
The Electric Power Industry and Energy in China

Shi Yubo

China has abundant energy resources. Because of its huge population and its current accelerated economic development, however, the electric power industry and other energy supplies have become a bottleneck that hinders further development. Unfortunately, a series of problems—such as environmental protection—have emerged concurrently, despite the fact that the constraint of the bottleneck has basically been relaxed. Therefore, the strategy for developing the power industry and other energy supplies, in conformity with the actual situation in China, will play a critical role as China steps into the twenty-first century.

SUMMARY OF THE CHINESE POWER INDUSTRY AND OTHER ENERGY

Ever since reforms and the open-door policy began, China has consistently adhered to a policy of giving priority to the power industry. In 1998 China had 270,000,000 kW (270 GW) of installed capacity and an annual generating capacity of 1,167,000,000,000 kWh (1,167 TWh). This is the second-largest capacity in the world. Notwithstanding the above, problems still remain unsolved, such as low per-capita power supply and demand, failure to fully explore the market potential for power consumption, and about 60 million people who still do not have access to electricity.

Rapid development has been achieved in the power industry in the past twenty years, since reforms and the open-door policy began, and an energy policy has been established in practice, with electric power at its center and with coal as its foundation. There are constant increases in the conversion of coal into electric power and in electric power as the end-use form of energy consumption. This pattern of Chinese energy consumption, with electric power as the main form of energy, will remain unchanged for a long time, and coal-fired generation will continue to take the lead. However, the power industry is now confronted with huge pressures and serious challenges relating to environmental protection, owing to the pollution caused by large-scale power generation. These pressures in turn will have major effects on our policy orientation and the future development of the electric power industry and other forms of energy.

SOME GUIDING PRINCIPLES AND POLICIES ON REFORM AND DEVELOPMENT OF THE POWER INDUSTRY IN CHINA

The orientation of the reforms includes separating political affairs from enterprise in the management system of the power industry, introducing mechanisms for competition, speeding up the separation of power plants from the power grid, and bidding for power transmission and distribution as required generally by the construction of a socialist market economic system. When local governmental organizations undergo reform, all their administrative powers and functions relating to the power industry will be transferred to the respective local Committee of Economy and Trade. These transfers will be made by the electric power bureaus (companies) at the level of provinces, autonomous regions, and municipalities, which are under the direct jurisdiction of the central government.

After this separation of powers and functions, all local governments will take an active part in the actual situations of the Chinese power industry. They will lead and push forward the power industry in its reforms, its further development, and its introduction of competitive mechanisms. They will try, as early as possible, to transform the industry into a standardized competitive entity in the field of power generation, to speed up the separation of power plants from the power grid, to speed up bidding for power transmission and distribution, to break monopolies, to lower costs, and to improve efficiency.

Another principle is to enhance structural adjustment and explore the power market, especially the rural power market. Power development will shift from quantitative increases in supply to quality improvement. At the same time, the development will adhere to the following policy:

- actively developing hydropower generation
- optimizing the development of coal-fired generation
- appropriately developing nuclear generation
- developing new energy resources, taking into consideration actual local conditions
- concurrently developing the power network
- giving equal importance to development and to economization, with economization in first place
- attaching great importance to environmental protection.

Attention will be paid to restructuring as the centerpiece of power development. The principal tasks for the time being are (1) to construct a power network (especially the construction and reform of urban and rural power networks and strict limitations on development and construction of small coal-fired generating units), (2) to explore power markets, and (3) to make full use of the power industry in raising domestic demand and driving economic growth.

A third principle is to speed up scientific progress and technical innovations and to pursue a strategy of sustained development of the electric power industry and other forms of energy. Efforts will be made to diversify the energy sources for electric power generation, to develop and make much greater use of China's abundant resources for hydropower generation. Measures will be taken according to local conditions for the development of hydropower and renewable energy sources, such as wind, solar, and geothermal energy. Coal-fired plants will be developed on the basis of large-scale generating capacity per plant, high efficiency, and promoting the use of cleaner coals and clean-coal technologies. Nuclear power plants may be developed both in areas where energy is in short supply and where pressure for environmental protection is high, as well as in the coastal areas of China.