

Editor's note:

Shao Bingren, a high-ranking official in China's electricity sector, traveled to Barcelona in April to address an Accenture conference that attracted utility executives from 21 countries. For anyone not closely following recent developments, the tenor of his remarks were startling. Here was an official from a large communist country extolling the benefits of foreign investment, competition and open markets in the energy business. Toward the end of his speech, he quietly delivered one statistic that clearly outlined the dimensions of China's ambitions in power. China intends to add 500 gigawatts of electric generating capacity in the next 15 years, he said. That is the equivalent of more than half of the total installed capacity of 968.6 gigawatts in the United States today. If China comes anywhere near achieving that goal, it will create enormous business opportunities for many years to come. However, one American executive said that the rules governing foreign investment and the power sector in China would have to become significantly clearer before he would commit a significant investment to the country. Shao Bingren's comments, edited for style, outline Chinese objectives for their power sector and display sensitivity to environmental issues now being addressed in many other parts of the world.

Final Take

China's Power Plans

PURSUING MARKET REFORMS, FOREIGN INVESTORS

SINCE THE ERA of reform and opening up started in China, the system underlying the power industry has experienced a series of reforms. The investment system for the power industry with the government as the sole source of funding has been transformed. New policies have spurred power investment by diversified investors, and competition. As a result, China's power industry is scaling new heights.

In 1978, the total installed electricity generation capacity in China was only 57 gigawatts. Electric power was in short supply. In 2004, it hit 440 gigawatts. In the meantime, electricity generation exceeded 1,000 Twh in 1995, and hit 2,187 Twh in 2004. (A Terawatt-hour equals 1,000 gigawatt hours (GWh)).

The rapid growth of power supply still has a hard time meeting the power demand, whose growth is greater than supply. In 2002, power supply was tight in 12 provinces, provincial-level cities and autonomous regions across China. In 2003, power shortages occurred in 21 provinces, provincial-level cities and autonomous regions. In 2004, the number of provinces affected by power shortage increased to 24. The main reason for tight power supply lies with rapid economic growth. On the other hand, since the level of per capita electricity consumption in China is comparatively low worldwide, there is a real need to speed up development.

REFORMING CHINA'S POWER INDUSTRY

In a bid to further improve the efficiency of the utilization and allocation of power resources, and promote sustained and sound development of the power industry, the Chinese government launched a new round of reforms in the electricity system in 2002. To meet the requirements of a socialist market economy, this new round of reforms was aimed at putting in place a power market system that features separation of government functions from enterprise management, fair competition,

system openness and sound growth.

The efforts took place at three levels:

- > **To distinguish between monopolistic business and competitive business, break up and reorganize the state-owned power assets that were under vertically integrated management, and separate power plants from grids.**
- > **To introduce competition at the generation side, establish a competitive and open power market system, and gradually implement the program of bidding for access to grids.**
- > **To reform the administrative system of the power industry, establish an independent and efficient modern electricity regulatory regime that is in line with the requirements of market competition, so as to exercise sound regulation over the power industry.**

The former State Power Company was broken up and reorganized in 2002. The Company was turned into five independent generation companies, two power grid operators, and four ancillary business groups engaged in power planning and designing hydropower construction. The formation of these 11 companies has been completed.

In 2003, the reform wave continued. As part of the reorganization of power assets, the assets and finance were transferred to new companies. The five regional power grid companies, which used to be affiliated with the State Grid Co., were transformed into independent corporate entities.

The State Electricity Regulatory Commission was created. Pilot programs for establishing regional power markets were officially launched. The mechanism for large users' direct purchase of electricity from generation companies took shape. The

By Shao Bingren

> **TOTAL U.S. GENERATION TODAY: 968.6 GIGAWATTS**

> **CHINA PLANS TO BUILD IN 15 YEARS: 500 GIGAWATTS**

Chinese government approved and promulgated an Electricity Tariff Reform Scheme.

In order to ease of the shortage of power supply, varying prices are charged for electricity during the periods of peak and low load.

With nearly three years' efforts, the reform of China's power industry system has registered big strides with profound and positive implications for the electricity sector.

Grid companies continue to separate ancillary businesses from their primary activities. Gradual steps have been taken to establish organizational and legal structures for electricity regulation. The State Electricity Regulatory Commission has been created and moved to perform its duties. Revisions to Electricity Law are being prepared. The framework for a new electricity regulation system is taking shape.

Efforts to establish regional power markets have been proceeding in an orderly manner. Studies have looked at the direct power purchases made by big users and at separate accounting for the transmission and distribution businesses of grid companies. That has created conditions for market-driven reforms in the power sector.



Photo courtesy of: Accenture

▲ Shao Bingren addresses power industry executives from 20 countries at a Barcelona meeting.

With the advent of a new century, the Chinese government has set broad goals of social improvement. This presents both challenges and opportunities for the development of China's power industry. In the next 15 years, China will put in place an additional installed electricity generation capacity of 500 gigawatts. To meet the requirements of the scientific concept about development, we will work to emancipate the mind, intensify reform and speed up development to ensure sufficient power supply to build a well-off society.

Looking toward the future, we will make energy conservation as the priority, be efficient, protect the environment, and seek diversified sources of power. We need to improve and expand power grids. While allowing coal-burned power supply to grow, we need to vigorously develop hydropower. Nuclear power should grow to an appropriate degree. Natural gas as a source of electricity needs to be developed. Development of new and renewable sources of energy, like wind-power and solar-power, will be encouraged.

The objective is to balance the needs for sustained economic development, all-round social progress, perpetual utilization of resources, and improvement of the environment and sound ecological cycles.

While we will try to increase power supply; we will also enhance the role of demand-side management.

We shall stick to the market-driven orientation in continuing reforms of the electricity system. We will work hard to speed up the development of regional power markets; to introduce separate accounting for power transmission and distribution. We will work to improve the laws and rules governing the power sector, to promptly clean up those that stand in the way of the dismantlement of monopolies and the introduction of competition.

We shall persist in opening up to the outside world, and strengthen international cooperation and exchange. We also need to draw upon advanced foreign experience and practices. That means we will open up the power sector to the outside world at a higher level and in a wider scope. We believe that in the future China will emerge as the most vibrant part of the global power community and a more attractive destination for investors. ☒

Shao Bingren is the vice chairman of the State Electricity Regulatory Commission of China, which is in charge of power industry reform, power market operation and power system safety.

CHINA POWERS UP

CHINA'S ENERGY APPETITE in the next two decades will be the fastest growing in the world, with consumption expected to roughly triple by 2025, according to federal estimates. Demand for power in the United States in the same time frame will increase by more than 50 percent.

Power Demand Growth (Billion kilowatt-hours)						
Country	2001	2010	2015	2020	2025	Average Annual percent change 2001-2025
United States	3,386	4,055	4,429	4,811	5,207	1.8
Western Europe	2,246	2,486	2,659	2,839	3,029	1.3
Japan	788	870	920	965	1,012	1
India	554	751	896	1,053	1,216	3.3
China	1,257	1,856	2,322	2,825	3,410	4.3

Source: U.S. Energy Information Administration, 2004



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