

Electric Vehicle Battery Cooling Plate Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

<https://marketpublishers.com/r/EF67F211AC04EN.html>

Date: April 2025

Pages: 170

Price: US\$ 4,850.00 (Single User License)

ID: EF67F211AC04EN

Abstracts

The Global Electric Vehicle Battery Cooling Plate Market was valued at USD 2.5 billion in 2024 and is estimated to grow at a CAGR of 16.3% to reach USD 9.4 billion by 2034, driven by the accelerating shift toward electric mobility, stricter global emission regulations, government incentives supporting EV production, and aggressive decarbonization goals. As electric vehicle adoption becomes mainstream, the demand for highly efficient thermal management systems is surging. With EV batteries becoming more powerful and complex, maintaining optimal temperatures has become critical for performance, safety, and battery lifespan. Cooling plates, especially liquid-cooled systems, have emerged as essential components in battery packs to handle high thermal loads during fast charging and heavy usage.

As the EV ecosystem matures, thermal management solutions are no longer just optional add-ons but integral to achieving competitive vehicle range, battery durability, and consumer trust. Growing consumer awareness about EV safety, the rising popularity of long-range electric models, and the expansion of fast-charging networks worldwide are further pushing automakers and battery manufacturers to invest heavily in advanced cooling technologies. Additionally, the push for vehicle lightweighting and space optimization has led to innovations in compact, high-efficiency battery cooling designs, making them indispensable in next-gen EV platforms.

Governments across the world are playing a crucial role in advancing EV technologies, particularly in battery thermal management systems. By making substantial investments in research and development, countries are fueling innovations aimed at enhancing the performance, safety, and energy efficiency of EVs. Funding initiatives are frequently directed toward the development of advanced cooling systems like liquid-cooled battery

plates, which help optimize battery health and extend driving range. Through financial incentives and subsidies for manufacturers and research institutions, governments are fast-tracking the development of more efficient cooling solutions essential for the rapid expansion of the EV market.

The electric vehicle battery cooling plate market is segmented by vehicle type into BEV, PHEV, and HEV. In 2024, BEVs accounted for a dominant 65% share and are expected to expand at a CAGR of 17.1% through 2034. Since BEVs rely entirely on electric batteries and lack internal combustion engines, they demand superior thermal management systems to ensure optimal performance and battery longevity. The surging growth of BEVs, supported by tightening emission regulations and increasing consumer interest, is driving significant demand for advanced cooling solutions.

By technology, the market is segmented into air cooling, liquid cooling, and PCM cooling. Liquid cooling captured a commanding 76% share in 2024 and is set to maintain dominance due to its superior ability to manage high thermal loads. Liquid-cooled systems offer better temperature control than air cooling, enabling faster charging and longer battery life, making them the preferred choice for long-range, high-performance EVs.

China led the global market in 2024 with a 68% share, generating around USD 840 million in revenue. Its leadership is fueled by robust EV manufacturing capabilities, strong battery production infrastructure, and proactive government policies promoting electric mobility.

Prominent players in the Global Electric Vehicle Battery Cooling Plate Market include Sanhua Group, Boyd, BorgWarner, Modine Manufacturing Company, Nippon Light Metal, Dana, Senior Flexonics, MAHLE, Sogefi Group, and Valeo. These companies are heavily investing in innovations around liquid cooling technologies, expanding product portfolios, collaborating with automakers, exploring eco-friendly materials, and forming partnerships with government bodies to strengthen their market presence and align with global sustainability trends.

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