

China Li-ion Battery Industry Report, 2009-2010

Apr/2010

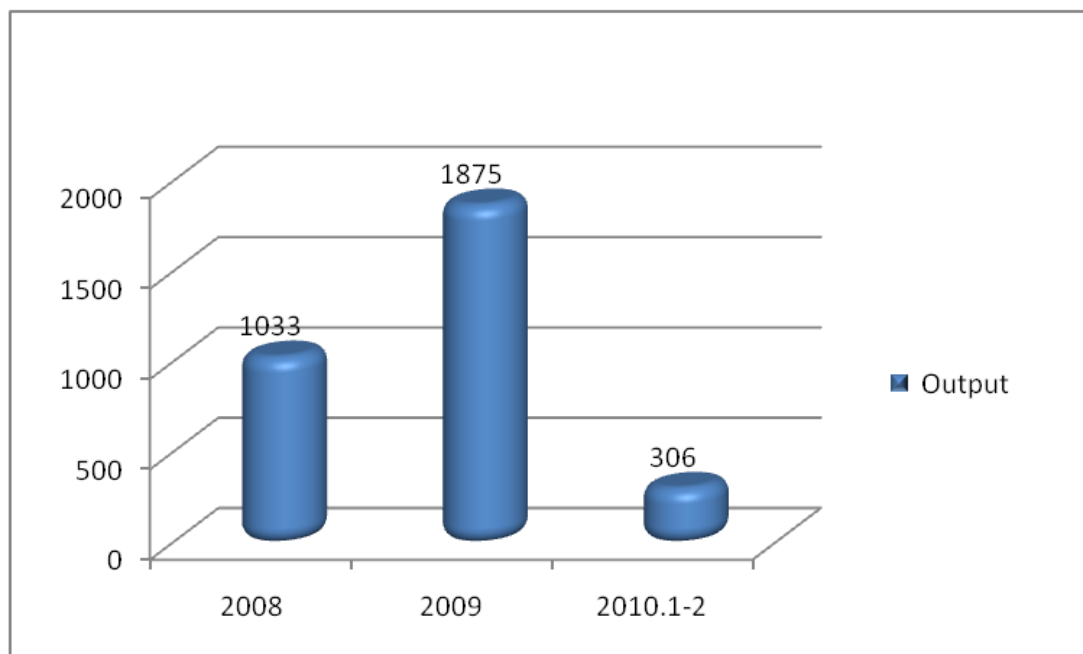


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3. Status Quo of China Li-ion Battery Market

After years of development, the global li-ion battery industry has formed a pattern dominated by China, South Korea and Japan. The three countries have different advantages in the market competitions, and the pattern will maintain a considerable period of time. China's li-ion battery output is growing year by year, reached 1875 million units in 2009, up 82% year on year, and reached 306 million units in the first two months of 2010, equivalent to 16% of the total output of 2009.

China Output of Li-ion Battery, 2008-Feb.2010 (Unit: Million Units)



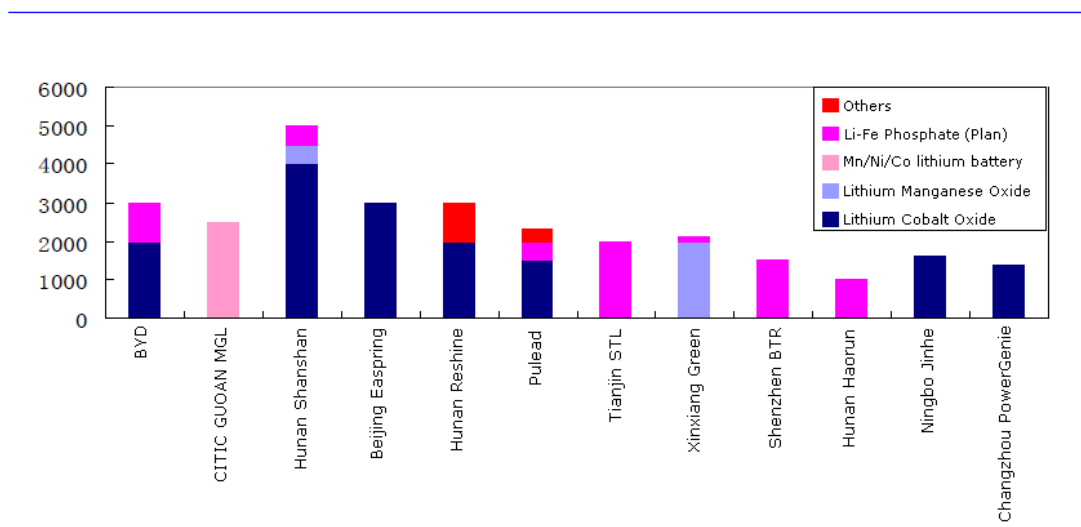
Source: wind, ResearchInChina

4. Li-ion Battery Industry Chain

4.1 Anode Material

As the lithium iron phosphate technology is not yet mature, and the requirements on the manufacturing process are high, there is currently no lithium iron phosphate electric cars put into mass production. In the next three to five years, the li-ion batteries with lithium cobalt oxide, lithium manganese oxide, nickel cobalt manganese lithium and lithium iron phosphate as anode materials will coexist. China's li-ion anode material production capacity is about 35,000-40,000 tons, basically focused on the production of lithium cobalt oxide, lithium manganese oxide, and nickel cobalt manganese lithium. At present, manufacturers with lithium iron phosphate production plans and experience in the production of anode materials include: Hunan Shanshan Advanced Material Co., Ltd., BYD Company Limited, Pulead Technology Industry Co., Ltd., and Xinxiang Green New Energy Material Co., Ltd.

Output Capacity of Anode Material Manufacturers



Source: Company Announcement

Taking into account the excellent physical properties of lithium iron phosphate, lithium iron phosphate li-ion battery will probably become the mainstream battery for electric cars. 95% of car li-ion batteries will adopt lithium iron phosphate as anode in 2020.

5. Companies

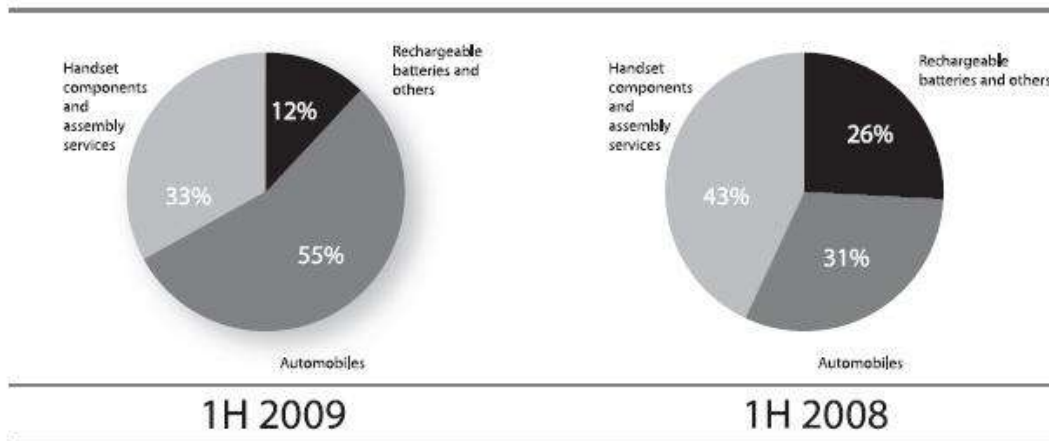
5.3 BYD

Founded in 1995, BYD Company Limited (hereinafter referred to as "BYD") is a private-owned high-tech enterprise listed in Hong Kong. At present, BYD has established 9 production bases in Guangdong, Beijing, Shaanxi, Shanghai, etc. with the total area of about 7 million m²; moreover, the company has branch offices in USA, Europe, Japan, Korea, India, Taiwan, Hong Kong, etc. and the employee number has exceeded 0.13 million. In 1997, BYD started producing Li-ion battery through independent R&D, and soon after that, BYD started mass production. In August, 2003, its Shanghai factory went into operation, starting the R&D of power battery and computer battery.

The two major business scopes of BYD include auto and IT spare parts, of which, the latter is composed of rechargeable battery and mobile parts & assembly service. Year 2009 witnessed the rapid recovery and outstanding performance of Chinese auto market, therefore, auto business became the main source of revenue and profit of the Group in 2009.

BYD has officially launched its F3DM dual-mode car loaded with the independently developed lithium iron phosphate battery. It is the only domestic enterprise who masters the mass production technology of lithium iron phosphate battery for automobile, taking a leading position even worldwide.

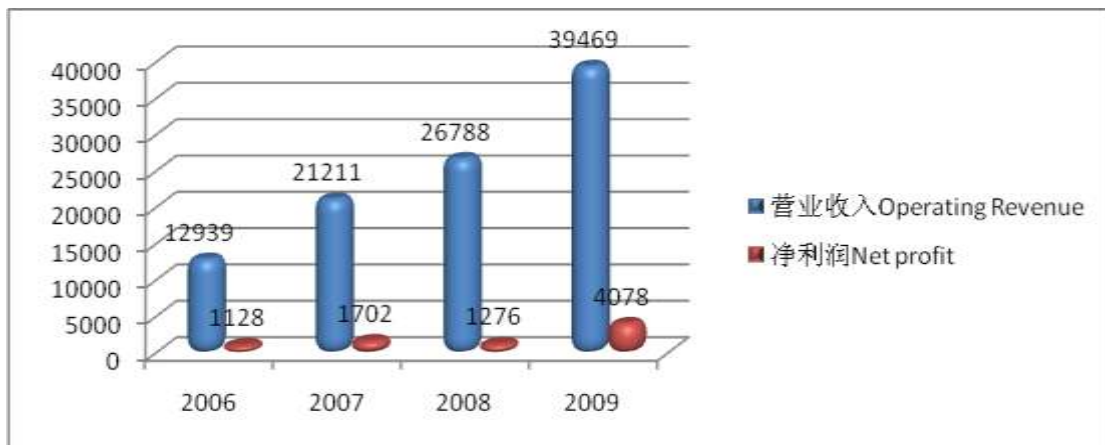
Statistics of BYD Business by Category, 2008H1-2009H1



Source: BYD, ResearchInChina

In Quarter 1, 2008, the mobile phone business only occupied 31%, but it rose to 55% in Quarter 1, 2009 and became the dominant business of BYD. Auto business has become the major business of BYD ever since 2009, and the power batteries used in BYD electric vehicles are all self-made.

Operation Data of BYD, 2006-2009



Source: BYD, ResearchInChina

The operating status of BYD maintained good from 2006 to 2009. The profit kept growing, and the net profit of 2009 reached RMB 4,078 million, a record high within the recent 5 years.

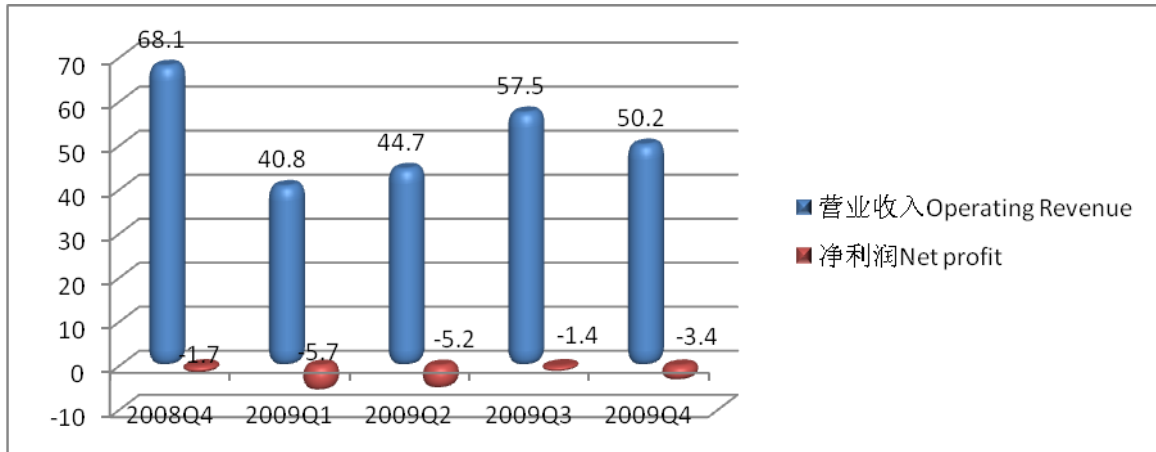
5.4 Shenzhen BAK Battery

China BAK Battery Co., Ltd.(abbreviation "China BAK", NASDAQ: CBAK) is one of the largest manufacturers of Li-ion battery cells. The main business of the company is to manufacture and sell Li-ion battery cells to mobile phone battery manufacturers and first-grade manufacturers. At present, China BAK is the largest Li-ion battery manufacturer of mobile phone substitute battery market with the market share of 60%. Its recently expanded product types contain high-energy lithium iron phosphate battery applied in wireless power tools, hybrid electric vehicle, and medical devices. China BAK also produces Li-ion polymer battery used in portable personal electronic devices such as digital media equipment, portable media player, portable audio player, portable game devices, and PDAs. Recently, the company has absorbed cylindrical battery production line to produce laptop battery. The 1.9 million square feet factory and equipment of China BAK is located in Shenzhen, and the monthly output can be 22 million batteries or so.

China BAK develops its business through 2 wholly-owned subsidiaries in Shenzhen. Shenzhen BAK Battery Co., Ltd., one of the subsidiaries established in August, 2001, is engaged in the development and manufacturing of square cells, cylindrical cells, and lithium iron phosphate cells. BAK Electronics Co., Ltd., the other subsidiary, is in charge of developing and manufacturing Li-ion polymer cells.

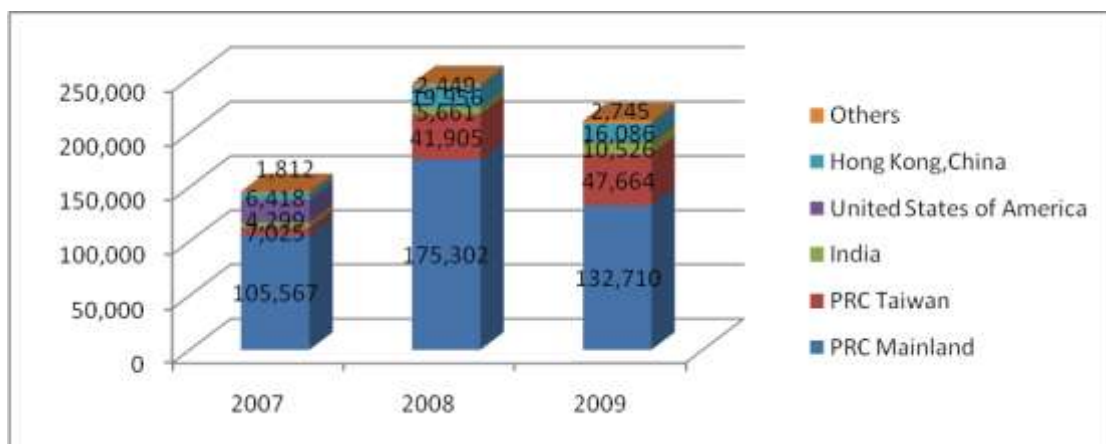
The products of BAK are Li-ion battery cells. Li-ion battery is usually composed of shell, cell, circuit protection devices of recharge & discharge, etc., of which cell is the core component of Li-ion battery. A large number of domestic Li-ion battery enterprises apply imported cells in their Li-ion battery assembly.

Operation Data of Shenzhen BAK Battery, 2008Q4-2009Q4



Source: Shenzhen BAK, ResearchInChina

Operation of Shenzhen BAK Battery by Region, FY2007-FY2009



Source: Shenzhen BAK, ResearchInChina

According to the company operation statistics, there is an obvious business improvement in 2008 and 2009. The total business of 2009 declines compared with 2008, the sales volume of Chinese Mainland market is decreased to US\$132 million from the original US\$175 million, but the sales volume of Taiwan and India market is increased by different degrees, the export of main products also achieves sustained growth.

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