Global and China Power Battery Management System (BMS) Industry Report, 2016-2020

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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.

Room 509, Building 1+1, No.10, Caihefang Road, Haidian District, Beijing, 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

Abstract

Battery management system (BMS), a key integral of battery electric vehicle (BEV) and hybrid electric vehicle (HEV), consists mainly of battery electronics (BE) and battery control unit (BCU), with the former responsible for acquiring data on electric current, voltage, and temperature of battery and sending them to BCU for control and the latter also in charge of communicating information with other control units.

Three core functions of BMS are cell monitoring, state of charge (SOC) estimation, and single-cell battery balancing. BMS monitors the operating temperature and electric quantity of single lithium battery cell, and automatically takes steps to balance charge/discharge current and prevent occurrence of over-temperature. Making automotive power battery deliver best performance and longest service life under various working conditions is one of key technologies to develop electric vehicle.

Global electric passenger vehicle sales amounted to 549,000 units in 2015, a 67.4% surge from a year ago, with growth coming primarily from China and Europe. Power battery BMS used in foreign countries commonly adopts active balancing technology, resulting in a higher cost for single vehicle. Global BMS market was valued at USD1.98 billion in 2015 and is expected to hit USD7.25 billion in 2022 at a CAGR of up to 20.5% during 2016-2022, showing huge development potential.

Traditional auto parts makers represented by Denso and Preh have gotten a head start by virtue of their important positions in OEMs' supply chain. As Toyota's the 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 its parent company- Ningbo Joyson Electronic Corp.

Cell makers like LGC attempt to, on the basis of cooperation with existing customers, simplify and generalize BMS by gradually narrowing the scope of functionality, and spin off software and data services which are provided alone to OEMs. Among OEMs, Tesla has mature and sophisticated BMS, and its next-generation BMS technology will get applied to battery packs with larger single cells.

China produced 340,471 and sold 331,092 electric vehicles in 2015, a 3.3-fold and 3.4-fold increase on a year-on-year basis, respectively. Thanks to booming EV market, the Chinese power battery BMS market size swelled to about RMB4 billion in 2015 and is expected to further soar to RMB14-15 billion in 2020.

Chinese power battery BMS market will present the following trends over the next five years:

1)At the policy level, the National Technical Committee of Auto Standardization under China Automotive Technology & Research Center, with the aim of increasing safety of new energy vehicle, is developing national BMS standard which will contribute to more stringent standards on BMS;

2) Management requirements on safety of battery will become stricter along with a higher penetration of ternary lithium battery;

3) The core of BMS lies in the design of active battery balancing and SOC estimation algorithms. Asset-light hardware design houses will enjoy a higher profitability.

4) Both OEMs and cell makers have plans to expand to BMS industrial chain. Constrained by technical barriers and limited R&D spending, it is difficult for upstream and downstream enterprises to move into BMS. Hence, outsourcing of BMS integrated solutions is a rational market behavior.

There are three types of companies in the Chinese BMS market.

1) Third-party BMS vendors, such as Epower Electronics, Shenzhen Klclear Technology, SINOEV Technologies, and Gold Up New Energy. Epower Electronics enters the industry early with its BMS products having been installed in multiple EV models of Chang'an, Dongfeng Motor, BAIC Motor, Foton, JAC, and ZOTYE. These vendors occupy a 45% share of the overall market.

2)Battery module and PACK packaging companies, like Guoxuan High-tech Power Energy, CATL, Shenzhen OptimumNano Energy, and Sunwoda Electronic, which enter the market via independent R&D or cooperation. These businesses seize a 31% share of the overall market.

3)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. These companies take up a 24% of the overall market.

Global and China Battery Management System (BMS) Industry Report, 2016-2020 focuses on the followings:

Overview of global and Chinese EV markets (overview, market size, vehicle output, sales, etc.);

Overview of global BMS industry (status quo & forecast, market size, technology trends, etc.);

Overview of BMS industry in China (status quo & forecast, price & cost, market size, competitive landscape, supporting, technology trends, etc.);

Major vendors in global BMS industry (revenue, revenue structure, net income, R&D, products, supporting for OEMs, latest developments, business in China, etc. of vendors and their subsidiaries);

Major vendors in BMS industry in China (independent third parties, cell makers, OEMs) (revenue, revenue structure, net income, R&D, products, supporting for OEMs, latest projects of companies and their subsidiaries);

Major makers in BMS cell industry (revenue, revenue structure, net income, BMS cell solutions, etc.)

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