

Automotive Battery Market Assessment, By Battery Type [Lead Acid, Lithium-Ion, Others], By Propulsion Type [Internal Combustion Engine, Electric Vehicle, Others], By Distribution Channel [OEM, Aftermarket], By Vehicle Type [Passenger Vehicle, Commercial Vehicle, Others], Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Global automotive battery market is projected to witness a CAGR of 5.24% during the forecast period 2024-2031, growing from USD 51.21 billion in 2023 to USD 77.06 billion in 2031. The higher adoption of electric vehicles (EVs), along with the expanded automotive sector in emerging economies, are expected to propel the growth prospects for the automotive battery market. The sector flourishes as the extended research and development (R&D) facilities work towards increasing the life cycle of batteries, upgrading lithium-ion battery technology, and producing flexible batteries to integrated technologies. While the battery's only functions are engine start and ancillary loads in internal combustion engine (ICE) vehicles, the EV and HEVs demand stronger batteries to provide primary power and energy to the system. Thus, the increasing demand for EVs is leading to higher automotive battery sales.

The market consists of a wide range of batteries such as lead acid, Li-ion, and solidstate batteries. Solid-state batteries have emerged as a potentially disruptive technology, providing higher energy density, extended life span, and enhanced safety compared to lithium-ion batteries. However, the lithium-ion battery still leads the market space due to higher adoption and better compatibility with battery management systems. Additionally, the automobile producers are also building battery systems to power the upcoming vehicle fleets.



For instance, in July 2023, Toyota revealed its new solid-state EV battery with a range of 745 miles, cutting emissions by 39%. The company plans on commercializing the solid-state battery technology by 2027. Toyota emphasized that this breakthrough would allow the company to reduce the size, cost, and weight of EV batteries by half. This achievement is expected to lead to substantial reductions in charging times to 10 minutes or less, along with increase in the driving range to 1,200 kilometers (745 miles).

Proliferated EV Sales and the Need for Sustainable Battery Solutions to Fuel Market Growth

The increasing sales of EVs can be attributed to the affordable rides and their lower impact on the environment. The increased sales of conventional (ICE) vehicles, especially in emerging economies, are acting as other growth-inducing factors. As the prevalence of EVs has grown, there has been a heightened emphasis on the recycling and sustainability of batteries. It has paved the way for the development of more eco-friendly recycling methods and the reutilization of spent battery materials. With the shift to EV models, addressing the environmental implications of battery manufacturing, use, and disposal is imperative. Promoting sustainable batteries improves a company's brand image and attracts environmentally conscious customers. Hence, the vendor companies are producing recyclable and sustainable battery solutions.

In May 2023, LOHUM and ACKO partnered to reuse and recycle batteries under the EV extended battery warranty insurance. The development is expected to help the companies optimize the battery insurance and financing price for consumers. Under the terms of the agreement, ACKO will maintain its performance warranty insurance coverage for EV batteries to various OEMs. It will also provide a convenient redress process for performance-related issues.

Improved EV Charging Infrastructure and Technological Advancements to Expand Market Size

The rapid expansion of EV charging stations in regions such as North America and Asia-Pacific is helping EV owners and promoting growth for higher EV sales. The major agenda for battery manufacturers is increasing mileage and reducing the charging time. In line with this, advancements in battery chemistry, solid-state batteries, and energydense materials are leading to increased range and efficiency. The demand for fastchanging technology is increasing with faster turnaround times.



To meet these demands, batteries must withstand higher charging currents and provide rapid charging without losing on safety or longevity. Additionally, the integration of battery management systems (BMS) has also become essential for optimized charging and disconnection processes. As a result, the demand for compatible battery technology is also increasing. Furthermore, public transport is transforming with the introduction of high-range electric buses and shared taxis, thereby favoring market growth.

In October 2023, Scania launched a new battery-electric bus platform with a 500 km range at Busworld. The new platform will initially be available in low-entry 4x2 bus models, which is a 4-battery model with a capacity of up to 416 kWh and a range of 400km, and a 5-battery option with up to 520 kWh capacity and a range of up to 500km.

Government Aids, Public-Private Partnerships, and Loans to Flourish the Battery Production

As nations around the world have started adopting alternative fuel measures, the sales of EVs have spiked. Due to this, governments worldwide are focusing on incentivizing and subsidizing battery manufacturing companies to make battery technology more sustainable, efficient, and productive. They also alert the manufacturers about the emissions during battery production, thereby supporting a sustainable approach. Higher fuel prices, new tariffs, and the Russia-Ukraine war have driven authorities to alternative fuel options. The race to become dominant in EV manufacturing and adopting green technology has enabled government authorities to invest in private-public partnerships (PPP) or aid companies with conditional loans.

In June 2023, Ford Motor Co. got a government loan of USD 9.2 billion to help the United States compete with China's EV dominance. The loan has been disbursed for constructing Ford's three battery factories. These factories are expected to supply Ford's extension of the EVS fleet present in Kentucky and Tennessee. This production line is under a joint venture named Blue Oval SK, owned by Michigan automaker and South Korean Giant SK On Co.

Reliable, High-Power Output, and Durability to Fuel the Segmental Growth

Based on battery type, lead acid battery leads the market as it held a 64.39% market revenue in the global market. Lead-acid battery technology is well-known for its reliability and durability. It has a long history in the automotive industry and has established itself as a reliable power source for automobiles. It is also easy to maintain.

Automotive Battery Market Assessment, By Battery Type [Lead Acid, Lithium-Ion, Others], By Propulsion Type [In...



It does not require a lot of maintenance, making it one of the best options. Lead acid is durable. It is also shock-resistant. This means that a lead-acid battery will be able to withstand the vibrations and impacts that occur in a moving car. the government also promotes the adoption of lead-acid batteries as they can be recycled and reused. The lithium-ion batteries also flourish at an accelerated pace and hence companies are building new facilities to strengthen the supply chain.

For instance, in April 2023, Log9 unveiled India's maiden commercial Li-ion cell production line in Bengaluru. The line is expected to have an initial capacity of 59 MWh. The new plant will produce batteries for EVs and energy storage. The initial capacity of the plant is estimated to be 50 MWh/h. The plant will focus on the production of LTO and LFP cell batteries.

Higher EV Adoption and Innovative Battery Startups to Make Asia-Pacific a Prominent Market

Asia-Pacific holds a significant share in the automotive battery market due to emerging economies such as China and India. The region held the major share of 44.07% in the global automotive battery market in 2023 and is projected to hold 42.08% overall revenue in 2031. New companies developing advanced battery technology with higher range and faster charging are also getting popular in the region. The rising gasoline prices due to inflation, increasing economic activities, and other conditions are driving end-users to look for EVs with higher mileage. Governments of India, Thailand, and Malaysia are constantly partnering with private charging providers, furthering the positive landscape for the market.

For instance, in October 2023, Reliance showcased swappable, multipurpose batteries for EVs. The batteries can be exchanged at Reliance's battery swap stations or recharged by homeowners using rooftop solar panels.

In August 2023, Autel Tech, a leading manufacturer of EV chargers held the 2023 Autel APAC partner summit for its partners in Asia-Pacific. Autel APAC's growth has been multi-regional, covering key countries such as Australia, Singapore, Malaysia, and Indonesia. Furthermore, several startups and automotive major players of India are setting up their battery plants and launching advanced battery systems to propel the nation's lead in the EV revolution.

Future Market Scenario (2024–2031F)



Higher government subsidies, depleting fossil fuels, and awareness among citizens are likely to fuel the market growth during the forecast period.

New battery technologies such as battery management systems to ensure efficiency and longer battery shelf life are anticipated to garner market expansion.

The usage of recyclable and recycled material for battery production is projected to increase sales of automotive batteries.

Increased EV sales and electrification are anticipated to add more value to the global automotive battery market.

Key Players Landscape and Outlook

The automotive battery market holds potential for new entrants, while established key players focus on enhancing the supply chain and technological advancements. Samsung SDI holds the major portion of the market while SK Innovation follows with the second largest market player. The competitors experiment with pricing, battery range, charging time, and longer shelf life to get an edge over each other. New research facilities, government partnerships, and collaboration with other key players are some of the strategies that key companies focused. Solid-state battery technology is being researched and developed by industry players as it holds the potential to be more energy-efficient, longer-lasting, and safer than lithium-ion batteries.

In July 2023, SVOLT Energy Technology Co. Ltd. started the construction of a battery factory. The annual production capacity is likely to be around 60,000 module packages. The planned plant will not be built from scratch, but rather a leased facility that will be adopted to meet the production requirements. This accounts for the relatively short timeline between the current commencement of construction and the goal of competing within six months.

In October 2023, Samsung SDI announced plans to build a second EV battery plant in Indiana with collaboration with Stellantis. The two companies have so far invested a total of USD 3.1 billion into this facility.

In January 2023, SK Innovation, a South Korean battery manufacturer, announced plans to develop a new, high-tech, lithium-ion-phosphate-based battery for electric



vehicles (EVs) by 2025, as part of a strategy to supply lower-cost EV batteries to automakers facing increasing EV costs. The company plans to invest in new battery plants in the United States and expects to have a capacity of 150 GWh by 2026.



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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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