



**China Hydrogen Storage Materials Industry  
Report, 2014-2017**

**Mar. 2015**

## 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

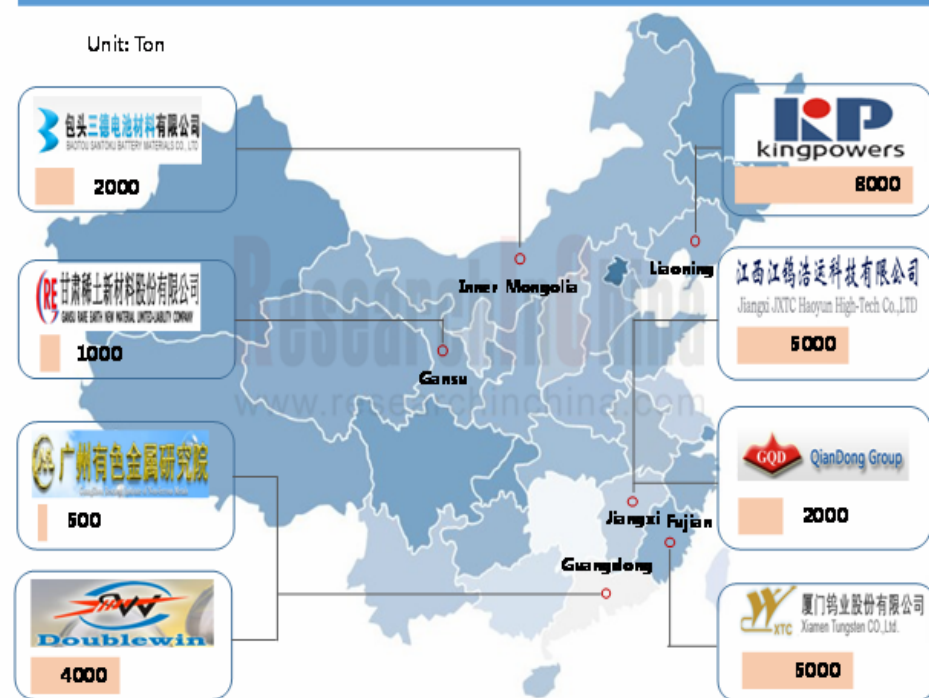
The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

## Abstract

Traditionally, there are two methods of storing hydrogen. One is to store hydrogen gas by using high-pressure cylinders, and the other is to store liquid hydrogen. In recent years, a simple new method of hydrogen storage has been developed, namely through hydrogen storage alloy (a metal hydride) which principally consists of titanium-based hydrogen storage alloy, zirconium-based hydrogen storage alloy, iron-based hydrogen storage alloy, as well as rare earth hydrogen storage alloy, etc.

Since 2005, the output of hydrogen storage materials and NI-MH battery in China has exceeded Japan as the world's biggest producer, with hydrogen storage alloy output accounting for about 60% of global total. After 2006, China's production of hydrogen storage alloy grew at a lower rate, with the capacity in 2014 reaching around 38,000 tons, reflecting that hydrogen storage material enterprises did not actively expand their capacity. This resulted mainly from factors below: firstly, fierce competition between enterprises due to domestic overcapacity; secondly, the prices of key raw materials such as nickel, cobalt, and rare earth fluctuated dramatically in recent years, leading to poorer corporate profitability than expected.

Capacity of Major China Hydrogen Storage Materials Manufactures, 2014



Sources : China Hydrogen Storage Materials Industry Report, 2014-2017; ResearchInChina

Now that the global NI-MH battery gradually gives way to lithium battery, China's NI-MH battery output would shrink, thus affecting the development of hydrogen storage materials. China's NI-MH battery output has declined for many years, with the output in 2014 amounting to 700 million units, a drop of 33.3% compared with 2010. However, with the advance in hydrogen fuel cell technologies, the growing demand for hydrogen fuel cells from new-energy vehicle is expected to drive the expansion of the hydrogen storage material market.

In the context of the integration of rare earth resources in China, China's hydrogen storage material manufacturers are divided into two echelons: rare earth enterprises in Northern and Southern China. The former is represented by Liaoning Kingpowers and Baotou Steel Rare-Earth(Group) while the latter mainly includes Jiangxi Rare Earth and Rare Metals Tungsten Group Corporation and Xiamen Tungsten. In 2014, the enterprise with the largest hydrogen storage material capacity was Liaoning Kingpowers, with the annual capacity of 8,000 tons.

China Hydrogen Storage Materials Industry Report, 2014-2017 by ResearchInChina highlights the following:

- ⇒ Status quo, competitive landscape, supply and demand, development prediction, etc. of China's hydrogen storage material industry;
- ⇒ Current situation, development trends, etc. of upstream and downstream sectors of China's hydrogen storage material industry;
- ⇒ Operation, hydrogen storage business, and growth prediction, etc. of 17 Chinese hydrogen storage material enterprises.

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