

Automotive Thermal Management - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2020 - 2029

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Report description:

The Automotive Thermal Management Market size is estimated at USD 99.97 billion in 2024, and is expected to reach USD 132.96 billion by 2029, growing at a CAGR of 5.87% during the forecast period (2024-2029).

Manufacturing shutdowns, lockdowns, and trade restrictions during the COVID-19 pandemic negatively affected the automotive thermal management industry. Furthermore, the fall in automotive production and lack of labor significantly impacted the market. For instance, worldwide automobile production fell by 15.69% in 2019. Although in 2021, global automotive production increased significantly compared to the pandemic hit 2020, it was well below the figures of 2019, primarily attributed to the semiconductor shortage.

The rising need for better ride quality and heat insulation for cabin comfort is greatly emphasized in the automotive industry, leading to a much higher demand for thermal management systems. The ever-increasing number of electrical and electronic components inside vehicles also drives the need for better thermal management systems due to heat dissipation.

Over the long term, as the automotive industry moves to electric mobility, thermal management systems for IC engines are expected to go completely obsolete. However, the increasing number of heavy-duty electrical components, such as heavy-duty batteries and high-current motors, is expected to continue keeping the high demand in these aspects. With increasing automation and powertrain electrification, the demand for electrical and electronic components exponentially increased, in both passenger cars and commercial vehicles, in the automotive industry.

Major original equipment manufacturers are focusing on the development of thermal management systems to offer the best possible travel range for their electric fleet. For instance,

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Key Highlights

-In December 2021, Volvo tested its new thermal management system that pre-heats a truck's batteries using electrical components and electronic control units. The thermal system ensures the temperature is maintained under extreme weather conditions, thus increasing their demand to a large extent.

Auto parts suppliers are accelerating efforts to strengthen their global competitiveness in the thermal energy management market with the advancement of vehicle electrification. For instance,

Key Highlights

-In February 2022, Borgwarner Inc. secured an agreement to supply High-Voltage Coolant Heater (HVCH) to be used in BMW Group's iX and i4 fully electric architecture. The solution controls the battery's thermal management system and cabin heating and significantly increases the driving range and reliability of the battery.

Asia-Pacific is anticipated to be the largest market due to the presence of large OEMs for automotive thermal management systems, large markets for automobiles like China, India, Japan, and South Korea, and a well-developed automobile manufacturing industry.

North America and Europe are projected to be the next biggest markets due to high vehicle ownership rates, growing electric and autonomous vehicle sales, and extensive automobile manufacturing industries.

Thus, the confluence of the aforementioned factors is anticipated to drive the growth of automotive thermal management systems.

Automotive Thermal Management Market Trends

Battery Thermal Management to Witness Significant Growth

Vehicles that run on an all-electric powertrain or hybrid powertrain require a battery thermal management system. The battery is operated under a specific temperature for maximum charge storage and utilization efficiency. Hence, the increase in battery electric vehicles or plug-in hybrid vehicles is likely to drive the automotive thermal management market during the study period. For instance,

- In 2021, many European countries witnessed double-digit growth in EV sales, whereas the European region captured around 34% of global EV sales in 2021 compared to 43% in 2020. The overall plug-in vehicle sales reached about 2.27 million units in 2021 compared to 1.37 million in 2020.

This spike in sales is the result of an increase in regulatory norms by various organizations and governments to control emission levels and propagate zero-emissions vehicles.

Companies are investing in making more efficient battery solutions for the upcoming battery electric vehicles. For instance,

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- In September 2022, Mahle launched its new thermal management systems for commercial electric vehicles at IAA Transportation in Hannover, Germany.

Thus, the above factors are estimated to significantly expand the market for automotive thermal systems during the forecast period.

Asia-Pacific Continues to Capture Major Market Share

The growing automobile sector in Asia-Pacific (with India and China emerging as automotive part manufacturing hubs for the western automobile giants) is expected to drive the market for thermal management systems in this region.

The growing government regulations improving electric vehicle adoption and robust expansion adopted by OEMs and suppliers in the region to accommodate the rising demand from the automotive industry in China are expected to create a positive outlook for market growth during the forecast period. For instance,

- In August 2022, Schaeffler Group celebrated the production of five million thermal management modules in China.

The Indian automotive industry is the fourth-largest in the world, and in terms of commercial vehicle production, the country ranks seventh globally. The auto component business in the country has also increased significantly over the past five years. For instance,

- In March 2022, the development of a new high-speed mid-torque electric motor was revealed by Matter, an Ahmedabad-based technological innovation start-up focusing on delivering futuristic sustainable solutions. The company says that Matter Drive 1.0 Motor is a new intelligent drive train that includes a variety of significant breakthroughs, such as the Integrated Intelligent Thermal Management System.

In addition, rising sales of electric and hybrid vehicles in countries like China, India, Japan, and South Korea will further augment the market for automotive thermal systems in the Asia-Pacific region.

Thus, the Asia-Pacific region is predicted to remain the largest market for automotive thermal systems in the world during the forecast period.

Automotive Thermal Management Industry Overview

The automotive thermal management market is moderately consolidated, with the major players dominating the market. Some of these players include Denso Corporation, Valeo, Mahle GmbH, Hanon System, and BorgWarner Inc. These players engage in new product launches, joint ventures, and capacity expansions to expand their business activities and cement their market position. For instance,

- In November 2022, Denso Corp. launched a new LD9 electric zero emissions thermal management unit for buses and coaches at Bus & Coach Expo in Sydney, Australia.

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- In March 2022, Hanon Systems inaugurated a new plant located in Huchai, China, to manufacture heating, ventilation, and air conditioning (HVAC) modules for electrified vehicles.

Additional Benefits:

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

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