

# **Vehicle Electrification Market Report by Product Type (Starter Motor, Alternator, Electric Car Motors, Electric Water Pump, Electric Oil Pump, Electric Vacuum Pump, Electric Fuel Pump, Electric Power Steering, Actuators, Start/Stop System), Vehicle Type (Internal Combustion Engine (ICE) and Micro-Hybrid Vehicle, Plug-in Hybrid Electric Vehicle (PHEV) and Battery Electric Vehicle (BEV), Hybrid Electric Vehicle (HEV)), Sales Channel (Original Equipment Manufacturers (OEM), Aftermarket), and Region 2024-2032**

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## **Abstracts**

The global vehicle electrification market size reached US\$ 91.4 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 162.0 Billion by 2032, exhibiting a growth rate (CAGR) of 6.4% during 2024-2032. Stringent environmental regulations, advancements in battery technology, growing consumer awareness of environmental issues, favorable government incentives, innovative business models, the rise of electric vehicle (EVs) startups, and the integration of renewable energy sources and advancements in autonomous driving technology are some of the factors accelerating the market growth.

Vehicle Electrification Market Analysis:

Major Market Drivers: The rapid growth of EV is the key factor behind the growth of the global vehicle electrification market. The EV market is driven by escalating concerns about the environment and strict emission standards in regions worldwide. In line with this, governments around the world are offering generous incentives and subsidies to

promote EVs, which is further driving the vehicle electrification market growth. The evolution of battery technology has increased energy density while lowering costs, making EVs affordable and economical. Since consumers are turning away from gasoline taxes by paying increasing fuel prices and extracting fossil fuels from overseas, hybrids and EVs have become more popular, which is further stimulating the market growth. Besides this, the rapid urbanization rate and the expansion of smart cities, which are well-suited to hybrid or electric vehicles, are contributing to the market growth. The growing use of renewable resources in conjunction with EV, the improvement of charging infrastructure, and the widened use of public transit are driving vehicle electrification demand.

**Key Market Trends:** While outlining the key trends in the vehicle electrification market, several patterns stand out, such as the growing popularity of plug-in hybrid vehicles (PHEVs) and battery electric vehicles (BEVs), due to the consumers' preference to use eco-friendly means of transportation. Moreover, solid-state batteries are being developed more often, as they promise enhanced efficiency and safety, which is boosting the market growth. Additionally, there are several pilot projects and investments in autonomous EVs, which is another key vehicle electrification market trend. Apart from this, the concept of vehicle-to-grid (V2G) technology and development of wireless charging technologies are providing an opportunity for the market growth.

**Geographical Trends:** The Asia Pacific is currently the leader in the global vehicle electrification market. The region has the highest investments in EV technology and infrastructure. For instance, the Chinese government enacted some aggressive policies and incentives to see the country being a pacesetter in the electric vehicle market. The success from this policy has seen a significant market growth in the country, which is stimulating the vehicle electrification market outlook. Europe is also leading in the vehicle electrification market since the emission from the current vehicles has been alarming. Additionally, the government in the region has shown strong support for green technologies. Similarly, Norway, Germany, and the Netherlands are some of the countries that are leading in electric vehicle usage. North America is also in this league; the United States and Canada have continued to compete for the big share of the market based on federal government support and their individual-state initiative. Japan, South Korea, and India are also rapidly growing due to the increased efforts by their automotive giant.

**Competitive Landscape:** The competitive landscape of the market is characterized by the presence of key vehicle electrification companies, such as Aisin Corporation, BorgWarner Inc., Continental AG, DENSO Corporation, Ford Motor Company, Hitachi Ltd., Johnson Electric Holdings Limited, Magna International Inc., Mitsubishi Electric Corporation, Robert Bosch GmbH, Valeo, ZF Friedrichshafen AG, etc.

**Challenges and Opportunities:** The vehicle electrification market faces several

challenges, including high initial costs and limited charging infrastructure, which can deter potential buyers. Battery disposal and recycling remain significant environmental concerns. There are also technological challenges related to battery life, range anxiety, and charging time. However, these challenges present opportunities for innovation and development. The increasing demand for sustainable transportation solutions opens avenues for new entrants and technological advancements. Improving battery technology and expanding charging infrastructure are key opportunities. Additionally, government policies and incentives continue to support the vehicle electrification industry.

#### Vehicle Electrification Market Trends: Stringent Environmental Regulations

To crackdown on greenhouse gas discharges, governments all around the world are implementing strict environmental laws, prompting automakers to accelerate the development of electrified vehicles. As per the industry reports, India has set NDC targets to decrease the carbon dioxide emissions per country's GDP by 45% in 2030 compared to the base year 2005i. India would meet this target as a result of its existing policies. To influence them into investing in EVs, manufacturers have set emission targets and are banning internal combustion engine automobiles. Due to the European Union's stringent emissions laws, automakers are required to sell a greater percentage of their vehicles as EVs to avoid costly penalties. This type of regulation provides automakers with a significant incentive to build electric cars, boosting the market growth.

#### Advancements in Battery Technology

A pivotal driver of the global vehicle electrification market is the remarkable advancements in battery technology, particularly the decreasing cost of lithium-ion batteries. This reduction in battery costs is crucial as batteries represent a significant portion of an EV's total manufacturing expense. Moreover, improvements in energy density and charging infrastructure are addressing range anxiety concerns, making EVs more attractive to consumers. As battery technology continues to evolve, offering longer ranges and shorter charging times, the market for electric vehicles is poised for substantial growth.

#### Growing Consumer Awareness

Rising consumer consciousness regarding environmental problems and the opportunity

of electric mobility is increasing interest in EVs across all vehicle classes. According to industry records, in the US, EV registrations have risen from 280 K automobiles in 2016 to 2.4 million in 2022. There was a 68% increase in Year-Over-Year growth in EV registrations from 2021 to 2022. People are also becoming increasingly concerned about the environmental consequences of internal combustion engine-propelled vehicles. This has motivated potential consumers to discover reasonable possibilities like the use of electric vehicles. Apart from that, the decrease of operating expenses and possible gasoline expenditures are the factors that draw these possibilities.

Vehicle Electrification Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on the product type, vehicle type, and sales channel.

Breakup by Product Type:

Starter Motor

Alternator

Electric Car Motors

Electric Water Pump

Electric Oil Pump

Electric Vacuum Pump

Electric Fuel Pump

Electric Power Steering

Actuators

Start/Stop System

Electric power steering (EPS) accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the product type. This includes starter motor, alternator, electric car motors, electric water pump, electric oil pump, electric vacuum pump, electric fuel pump, electric power steering, actuators, and start/stop system. According to the report, electric power steering (EPS) represented the largest segment.

The electric power steering segment is driven by the increasing demand for fuel-efficient and environmentally friendly vehicles, as electric power steering systems offer greater energy efficiency compared to traditional hydraulic systems. Additionally, advancements in vehicle electrification and autonomous driving technologies are fueling the adoption of

electric power steering, as these systems seamlessly integrate with electrified and self-driving vehicle platforms, providing enhanced control and maneuverability. Moreover, electric power steering systems offer automakers flexibility in vehicle design and packaging, allowing for more compact and lightweight steering components, which in turn contribute to improved fuel efficiency and overall vehicle performance.

Furthermore, the growing trend towards connected vehicles and advanced driver assistance systems (ADAS) is driving the demand for electric power steering systems equipped with features such as lane-keeping assistance and park assist, enhancing driver safety and convenience. Apart from this, the increasing focus on driver comfort and ergonomics is propelling the adoption of electric power steering, as these systems can be tuned to provide varying levels of steering assistance and feedback tailored to driver preferences.

Breakup by Vehicle Type:

Internal Combustion Engine (ICE) and Micro-Hybrid Vehicle

Plug-in Hybrid Electric Vehicle (PHEV) and Battery Electric Vehicle (BEV)

Hybrid Electric Vehicle (HEV)

Internal combustion engine (ICE) and micro-hybrid vehicle accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the vehicle type. This includes internal combustion engine (ICE) and micro-hybrid vehicle, plug-in hybrid electric vehicle (PHEV) and battery electric vehicle (BEV), hybrid electric vehicle (HEV). According to the report, internal combustion engine (ICE) and micro-hybrid vehicle represented the largest segment.

The internal combustion engine (ICE) and micro-hybrid vehicle segment is driven by the increasing demand for affordable and efficient transportation solutions, particularly in emerging markets where infrastructure for electric vehicles (EVs) may still be developing. In these regions, consumers often prioritize upfront cost and accessibility over environmental concerns, leading to sustained demand for vehicles powered by internal combustion engines. Additionally, the versatility and familiarity of ICE vehicles make them a preferred choice for various applications, including long-distance travel and heavy-duty tasks such as towing and hauling. Furthermore, the integration of micro-hybrid technology, which combines a traditional internal combustion engine with mild electrification features such as start-stop functionality and regenerative braking, offers incremental improvements in fuel efficiency and emissions without the higher costs

associated with full hybrid or electric vehicles. This hybridization approach allows automakers to meet increasingly stringent emissions standards while maintaining the performance and affordability characteristics that appeal to a broad consumer base.

#### Breakup by Sales Channel:

Original Equipment Manufacturers (OEM)

Aftermarket

Original equipment manufacturers (OEM) accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on sales channel. This includes original equipment manufacturers (OEM) and aftermarket. According to the report, original equipment manufacturers (OEM) represented the largest segment.

The original equipment manufacturers (OEMs) segment is driven by the increasing demand for innovative automotive technologies and the imperative to meet stringent emissions regulations. As governments worldwide tighten environmental standards, OEMs are compelled to invest heavily in research and development to produce vehicles that comply with these regulations while still meeting consumer demands for performance, safety, and comfort. Additionally, the rise of electric and hybrid vehicles has prompted OEMs to adapt their manufacturing processes and invest in new technologies, such as battery production and electric drivetrains. Furthermore, the shift towards autonomous driving capabilities is pushing OEMs to integrate advanced sensors, artificial intelligence, and connectivity features into their vehicles, creating new revenue streams and enhancing the overall driving experience. Apart from this, globalization and market expansion strategies are driving OEMs to establish a presence in emerging markets, where demand for automobiles is rapidly growing.

#### Breakup by Region:

North America

United States

Canada

Asia-Pacific

China

Japan

India

South Korea  
Australia  
Indonesia  
Others  
Europe  
Germany  
France  
United Kingdom  
Italy  
Spain  
Russia  
Others  
Latin America  
Brazil  
Mexico  
Others  
Middle East and Africa

Asia Pacific leads the market, accounting for the largest vehicle electrification market share

The market research report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, Asia Pacific accounted for the largest market share.

The Asia Pacific region is driven by the increasing urbanization and population growth, leading to rising demand for transportation solutions and heightened environmental concerns. With densely populated cities grappling with pollution and congestion, governments are incentivizing the adoption of electric vehicles (EVs) through subsidies, tax incentives, and stringent emission regulations. Additionally, the region's strong manufacturing base and technological prowess are driving advancements in EV technology and infrastructure development. China, in particular, leads the market with its ambitious electric vehicle goals and significant investments in battery manufacturing and charging infrastructure. Furthermore, the region's emerging economies, such as India and Southeast Asian countries, are witnessing a growing middle class with increasing purchasing power, driving consumer demand for electric vehicles as a

cleaner and cost-effective alternative to traditional vehicles. Moreover, partnerships between governments, automakers, and technology companies are accelerating the deployment of EVs and charging infrastructure across the region.

#### Competitive Landscape:

The market research report has also provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the major market players in the vehicle electrification include Aisin Corporation, BorgWarner Inc., Continental AG, DENSO Corporation, Ford Motor Company, Hitachi Ltd., Johnson Electric Holdings Limited, Magna International Inc., Mitsubishi Electric Corporation, Robert Bosch GmbH, Valeo, ZF Friedrichshafen AG, etc.

(Please note that this is only a partial list of the key players, and the complete list is provided in the report.)

Key players in the global vehicle electrification market are actively engaged in various strategic initiatives to capitalize on the growing demand for electric vehicles (EVs) and advance their positions in the market. These initiatives include substantial investments in research and development to enhance EV technology, particularly in areas such as battery efficiency, range, and charging infrastructure. Additionally, major players are focusing on expanding their product portfolios to offer a diverse range of electric vehicles catering to different segments and consumer preferences. Partnerships and collaborations with other industry stakeholders, including governments, utilities, and technology companies, are being forged to develop supportive policies, infrastructure, and ecosystem for electric mobility. Furthermore, investments in manufacturing facilities and supply chain optimization are being made to scale up production capacity and meet the increasing demand for electric vehicles globally. Marketing and branding efforts are also being intensified to raise awareness and promote the benefits of electric mobility among consumers. Moreover, some key players are exploring innovative business models, such as subscription-based services and battery leasing, to make electric vehicles more accessible and affordable to a wider audience.

#### Vehicle Electrification Market News:

In 2024: BorgWarner is continuing to expand its product portfolio for battery electric and hybrid commercial vehicles by agreeing to form a joint venture with Shaanxi Fast Auto Drive Group, a China-based market-leading commercial vehicle (CV) parts supplier specializing in transmission and drivetrain systems.



### Key Questions Answered in This Report:

How has the global vehicle electrification market performed so far, and how will it perform in the coming years?

What are the drivers, restraints, and opportunities in the global vehicle electrification market?

What is the impact of each driver, restraint, and opportunity on the global vehicle electrification market?

What are the key regional markets?

Which countries represent the most attractive vehicle electrification market?

What is the breakup of the market based on the product type?

Which is the most attractive product type in the vehicle electrification market?

What is the breakup of the market based on vehicle type?

Which is the most attractive vehicle type in the vehicle electrification market?

What is the breakup of the market based on sales channel?

Which is the most attractive sales channel in the vehicle electrification market?

What is the competitive structure of the market?

Who are the key players/companies in the global vehicle electrification market?

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