

Start-stop Battery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Enhanced Flooded Batteries (EFB), Absorbent Glass Mat Batteries (AGM), Lead-Acid Batteries, Lithium-Ion Batteries), By Vehicle Type (Passenger Cars, Light Commercial Vehicles, Heavy Commercial Vehicles), By End-Use (Automotive, Transportation, Logistics), By Region & Competition, 2020-2030F

<https://marketpublishers.com/r/SA3F40136185EN.html>

Date: June 2025

Pages: 185

Price: US\$ 4,500.00 (Single User License)

ID: SA3F40136185EN

Abstracts

Market Overview

The Global Start-stop Battery Market was valued at USD 3.76 billion in 2024 and is projected to reach USD 5.76 billion by 2030, growing at a CAGR of 7.21% during the forecast period. This market serves a critical role in supporting vehicles equipped with start-stop systems—technologies that automatically turn off the engine during idling and restart it when acceleration resumes. These systems aim to enhance fuel efficiency and reduce emissions in line with global sustainability goals and tightening regulations. Start-stop batteries, particularly Enhanced Flooded Batteries (EFB) and Absorbent Glass Mat (AGM) types, are designed for frequent cycling, offering improved charge acceptance and extended cycle life. The market's expansion is being fueled by increasing regulatory mandates across North America, Europe, and Asia-Pacific, pushing automakers toward more fuel-efficient designs. In parallel, rising consumer awareness regarding fuel savings and environmental impact is driving demand for vehicles integrated with start-stop functionality.

Key Market Drivers

Stringent Emission Regulations and Fuel Efficiency Standards

The Start-stop Battery Market is witnessing strong growth, propelled by stringent global emission standards and fuel economy regulations. These mandates are compelling automotive manufacturers to incorporate technologies that minimize vehicle emissions and enhance fuel efficiency. Start-stop systems, which automatically power down and restart the engine during idle moments, depend on advanced batteries such as Enhanced Flooded Batteries (EFB) and Absorbent Glass Mat (AGM) for consistent performance under repeated cycling. Regulatory frameworks like the European Union's CO₂ targets—limiting new passenger car emissions to 95 grams per kilometer by 2025—and the U.S. Corporate Average Fuel Economy (CAFE) standards, are promoting the adoption of this cost-effective technology. This regulatory push is especially pronounced in regions with ambitious decarbonization goals such as Europe and China, where governments are actively implementing policies to curb transportation-sector emissions.

Key Market Challenges

Performance Degradation under Frequent Cycling Conditions

A key challenge facing the start-stop battery market is the accelerated degradation of performance due to frequent cycling. Unlike conventional automotive batteries, start-stop batteries undergo continuous charge and discharge cycles every time a vehicle halts and resumes motion. This constant usage stresses the battery's internal structure, particularly in Enhanced Flooded Batteries and Absorbent Glass Mat technologies, leading to issues like plate sulphation, loss of active material, and reduced charge acceptance. The core engineering challenge is to enhance the battery's resilience to deep cycling without significantly increasing production costs. Though AGM batteries outperform EFBs in demanding start-stop conditions, they come at a higher cost and are still susceptible to gradual capacity loss. Additionally, extreme environmental factors—such as very low or high temperatures—can further accelerate battery wear, reduce operational life, and necessitate more frequent replacements.

Key Market Trends

Growing Integration of Start-stop Systems Across All Vehicle Segments

An emerging trend in the start-stop battery market is the widespread incorporation of start-stop systems across diverse vehicle categories, including economy-class passenger vehicles, mid-range models, and light commercial vehicles. Once reserved for premium and luxury cars, these systems have become standard in many mainstream vehicles as OEMs strive to meet rigorous global emission and fuel economy regulations. Governments in Europe, North America, and Asia-Pacific continue to enforce tighter carbon limits, making fuel-saving technologies like start-stop systems a vital compliance tool. This growing adoption is boosting demand for durable, high-performance batteries that can withstand frequent engine restarts. Manufacturers are responding with tailored solutions such as EFB and AGM batteries, designed for specific vehicle types and driving patterns. Additionally, the rising popularity of mild and micro-hybrid vehicles, which rely on start-stop functionality, is expanding the market potential for start-stop batteries.

Key Market Players

Johnson Controls International plc

Exide Technologies

East Penn Manufacturing Company

EnerSys

GS Yuasa Corporation

Clarios

Panasonic Corporation

Robert Bosch GmbH

Hitachi Chemical Co., Ltd.

Amara Raja Batteries Ltd.

Report Scope:

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

Start-stop Battery Market, By Type:

Enhanced Flooded Batteries (EFB)

Absorbent Glass Mat Batteries (AGM)

Lead-Acid Batteries

Lithium-Ion Batteries

Start-stop Battery Market, By Vehicle Type:

Passenger Cars

Light Commercial Vehicles

Heavy Commercial Vehicles

Start-stop Battery Market, By End-Use:

Automotive

Transportation

Logistics

Start-stop Battery Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Start-stop Battery Market.

Available Customizations:

Global Start-stop Battery Market report with the given market data, TechSci 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).

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Contents

1. PRODUCT OVERVIEW

- 1.1. Market Definition
- 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
 - 1.2.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, and Trends

4. VOICE OF CUSTOMER

5. GLOBAL START-STOP BATTERY MARKET OUTLOOK

- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Type (Enhanced Flooded Batteries (EFB), Absorbent Glass Mat Batteries (AGM), Lead-Acid Batteries, Lithium-Ion Batteries)
 - 5.2.2. By Vehicle Type (Passenger Cars, Light Commercial Vehicles, Heavy Commercial Vehicles)

- 5.2.3. By End-Use (Automotive, Transportation, Logistics)
- 5.2.4. By Region (North America, Europe, South America, Middle East & Africa, Asia Pacific)
- 5.3. By Company (2024)
- 5.4. Market Map

6. NORTH AMERICA START-STOP BATTERY MARKET OUTLOOK

- 6.1. Market Size & Forecast
 - 6.1.1. By Value
- 6.2. Market Share & Forecast
 - 6.2.1. By Type
 - 6.2.2. By Vehicle Type
 - 6.2.3. By End-Use
 - 6.2.4. By Country
- 6.3. North America: Country Analysis
 - 6.3.1. United States Start-stop Battery Market Outlook
 - 6.3.1.1. Market Size & Forecast
 - 6.3.1.1.1. By Value
 - 6.3.1.2. Market Share & Forecast
 - 6.3.1.2.1. By Type
 - 6.3.1.2.2. By Vehicle Type
 - 6.3.1.2.3. By End-Use
 - 6.3.2. Canada Start-stop Battery Market Outlook
 - 6.3.2.1. Market Size & Forecast
 - 6.3.2.1.1. By Value
 - 6.3.2.2. Market Share & Forecast
 - 6.3.2.2.1. By Type
 - 6.3.2.2.2. By Vehicle Type
 - 6.3.2.2.3. By End-Use
 - 6.3.3. Mexico Start-stop Battery Market Outlook
 - 6.3.3.1. Market Size & Forecast
 - 6.3.3.1.1. By Value
 - 6.3.3.2. Market Share & Forecast
 - 6.3.3.2.1. By Type
 - 6.3.3.2.2. By Vehicle Type
 - 6.3.3.2.3. By End-Use

7. EUROPE START-STOP BATTERY MARKET OUTLOOK

- 7.1. Market Size & Forecast
 - 7.1.1. By Value
- 7.2. Market Share & Forecast
 - 7.2.1. By Type
 - 7.2.2. By Vehicle Type
 - 7.2.3. By End-Use
 - 7.2.4. By Country
- 7.3. Europe: Country Analysis
 - 7.3.1. Germany Start-stop Battery Market Outlook
 - 7.3.1.1. Market Size & Forecast
 - 7.3.1.1.1. By Value
 - 7.3.1.2. Market Share & Forecast
 - 7.3.1.2.1. By Type
 - 7.3.1.2.2. By Vehicle Type
 - 7.3.1.2.3. By End-Use
 - 7.3.2. France Start-stop Battery Market Outlook
 - 7.3.2.1. Market Size & Forecast
 - 7.3.2.1.1. By Value
 - 7.3.2.2. Market Share & Forecast
 - 7.3.2.2.1. By Type
 - 7.3.2.2.2. By Vehicle Type
 - 7.3.2.2.3. By End-Use
 - 7.3.3. United Kingdom Start-stop Battery Market Outlook
 - 7.3.3.1. Market Size & Forecast
 - 7.3.3.1.1. By Value
 - 7.3.3.2. Market Share & Forecast
 - 7.3.3.2.1. By Type
 - 7.3.3.2.2. By Vehicle Type
 - 7.3.3.2.3. By End-Use
 - 7.3.4. Italy Start-stop Battery Market Outlook
 - 7.3.4.1. Market Size & Forecast
 - 7.3.4.1.1. By Value
 - 7.3.4.2. Market Share & Forecast
 - 7.3.4.2.1. By Type
 - 7.3.4.2.2. By Vehicle Type
 - 7.3.4.2.3. By End-Use
 - 7.3.5. Spain Start-stop Battery Market Outlook
 - 7.3.5.1. Market Size & Forecast

- 7.3.5.1.1. By Value
- 7.3.5.2. Market Share & Forecast
 - 7.3.5.2.1. By Type
 - 7.3.5.2.2. By Vehicle Type
 - 7.3.5.2.3. By End-Use

8. ASIA PACIFIC START-STOP BATTERY MARKET OUTLOOK

- 8.1. Market Size & Forecast
 - 8.1.1. By Value
- 8.2. Market Share & Forecast
 - 8.2.1. By Type
 - 8.2.2. By Vehicle Type
 - 8.2.3. By End-Use
 - 8.2.4. By Country
- 8.3. Asia Pacific: Country Analysis
 - 8.3.1. China Start-stop Battery Market Outlook
 - 8.3.1.1. Market Size & Forecast
 - 8.3.1.1.1. By Value
 - 8.3.1.2. Market Share & Forecast
 - 8.3.1.2.1. By Type
 - 8.3.1.2.2. By Vehicle Type
 - 8.3.1.2.3. By End-Use
 - 8.3.2. India Start-stop Battery Market Outlook
 - 8.3.2.1. Market Size & Forecast
 - 8.3.2.1.1. By Value
 - 8.3.2.2. Market Share & Forecast
 - 8.3.2.2.1. By Type
 - 8.3.2.2.2. By Vehicle Type
 - 8.3.2.2.3. By End-Use
 - 8.3.3. Japan Start-stop Battery Market Outlook
 - 8.3.3.1. Market Size & Forecast
 - 8.3.3.1.1. By Value
 - 8.3.3.2. Market Share & Forecast
 - 8.3.3.2.1. By Type
 - 8.3.3.2.2. By Vehicle Type
 - 8.3.3.2.3. By End-Use
 - 8.3.4. South Korea Start-stop Battery Market Outlook
 - 8.3.4.1. Market Size & Forecast

- 8.3.4.1.1. By Value
- 8.3.4.2. Market Share & Forecast
 - 8.3.4.2.1. By Type
 - 8.3.4.2.2. By Vehicle Type
 - 8.3.4.2.3. By End-Use
- 8.3.5. Australia Start-stop Battery Market Outlook
 - 8.3.5.1. Market Size & Forecast
 - 8.3.5.1.1. By Value
 - 8.3.5.2. Market Share & Forecast
 - 8.3.5.2.1. By Type
 - 8.3.5.2.2. By Vehicle Type
 - 8.3.5.2.3. By End-Use

9. MIDDLE EAST & AFRICA START-STOP BATTERY MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Type
 - 9.2.2. By Vehicle Type
 - 9.2.3. By End-Use
 - 9.2.4. By Country
- 9.3. Middle East & Africa: Country Analysis
 - 9.3.1. Saudi Arabia Start-stop Battery Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Type
 - 9.3.1.2.2. By Vehicle Type
 - 9.3.1.2.3. By End-Use
 - 9.3.2. UAE Start-stop Battery Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Type
 - 9.3.2.2.2. By Vehicle Type
 - 9.3.2.2.3. By End-Use
 - 9.3.3. South Africa Start-stop Battery Market Outlook
 - 9.3.3.1. Market Size & Forecast

9.3.3.1.1. By Value

9.3.3.2. Market Share & Forecast

9.3.3.2.1. By Type

9.3.3.2.2. By Vehicle Type

9.3.3.2.3. By End-Use

10. SOUTH AMERICA START-STOP BATTERY MARKET OUTLOOK

10.1. Market Size & Forecast

10.1.1. By Value

10.2. Market Share & Forecast

10.2.1. By Type

10.2.2. By Vehicle Type

10.2.3. By End-Use

10.2.4. By Country

10.3. South America: Country Analysis

10.3.1. Brazil Start-stop Battery Market Outlook

10.3.1.1. Market Size & Forecast

10.3.1.1.1. By Value

10.3.1.2. Market Share & Forecast

10.3.1.2.1. By Type

10.3.1.2.2. By Vehicle Type

10.3.1.2.3. By End-Use

10.3.2. Colombia Start-stop Battery Market Outlook

10.3.2.1. Market Size & Forecast

10.3.2.1.1. By Value

10.3.2.2. Market Share & Forecast

10.3.2.2.1. By Type

10.3.2.2.2. By Vehicle Type

10.3.2.2.3. By End-Use

10.3.3. Argentina Start-stop Battery Market Outlook

10.3.3.1. Market Size & Forecast

10.3.3.1.1. By Value

10.3.3.2. Market Share & Forecast

10.3.3.2.1. By Type

10.3.3.2.2. By Vehicle Type

10.3.3.2.3. By End-Use

11. MARKET DYNAMICS

11.1. Drivers

11.2. Challenges

12. MARKET TRENDS AND DEVELOPMENTS

12.1. Merger & Acquisition (If Any)

12.2. Product Launches (If Any)

12.3. Recent Developments

13. COMPANY PROFILES

13.1. Johnson Controls International plc

13.1.1. Business Overview

13.1.2. Key Revenue and Financials

13.1.3. Recent Developments

13.1.4. Key Personnel

13.1.5. Key Product/Services Offered

13.2. Exide Technologies

13.3. East Penn Manufacturing Company

13.4. EnerSys

13.5. GS Yuasa Corporation

13.6. Clarios

13.7. Panasonic Corporation

13.8. Robert Bosch GmbH

13.9. Hitachi Chemical Co., Ltd.

13.10. Amara Raja Batteries Ltd.

14. STRATEGIC RECOMMENDATIONS

15. ABOUT US & DISCLAIMER

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