

Automotive Regenerative Braking System Market Size, Share & Trends Analysis Report By Component (Battery, Motor, Electronic Control Unit, Flywheel), By Propulsion Type, By Vehicle Type, By Region, And Segment Forecasts, 2025 - 2030

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Abstracts

This report can be delivered to the clients within 4 Business Days

Market Size & Trends

The global automotive regenerative braking system market size was estimated at USD 7.83 billion in 2024 and is projected to grow at CAGR of 12.1% from 2025 to 2030. The rapid growth of the electric vehicle (EV) and hybrid electric vehicle (HEV) markets is a major driver for the automotive regenerative braking system industry. Regenerative braking plays a pivotal role in these vehicles by recovering and storing energy that would otherwise be wasted during braking, thus extending the range and improving fuel efficiency. As governments around the world implement stricter emission regulations and offer incentives for EV and HEV adoption, more automakers are integrating regenerative braking systems into their vehicles. This growing demand for EVs and HEVs is expected to continue fueling the market growth.

Ongoing advancements in regenerative braking technology are enhancing the efficiency of energy recovery and storage systems. Improved electric motor designs, better power electronics, and more sophisticated battery management systems are making regenerative braking systems more effective at capturing and utilizing kinetic energy. These innovations are leading to greater energy savings, longer vehicle range, and better overall vehicle performance. Thus, with the growing advancements in technology, the demand for regenerative braking systems is expected to increase in electrified

vehicles.

Governments worldwide are implementing increasingly stringent emissions regulations and sustainability targets, which are encouraging automakers to adopt technologies that improve fuel efficiency and reduce carbon footprints. Regenerative braking systems, by recapturing kinetic energy and reducing the reliance on traditional braking, contribute significantly to the overall energy efficiency of vehicles. This aligns with both the automotive industry's shift towards electrification and the global push for reducing greenhouse gas emissions. Thus, owing to the various stringent regulations, manufacturers are expected to integrate regenerative braking systems into their strategies to meet environmental targets and remain competitive in the automotive regenerative braking system industry.

Automotive regenerative braking systems offer several key benefits that contribute to enhanced vehicle performance and sustainability. By capturing and converting kinetic energy during braking into electrical energy, these systems help recharge the vehicle's battery, improving overall energy efficiency and extending driving range, particularly in electric and hybrid vehicles. This process reduces reliance on conventional friction brakes, which lowers maintenance costs by minimizing brake wear and tear. As a result, the service life of brake components, such as discs and pads, is prolonged.

In addition, regenerative braking reduces non-exhaust emissions by lowering the need for frequent brake use, contributing to cleaner air. The system also helps mitigate heat energy dissipation, further enhancing energy conservation and reducing the environmental impact of driving. Overall, regenerative braking systems are a crucial technology for making vehicles more efficient, cost-effective, and environmentally friendly. Such benefits offered by regenerative braking systems are expected to drive their demand in the near future.

Despite the numerous benefits, the automotive regenerative braking system industry faces several challenges. The increased vehicle weight, as the additional components required for regenerative braking, such as motors and advanced batteries, contribute to the overall mass of the vehicle. In addition, vehicles equipped with regenerative braking systems tend to be more expensive due to the complexity of the technology and the need for specialized components. This can make such vehicles less affordable for a broader range of consumers, limiting market adoption. Thus, increased vehicle weight and an increase in the overall cost of vehicles could hamper the growth of the automotive regenerative braking system industry.

Global Automotive Regenerative Braking System Market Report Segmentation

This report forecasts revenue growth at global, regional, and country levels and provides an analysis of the latest industry trends in each of the sub-segments from 2018 to 2030. For this study, Grand View Research has segmented the global automotive regenerative braking system market report based on component, propulsion type, vehicle type, and region:

Component Outlook (Revenue, USD Million, 2018 - 2030)

Battery

Motor

Electronic Control Unit (ECU)

Flywheel

Propulsion Type Outlook (Revenue, USD Million, 2018 - 2030)

Battery Electric Vehicles (BEV)

Plug-In Hybrid Electric Vehicles (PHEV)

Fuel Cell Electric Vehicles (FCEV)

Vehicle Type Outlook (Revenue, USD Million, 2018 - 2030)

Passenger Car

Light Commercial Vehicle (LCV)

Heavy Commercial Vehicle (HCV)

Regional Outlook (Revenue, USD Million, 2018 - 2030)

North America

U.S.

Canada

Mexico

Europe

Germany

UK

France

Asia Pacific

China

Japan

India

South Korea

Australia

Latin America

Brazil

Middle East and Africa (MEA)

KSA

UAE

South Africa

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