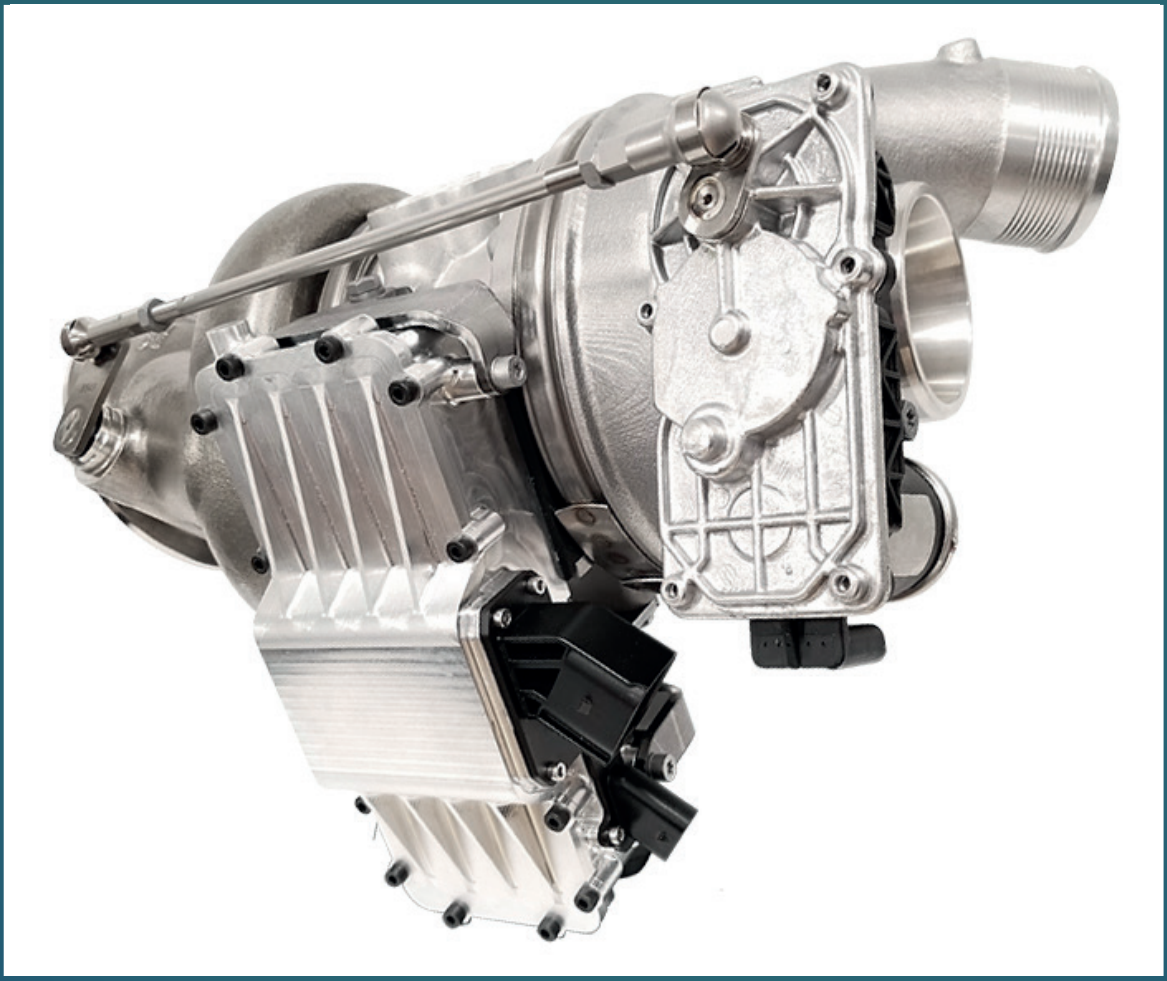
RESEARCH REPORT
ABOUT Automotive

The Global Market for Automotive Turbochargers, E-chargers and Superchargers

FORECASTS AND TRENDS FOR LIGHT-VEHICLE APPLICATIONS TO 2032



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ABOUT Publishing Group
29 Barnfield Road
Harpenden
Hertfordshire
AL5 5TH
United Kingdom

Email: sales@aboutpublishinggroup.com
www.aboutpublishing-auto.com

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Cover image courtesy BorgWarner.

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1 INTRODUCTION

1.1 INTRODUCTION

For the past two decades, turbochargers have been a popular way for automakers to shrink their engines and make them more efficient. As they focus on rightsizing engine technology to achieve fuel economy gains, turbocharging will continue to play a crucial role in the vehicle market.

The main driver for this trend is the adoption of turbochargers in gasoline engines. Development of turbochargers for the next-generation small gasoline engines continues apace with three objectives: minimizing the weight added to the powertrain; making power potential equal to, or better than, larger engines; and meeting global emission norms. The use of variable geometry turbocharger technology in gasoline engines is another emerging trend.

1.2 SCOPE OF REPORT

A turbocharger is a type of supercharger that is powered by engine exhaust gas. It is designed to force additional intake into the engine to create a cleaner and more powerful ignition. The increasing adoption of variable geometry turbochargers and the growing popularity of turbochargers in hybrid and medium-sized vehicles are among the key drivers of growth in the turbocharger market. Other drivers include the ever more stringent emission regulations worldwide and increased demand for gasoline engines following 'dieselgate'.

Growth in the global turbocharger industry is expected in all regions, particularly the high-growth regions in Asia, where rising income levels continue to drive long-term automotive and vehicle component demand.

This research report, therefore, sets out an analysis of the turbocharger market for passenger cars, providing market intelligence on the main drivers, trends, opportunities and challenges and assesses the market as it recovers from the impact of the pandemic. It includes market share estimates across Europe, North America, Japan and worldwide as well as regional market volume and value forecasts from 2018 to 2032.

The scope of this report includes:

- How fast is the automotive turbocharger, E-charger and supercharger market growing?
- What are the key drivers of growth?
- Which regions of the world are growing fastest and why?
- What are the opportunities for electric turbochargers?
- What are the Political, Economic, Social, Technological, Environmental, and Regulatory (PESTER) factors at work in the turbocharger market?
- Who are the market leaders in Europe, North America and Japan?

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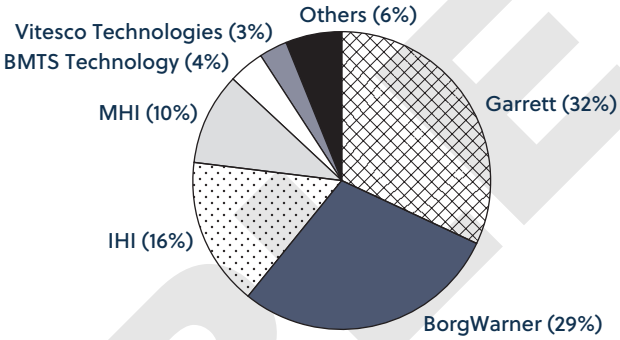
division supplies diesel engines and the second manufactures turbochargers for the automotive industry.

On that basis, our global overview refers to the triad of Europe, North America and Japan. Taking 2021 production volumes and fitment rates, we estimate global market shares to be as follows:

FIGURE 2 **Worldwide market shares for turbochargers for light vehicles, 2021 (% of volume)**



Source: ABOUT Automotive, Auto Research Analysts

3.3.2 Europe

The major factor setting Europe apart from the rest of the automotive world is the historically high penetration of turbocharged-diesel engines. Motivated by favourable taxation (based on CO_2 output), fuel efficiency and the lower cost of diesel, the European market has had a historic interest in developing turbocharging for diesel engines. Although diesel vehicles command a higher premium over equivalent gasoline engines, due to their more complex and expensive technology, it has not deterred ownership.

The European turbocharger market is defined by a small number of market players with niche technologies. As of 2021, the European market is dominated by BorgWarner and Garrett Motion with 67 per cent share followed by IHI, BMTS, MHI and Vitesco Technologies with single-digit market shares.

Market leader Garrett's European customers include Mercedes-Benz (GLE, GLS, G-Class, GLC, AMG GT4, C-Class, CLE-Class, CLS, E-Class, M-Class, SL-Class, SLK, Sprinter H and L), Maserati (LX) and the Volkswagen Group, including SEAT (Ateca and Leon), Skoda (Octavia), Audi (A3) and VW (Golf).

In second place, BorgWarner supplies turbochargers to several European customers, including BMW (X1, X2, 1 Series, 3 Series, 4 Series, 5 Series, 6 Series, 7 Series, X1, X2, Mini One Cooper). In May 2021, BorgWarner entered into a global agreement to supply its eTurbo to an unnamed European OEM for use in a high-voltage hybrid passenger car. It marks the supplier's first application of its electrically assisted turbocharger in a high-voltage hybrid vehicle.

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5 MANUFACTURERS

5.1 BMTS TECHNOLOGY

Bosch Mahle Turbo Systems (BMTS) was formed in 2008 from a 50:50 joint venture between Robert Bosch GmbH and Mahle GmbH to develop exhaust turbochargers for cars, commercial vehicles and off-highway applications.

The sale of this joint venture to FountainVest Partners was completed in December 2018. The company now operates as BMTS Technology.

BMTS offers turbochargers for passenger car gasoline and diesel engines. The latter with power outputs from 35 to 260 kW; and turbochargers for commercial vehicle engines with power outputs from 30 to 520 kW. It also provides various turbocharger components, including exhaust gas turbines, compressors, rotors/bearings, variable turbine geometry and wastegate boost pressure regulation components and actuators.

BMTS employs 1,300 people at plants in Europe, China and Mexico.

Europe

- In Novi Sad, Serbia's second-largest city, about 50 miles from Belgrade, BMTS commenced production in November 2020. The site includes assembly and end-of-line testing of turbochargers for commercial vehicles and passenger cars. In addition to production, both technical and administrative functions are located in Novi Sad.
- BMTS Technology Austria is based in Carinthia, Austria. This site has been operating since 2012 and is BMTS Technology's main European plant for series production.

China

- BMTS Technology's foundry is located in Dongying, a city in the province of Shandong near the yellow sea. This site produces casting turbocharger components, e.g. turbine and bearing housings.
- BMTS Technology Co Ltd (China) headquarters are based in Shanghai. In addition to manufacturing, the site also includes functions such as quality assurance, sales, simulation, design, application and validation.

Mexico

- With the 2019 opening of a manufacturing plant in Ramos Arizpe, in the Mexican state of Coahuila, BMTS Technology responded to the growing demand for turbocharging technologies in North America.

Bosch was already a leader in both gasoline direct-injection systems, and common-rail diesel technology and the Bosch Group as a whole encompasses automotive and industrial technology, consumer goods and building

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This exclusive new report analyses the turbocharger market for passenger cars, providing market intelligence on the main drivers, trends, opportunities and challenges and assesses the market as it recovers from the impact of the pandemic. It includes market share estimates across Europe, North America, Japan and worldwide as well as regional market volume and value forecasts from 2018 to 2032.

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The report also includes coverage of key players pushing back the technical boundaries in turbocharger arena.

Report coverage

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