

# **China EV (Electric Vehicle) Motor Controller Industry Report, 2017-2020**

**July 2017**

## 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

Motor drive control system (drive motor and motor controller) is an important execution mechanism when an EV runs, and control & drive properties decide main driving performance indicators. Each battery electric vehicle or hybrid vehicle needs a set of motor drive control system.

Motor controller prices vary greatly depending on specifications and performance requirements. The market price of motor controller for electric bus is usually RMB30,000-50,000/set (around RMB45,000 on average), of single-motor controller for electric truck RMB7,000/set or so, of single-motor controller for passenger car RMB7,500/set, and of multi-motor controller for passenger car RMB12,000/set. As dual motor can simplify plug-in hybrid system and boost driving performance (like BMW 2 Series PHEV, Toyota Prius, BYD Tang, and BYD Yuan), the proportion of EVs (especially PHEV) carrying dual-motor system will keep rising.

China's demand for EV motor controllers was around 590,000 sets or worth RMB9.1 billion or so in 2016, primarily concentrated in commercial vehicle field. It is expected that EV motor controller market size will climb to RMB28.1 billion in 2020 with passenger car holding a dominant position.

The Chinese EV motor controller market is dominated by foreign brands which hold fractional share at the stage of market fostering and early development due to higher prices. Domestic companies are mainly divided into two categories: electric vehicle makers which produce EV motor controllers generally for its own vehicles; EV parts companies which produce EV motor controllers for specific or non-specific vehicle makers.

Some vehicle makers may intensify efforts for R&D of motor electronic control and produce products by themselves after mastering the technology; however, a great majority of vehicle makers without such capability still choose third parties to supply products. Hence, the companies with core technologies, experience in mature products, and good cost control will be the main beneficiary.

## EV Motor Controller Demand and Market Size in China, 2015-2020E

	Year	2015	2016	2017E	2018E	2019E	2020E
Commercial Vehicle	Average unit price of motor controller for electric bus (RMB/set)	45,000	42,000	40,000	38,000	36,000	35,000
	Electric bus sales	96,000	121,000	146,000	179,000	205,000	235,000
	Electric bus motor controller market size (RMB bn)	4.3	5.1	5.84	6.8	7.38	8.23
	Average unit price of motor controller for electric truck (RMB/set)	7,000	6,600	6,200	5,800	5,500	5,200
	Sales of electric truck	28,000	50,000	65,000	85,000	110,000	145,000
	Electric truck motor controller market size (RMB mln)	200	330	400	490	605	754
Passenger Car	Average unit price of single-motor controller for electric passenger car (RMB/set)	7,500	7,000	6,600	6,200	6,000	5,800
	Average unit price of multi-motor controller for electric passenger car (RMB/set)	12,000	11,000	11,000	10,000	10,000	9,000
	EV sales (unit)	146,719	244,763	425,631	684,703	941,047	1,229,069
	PHEV sales (unit)	60,663	80,352	176,730	307,620	418,589	525,458
	HEV sales (unit)	13,187	60,168	155,637	343,958	646,297	913,270
	Passenger car motor controller market size (RMB bn)	1.8	3.7	6.7	11.4	14.8	19.1
Overall	Motor controller market size (RMB bn)	6.3	9.1	12.9	18.7	22.8	28.1
	YoY (%)		44.9%	41.3%	45.0%	21.9%	23.2%

Note: Passenger car multi-motor controller refers to mainly TM+ISG dual-motor controller, front and rear dual-TM motor controller, or front and rear dual TM+ISG tri-motor controller.

Source: ResearchInChina

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Prices will trend down throughout the industry as the competition in the EV motor controller market is possible to prick up along with a quicker R&D progress & launching of mature products of Chinese EV motor controller producers and deep engagement of foreign-funded enterprises. In addition, as subsidies decline, the cost transfer of vehicle makers will also have a big impact on prices.

China EV (Electric Vehicle) Motor Controller Industry Report 2017-2020 highlights the followings:

Main technology roadmaps and development trends of EV motor controller;

- ◆Upstream IGBT & thin-film capacitor and downstream EV industry (market size, competitive landscape, main policies, etc.);
- ◆EV motor controller (industrial policy, market size, supply chain, and competitive landscape), global mainstream EV motor electronic control system;
- ◆19 Chinese EV motor controller companies (operation, motor controller business and technology, etc.);
- ◆Six global IGBT vendors (operation, business in EV field, etc.);
- ◆Eight global automotive inverter companies (operation, business in EV field, etc.)

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