

# Global and China Power Battery Management System (BMS) Industry Report, 2015-2018

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# **Abstracts**

Battery management system (BMS) is a key component of electric vehicles and hybrid vehicles. To ensure safe and reliable operation of batteries, BMS needs to have various functions such as battery status monitoring and assessment, charging and discharging control, balancing and so forth.

The fire accidents of electric vehicles (particularly battery electric vehicles) since 2013 result in consumers' concerns about the safety of electric vehicles. Compared with HEV, both PHEV and BEV have more complex battery system structure, which requires more excellent battery endurance and safety; therefore, PHEV and BEV need more mature and reliable BMS. The BMS industry will benefit from the expansion of the electric vehicle market.

Throughout the global BMS market, traditional auto parts makers represented by Denso and Preh have seized the initiative by virtue of their important positions in the vehicle supply chain. As Toyota's most important parts supplier, Denso has provided battery management modules for Prius, Camry Hybrid and other models. Besides serving BMW I-series BEV, Preh also explores the Chinese market with the help of the resources of its parent company- Ningbo Joyson Electronic Corp.

Cell makers like LGC attempt to, on the basis of cooperation with existing customers, simplify and generalize BMW by gradually narrowing the scope of functionality, and spin off software and data services, which are provided alone to vehicle makers. Among vehicle makers, Tesla has mature and sophisticated BMW, and its next-generation BMS technology will get applied to battery packs with larger single cells. Third-party BMS companies, constrained by outdated technology and inadequate funds, have developed slowly amid hardships.



In the first quarter of 2015, China produced 27,271 and sold 26,581 new energy vehicles, both exceeding the figures in the first half of 2014. It is expected that throughout the year of 2015, China's new energy vehicle capacity will continue to be quickly unleashed, and PHEV and mini BEV will witness faster growth, driving rapid development of the Chinese BMS market.

There are three types of companies in the Chinese BMS market. First type covers thirdparty BMS vendors, such as Epower Electronics, GuanTuo Power and LIGOO New Energy Technology, of which Epower Electronics entered the industry early, with its BMS products having been installed in multiple EV models of Chang'an, Dongfeng, BAIC Motor, Foton, JAC, and ZOTYE. Second category refers to battery module and pack packaging companies, like Guoxuan High-tech Power Energy and Sunwoda Electronic, which enter the market via independent research and development or cooperation. Third type is OEMs represented by BYD and BAIC BJEV, which have relatively perfect layout in the sector, with the former integrating R&D of battery, BMS and EV, thus giving it advantages in terms of cost and efficiency, and the latter boasting research capability for BMS after acquisition of Atieva and no longer needing supplies from third-party BMS companies.

As a whole, China's BMS industry is still very backward compared with that in foreign countries no matter by technical specification or by business model. Meanwhile, consolidation in BMS industry continues to proceed, and some third-party BMS companies have gained a firm foothold and grown stronger via long-term cooperation with battery plants and vehicle makers. As module vendors, packaging companies and vehicle makers accelerate their presence in BMS industry, independent firms that have not entered supply systems will face increasingly narrowed living space.

Global and China Power Battery Management System Industry Report, 2015-2018 by ResearchInChina highlights the followings:

Overview of global and Chinese electric vehicle market (including overview, market size, output and sales volume of vehicles, etc.);

Overview of global and China BMS industry (embracing status quo, forecast, market size, BMS supporting, etc.);

Major vendors in global BMS industry (involving revenue, revenue structure, net income, R&D, products, supporting for vehicle makers, latest developments,



business in China, etc.);

Major vendors in China BMS industry (comprising revenue, revenue structure, net income, R&D, products, supporting for vehicle makers, new projects, etc.);

Main enterprises in BMS chip industry (including revenue, revenue structure, net income, BMS chip solutions, etc.).



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