



**Global and China Power Battery
Management System (BMS) Industry
Report, 2014-2017**

Aug. 2014

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

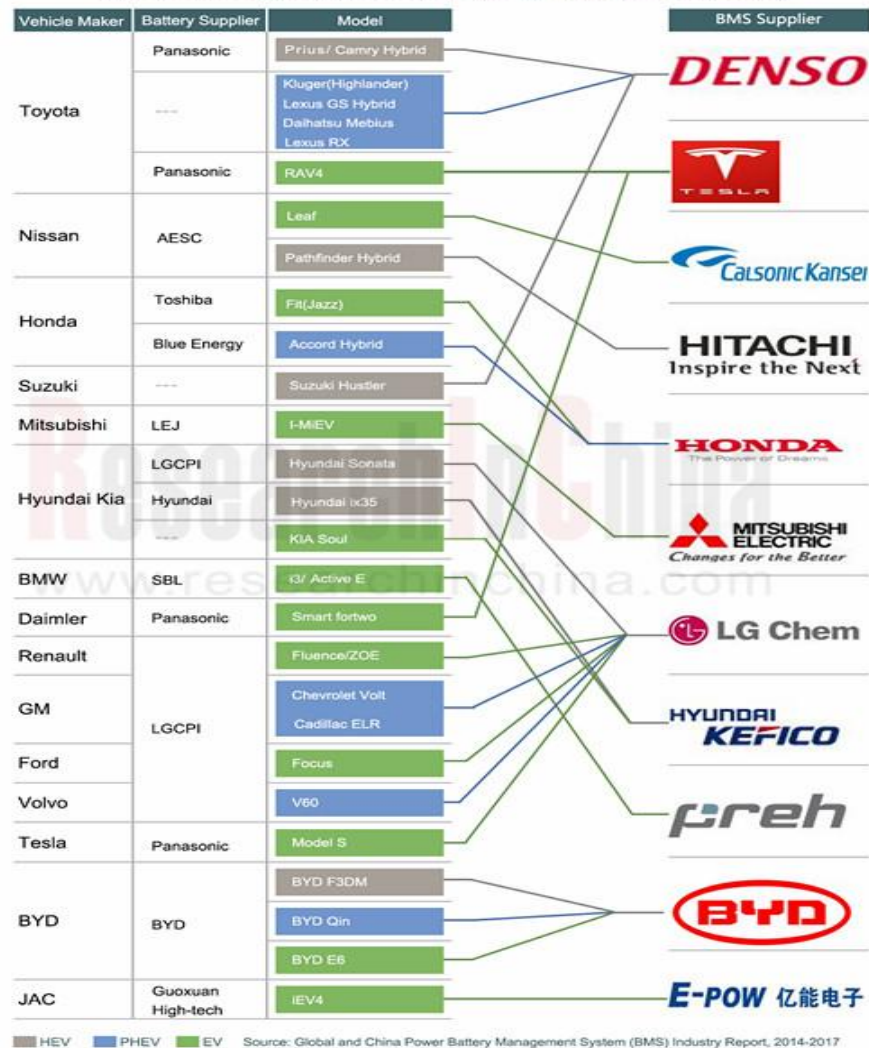
Abstract

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 pure electric vehicles) since 2013 result in consumers' concerns about the safety of electric vehicles. Compared with HEV, 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 opportunities 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. Preh mainly offers BMS for BMW I series pure electric vehicles.

The World's Main EV/HEV/PHEV Models and BMS Supporting



Meanwhile, the battery vendor LGC has established cooperative relationship with GM, Ford, Volvo and many other enterprises by providing power battery packs and related BMS to them. As for automobile companies, Tesla performs remarkably with advanced BMS technology. In contrast, professional BMS firms develop relatively slower due to technical and financial factors.

In the first half of 2014, China produced 20,692 new energy vehicles and sold 20,477 ones, higher than the figures in 2013. In 2015, Chinese new energy vehicle market capacity will be quickly released, especially plug-in hybrid electric vehicles and mini pure electric vehicles will witness faster growth, which will drive the rapid development of the Chinese BMS market.

In the Chinese BMS market, there are three types of enterprises:

First, third-party BMS vendors, such as Epower Electronics, GuanTuo Power and LIGOO New Energy Technology. Among them, the products of Epower Electronics are used most widely and adopted by Changan, Dongfeng, BAIC, Foton, JAC, Zotye and so on.

Second, battery system packaging companies represented by Guoxuan High-tech and Winston Battery. Guoxuan High-tech serves JAC and Anka Automobile with battery modules and BMS.

Third, vehicle manufacturers, including BYD and BAIC BJEV. BYD integrates batteries and BMS with electric vehicle R & D, and shows advantages in terms of cost and efficiency.

Overall, China BMS industry still lags behind foreign countries in technical specifications and business models. To narrow the gap, some companies hope to make progress by mergers and acquisitions. For example, BAIC BJEV enhances battery system performance and technological strength via the cooperation with SK, Atieva and other enterprises; Zotye meets its demand for BMS by holding Jieneng; Desai masters some share of Epower Electronics in order to upgrade its technology from consumer electronics to electric vehicle BMS.

The report includes:

- ⇒ Overview of global and Chinese electric vehicle market (including overview, market size, output, sales volume, 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 of subsidiaries, revenue structure, net income, R & D, products, supporting for vehicle plants, latest developments, business in China, etc.)
- ⇒ Major vendors in China BMS industry (comprising revenue, revenue of subsidiaries, revenue structure, net income, R & D, products, supporting for vehicle plants, new projects, etc.)
- ⇒ Main enterprises in BMS chip industry (including revenue, revenue structure, net income, BMS chip solutions, etc.)

1. Overview of BMS

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