

China Fan Industry Report, 2009-2010

July/2009



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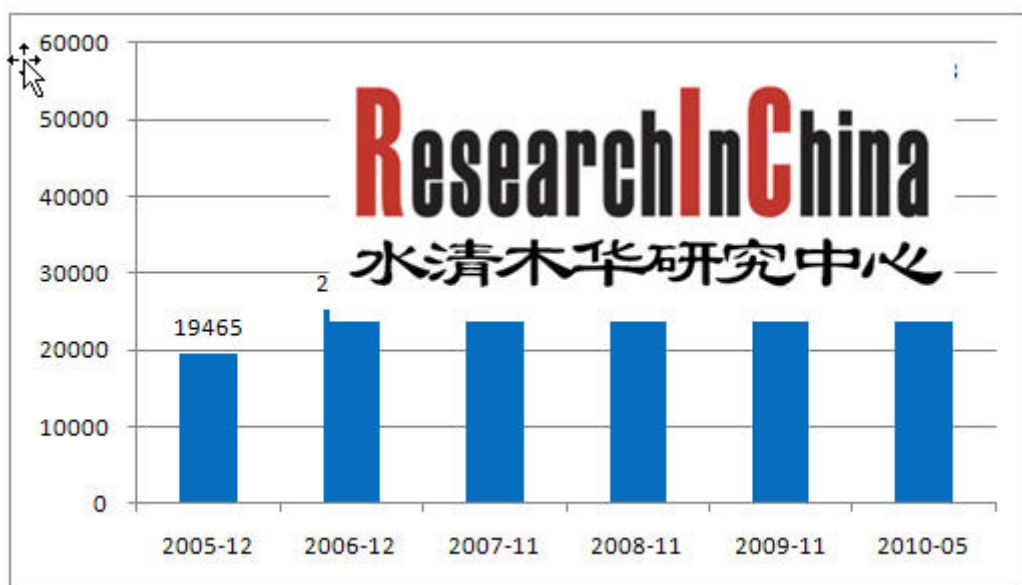
3. Status Quo of China Fan Industry

3.1 Operation

China had a total of ** above-scale enterprises by the end of May 2010, with the total asset of RMB **.

During Jan.-Nov. 2009, the output value of new products in fan industry of China reaped RMB, up 0.68% year-on-year, the industrial sales output value RMB**, up 18.3% year-on-year, and the export delivery value RMB**, decreasing by **% slightly comparing to the same period of 2008.

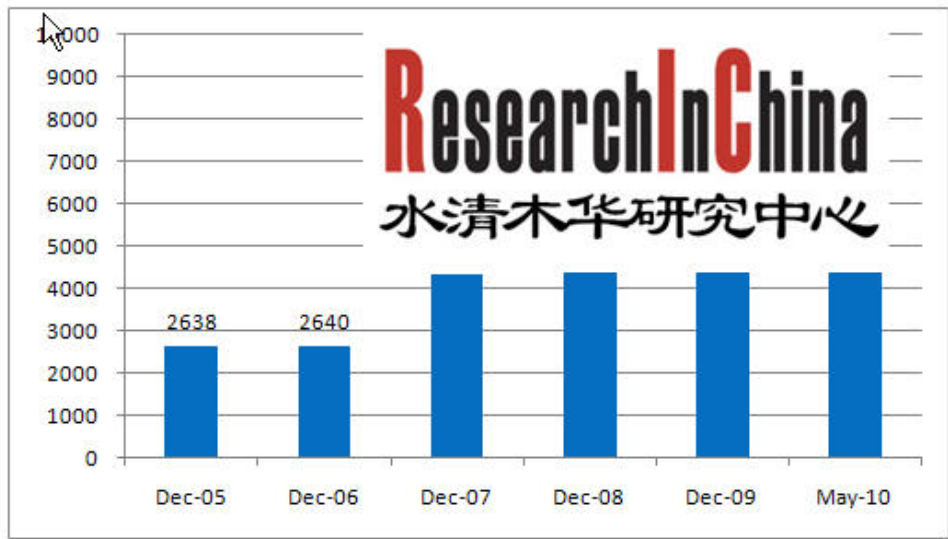
Asset Scale of China Fan Industry, 2005-2010 (RMB mln)



Source: ResearchInChina

In 2009, the output of fan products in China saw a sharp growth to ** sets, up 106% comparing to that in 2008. Since 2010, China's output of fan products has continued to keep rising, with a year-on-year increase of **% to ** sets by Jan.-May 2010.

Accumulated Output of China-made Fan Products, 2005-2010 (1,000 sets)



Source: ResearchInChina

In Jan.-Nov.2009, the prime operating revenue of the industry of China realized RMB**, an increase of 19.5% over 2008, the total profit accumulated to RMB **, up 34.7% year-on-year over 2008. As of May 2010, the prime operating revenue of China's fan industry attained RMB**, rising ** comparing to the same period in 2008, with the total profit of RMB**, a sharp increase of ** year-on-year from 2009.

Accumulated Prime Operating Revenue and Total Profit of China Fan Industry (RMB mln)



Source: ResearchInChina

3.2 Demand

In terms of demand in the downstream industries, mid-and low-end fan products oriented civil buildings and industrial & mining plants still dominate the market. Against the backdrop of steady economic development in China, the mid-and low-end fan market is expected to remain upwardly mobile. Meanwhile, alongside with the breakneck advance of heavy industry and key infrastructure industry, the market size of high-end fan products which are widely applied in petrochemical industry, nuclear power station and MTR rain transportation will see a considerable increase.

3.2.1 Industry and Civil Building

As far as civil building sector as considered, fan products applied in civil building industry have occupied high ground in recent years, thanks to the accelerated urbanization drive and robust real estate industry. In 2009, China's level of urbanization rose to 46.59% from 42.99% in 2005, and it is expected to exceed 50% in the upcoming 5 years. It is a fact that the increased level of urbanization will help boost stronger market demand for fan products for civil building sector.

The real estate industry has become one of the engines for the economy of China in recent years. Since 2002, the annual investment in real estate has increased by 20% or more. Up to 2009, China's investment in real estate industry realized RMB 3.6232 trillion, with the area of houses finished covering 702 sq m, 577 million sq m of which for residence. According to the related requirements, the investment in fan equipments should reach RMB **/10,000 sq m for ordinary buildings, while it should be realize RMB** for public places such as hotels, hospitals, schools, office buildings, exhibitions, stadiums and shopping malls. That is to say, the market demand of fan products applied in civil buildings should be around RMB** in 2009.

Market Scale of Fan Products for Civil Buildings in China, 2007-2009 (RMB bn)

Year	Market Demand
2007	17-31
2008	**
2009	**

Source: ResearchInChina

As far as industrial buildings sector as considered, the quickened manufacturing-based industrialization course of China brings huge market for fan industry. Since 1979, the annual industrial added value of China has grown by 12% or more on average. And it is expected to keep its upward momentum of growth in a considerably long period of time in the future, which will contribute to the robust demand of fan products for industrial and mining plant sector.

3.2.2 Nuclear Power

As for nuclear power, the nuclear power installed capacity of China has increased sharply in recent years, which results in the sharp growth of nuclear power HVAC equipment market. Moreover, China launched related policies to call for the localization of nuclear power equipments, a move that it is in favor of nuclear power fan industry of China.

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Nuclear power HVAC equipment, especially nuclear island HVAC equipment, serves as one of the key auxiliary equipments of nuclear power station. Benefiting from the support of industrial policies, the domestic key enterprises engaged in the production of nuclear power fan products like NanFang Ventilator and Zhejiang Shangfeng Industrial Holdings broke out of the technopoly of foreign counterparts, fully realizing localization of nuclear power HVAC products.

HAVC Equipment Import Substitution of Nuclear Power Projects Constructed or Under Construction in China by July 2009

Project Progress	Nuclear Power Plant Unit (10,000 KW)	Installed Capacity	HAVC Equipment Import Substitution
11 sets of units constructed	* , Taishan phase I	**	70%
	* ,Taishan phase II	**	80%
	* , Taishan Phase III	**	
	* , Dayawan	**	
	* , Tianwan phase I	**	
	* , Lingao, phase I	**	
22 sets of units under construction	* ,Taishan Phase II (expanded Project)	**	
	* , Lingao phase II	**	
	* , Hongyanhe phase I	**	
	* , Ningde phase I	**	
	* , Yangjiang phase I	**	
	* , Haiyang phase I	**	
	* , Fangjiashan phase I	**	
	* , Fuqing phase I	**	
* ,Sanmen phase I	**		
40 sets of units to be constructed	* , Sanmen Jiantiao	**	
	* ,Sanmen-Tangshan	**	
	* , Tianwan phase II	**	
	* , Yangjiang phase II	**	
	* , Yaogu, Taishan	**	
	* , Fangchenggang, Bailong	**	
	* , Fuqing phase II	**	
	* , Ningde phase II	**	
	* , Daban, Xian'ning	**	
	* , Taohuaijiang	**	
	* , Hongyanhe phase II	**	
	* , Haiyang phase II	**	

Source: The State Council of PRC; ResearchInChina

It is expected that the market scale of HVAC nuclear power equipment in China will flourish in the upcoming years. And the market scale is estimated to reach RMB 1.2 billion by 2013. In the next 4 years, China's market scale of HVAC equipment will total RMB**.

Market Demand of HVAC Nuclear Power Equipments in China, 2009-2013E (RMB mln)



Source: China Fan Association, ResearchInChina

4. Competition in China Fan Industry

4.1 Competition Pattern

In respect to competition pattern of fan industry, it constitutes fan market oriented key technological equipment and ordinary fan market.

4.1.1 Market Competition of Key Technological Equipment Fans

As a high-end market of fan products, key technological equipment fans feature high technology content, complicated structure, accurate manufacturing precision and great difficulty in design and manufacture.

At present, leading enterprises engaged in the production of key technological equipments include Manturbo, Mitsui, GE, Siemens, China-based Xi'an Shaangu Power and Shenyang Blower Works Group. And the major products of the first 3 foreign enterprises are mainly specialized in the production of axial compressor, centrifugal compressor and Turbine, among which, large axial compressor and centrifugal compressor are mainly sold in Chinese market. As for Xi'an Shaangu Power and Shenyang Blower Works Group, they boast flagship key technological equipment fan manufacturers in China.

5. Leading Manufacturers

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5.3 Xi'an Shaangu Power

5.3.1 Profile

Xi'an Shaangu Power Co., Ltd. (Shaangu Power) is a subsidiary of Shaanxi Blower (Group) Co., Ltd. which holds its 69.388%. Shaangu Power was established in June 1999, and went public on April 28, 2010.

Shaangu Power provides turbine mechanical system solutions and services for metallurgical, petroleum, chemical, air separation, power (including nuclear power), urban construction, environmental, pharmaceutical, defense and other industries. Its products are axial compressors, industrial energy recovery & generation equipment, centrifugal compressors, centrifugal blowers, large fans, steam turbines and so on. In particular, axial compressors and industrial energy recovery & generation equipment are highly-efficient energy-saving and environment-friendly products. The main rivals of Shaangu Power in China are foreign enterprises.

Market Shares of Leading Fan Products of Xi'an Shaangu Power, 2008

Type	Products	Market Shares
Turbine Compressor	AV90 (or Above) Axial Compressor	80%
	AV80 (or Below) Axial Compressor	**
	ASU Compressor (mainly RIK)	65%
Industrial Energy Recovery Device	TRT	**
	Three-In-One, Four-In-One Units	**

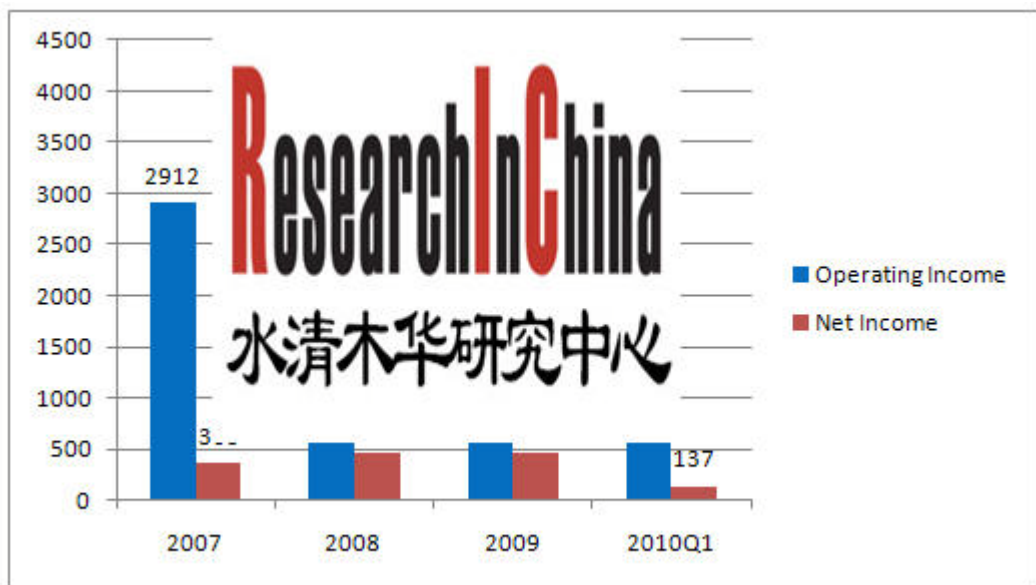
Source: Shaangu Power

5.3.2 Operation

In 2009, Shaangu Power achieved the operating income of RMB **, down 8.5% from 2008. Affected by the financial crisis, Shaangu Power suspended some orders, the contracts valued about RMB634 million were postponed to be carried out in 2010. The total profit reached RMB **, including the net profit of RMB**, up 1.3% from 2008.

In 2010, the operation of Shaangu Power gets better apparently. In Q1, Shaangu Power achieved the operating income of RMB1.11 billion, up 15% from 2009; the net profit reached RMB 140 million, up 27% from 2009.

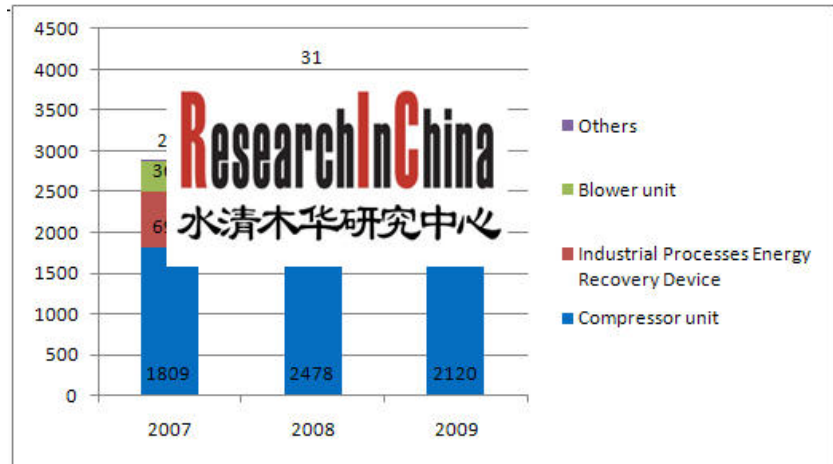
Operating Income and Net Profit of Xi'an Shaangu Power, 2007-2009 (RMB mln)



Source: Shaangu Power, ResearchInChina

The products are industrial energy recovery equipment, turbine compressors and turbine blowers. Among them, turbine compressors are the leading products. Since 2007, turbine compressors has always contributed ** % to the total operating income.

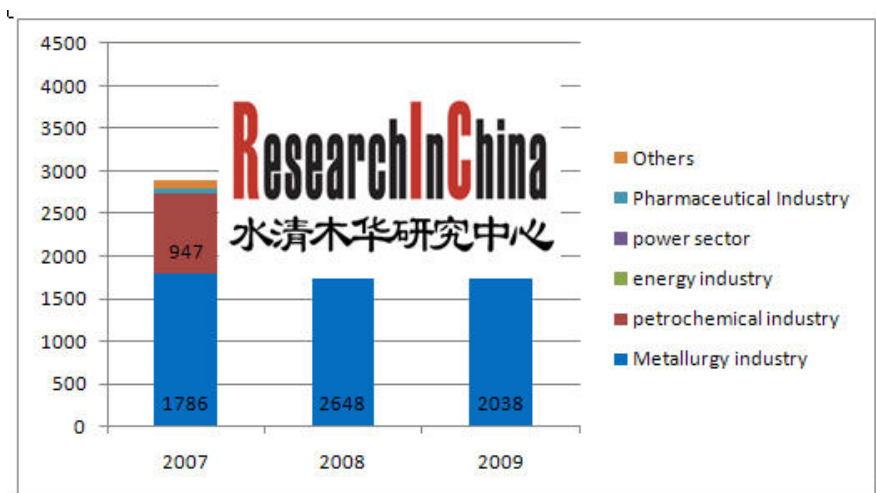
Operating Income of Xi'an Shaangu Power by Product, 2007-2009 (RMB mln)



Source: Shaangu Power, ResearchInChina

The clients who buy industrial energy recovery equipment and turbine compressors are mainly concentrated in metallurgy and petrochemical industries, which contributed over 90% to the prime operating income of Shaangu Power. In recent years, ** of the prime operating income comes from the metallurgical industry. In order to reduce the dependence on the metallurgical industry, Shaangu Power has enhanced its marketing in petrochemical and other industries. In 2009, the revenue which Shaangu Power gained from the petrochemical industry accounted for **%. Meanwhile, Shaangu Power also focuses on the application and promotion in energy, electricity, pharmaceutical and other industries to obtain more sales revenue.

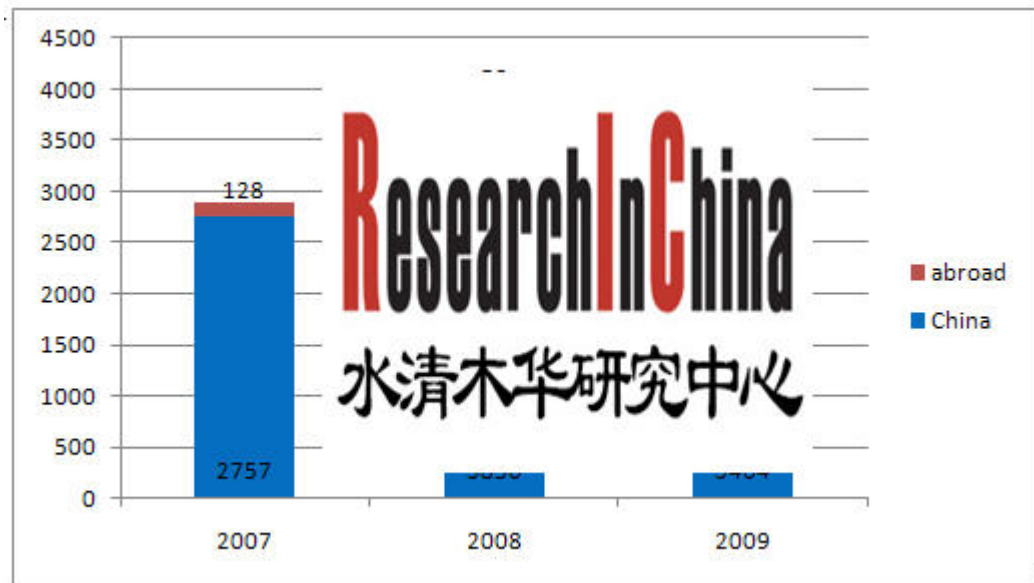
Operating Income of Xi'an Shaangu Power by Sector, 2007-2009 (RMB mln)



Source: Shaangu Power, ResearchInChina

Now, Shaangu Power mainly sells products in China. It also exports industrial energy recovery equipment and turbine compressors to foreign countries.

Operating Income of Xi'an Shaangu Power by Region, 2007-2009 (RMB mln)



Source: Shaangu Power, ResearchInChina

5.3.3 Investment

In 2010, the fund Shaangu Power raised from A-share market is invested in three projects. The total investment of these projects reached RMB **, including the fund raised from A-share market and its own funds

Projects under Construction of Xi'an Shaangu Power, 2010 (RMB mln)

Project	Total Amount	Investment
Large-Scale Turbine Capacity Improvement and Optimization Project	**	**
Shijiazhuang Jinshi ASU Industrial Gas Project	422	**
ASU Industrial Gas Project of Shaanxi Huashan Chemical	**	511
Total	**	**

Source: Shaangu Power, ResearchInChina

5.3.4 Core Technology Advantage

Shaangu Power is the first one that achieved system integration technology in wind turbine industry, so it has advantages in system technology. Over the years, Shaangu Power has cooperated with foreign companies actively in process technology development and system integration to enhance its integrated capacity in system technology. At the same time, Shaangu Power made continuous system technology innovation through basic research and technology development.

Key Technology Level of Major Products of Xi'an Shaangu Power

Products	Features	Level
Axial Compressor	High efficiency Low noise Energy-saving	International advanced level
Industrial Energy Recovery Device	High efficiency High recovery power	International advanced level
Centrifugal Blower	Energy-saving	Domestic advanced level
Centrifugal Compressor	High efficiency Energy-saving	Domestic advanced level

Source: Shaangu Power, ResearchInChina

Shaangu Power has advantages in associated industrial process technology. Based on the research on industrial core equipment and technology, it conducts R & D on the associated industrial process and equipment to provide equipment, technology, monitoring and maintenance which the industrial process requires. Shaangu Power has established the world's only TRT industrial process test platform to make analysis on high-precision stability control of the top pressure of blast furnace. Besides, it is the first one to launch rotating machinery remote online monitoring and fault diagnosis technology which has been adopted by 60 clients.

Shaangu Power also has advantages in host technology. It masters various international advanced host technologies. Axial compressor technology innovated by it on the basis of the introduced technology and energy recovery turbine equipment developed by itself have reached international advanced level with the features of high-efficiency, energy-saving and reduced noise. Axial compressor technology and energy recovery turbine equipment have been applied to many key fields. Shaangu Power cooperates with foreign companies to develop centrifugal blower technology and centrifugal compressor technology, which use three-dimensional flow design and CFD flow field analysis. centrifugal blower technology and centrifugal compressor technology has been applied to coal chemical, petrochemical, metallurgy and other fields, reaching the domestic advanced level; in particular, ASU compressor technology has reached international advanced level.

Currently, Shaangu Power is increasing R & D investment. In 2009, R & D expenses accounted for 5.76% of the operating revenue, twice the proportion in 2007.

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