat to the tubular battery market's sustainability and global growth prospects.

Key Market Trends

Integration of Tubular Batteries in Renewable Energy Systems

A prominent trend in the global tubular battery market is the growing integration of tubular batteries with renewable energy systems, especially solar photovoltaic (PV) installations. As the world transitions toward cleaner energy sources to address climate change and reduce dependency on fossil fuels, solar and wind energy adoption is rapidly expanding. However, the intermittent nature of renewable sources creates a pressing need for efficient energy storage systems to ensure reliable power supply.

Tubular batteries are gaining popularity in off-grid and hybrid solar systems because of their deep discharge capacity, longer cycle life, and resilience in harsh environmental conditions. They are particularly suitable for rural electrification projects, solar-powered agricultural pumps, and residential solar setups in emerging economies like India, Bangladesh, Nigeria, and Kenya. Governments and international organizations are supporting this trend through subsidy programs and funding for energy access initiatives, which has further fueled the demand for cost-effective storage solutions like tubular batteries.

The trend is further driven by the affordability and serviceability of tubular lead-acid batteries compared to lithium-ion batteries in cost-sensitive regions. Unlike lithium-ion batteries, which require advanced electronic management systems and precise thermal conditions, tubular batteries can operate in high-temperature and dusty environments with minimal maintenance.

Manufacturers are responding to this trend by developing specialized solar tubular batteries with improved charge acceptance, faster recharge rates, and enhanced deep-cycle performance. Many are also working on hybrid models that combine solar charging with grid support. As rural electrification and decentralized solar solutions continue to gain momentum, the role of tubular batteries as a dependable, economical storage option will become increasingly central to global energy transformation efforts, especially in developing markets.

Key Market Players

+357 96 030922
info@marketpublishers.com

Exide Industries Limited

Amara Raja Batteries Limited

HBL Power Systems Limited

Luminous Power Technologies Pvt. Ltd.

Base Corporation Limited

Okaya Power Pvt. Ltd.

Su-Kam Power Systems Ltd.

Southern Batteries Pvt. Ltd.

Report Scope:

In this report, the Global Tubular Battery Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Tubular Battery Market, By Product Type:

Lead-Acid Tubular Batteries

Lithium-Ion Tubular Batteries

Gel Tubular Batteries

Maintenance-Free Tubular Batteries

Tubular Battery Market, By Application:

Residential

Commercial

Industrial

+357 96 030922
info@marketpublishers.com

- Utilities

Tubular Battery Market, By Region:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - Germany
  - France
  - United Kingdom
  - Italy
  - Spain
- Asia Pacific
  - China
  - India
  - Japan
  - South Korea
  - Australia
- South America

+357 96 030922
info@marketpublishers.com

Brazil

Colombia

Argentina

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Tubular Battery Market.

Available Customizations:

Global Tubular Battery Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

8. ASIA PACIFIC TUBULAR BATTERY MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

9. MIDDLE EAST & AFRICA TUBULAR BATTERY MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

10. SOUTH AMERICA TUBULAR BATTERY MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

11. MARKET DYNAMICS

12. MARKET TRENDS AND DEVELOPMENTS

13. COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

14. STRATEGIC RECOMMENDATIONS

15. ABOUT US & DISCLAIMER

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Tubular Battery Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Product Type (Lead-Acid Tubular Batteries, Lithium-Ion Tubular Batteries, Gel Tubular Batteries, Maintenance-Free Tubular Batteries), By Application (Residential, Commercial, Industrial, Utilities), By Region, By Competition, 2020-2030F

Product link: https://marketpublishers.com/r/T3916B3FFDE0EN.html

Price: US$ 4,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/T3916B3FFDE0EN.html