

The Xinfeng Power Plant Incident and Challenges for China's Electric Power Industry – Prospect of System Reforms, Energy Conservation, and Environmental Policies –

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Introduction

Construction of the Xinfeng Power Plant project in north China's Inner Mongolia Autonomous Region started in April 2004 with an investment of 2.89 billion yuan (1 yuan = 14 yen). However, in July 2005, the project led to a major disaster in which a structure housing gas turbine generators collapsed, killing six workers and injuring eight others, due to a recklessly tight construction schedule and unscrupulous construction work that cut some corners. After a thorough investigation of the incident, an executive meeting of the State Council chaired by Premier Wen Jiabao sternly reprimanded the illegal construction project at the Xinfeng Power Plant and imposed disciplinary action against Yang Jing, Chairman of Inner Mongolia Autonomous Region, as well as many other top officials of the local government, causing a nation-wide stir in China. In the backdrop of the tough message sent by the Premier personally singling out one unauthorized construction project was the fact that despite the central government's implementation of macro-economic controls and restructuring of China's electric power industry, regional and local governments have continued to fail in enforcing the central policies and curtailing their overheated capital investments.

This paper will attempt a comprehensive review of the details, background, and the aftermath of the incident at the Xinfeng Power Plant, thereby to shed some light on inherent challenges that face China's power industry and its structural reforms today.

1. The Xinfeng Power Plant Incident

1.1 Development of the Incident

The fatal accident took place at the Xinfeng Power Plant project whose construction work was in progress in Ulanqab, a city in the central part of Inner Mongolia Autonomous Region. The project was designed to have two coal-fired generating units each with a capacity of 300 MW, for a total cost of 2.89 billion yuan. However, after the construction was started in April 2004, a multitude of irregularities were revealed such as neglect of authority limits and standard procedures in the project approval, violation of land acquisition regulations, forgery of project plan documents, and breach of tendering procedures for the construction contract, all committed by the regional government as well as the local business entities. While the construction of the

power plant pressed on in a hurry even after the central authorities' order to stop the continuation of the unauthorized project, the collapsing accident took place, claiming six fatalities.

[Fig.1] File photos of the incident



Source: Xinhua News Agency.

1.2 Socio-economic Background of the Incident

The incident at the Xinfeng Power Plant not only brought a governance problem existing between the central and local governments into the open, but could also be understood as a vivid reflection of a critically tight supply and demand situation in the Chinese electric power industry today.

[Table 1-1] Rolling Blackouts Implemented in China (2002 – Summer 2005)

(Number of provinces/municipalities/autonomies in blackouts)

Region	Jan/Aug 2005 (26)	2004 (24)	2003 (22)	2002 (12)
North China	Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia, Shandong	Tianjin, Hebei, Shanxi, Inner Mongolia, Shandong	Hebei, Shanxi, Inner Mongolia, Shandong	Hebei, Shanxi, Inner Mongolia, Shandong
Northeast China	Liaoning			
East China	Shanghai, Jiangsu, Zhejiang, Anhui, Fujian	Shanghai, Jiangsu, Zhejiang, Anhui, Fujian	Shanghai, Jiangsu, Zhejiang, Anhui, Fujian	Shanghai, Jiangsu, Zhejiang, Anhui, Fujian
Central China	Jiangxi, Henan, Hubei, Hunan, Sichuan, Chongqing	Jiangxi, Henan, Hubei, Hunan, Sichuan, Chongqing	Jiangxi, Henan, Hubei, Hunan, Sichuan, Chongqing	Henan, Hubei, Sichuan, Chongqing
Northwest China	Shaanxi, Gansu, Qinghai, Ningxia	Shaanxi, Gansu, Qinghai, Ningxia	Gansu, Qinghai, Ningxia	
South China	Guangdong, Guangxi, Guizhou, Yunnan	Guangdong, Guangxi, Guizhou, Yunnan	Guangdong, Guangxi, Guizhou, Yunnan, Hainan	Guangdong, Guizhou

Source: China Electricity Council data.

In China, the problem of electricity shortage has become conspicuous year by year due to various factors including, in particular, rapid economic growth, forcing the central and local

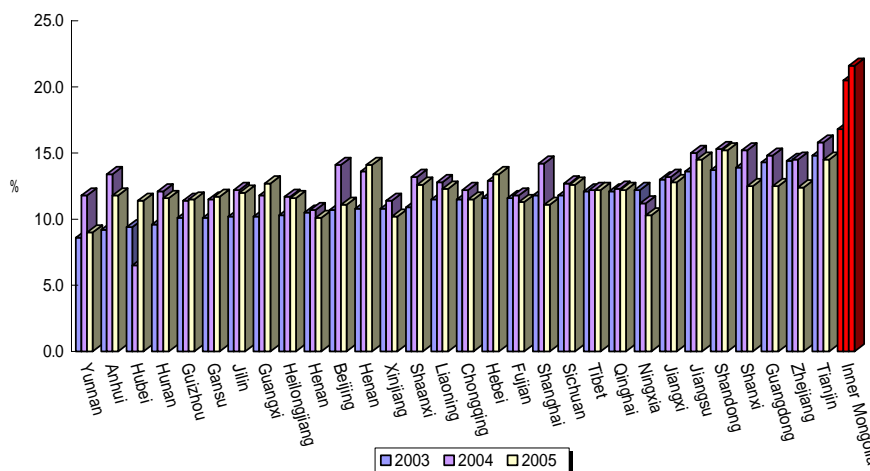
governments to implement supply restriction in the form of rolling blackouts which in 2005 spread to 26 municipalities, provinces, and autonomies (see Table 1-1). The severe shortage in electricity supply is now seriously affecting the nation’s economic activities as well as the citizens’ daily life. According to an estimate by the Beijing Economic and Technological Research Institute of the State Grid Corporation of China, economic losses attributable to the restrictive measures taken during 2002 to 2005 amounted to some 1 trillion yuan.

Under the nationwide power shortages such as described above, Inner Mongolia Autonomous Region was also designated as a region requiring supply restriction measures from 2002 to the summer of 2005. The following can be mentioned as the main causes underlying the region’s power shortages.

- (a) Rapid growths in local economy and capital investments.

Since 2003, the GDP growth rates of Inner Mongolia Autonomous Region have continued to be higher than any other regions in all of China and, moreover, the GDP growth of 18.2% and the growth in capital investments of 43.5% registered in the first half of 2006 surpassed the national average by 7.3 percentage point and 12.2 percentage point, respectively (see Fig. 1-2).

[Fig. 1-2] GDP Growth Development by Region (2003-2005)



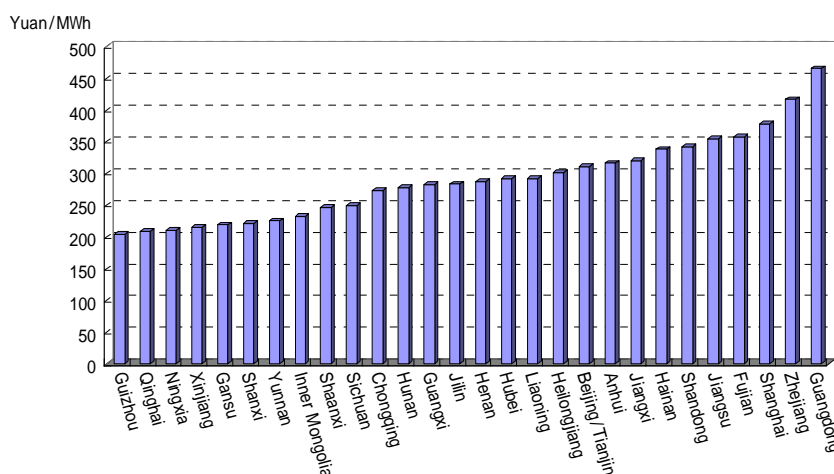
Source: National Bureau of Statistics of China, *China Statistical Abstract 2006*.

- (b) Load demand increases driven by the expansion of energy intensive industries.

In order to maintain its high economic growth and development, Inner Mongolia Autonomous Region has offered cheap preferential electricity tariffs as a means of

soliciting investments (see Fig. 1-3), and so far succeeded in inducing such energy intensive industries as aluminum, carbide, steel making and the like into the region. As a result, the ratio of industrial demand in the total electricity consumption rose as high as 81.9% in 2004, with the demand by the three major material industries above accounting for approximately 80% of the total industrial consumption. The headlong growths in these industries consuming enormous amounts of energy have stretched the power supply balance in the region.

[Fig. 1-3] Retail Electricity Tariffs by Region (2004)



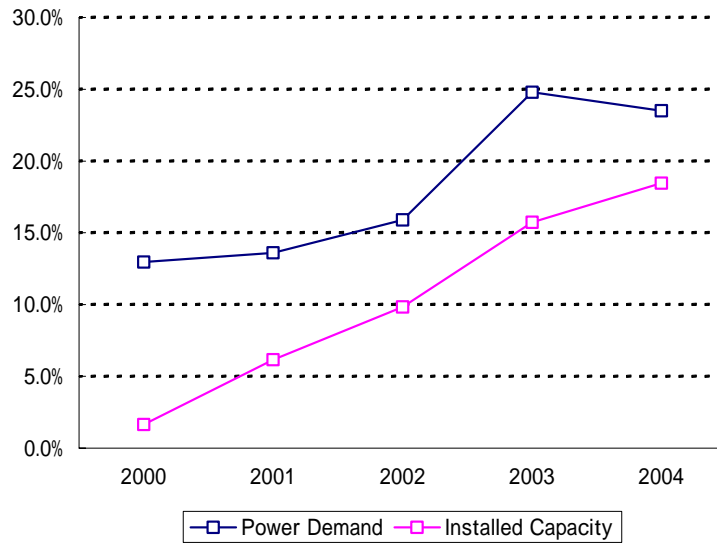
Source: State Power Economic Research Center.

(c) Delays in generation and power network construction.

While the electricity demand in the region grew at an average annual rate of 15.2% during the period from 2000 to 2004, the average annual growth in the installed capacity was 9.83% in the same period (see Fig. 1-4). The shortfall in the installed capacity reached 5.5 GW in 2005, and is expected to continue at least until 2007 with a deficit of 4 GW each being estimated for 2006 and 2007. Additionally, delays in grids construction prolonging over the years are creating transmission bottlenecks, hampering power import and export within the region.

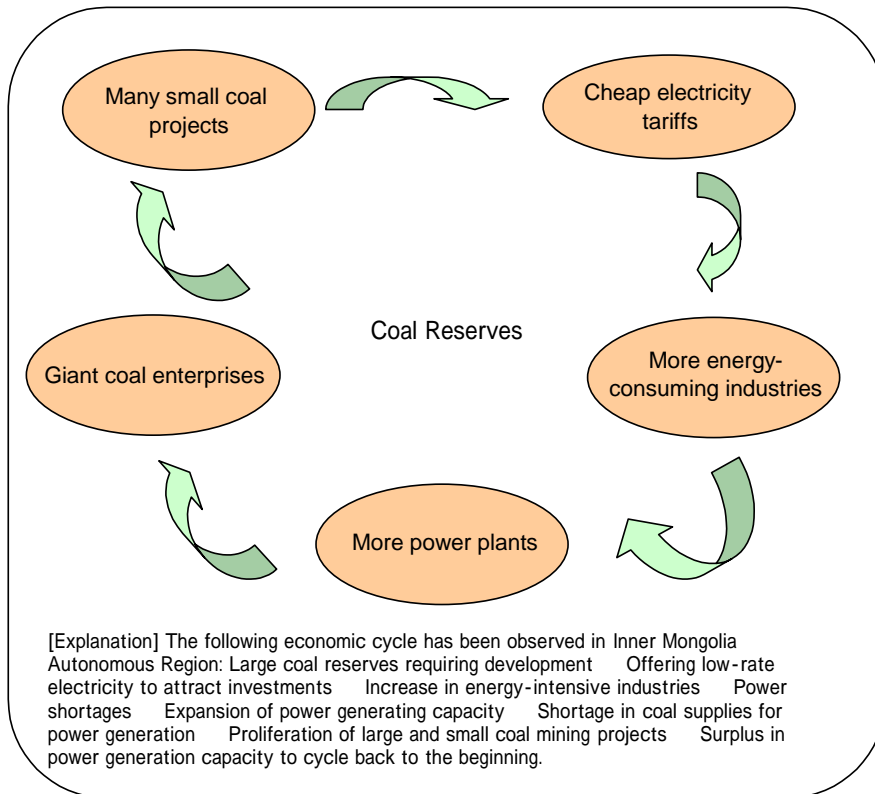
To deal with the situation such as described above, construction of large-scale electric facilities has been promoted in Inner Mongolia Autonomous Region and, it is not too farfetched to conclude that the high-gear construction rush has led to the incident of the present discussion as a consequence.

[Fig. 1-4] Growths in Power Consumption and Installed Capacity in Inner Mongolia



Source: China Electric Power Yearbook Editorial Board, *China Electric Power Yearbook 2000-2005*.

[Fig. 1-5] Economy Development Cycle in Inner Mongolia



2. Actions After the Incident

Immediately after the accident, the State Council organized a multi-ministry joint investigation team and started to look into the case. The probe subsequently revealed that there were ten unauthorized power plant projects similar to the Xinfeng Power Plant with a combined generating capacity of 8.6 GW, or 14 times the capacity of Xinfeng, and that the total investment required for these amounted to more than 80 billion yuan. Moreover, it turned out that seven of the ten unauthorized projects belonged to Inner Mongolia Electric Power Corporation, which owns a major portion of Xinfeng Power Plant's shares.

Following the above developments, the executive meeting of the State Council held on August 16th this year sanctioned criminal charges against the parties directly involved in the project that led to the tragic accident, and decided to impose administrative punishment in which the high-ranking officials of Inner Mongolia Autonomous Region, including its Chairman, were required to write letters of self-criticism to the State Council. Furthermore, on August 21st, the National Development and Reform Commission (NDRC) promulgated an urgent notice in which the Commission instructed the Regional Development and Reform Commission offices nationwide to ensure prevention of the recurrence of a similar incident. According to a Xinhua News Agency report, the urgent notice issued by the NDRC set forth the following five requirements:

- (i) To completely implement the central government's macro control measures
Strengthen and tighten supervision and control over capital investment projects to ensure a sustainable development of the national economy.
- (ii) To rigorously regulate new projects and market entries
Strictly examine and scrutinize capital investment projects and disallow any projects that do not conform to national industrial policies or regulations concerning environmental protection and land utilization. In the event a project is found to be in violation of any statutory requirement, immediately order corrective actions.
- (iii) To strictly observe laws and regulations in administering projects
Put all projects needing government approval under stringent review processes performed in accordance with established procedures. Reviews performed by officials without proper authority are to be strictly prohibited, along with the practice of subdividing or segmenting a project to avoid a required review. For projects involving autonomous decisions to be made by responsible business entities, direct the business to make prudent investment decisions based on a scientific demonstration of the rationale so that investors are guided to avoid losses due to unsound investment decisions.

(iv) To strengthen administrative and legal discipline and enforcement

Develop and establish a framework of responsibility and authority with respect to examination of capital investment projects. In the event of violation of prescribed procedures, arrogation of the review authority, or an attempted avoidance of a review by subdividing a project, hold the parties involved criminally accountable in the light of laws and regulations. Relevant government ministries and agencies are asked to inquire into the criminal liability of a person who has caused a substantial loss and/or a breach of state laws.

(v) To ensure safe operations

Strengthen guidance given to business owners so that the proprietor is directed to closely supervise construction work and carry out projects with an adequate time table to avoid any accident or mishap, thereby securing the quality standard of the construction work and safeguarding assets and resources.

Behind the central government's stern administrative measures as described above can be seen an intention to use the Xinfeng incident as a strong warning against regional and local governments who are single-mindedly continuing their overheated investments in defiance of the macro-control policies of the central government.

3. Implications of the Incident

The incident at the Xinfeng Power Plant is but a tip of the iceberg, and the issues behind it are not at all limited to Inner Mongolia Autonomous Region alone. The following sections will attempt to shed some light on inherent challenges that face China's power industry today.

1) Measures against unauthorized power projects and inefficient, small-scale power plants.

China's investments into generation capacity construction during the period from 2003 to 2005 totaled to one trillion yuan, adding an average of more than 50 GW of installed capacity every year since 2004. For the year 2004, while the aggregated capacity of power plant projects that commenced construction with official approval of the NDRC was approximately 60 GW, there were other power projects totaling some 120 GW in capacity that had been carried forward without obtaining proper approval. Available data indicates that of this 120 GW, approximately 50 GW belonged to small-scale, coal- or oil-fired thermal power plants having capacities of 125 MW or less, with scarcely a plan for installing flue-gas desulfurization equipment and therefore failing to meet the construction standards causing environmental burdens to their neighborhood.

To address disorderly power resource developments involving reckless practices such as giving a project a head-start to secure a construction site first, or filing for a project approval while already proceeding with construction of a plant, the State Council in February 2005 issued

a directive to provinces, autonomies, direct-controlled municipalities, ministries of the State Council, and other related organizations to implement the specific measures listed in Table 3-1 below.

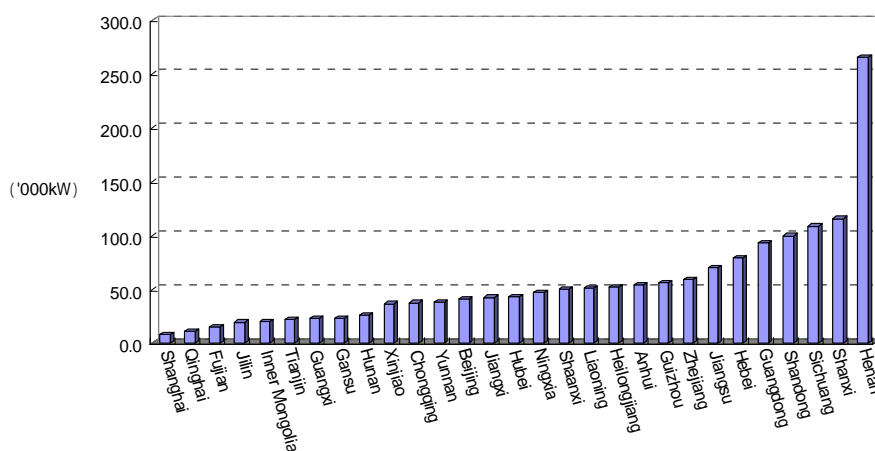
[Table 3-1] Central Government’s Measures Against Disorderly Power Resources Development

Status of Unauthorized Power Plant Projects	Measures
[1] Projects for which the “Project Proposal” has been approved, but waiting for examination and approval of the “Feasibility Study” or verification and approval in accordance with the new “Simplified Process”: Totaling approx. 30 GW	Projects under this category shall be incorporated into the 2005 construction plans after obtaining the necessary approval for project implementation.
[2] Projects that are not examined or approved in accordance with provisions in the state regulations: Totaling approx. 80 GW	Projects under this category shall be handled according to their approval status: (a) projects which have been subjected to deliberations by experts and proved to meet the state development plans in principle while conforming to the industrial policies (with a total capacity of approx. 46 GW) shall be incorporated into the construction plans for the respective year after going through strict procedures; and (b) projects failing to meet the above criteria or otherwise failing to satisfy project approval conditions (with a total capacity of approx. 34 GW) shall be discontinued immediately.
[3] Projects under the rationalization program: Totaling approx. 16 GW	Projects under this category shall be discontinued after due confirmation of the status.

Source: State Council Notice [2005] No.8.

Further, in August 2005, the NDRC announced a program for closing down inefficient, small-scale power plants. The program called for abolishment of 1,200 generating units with a combined capacity of 16 GW to be implemented according to a prescribed sequence, stipulating specific identities of the plants and their timing of closure. According to the announced plans, the power plants designated for closure mainly comprise those with a capacity less than 50 MW. In terms of provincial distribution of the 16 GW to be closed, Shanghai was the least affected whereas the Province of Henan had the largest capacity closures ordered (see Fig. 3-1). By regions, North China took 3.76 million kW accounting for 23% of the total closure, followed by Northeast China (1.2 GW and 8%), East China (2.1 GW, 13%), Central China (5.2 GW, 33%), South China (2.1 GW, 13%), and Northwest China (1.7 GW, 10%).

[Fig. 3-1] Small-scale Thermal Power Plant Closures Planned for 1999 – 2020, by Province



Source: National Development and Reform Commission Notice [2006] No. 392.

It can be pointed out here that behind the act of the Xinfeng Power Plant to press on with the outlawed construction project in a hurry amid a series of announcements by the government on measures to restrain disorderly power resources projects, interests of various parties were also at work as the significant causes in addition to the power shortage problem in Inner Mongolia Autonomous Region.

The first of such elements is the involvement of the local government in power resources projects in general. Generally speaking, power resources development not only provides a local government with an important infrastructure to support the local economic activities, but investment in power resources projects is regarded as a realm in the budgetary scheme that can significantly contribute to developing local economy, raising revenues for the local government, and creating jobs for more workers along with other benefits. Moreover, since most power generating entities in China are state-owned enterprises or public corporations, it is taken for granted that a local government plays an aggressive role in a power plant project and provides various types of preferential treatment and incentives to generators. As a consequence, the present situation is such that local government's examination of power resources investment projects tends to be less strict and, even if a generator infringes certain laws or regulations, the authorities often allow such a party to blatantly operate the plant and engage in wholesale electricity supplies on the pretext of "needs for responding to the rapid and healthy economic development". As mentioned earlier, the probe made by the State Council investigation team after the accident at the Xinfeng Power Plant revealed that the unauthorized projects in the Region included not just Xinfeng alone, but as many as nine other unauthorized projects. Given the size of the total capital investments in the Region at slightly over 260 billion yuan in 2005,

the combined investment into these unauthorized projects amounted to more than 30% of the overall capital investment. Under such circumstances and the reality, the Inner Mongolia Autonomous Regional government practically had no choice but to approve those construction projects even with the knowledge that some of them might be infringing the laws and regulations.

The second element working behind the unruly investments is the issue of profit seeking by state-owned banks. As mentioned previously, all unauthorized power plant projects in Inner Mongolia Autonomous Region were aborted after the Xinfeng incident. At that time, seven unauthorized construction projects managed by Inner Mongolia Electric Power Corporation, including Xinfeng, had already received various bank financing that collectively amounted to 5.95 billion yuan.

Following the exposure of the Xinfeng incident, the China Banking Regulatory Commission made a probe into the status of financing provided by various banks to Inner Mongolia Electric Power Corporation and subsequently found that nine banks and two financial institutions had furnished the above Corporation with funds in excess of 20 billion yuan in total. As for the breakdown of loan balances by financial institutions, China Development Bank had 5,697 million yuan, followed by Industrial and Commercial Bank of China with 4,017 million yuan, China Construction Bank with 3,135 million yuan, Bank of China with 2,291 million yuan, Agricultural Bank of China with 1,805 million yuan, Bank of Communication with 1,100 million yuan, China CITIC Bank with 542 million yuan, China Merchant Bank with 500 million yuan, China Minsheng Banking Corporation with 200 million yuan, and the Mongolia Business Dept. of China Power Finance Company as well as Huabei Power Finance Corporation with 1,872 million yuan and 500 million yuan, respectively. In addition, it also turned out that there were cases where the above nine banks had arranged finance for the company's same power development project more than once, with such duplicate financing amounting to 1,201 million yuan in total.

Behind the willingness of various banks including the four major commercial banks to provide Inner Mongolia Electric Power Corporation with such multiple loans is the fact that power resources projects are ranked as a lucrative investment item with high returns and small risks thanks to the tight electricity supply in recent years. Although a demonstration program of wholesale electricity market is currently being tried in selected (i.e. northeastern, eastern, and southern) regions in China, most power sources and wholesale prices are fixed in a Power Purchase Agreement (PPA), convincing the banks that the government would not implement a dramatic system reform or a new pricing scheme that would lead to significant business losses on the part of generators owned by the state or local public corporations. Furthermore, if the central government is truly adamant in shutting down the unauthorized power construction

projects, that will inevitably work to raise the non-performing loans and the bad debts ratios at each bank involved. Since such a consequence seems to contravene with the current policies of reforming the state-owned commercial bank system as well as the listing of commercial banks in domestic and international stock markets, it suggests that the government will eventually need to take a certain buffer action, conceivably providing another reason for promoting the fraudulent loans.

As discussed in the foregoing, the Xinfeng Power Plant incident is neither the only instance of unauthorized construction projects in Inner Mongolia Autonomous Region, nor the problem is unique to the Region alone. Given the issues existing in areas such as economic development of the local community, social stability, and business interests of commercial banks, it is somewhat questionable whether the electric power industry in China can actually afford to abolish the low-efficiency, small-scale power plants or unauthorized plants amounting to the scale of 50 GW as designated by the central government. In fact, at an interview with Chinese experts on this issue in May this year, more prominent views appeared to be that it would be difficult to stop those unauthorized power projects that had already been in operation, and the small-scale plants would likely be retained for a “load adjusting” purpose. In that event, the resulting increase of the amount of electricity generated by these facilities will make it more difficult to achieve the goals of energy conservation and reduction of major pollutant emissions as specified in the “Eleventh 5-year Plan”.

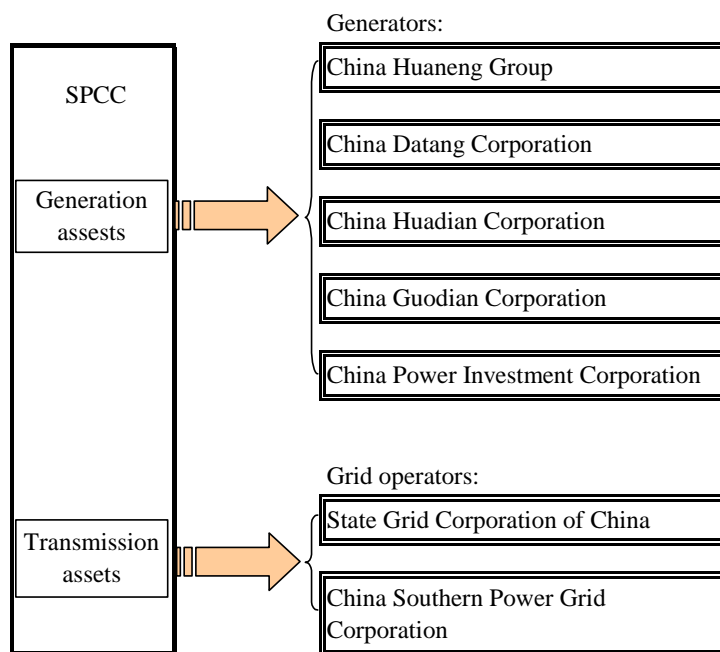
2) Complete separation of generation and transmission sectors.

In March 2002, the central government of China issued a “Plan for Electric Power System Reform” as the State Council Notice [2002] No.5, which was a guiding document for China’s electric power system reform incorporating the concept of separating generation sector and transmission sector and introducing competitive principles. Based on this plan, power generation assets previously owned by the State Power Corporation of China were restructured into five generating companies, i.e. China Huaneng Group, China Datang Group, China Huadian Corporation, China Guodian Corporation, and China Power Investment Corporation, and transmission assets were regrouped into the State Grid Corporation of China and China Southern Power Grid Corporation (see Fig. 3-2). As a result of the break-up of the former State Power Corporation of China, the vertically integrated system of generation and transmission was abolished and replaced with the newly established grid operating companies who took up the position of the single buyer to conclude PPAs with respective power generating entities.

However, the equity participation proposed for the Xinfeng Power Plant as it was made known after the incident included shareholders such as Inner Mongolia Electric Power Corporation with a 40.98% stake, No.2 Electric Power Construction Engineering Company and Inner Mongolia Power Transmission and Distribution Company each contributing 16.18% of

the investment, with the remainder split among Inner Mongolia Energy Public Tender Company, No.1 Electric Power Construction Engineering Company, No.3 Electric Power Construction Engineering Company, and Inner Mongolia Research Survey and Design Institute. That the above list included as an investor even for a part of the power plant the name of Inner Mongolia Power Transmission and Distribution Company, which is responsible for the grid operation in the area, clearly contravenes the government’s “Plan for Electric Power System Reform” and casts some doubts on the fair and equitable nature of operation of the grid owner as a single buyer.

[Fig. 3-2] Restructuring of the State Power Corporation of China



Up to the present stage, the discriminatory treatment by the transmission and distribution companies against power producers has been temporarily alleviated because of the tightness in power supply balance since 2003, allowing APPs (Affiliated Power Producers) or IPPs (Independent Power Producers) to maintain their capacity utilization rates at 85% or higher. However, according to the power supply and demand outlook released by the NDRC in June this year, it is expected that the power supply restriction will be mitigated by around 2007, at which time a nationwide balance of power supply and demand will be maintained. It follows therefore that when power supply turns to a surplus in a grid operation area, there is concern whether the grid operator responsible for the area will contact PPAs under a fair, equitable, and transparent purchasing program based on generators’ past performance in terms of power generation, generation efficiency, generation cost and other factors, and without preferentially

treating their APPs.

It should be noted further that when the former State Power Corporation of China was divided, the State Grid Corporation of China (SGCC) was allowed to retain for the time being, respectively, a power generation capacity of about 6.47 GW which was earmarked for the purpose of defraying expenditures required in the market restructuring and also supplementing costs of constructing power transmission lines; and another generation capacity of approximately 9.2 GW allotted for the purpose of compensating for expenditures required in divestiture of main and related business operations for regional grid operators. Of these capacities, the retained facilities with 9.2 GW of capacity have been operated by regional subsidiaries of the SGCC in provinces and municipalities on behalf of the SGCC. Subsequently, in the face of the nationwide power shortages since 2003, the regional power companies have kept expanding the existing facilities, and today the initial nameplate capacity of 9.2 GW is said to be virtually reaching 10 GW or more. Moreover, ownership of those facilities is becoming increasingly diverse and complex, including some of them being already listed in domestic security markets or some even having foreign capital participation.

Meanwhile, with regard to the other portion of the retained facilities with 6.47 million kW of capacity, although the original plan called for the SGCC to sell the assets within two years i.e. by the end of 2004, the SGCC established a new subsidiary named State Grid Xinyuan Company Limited in April 2005 and allow it to engage in a specialized wholesale power supply utilizing the above facilities. The first offer for the sale of the facility with 9.2 GW of capacity is scheduled for September 2006, and the sale of the facility with 6.47 GW of capacity is planned to take place following the complete disposition of the asset with 9.2 GW of capacity. However, it is now believed that the SGCC intends to retain the latter assets within its portfolio as a power reserve for load adjustment.

In summary, complete implementation of separation of generation and transmission sectors in China's power industry will wholly depend on how those installed capacity retained by grid operators are divested. Grid operators will be put to tests for their fair and transparent business practice. Further, depending on the scale and eventual takers of those assets to be sold in the future, it is also expected that major power generation groups may increase their market concentration in the wholesale market.

3) State Electricity Regulatory Commission and its role.

Following the restructuring of the former State Power Corporation of China, the State Electricity Regulatory Commission (SERC) was established in March 2003 as an independent regulatory body and the first of its kind in China.

Reporting directly to the State Council and empowered by it, the responsibility of the SERC is to perform administrative and regulatory duties with regard to the national electric power

sector in accordance with laws and regulations. Its major responsibilities include the following:

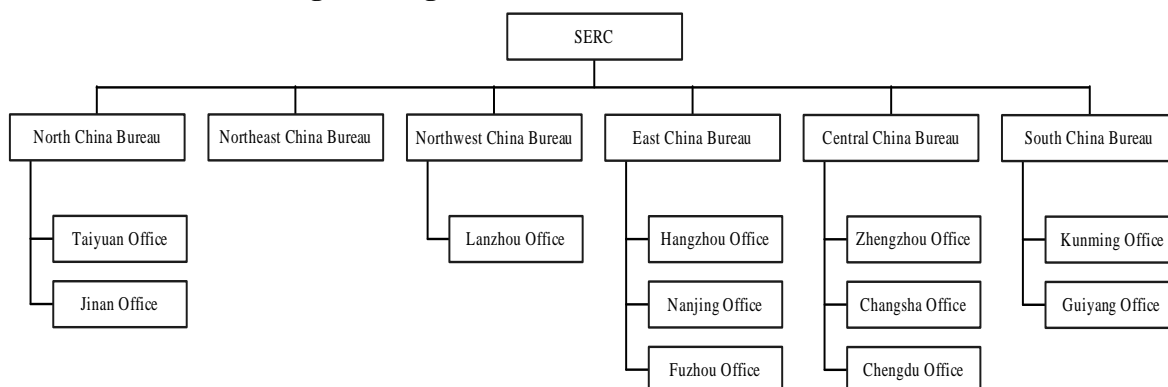
- (a) To establish a coherent system for administering and supervising the national power sector, and to exercise the overall regulatory and supervisory functions.
- (b) To develop laws and regulations as well as relevant amendments on sector regulation, formulate regulatory rules for the sector; and establish rules for electricity market operations.
- (c) To participate in plan for the national power development; prepare development plans for electricity markets and market designs for regional power markets, and review and determine models for electricity market operation as well as draft plan for wholesale electricity trading organizations.
- (d) To monitor electricity market operations, ensure orderly and fair competition in the market, and regulate and supervise transmission and distribution sectors.
- (e) To participate in establishment and enforcement of safety and technical standards and codes for the electricity industry, issue and administer business licenses, and enforce environmental laws and regulations in coordination with relevant environmental protection agencies.
- (f) To propose tariffs and tariff adjustments to relevant pricing authorities, regulate and supervise tariff levels, and oversee fees and charges for ancillary services.
- (g) To investigate any possible violations of laws and regulations by market participants, and resolve disputes among them.
- (h) To supervise the implementation of universal service provisions policy; propose revisions to such policy measures, and prepare and publish statistics and information concerning the electricity market.
- (i) To implement the electricity reform programs in accordance with direction from the State Council, and propose policy options for further promotion of the reform; and to assume any other duties delegated by the State Council.

Additionally, the SERC established its representative offices in the regional electricity markets by July 2004 to reinforce its regulatory and supervisory functions at the local level (see Fig. 3-3).

However, a closer look at the current status of the electricity administration indicates that duties such as plan for long-term electric resources development or granting permission and license for a new power plant with a capacity of 125,000 kW or above are under the jurisdiction of the Energy Bureau of the NDRC, and the wholesale price of a newly commissioned power plant is under the charge of the Price Department of the NRDC. On the other hand, the role of the SERC in its present state is rather limited to developing rules concerning the fair

competition in the electricity market and regulatory and supervisory functions associated with its implementation. Thus, it can be pointed out that fragmentation of the regulatory agencies and their roles in the electric power industry was one of the causes that resulted in the Xinfeng incident.

[Fig.3-3] Organization of Local Offices of the SERC



Source: SERC.

As discussed before, the Xinfeng Power Plant had been named in the NDRC's list of unauthorized construction projects as early as in 2004. In the background where the construction project nevertheless was left to press forward is the fact that the scope of regulatory and supervisory authority for the SERC based on the existing laws and regulations is limited and at the same time lacking clear definition. From this, one could argue that the regulatory and supervisory functions of the SERC are not yet sufficiently penetrated in the electric power sector. Also, it appears that the policy coordination among the related government offices is not always close. The weakness in the present administrative and regulatory function shows not only in the field of power resources projects, but also in the environmental protection measures observed by power plants. As of the end of the year 2005, power generation facilities equipped with flue-gas desulfurization equipment account for a mere 14% of the entire thermal power generation capacity. Furthermore, according to Chinese industry sources revealing the real status of the matter, there appear to be a number of generating entities who collect wholesale power prices at a rate higher than that charged by generating entities without flue-gas desulfurization equipment but do not actually operate the equipment. The situation such as depicted in the above story appears to have been created because, in spite of the efforts by the central government to establish an environmentally oriented electricity tariff system, the law enforcement system at the related organizations has not been sufficiently developed. On the matter of environmental protection measures for the electric power industry, an ethical question of compliance by the parties concerned in the Chinese electric power industry will become an

issue in addition to the efforts by the central government.

In summary, to prevent a case like the Xinfeng Power Plant incident from happening again and to achieve the goal of reducing emissions of major pollutants as set in the “Eleventh 5-year Plan”, the methodology of how a comprehensive and integrated administration system could be built from now on will become the key. Making progress in the above will enable the functional reinforcement of the SERC in operating in the field where its scope of regulatory and supervisory authority over the electric power market is not necessarily clear-cut at the moment.

Conclusion

In this paper, challenges that face China’s power industry today have been discussed through a review on a fatal accident that took place in the Xinfeng Power Plant in Inner Mongolia Autonomous Region. If China’s electric power sector is to continue on the present course without remedial actions, when power supply turns to a surplus position sometime after 2007, as local governments try to protect their interests within each province (or municipality or autonomy), regional monopoly will become more and more fortified under the present power supply mode based on the single-buyer system, thus making it highly likely to create a discriminating practice in connection with the wholesale power supplies even within one same area. Furthermore, in the event that the targeted closures of inefficient, small-scale power plants could not be achieved as planned, this would deepen the seriousness of energy conservation or environmental protection issues in the power sector and exacerbate the problems, far from helping achieve the targets set by the central government.

While this paper has attempted an analysis of the present situation with a focus on the power industry, from a broader perspective taken on the Chinese industries in general, it can be noted that similar phenomena are occurring in a number of raw material industries such as coal, iron and steel, or cement industries. In particular, in the coal industry, while the supply tightness has been eased since early this year, the scale of coal mine projects presently under construction totals as much as 800 million tons, and shut down of small-scale coal mines or stoppage of unauthorized mining will bring about problems similar to those in the electric power industry.

As the foregoing discussion suggests, the mechanism and general nature of the development of China’s industrial and socio-economic growth of today can be identified even in a microscopic event such as the Xinfeng Power Plant incident, making the future of the Chinese economy may not necessarily look like a sanguine one.

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