

Automotive On-board Charger - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Automotive On-board Charger Market size is estimated at USD 13.75 billion in 2024, and is expected to reach USD 58.89 billion by 2029, growing at a CAGR of 33.76% during the forecast period (2024-2029).

The impact of COVID-19 on the onboard charger market was inevitable as it affected almost every other industry across the world. However, the electric vehicle (EVs) market is witnessing substantial growth owing to the swiftly escalating year-on-year adoption rate of battery electric vehicles. For instance, there was a dramatic rise in electric vehicle sales in China and Europe despite the pandemic, showing signs of active market growth during the forecast period.

Over the medium-run forecast period, rapid sales of electric vehicles, stringent emission regulations, advancements in battery technology, and improving charging infrastructure are expected to fuel the demand for automotive onboard chargers. The market is already witnessing the adaptation of electric passenger vehicles in developed countries, and now the new start-ups and major players in the EV industry are planning to introduce their new electric models in the coming years.

On-Board Charger is an important component in electric vehicles, It allows the charging of the vehicle's battery by converting AC voltage into DC. The main components include an input filter, power factor corrector, DC/ DC Converter, and a control circuit that enables communication with other devices on the vehicle.

EV battery range is increasing rapidly, now models are coming in the market with up to 600 miles of range. Trucks and van body sizes are bigger as compared to passenger cars; they can accommodate more batteries for a longer range. Big electric motors can create enormous amounts of torque for towing and hauling capacities. For instance, Nikola's Badger pickup truck has a range of 600 miles, due to its fuel cell technology in addition to batteries.

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China is the leader in the EV race, its fleet of electric buses accounts for more than 98% of total electric buses running worldwide. China has a fleet of more than 425000 electric buses. This high adoption can be attributed to the strong municipal framework that many provinces in China have adopted. More than 30 Chinese cities had plans to achieve 100% electrified public transit by 2020, including Guangzhou, Zhuhai, Dongguan, Foshan, and Zhongshan in the Pearl River Delta, along with Nanjing, Hangzhou, Shaanxi, and Shandong.

Considering these developments, demand for on-board chargers is expected to remain high during the forecast period.

On Board Charger Market Trends

Passenger vehicles leading the on-board charger market

Electric Passenger cars is gradually penetrating on the global scale, as of now the penetration of electric passenger car stands on 9% globally which is expected to remain in the growth trajectory over the coming years. Europe has witnessed a surge in electric passenger car registration during the year 2020. A significant increase from 3.5% to 11% has been registered in the total new electric passenger car registration, accounting for 6% of total new car registration.

Electric mobility is gradually growing around the world, owing to which, the goods transportation companies are also converting their existing fleets into electric propulsion-based vehicles. OEM is redefining its roadmap for electric vehicles. For instance,

- In May 2022, Volvo AB announced that all its 2023 United States line-up will be plug-in hybrids. In addition to the XC90, Volvo offers plug-in hybrid versions of the XC60 SUV, S60 and S90 sedans, and V60 wagon.
- In March 2022 Hyundai unveiled a strategic roadmap to accelerate its electrification ambition under which it plans to introduce 17 new BEV models by 2030; 11 for Hyundai models and six for Genesis luxury brand
- In December 2021, Toyota Motor Corporation has announced a line-up of its battery electric vehicle plans, unveiling 16 new BEV models. The 16 new BEVs unveiled at the Mega web showcase included five Toyota 'bZ' (beyond Zero) vehicles, one of which - the bZ4X - is set for a global launch in 2022

Governments of many developed and developing countries have framed their plan for green mobility, in which they are banning diesel vehicles and providing incentives to the EV buyer, For instance, the United Kingdom is planning to ban sales of all types of gasoline and diesel engine cars by 2040, India is planning to ban all type of diesel-engine cars in the roads by 2030. On the other hand, Norway is way ahead of the curve, it plans to make every new car a zero-emission car by 2025. The increase in sales of passenger electric cars and an increase in the number of chargers will ultimately propel the growth of the automotive on-board charger market

Considering these developments and factors, demand for onboard charger is expected to remain positive in the passenger cars segment during the forecast period.

Asia-Pacific Is Expected to Lead the Automotive On-board Charger Market

Asia-Pacific is expected to lead the automotive on-board charger market as it is the hub of the electric vehicle industry owing to the availability of cheap raw materials, cheap manpower, presence of numerous numbers of industry players, large population, and government participation.

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Despite a global downturn in auto sales due to a shortage of semiconductor supply caused by the Covid-19 pandemic, electric vehicle sales in China increased by 154 percent last year, as more people chose cleaner vehicles. Electric vehicle (EV) manufacturers sold a total of 3.3 million units in China in 2021, up from 1.3 million in 2020 and 1.2 million in 2019.

Government regulations that include incentives have aided the growth of China's electric vehicle (EV) sector since its inception. However, given the tremendous expansion of the EV sector, the incentives place a significant burden on the government. As a result, in January 2022, the country's Finance Ministry announced that China will reduce EV subsidies by 30% this year and abolish all subsidies by the end of the year. Such measures might hinder market growth.

The government of India has undertaken multiple initiatives to promote the manufacturing and adoption of electric vehicles in India to reduce emissions pertaining to international conventions and develop e-mobility in the wake of rapid urbanization. In India, 3,29,190 electric vehicles were sold in 2021, a 168 percent increase over the 1,22,607 units sold the previous year with passenger EV sales in India tripled in 2021 to 14,800 units and are still showing signs of growth.

Chinese automakers are aiming to bring higher efficiency under their offered fleet to resonate prominence in regional landscape. for instance, in August 2022, Chinese car giant BYD expanded its business potential in Europe with revamping line-up of three electric cars. The newly designed architecture has been built around blade battery which BYD calls as 8-in-1 electric powertrain. That power train architecture basically comprises vehicle control unit, power distribution unit, battery management system, motor controller, drive motor, transmission, DC-DC connector and on-board charger which takes the overall efficiency to 89%.

Considering these developments, demand for on-board charger is expected to witness high growth in the Asia-Pacific during forecast period.

On Board Charger Industry Overview

The global automotive on-board charger market is fragmented, has several active players, owing to the presence of new startups and major automotive electronics manufacturers. Some of the major players in the market are BorgWarner Inc., Ficosa Corporation, and LG Electronics amongst others. Some of the electric vehicle OEMs manufacture onboard charger in-house such as BYD and Tesla. As the market is witnessing the entry of various new electric models the on-board charger companies are expanding their presence by forming strategic alliances with other players in the market and launching new automotive on-board chargers. For instance, BorgWarner uses silicon carbide technology and have a range of AC power ratings of 7.4 kilowatts (kW), 11 kW, and 22 kW whereas DC-to-DC converter rating from 2.3 kW to 3.6 kW are offered under its onboard charger.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION

1.1 Study Assumptions

1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

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4 MARKET DYNAMICS

4.1 Market Drivers

4.2 Market Restraints

4.3 Industry Attractiveness - Porter's Five Forces Analysis

4.3.1 Threat of New Entrants

4.3.2 Bargaining Power of Buyers/Consumers

4.3.3 Bargaining Power of Suppliers

4.3.4 Threat of Substitute Products

4.3.5 Intensity of Competitive Rivalry

5 MARKET SEGMENTATION (Market Size in Value USD Billion)

5.1 By Vehicle Type

5.1.1 Passenger Car

5.1.2 Commercial Vehicle

5.2 By Powertrain Type

5.2.1 BEV

5.2.2 PHEV

5.3 By Rated Power Type

5.3.1 Less than 3.3 kW

5.3.2 3.3-11 kW

5.3.3 More than 11 kW

5.4 By Geography

5.4.1 North America

5.4.1.1 United States

5.4.1.2 Canada

5.4.1.3 Rest of North America

5.4.2 Europe

5.4.2.1 Germany

5.4.2.2 United Kingdom

5.4.2.3 France

5.4.2.4 Rest of Europe

5.4.3 Asia-Pacific

5.4.3.1 India

5.4.3.2 China

5.4.3.3 Japan

5.4.3.4 South Korea

5.4.3.5 Rest of Asia-Pacific

5.4.4 Rest of the World

5.4.4.1 Brazil

5.4.4.2 Mexico

5.4.4.3 United Arab Emirates

5.4.4.4 Other Countries

6 COMPETITIVE LANDSCAPE

6.1 Vendor Market Share

6.2 Company Profiles

6.2.1 BorgWarner Inc.

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- 6.2.2 Hyundai Mobis Co., Ltd
- 6.2.3 LG Electronics
- 6.2.4 Innoelectric AG
- 6.2.5 Ficosa Corporation
- 6.2.6 Valeo
- 6.2.7 Delta Energy Systems
- 6.2.8 Toyota Industries Corporation
- 6.2.9 BrusaElektronik AG
- 6.2.10 VisIC Technologies, Ltd

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

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