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``Report on China Wind Power Market``

China Wind Resources  
China Wind Power Market  
Prominent Problems  
Foreign Investment in China Power Market

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After 30 years of rapid process of industrialization and urbanization, China's economic development has encountered two difficult problems: First, the environmental pollution is becoming increasingly severe; second, due to huge energy consumption, energy security is very urgent. How to solve these two problems will directly affect China's sustainable economic development. Undoubtedly, to tap new energy sources and develop green economy will be a win-win solution. China's rapid adoption of the "Renewable Energy Law" in 2006 indicates that China's new energy market will usher in an unprecedented development period. Since the adoption of the bill, China's new energy market has boomed, especially the wind power market. This report tries to make an analysis of the current status of China's wind energy market and its development prospects in the hope of providing potential foreign investors with basic understandings of China's wind power industry, thereby reducing their investment risk.

### China Wind Power Resources

China regards renewable energy industry as a key growth component of the economy and intends to become a leading producer in future renewable energy market. At present, *China is the world's largest producer of solar panels and the fourth largest producer of wind power*, after the United States, Germany, and Spain. At the end of 2008, wind power in China accounted for 12.2 gigawatts (GW) of electricity generating capacity. The reason why wind power becomes so popular in China is mainly because of its two obvious advantages: widely available and environment-friendly.

On one hand, China's wind power resources are large and widely distributed across the country. In 2006, China National Climate Centre applied a data modelling method to assess the wind energy resource in China, concluding that at 10 meter height above ground level, and without taking into account the Qinghai-Tibet Plateau, the technically exploitable wind energy resource is about 2,548GW, which is mainly distributed across the southeast coastal areas, adjacent islands, Inner Mongolia, Xinjiang, the Gansu Hexi Corridor, Huabei and the Qinghai-Tibetan Plateau. On the other hand, wind power has the added advantage that it is free of pollution. Generating electricity from wind does not need fuel; hence there is no risk of a fuel price rise and environmental costs, such as

carbon emissions, in the generation process. Therefore, the rational harnessing of wind energy can reduce environmental pollution and the increasing pressure of energy shortage in China to a great extent.



Figure 1: green=great, pink=good, blue=ok, yellow=poor

### China Wind Power Market

The growth of China's wind power industry in recent years can be described as explosive. China's wind power production has been more than doubled for five consecutive years, with installed capacity of wind power reaching more than 12 million kilowatts. It is estimated that China may add about 10000 megawatts of capacity in 2009.

① In 2006, wind power investment in China was RMB 16.27 billion yuan, accounting for 9% of the global total. If this growth rate is maintained, China could become a tremendous wind market in the world. According to Global Wind Energy Council, China is poised to become the biggest growth market for wind-power generating capacity this year as the recession and credit crisis crimp expansion in the U.S.②

According to Zhang Xiaoping, Deputy Director of the National Development and Reform Commission, the initial future target set by the Chinese government was 10 GW by 2010, but estimates suggest that by 2010 the total installed capacity for wind power generation in China will reach 20 GW. China aims to have 100 GW of wind power capacity by 2020. In addition, China is developing a renewable energy development plan, by which China hopes to make renewable energy account for 20% of its total energy consumption.③

### Prominent Problems

Considering the statistics aforementioned, it is quite easy to reach a conclusion that the wind power market in China is huge and lucrative. However, every coin has two sides. In order to make a sound investment in China's wind power market, not only the opportunity and potential should be valued but also the problems and risks should be brought into consideration. Though China's wind power market is growing at a record-breaking speed, yet there are prominent problems waiting to be solved.

#### ➤ Weak Grid Network

The first hurdle in developing China's wind power market is geographical imbalance between supply and demand. The geographical distribution of the wind resource in China does not fit very well with the country's power load profile. Coastal regions with a large power load have fewer areas with rich wind resources than the northern areas with abundant wind resources but relatively smaller demand. This creates difficulties for the economic development of wind power. As most of the areas with abundant wind resources are far away from the power load centres, and the grid network is relatively weak, grid reinforcement is needed to support the development of large scale wind power.

#### ➤ Lack of core technologies

The next obstacle China faces in developing wind power market is the lack of core technologies. Take wind turbine manufacturing industry for example, small and large businesses have sprouted up in China during recent years. However, most companies are not able to produce the key components required by wind turbines because of lacking core technologies. (For example, *electricity control system* is the weakest sector in Chinese domestic accessory production and is entirely imported.) All the manufacturers just follow the suit by directly purchasing the components from abroad or using technology transfer from foreign companies. There are only a small number of independent scientific research projects involving units manufacturing. However, most of these scientific researches had no potential to be improved and transformed into commercial products both because of the long research cycle required and the fact that they could not meet the market demand. In fact, the lack of key technologies and innovative capacity has become a bottleneck for China's wind power industry.

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① From Bloomberg:  
<http://www.bloomberg.com/apps/news?pid=20601072&sid=a8RjFHR.Y9r8&refer=energy>

② Information from Global Wind Energy Council  
<http://www.gwec.net/>

③ From Reuters:  
<http://uk.reuters.com/article/idUKPEK33615120090420>

### ➤ **Overcapacity**

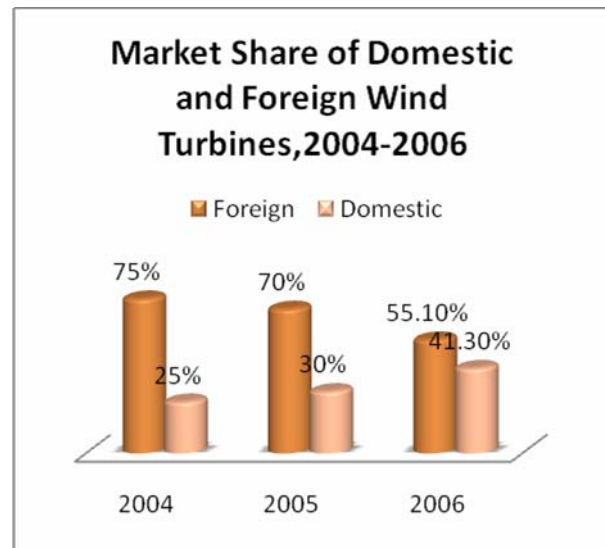
China's wind power industry has developed very rapidly. There are not just a flood of private enterprises into this sector, but state-owned enterprises also see it as a magnet for investment. The latest statistics show that till the end of 2008 the number of Chinese enterprises in wind power industry has already exceeded 239 nation-wide. At present, there are more than 70 enterprises manufacturing wind power generation equipment and related spare parts, 50 blade manufacturers and more than 100 tube manufacturers in China. Among wind turbine manufacturing enterprises, Jinjiang Gold Wind Science & Technology Co, Sinovel Wind Co, Dongfang Electric Corp, SAIC are the top four manufacturers with annual production capacity of 12 million kilowatts. However, according to the estimation of Chinese Wind Energy Association, China's installed capacity of wind power in 2009 will only be 20 million kilowatts. Apart from this, recent years also see a flood of foreign invested enterprises entering into Chinese wind power market, like *GE (US)*, *Gamesa (Spain)*, *Vestas (Denmark)* and *Suzlon (India)*. So it is safe to say that China's wind power industry will suffer from overcapacity if the investment continues to grow at a neck-breaking speed. It is certain that a number of less competitive enterprises will face the fate of being eliminated out of the market.

### **Foreign investment in China's wind power market**

Just like aforementioned, many foreign companies have been attracted to Chinese wind power market by its huge potential. To them, the cake is big but it is not easy to have a bite. Roughly speaking, the main problems and challenges for foreign investors can be summed up as following:

### ➤ **Challenges from Chinese domestic Enterprises.**

Generally speaking, foreign companies so far still have a large share in Chinese wind power market, but their dominant position is shaking due to fierce competition from their Chinese counterparts. In terms of turbine manufacture, the market share for domestic manufacturers increased in 2006 to 45% (including joint ventures), among which Jinjiang Gold Wind had the biggest share, with 33% of the total newly installed capacity and 80% domestic output. You can easily observe from the following figure that foreign companies' share in China wind turbine market is on a steep decline.



### ➤ **Protectionism**

There is an obvious protectionist tendency in Chinese wind power market. Foreign invested companies face a number of restrictions in many aspects. China regards renewable energy sector as an area of strategic importance, so in order to protect the development of Chinese enterprises and to ensure their leading position in the future, China has set many restrictions for foreign enterprises to invest in Chinese wind energy market. For example, in public tendering for wind power projects, government often makes it clear that "this product is only

limited to local companies in China." Again, in the 6th round of bidding for wind power concession projects launched *in March 2009, the government restricted the use of turbine below 1MW for the majority of projects in China*. This reduces the range of turbine options available for developers and undermines investment opportunities for a number of foreign manufacturers.

➤ **Exclusion From renewable energy incentives**

Exclusion of foreign invested companies from renewable energy incentives: Foreign invested companies are often excluded from the financial and fiscal incentives the Chinese government provides to encourage renewable energy development, thus discouraging further foreign investment in China's renewable energy sector.

➤ **Lack of transparency in the concession bidding process.**

Opacity is really a big headache to foreign manufacturers in the concession bidding process, because this makes it very difficult for foreign manufacturers to react on a timely basis to decisions made in the bidding process. Also, there are no uniform national standards for competitive bidding in China and the bidding evaluation criteria are difficult to understand and are often subject to change. This hampers the ability of companies to prepare for the biddings.

➤ **Bidding Criterion**

Comparing with Chinese local manufacturers, foreign turbine manufacturers are less competitive in terms of price. Chinese companies usually can offer a more favourable price, though their quality is not the most reliable. This stands the Chinese companies in a good edge over their foreign competitors, because in the bidding process the assembly costs are always considered as the most decisive factor, though in long terms the life-cycle costs of foreign projects are less than Chinese projects. Although Chinese government is trying to revise the criterion "The bidder who offers the lowest price wins the bid", price is still having the heaviest weight in deciding the winning bids.

*In short, for foreign-funded enterprises investing in China's wind power market, the growing Chinese market is indeed a rare opportunity, but the business development cannot be smooth like sailing in still waters. China wind power market has already shown signs of overcapacity, in order to steady their feet in Chinese market and survive the fierce competition, foreign investors must pay adequate attention to factors in multiple aspects including product quality, advanced technologies and after sales service.*



**TURKISH INDUSTRY AND BUSINESS ASSOCIATION**

**References:**

*2008-2009 Annual Report on China Wind Power Generation Equipment Market by Energy Industry Research Centre of CCID Consulting Co., Ltd.*

*European Business in China Position Paper 2009/2010 by EUCCC*

*2007 China Wind Power Report by Li Junfeng*

*Chian Wind Energy Association: <http://www.cwea.org.cn/main.asp>*

*Global Wind Energy Council <http://www.gwec.net/>*

*Xinhua.news.cn [http://news.xinhuanet.com/fortune/2009-09/11/content\\_12032263.htm](http://news.xinhuanet.com/fortune/2009-09/11/content_12032263.htm)*

*2009 China's Wind Power Industry Capital Forum*

*<http://finance.ifeng.com/topic/news/zgfnyczblt/index.shtml>*