

Electric Powertrain Market by Component (Motor/Generator, Battery, BMS, Controller, PDM, Inverter/Converter, On Board Charger), Type (BEV, MHEV, Series, Parallel & Series-Parallel Hybrid), Vehicle (BEV, FCEV, PHEV, MHEV), & Region - Global Forecast to 2030

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Abstracts

The electric powertrain market is projected to grow from USD 96.7 Billion in 2023 to USD 230.5 Billion by 2030, at a CAGR of 13.2% during the forecast period. The market is anticipated to grow as more consumers and businesses recognize the benefits of electric vehicles. With aggressive targets set for zero-emission vehicles to achieve net-zero emissions targets, the demand for Battery electric vehicles (BEV) will be gaining a major market share in the future. According to IEA, BEV sales accounted for over 70% of the total stock of electric cars in 2022. According to MnM analysis, the Motor/generator, control unit, and power distribution module are components that will dominate the EV powertrain market by 2030, making a major market share in the BEV powertrain market. Fuel-Cell electric vehicles (FCEVs) are estimated to be the fastest-growing vehicle type owing to recent investments in the technology by many key OEMs such as Toyota, Hyundai, and Honda. According to MarketsandMarkets analysis, North America is estimated to be the fastest growing market for FCEVs as the sales of FCEVs in the United States increased by more than 20%. Globally, the FCEV market grew by 40% in 2022 as compared to 2021. This growth is expected to continue in the future in all regions, with Asia Pacific being the largest market. China dominates the battery market and is home to many major automakers, which drives the electric powertrain market in this region.

“DC-DC Converter is estimated to be the fastest growing market for 48V MHEV

powertrain.”

DC-DC converters are used to convert DC voltage from one level to another according to circuit requirements. This is the basic part of the power supply that changes the voltage value to power various applications requiring low DC voltage or high DC voltage. It is the main component of MHEV and consists of a battery that supplies a high DC voltage. The demand for 48V MHEV vehicles is growing rapidly as governments across the world are introducing policies to promote the adoption of these vehicles. This technology has the capacity to deliver around 70% of the performance as compared to a conventional ICE-electric hybrid for about 30 percent of the cost. It allows the integration of the 48V electrical system with the existing 12V electrical architecture in conventional vehicles. Considering all these factors, the DC-DC converter is a key component in EV powertrains. The DC-DC converter contributed to XX% of total EV Components by value in 2022. Considering the ongoing research and development efforts in the DC-DC converter technology market are concentrated by a few major players such as Bosch and Valeo. For instance, Valeo developed a range of solutions for efficient and affordable electric vehicles, which includes DC/DC converters, eAxle, eMotor, Inverters, and On-Board Chargers. With the growing demand for electric vehicles, the demand for DC-DC converters is expected to continue to grow in the coming years.

‘Fuel Stacks are estimated to be the largest market in FCEV powertrain market.’

FCEVs are growing rapidly as governments in several countries are introducing policies to promote the adoption of these vehicles. Countries and regions with strict emission regulations have shown interest in FCEVs as a clean transportation solution. According to MnM analysis, Asia Pacific is estimated to be the largest market for FCEVs owing the presence of dominant markets like China and Japan, also the automakers in this region like BYD, CATL, Toyota, Hyundai, etc. The fuel cell stack is a critical component of FCEVs and is responsible for the electrochemical reaction that converts hydrogen and oxygen into electricity, powering the vehicle's electric motor. China, followed by Korea, was historically the biggest market for FCEVs, which shows huge demand for these vehicles in this region. Although the technology is expensive as compared to other EVs, some automakers, fuel cell manufacturers, and other industry players have been investing in fuel cell stack research and development, driving innovation and cost reductions in this segment. For instance, Toyota will be launching the Crown Sedan with a hydrogen version in Japan. Hyundai also announced an investment of USD 1.1 billion in new hydrogen fuel cell plants. The expansion of hydrogen refueling infrastructure will support the growth of FCEVs, creating a conducive environment for fuel cell stack

market expansion.

“Europe is anticipated to be the fastest growing market for BEVs.”

Europe is one of the largest market automotive industries and home to some of the biggest automakers, including Volkswagen, BMW, Mercedes-Benz, Stellantis, etc. Europe alone contributed to the production of 19% of all passenger cars produced globally. Europe’s EV market continues to grow as the sales of BEVs cover a market share of 12.1%, and hybrids cover a market share of 22.6%. Germany is estimated to be the largest market for electric powertrains as electric cars are being widely adopted by consumers. The German government offers a 10-year tax exemption for BEV ownership till 2030, Tax reduction for PHEVs, subsidies for EV manufacturers, etc. The availability of charging infrastructure is another concern affecting the adoption of EVs. In Europe, around 535,700 public charging stations for electric vehicles are available, which increases the adoption of EVs in the region. Some popular models in the region include Tesla Model Y, Tesla Model 3, Volkswagen ID.4, Volkswagen ID.3, and Ford Kuga PHEV. The presence of major automakers supports the growing demand for EVs. For instance, Volkswagen plans to start a production site in Europe to build six battery factories totaling 240 gigawatts (GWh) of capacity by 2030. France, one of the fastest-growing markets in this region, will be undergoing a joint venture with ACC (Automotive Cells Company) to build three gigafactories in Europe. All other countries like Spain, Netherlands, and UK are making significant growth in the EV market, which will drive the electric powertrain market in Europe, making it the fastest-growing market.

Breakdown of primaries

The study contains various industry experts' insights, from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier I - 70%, and OEM - 30%

By Designation: C Level - 40%, D Level - 35%, and Others - 25%

By Region: North America - 5%, Europe - 20%, Asia Pacific - 60%, and Rest of the World – 15%

The key players in the electric powertrain market comprise major manufacturers such as Robert Bosch GmbH (Germany), Mitsubishi Electric (Japan), Magna International Inc.

(Canada), Continental AG (Germany), and Hitachi Astemo Ltd. (Japan). etc. Major companies' key strategies to maintain their position in the global e-bike market are strong global networking, mergers and acquisitions, partnerships, and technological advancement.

Research Coverage

The electric powertrain market is segmented based on vehicle type (PHEV, BEV, MHEV, FCEV), PHEV component (motors/generators, batteries, battery management systems, control units, inverters, power distribution modules, on-board chargers, BEV component (motors/generators, batteries, battery management systems, control units, inverters, power distribution modules, on-board chargers), 48V mild hybrid vehicle (MHEV) component (batteries, battery management systems, inverters, DC-DC converters), FCEV component (Fuel stacks, fuel processors, power conditioners, air compressors, humidifiers), powertrain type (BEV powertrain, MHEV powertrain, series hybrid powertrain, parallel hybrid powertrain, and series-parallel hybrid powertrain) and region (Asia Pacific, Europe, North America, and Rest of the world). The report's scope covers detailed information regarding the major factors, such as influencing factors for the growth of the electric powertrain market. A detailed analysis of the key industry players has been done to provide insights into their business overview, solutions, and services; key strategies; contracts, partnerships, agreements, new product & service launches, mergers and acquisitions, recession impact, and recent developments associated with the electric powertrain market.

Key Benefits of Buying the Report:

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall electric powertrain and the sub-segments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Stringent emission norms, Growing vehicle electrification demand in the automobile industry), restraints (Lack of infrastructure for electric vehicle charging, Emerging competing technologies in conventional engines), opportunities (Developments in lithium-ion batteries, Extended range offered by

FCEVs), and challenges (High cost of electrical components, Technological challenges with electric powertrains) influencing the growth of the electric powertrain market.

Product Development/Innovation: Detailed insights on new products such as eBeam Technology by Magna International Inc. in March 2023 and e-motor Rotor Position Sensor (eRPS) launched by Continental AG in February 2023.

Market Development: The growing demand for vehicle electrification and stringent emission norms is driving the market – the report analyses the electric powertrain market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the electric powertrain market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like Robert Bosch GmbH (Germany), Mitsubishi Electric (Japan), Magna International Inc. (Canada), Continental AG (Germany), Hitachi Astemo Ltd., (Japan) among others in the electric powertrain market.

The report also helps stakeholders understand the pulse of the electric powertrain market & electric vehicle market by providing information on recent trends and technologies.

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