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RESTRUCTURING OF THE COAL INDUSTRY IN ECONOMIES IN TRANSITION

(Contribution submitted by the Government of China)[1]

RESTRUCTURING OF THE COAL INDUSTRY IN CHINA

Introduction

1. Coal accounts for over 70% of both primary energy production and primary energy consumption structure in China. China's coal output growth mainly relies on the addition of new coalmines, especially the addition of large number of township coal mines. The unchecked development of township coalmines, however, has resulted in the phenomenon that coal supply is much greater than demand. Since 1998 the Chinese government has been closing coal mines which do not hold licenses or cannot meet safety standards, reducing overall coal output and restructuring the coal industry. This paper focuses on coal demands and coal production prospects in China, the preliminary results of coal industry restructuring and the key points in the plan for the coal industry during the "tenth Five-Year-Plan" period from 2001 to 2005.

1 Bearing in mind the importance of China in the world coal production, consumption and international trade and its emphasis on far-reaching market reforms, the secretariat thought that representatives from various coal industries in the ECE region could benefit from having an informed insight into the recent developments and trends in this vast Chinese industry. The original contribution prepared by Mr. Huang Shengchu, Vice-President and Mr. Hu Yuhong, Division Chief of the China Coal Information Institute was edited by the ECE secretariat**.**

I. COAL SUPPLY AND DEMAND

(a) Coal resources

2. As the most abundant energy resource of China, coal resources are estimated at 988.0 billion tons, of which 114.5 billion tons are proven reserves. This accounts for 90% of the total proven fossil energy reserves of China. The ratio of reserves to recovery is 93.

3. China lacks oil and natural gas resources, which only account for about 5.3% of the total proven fossil energy resources. The ratio of reserves to recovery is 24. Without the discovery of large-sized oil fields in the future, annual oil output of the nation will be maintained at 160.0 to 180.0 Mt, which will not satisfy the growing demand. In 2000, about 30% of oil consumed was imported. Within the next 20 years, the share of imported oil might increase to over 40%. More pressure comes as a result of the growing foreign currency expenditures for oil imports. Also, oil supply security becomes closely linked with energy security of China.

4. Over the past few years, the proven reserves of natural gas have increased. In the 1990s, the accumulated proven reserves of natural gas and the ratio of reserves to recovery grew at an annual rate of over 10%. A long-term view shows, however, that a large gap exists between domestic supply and demand for natural gas. At the same time, coal is deemed to be the most reliable energy resource of China due to its availability and readiness for exploitation.

(b) Coal demand

5. China's national economy will grow at an annual rate of around 7% in the next five years. Within this context, total energy demand increases but the growth rate slows down somewhat. Domestic energy and coal demand is characterized by demand for cleaner energy such as oil, natural gas, hydropower and nuclear power. It will increase at a rapid rate while coal's share in the consumption of primary energy will decline somewhat. Because of technological improvements, energy efficiency and energy saving will be improved. Thermal power keeps on a quicker pace of growth in the entire power industry, which results in growing demand for coal. The major coal consuming sectors such as the metallurgical, chemical, and building materials industries have grown steadily but coal demand by those sectors has changed little because of the implementation of industrial and product restructuring and technological upgrading. Residential use of energy is shifting to natural gas, LPG, electric power and some other energy sources, which lowers the demand for coal.

6. Coal is the cheapest energy in the world today. The cost of burning natural gas and oil is generally 2 to 3 times higher than that of burning steam coal on the basis of producing equal heating value under average conditions in different countries. In Beijing the costs for burning oil and natural gas are about 3 to 4 times that of burning steam coal (Table 1). In the light of these data, coal should be the first choice in the energy consumption structure of China. In fact, coal accounts for 71.6% of the total primary energy consumption (Table 2).

7. Over recent years, the domestic coal market has suffered from a slump in demand. Coal enterprises have worked hard to open up the overseas coal market, which has resulted in

significant growth in coal exports. The state policies that were introduced in 1999 concerning the reduction of port charges and transport fees as well as the rail transport rate greatly encouraged the export of coal. This resulted in a dramatic increase in coal exports, which reached 58.84 Mt in 2000, accounting for 11% of the total world coal trade (Figure 1). Export by four major coal exporters is indicated in Table 3.

Table 1 Prices of steam coal, natural gas, diesel oil and heavy oil in Beijing

Steam coa		Natural gas		Diesel oil		Heavy oil	
yuan/t	yuan/kcal	yuan/t	yuan/kcal	yuan/t	yuan/kcal	yuan/t	yuan/kcal
200 ~ 250	0.036~0.045	1.4 ~ 1.8	0.175~0.225	3000	0.3	1500	0.15
Price ratio	1		4 ~ 5		6 ~ 7		3 ~ 4

Table 2 Primary energy consumption structure of China (%)

Year	Coal	Oil	Natural gas	Hydro-power & nuclear power
1953	94.33	3.81	0.02	1.84
1960	93.90	4.11	0.45	1.54
1970	80.89	14.67	0.92	3.52
1980	72.15	20.76	3.10	3.99
1985	75.81	17.10	2.24	4.85
1990	76.20	16.60	2.10	5.10
1995	74.60	17.50	1.80	6.10
1997	73.50	18.60	2.20	5.70
1998	71.60	19.80	2.10	6.50
1999	67.90	26.60	2.60	2.90

Table 3. China's coal exports

Company	Year 1999, Mt	Year 2000, Mt	Change, %
CNCIEC	31.13	39.20	25.9
Shanxi Coal Im/Ex Co	5.33	10.47	96.5
Shenhua Group	2.51	8.07	221.5
MINMETAL	0.30	1.09	261.9
Total	39.27	58.84	49.8

(c) Coal production

8. During the period 1990-1996, China's coal production grew rapidly; annual national total coal output hit a record peak of 1.374 billion tons in 1996 (Figure 2). During that period, the township coalmines experienced an unprecedented growth and their annual total output was as high as 615.0 Mt, accounting for 45% of the national total. Due to a considerable coal surplus in

the weak market, the state government implemented a programme of small mine closure and overall coal output reduction in 1997, which halted the trend of the coal output increase. Thus the national total coal output decreased reaching 988.0 Mt in 2000.

9. Table 4, showing the coal output and the market shares of the ten top coal producers in China, indicates that the coal industry is rather fragmented. In 1990, the total coal output of the 10 top coal producers of China accounted for 16.48% of the national total coal output while in 2000 their share increased to 21.33% of the national total.

Table 4. Coal output of the 10 largest coal producers in China and their market shares, 1990 and 2000

	Company	Year 1990		Company	Year 2000	
		Output (Mt)	Market share (%)		Output (Mt)	Market share (%)
	National total	1079.3	100	National total	988.69	100
1	Datong	34.94	3.24	Shenhua	38.11	3.85
2	Jixi	18.52	1.72	Datong	32.0	3.24
3	Pingdingshan	18.3	1.70	Yanzhou	28.01	2.83
4	Kailuan	17.82	1.65	Kailuan	19.18	1.94
5	Hegang	17.5	1.62	Pindingshan	18.34	1.85
6	Yangquan	16.23	1.50	Huaibei	16.93	1.71
7	Xishan	15.72	1.46	Xishan	16.73	1.69
8	Huaibei	14.19	1.31	Tiefa	14.66	1.48
9	Xuzhou	13.17	1.22	Huainan	14.28	1.44
10	Fengfeng	11.46	1.06	Yangquan	12.85	1.30
Total		177.85	16.48		211.09	21.33

II. RESTRUCTURING OF THE COAL INDUSTRY

(a) Why the restructuring of the coal industry?

10. China's coal industry encountered unprecedented challenges in the course of the country's transition from a planned economy to a market economy.

(i) Coal output exceeds coal demand, mainly because of the unchecked coal production from small-sized coal mines which spun out of control: over the last 20 years, coal output growth mainly came from the addition of new coal mines, especially the township coal mines. By 1997, there were more than 70,000 small coalmines in the country. Due to the lack of effective macro regulation, lack of reliable information and forecasts were a major feature of the small coalmines development. The total coal output from small coal mines, on the other hand, went up from 394 Mt in 1990 up to 615.0 Mt in 1996, or a 221.0 Mt increase. This increase accounted for 81% of the national total coal output growth in that period. The overheated coal production resulted in a sizable oversupply in the last few years and by 1999 the national total coal stocks increased to over 200.0 Mt.

(ii) Tough coal market competition resulted in downward price pressure by coal users. The parallel lack of unified price management and self-disciplinary mechanism on the supply side in terms of price stability led to the sharply lower average coal prices. By February 2000, the lowest coal price of key state-owned coalmines was registered at 137.0 Yuan/t, or 29.0 Yuan/t lower than the coal price of 1997.

(iii) State-owned key coalmines suffered large losses. In 1998, 76 key state-owned coal companies out of a total of 94 recorded sizable economic loss. This means that 80.8% of the total key state-owned coal companies faced economic losses amounting to 2.28 billion Yuan. On the other hand, coal production costs remained high. Many key state-owned coal mines experienced production costs as high as 120 Yuan/t, while coal production costs in small-sized and township coal mines was only about 50 Yuan/t. Last but not least, the coal purchase payment arrears increased by a large margin. By 1999, payment arrears to the 94 key state-owned coalmines totalled 40.064 billion Yuan, of which 32.733 billion Yuan were arrears in coal purchase payment, 4.0 billion Yuan and 3.1 billion Yuan were incurred in 1999 respectively.

(b) Implementation of a mine closure and overall coal output reduction policy

11. Too many sub-standard small-sized coalmines caused not only a large surplus of coal output, but also a direct adverse impact upon the healthy development of the coal industry in the country. In this context, the State Council convened a working conference in November 1998 on the closure of illegal and inefficient small-sized coal mines and a subsequent decision was made on mine closure and overall coal output reduction. Organized and led by local governments at all levels, all competent authorities achieved good coordination in a campaign to close those illegal mines. As a result of a two-year long effort, a total of 46,000 small-sized coalmines of all kinds were closed, achieving a reduction of coal production capacity by more than 400.0 Mt. The national total coal output in 2000 was thus reduced to 988.0 Mt. As result, the coal supply/demand surplus was alleviated. By the second half of 2000, coal prices began to rebound again with an average increase of 10 - 20 Yuan/t (Figure 2). Meanwhile, coal stocks nationwide were reduced from 200.0 Mt to 140.0 Mt, reflecting a production/sale ratio of 107%. It is worth mentioning that in 2000 there were no arrears for coal purchase. In addition, a total of nearly 1.0 billion Yuan of the arrears due from earlier years were also collected.

(c) Implementation of the policy of mine closure and bankruptcy policy on mines which depleted their coal reserves and aged mines badly hit by economic losses

12. Prior to 1998, there were about 200 key state-owned coalmines whose coal reserves were almost depleted and whose financial situation was hopeless. Those units accounted for 30% of the producing coalmines. To solve the problems of these coalmines, the State Council agreed that the programme on coalmines closure and bankruptcy, proposed by the former State Administration of the Coal Industry, be implemented first in the case of Benxi Coal Co and some other enterprises ona trial basis. So far, a total of 65 closure and/or bankruptcy cases have been approved. This involves the elimination of coal production capacity of 44.0 Mt and elimination of losses of 2.4 billion Yuan, dismissal of a total of 0.40 million coal workers and proposed cancellation of bad debts amounting to more than 10.0 billion Yuan.

(d) Coal industry management system reform

Part One: Elements of the coal sector management system reform

13. The purpose of the Chinese governmental organizational reform is to reduce the interference from the central government in the business activities of the industrial enterprises. The goal is to achieve a separation of governmental functions from economic activities of business entities. The former Ministry of the Coal Industry was abolished in 1998 and the State Administration of Coal Industry was subsequently established, the goal of which was to ensure the transfer of coal enterprises down to lower levels of power and the subsequent coordination work in the transition period. By the end of 2000, all key state-owned coal mines were transferred down to local authorities, the provisional State Administration of Coal Industry was abolished at the beginning of 2001 and the governmental functions concerning coal industry management and coordination were handed over to the Department of Industrial Planning at the State Economic and Trade Commission (SETC).

Part Two: Coal enterprise joint-stock system reform

14. The goal of the economic system reform in China is to establish a market economy with a focus on reforming the state-owned enterprises in line with the joint-stock system. Out of a total of 94 key state-owned coal enterprises, 35 have completed their reform in line with the modern corporate system. Of the 34 coal enterprises that are listed as the key enterprises of China, 27 have completed their system reform. Among these coal enterprises, a number of enterprises including Yanzhou Coal of Shandong Province, Zhengzhou Coal & Power of Henan Province, Xishan Coal & Power of Shanxi Province, Xingtai Mining of Hebei Province, Panjiang Coal & Power of Guizhou Province and Taiyuan-Shenzhou Coal, and Power & Coke of Shanxi Province are successfully listed on the stock market. In March and July 1998, Yanzhou Coal Co Ltd, under the sponsorship of the Yankuang Group, was successfully listed on the stock markets in New York, Hong Kong and Shanghai in spite of the devastating Asian financial crisis at that time. The listing of Yanzhou Coal brought revenues totalling 2.4 billion Yuan. Since it became listed, Yanzhou Coal has been enjoying the leading position among the listed international coal companies supported by its very good achievements. Yanzhou Coal has thus often been regarded as the best and the strongest listed company by both domestic and international authoritative organizations. Because of its very good performance, Yanzhou Coal once more successfully issued 100 million A shares and 170 million H shares last December and last May, respectively. It raised funds totalling 1.5 billion Yuan. In total, the listings and its additional issuance of shares brought revenues of 4.0 billion Yuan.

15. To ease huge financial burdens of selected key state-owned coalmines, the State Council agreed to implement a debt-to-equity programme which was a clear success. For 64 coal enterprises recommended for the debt-to-equity transaction, a total of 54.596 billion Yuan is envisaged, which will result in a reduction of annual interest payments of 3.6 billion Yuan.

III. THE KEY POINTS OF THE TENTH FIVE-YEAR PLAN FOR THE COAL SECTOR

(a) National economic development

16. In March 2001 the Chinese government ratified the "Development Programmes: the Tenth Five-Year-Plan for the National Economy and Social Development". It emphasized that energy development should focus on bringing into full play the advantages of resources and the optimisation of the national energy structure. Energy policy will still rely on coal as the dominant energy with the share of clean coal increasing while at the same time efforts should be intensified on the development and application of clean coal technology.

17. In June 2001, the State Economic and Trade Commission released the Coal Industry Development Programmes in the Tenth Five-Year-Plan Period. It is expected that China's national economy will grow at an annual average rate of 7%. Under this projection, domestic demand for coal will increase steadily at an annual average rate of about 20.0 Mt. Along with the readjustment of the industrial structure and the energy consumption structure, coal consumption and production structure will also experience some changes. The first one that relates to the implementation of the strategy of a large-scale development in the western part of China will surely spur the economic and social development in the west. The construction of large mine-mouth power plants will encourage the growth of coal production and coal consumption in the west of China. The second one concerns the acceleration of the construction of transport and communication infrastructure as well as the separation between railroad operation and transportation, which will benefit the coal industry and will hence shift the coal development centre towards the western part of the country. The third one deals with the fact that pollution emission standards are becoming more and more stringent and in the context of rising or high prices of oil and natural gas, the development of clean coal technology and its application will be intensified. It will also stimulate growth in coal consumption. The fourth change is that the implementation and commissioning of projects such as "Western electric power transmitting to the east", "Western natural gas pipelined to the east" and "Three-gorge Project" will undoubtedly improve the energy supply conditions in the eastern part and the mid-southern part of China, while the coal consumption growth rate will inevitably slow down in the south-eastern coastal areas of China.

(b) Development goals of the coal industry

18. The Coal Industry Development Programmes in the Tenth Five-Year-Plan Period emphasized the continuation of the implementation of the coal industry restructuring with the following goals:

19. Goals in coal mine organizational restructuring. By 2005, the coal industry will be dominated by a group of large-sized coal industrial groups or companies. The first eight largest coal producers of the country should have a combined market share of over 35%. The goal is to form 2-3 extra-large industrial groups or companies strong enough to be competitive internationally and operate in multiple businesses of coal mining, power generation, rail transportation and port shipping. A batch of large and medium-sized modern coalmines is to be formed. About 25 new coalmines will be under construction with a total production capacity of more than 60.0M t during the Tenth Five-Year-Plan period. At the same time, due attention should

be given to preparatory work for the construction of the production base of a high quality steam coal with low ash content, low sulphur content and high heating value. It will be done according to the principle of coal development disposition i.e. that coal mining projects and power plant projects will be executed simultaneously in the western part of the country; coal produced from Shanxi Province, Shaanxi Province and the western part of Inner Mongolia Autonomous Region will be used to balance the overall coal supply and demand of the whole country and coal production in the eastern part of the country is to be stabilized. The implementation of proper industrial policy will prevent and stop the construction of the following four categories of coal mines: (a) the coal mines below the following annual capacities: 0.15 Mt coal mines in Shanxi Province, Shaanxi Province and Inner Mongolia; 0.09 Mt mines in Xinjiang Uygur Autonomous Region, Gansu Province, Ningxia Hui Autonomous Region, Qinghai Province, Beijing, Hebei Province, northeast China and the eastern part of the country; 0.06 Mt coal mines in the south-western part and mid-southern part of the country and 0.03 Mt coal mines that mine very thin coal seams and unstable coal seams; (b) the coal mines that use obsolete mining methods such as manual mining ethod and tunnel mining, etc; (c) all types of high sulphur coal mines; (d) all kinds of coal mines with coal recovery rate below 50%.

20. Goals of technological restructuring. By 2005, the coalmine production technology and equipment should be further improved and work safety in coal mine substantially improved. In large-sized coalmines, the coal mining and roadway heading operations should be mechanized over 90%. In medium-sized coalmines the degree of mechanization should be over 60%. In small-sized coalmines, mining and heading mechanization and semi-mechanization should be introduced.

21. Goals in product restructuring. By 2005, over 50% of the national total raw coal produced should pass through the coal preparation process. Around 70.0 Mt of blended steam coal should be produced. An annual total of 3.0 - 4.0 billion m^3 of coal-bed methane should be produced; water-coal-slurry production should reach 10.0 Mt and production of coal derived oil products should be more than 2.5 Mt. Coal exports should reach 80.0 Mt/year.

IV. CONCLUSIONS

22. The following conclusions could be made:

(a) Coal is the most abundant, the cheapest and most reliable energy source in China.

(b) Over the last few years, coal supply was considerably greater than the demand. The uncontrolled growth of township coalmines created severe challenges for the state-owned coal enterprises.

(c) Tangible results were achieved by the measures implemented by the Chinese government for coalmine closure, overall coal output reduction and coal industry restructuring. With coal output reduced, coal prices recovered.

(d) As a result of the coal industry management system reform, coalmines were transferred by the central government down to the local authorities. A total of six coal enterprises have been successfully listed on the stock market.

(e) The Coal Industry Development Programmes in the Tenth Five-Year-Plan Period focus on the restructuring of the coal industry and put forward clear-cut goals.

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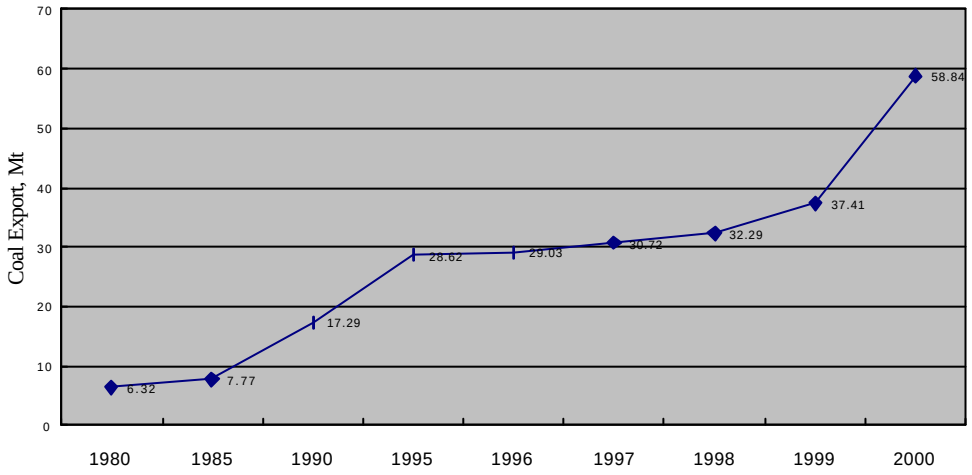

Figure 1. China's coal export growth trend, 1980 – 2000

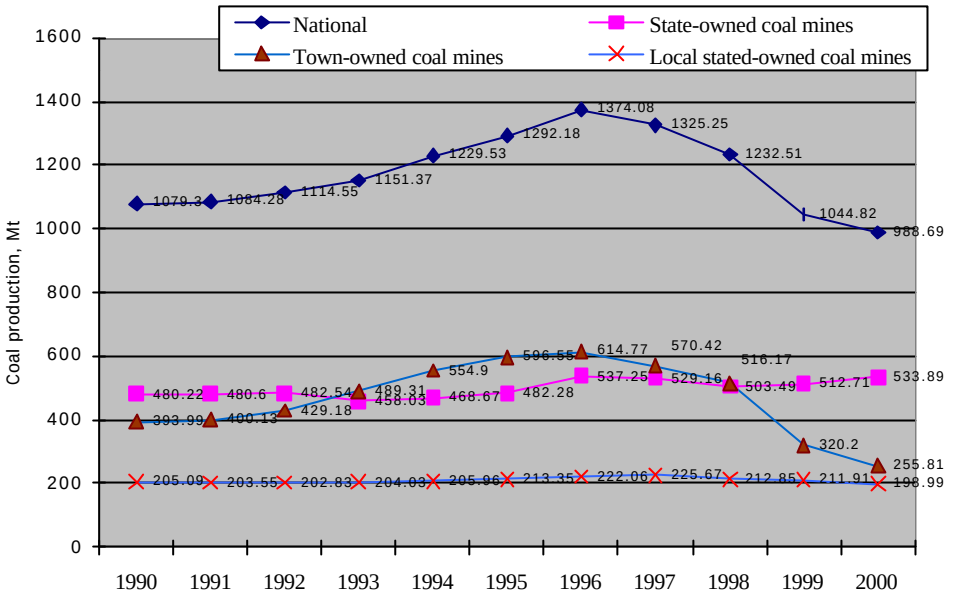

Figure 2 China's coal output, 1990 – 2000

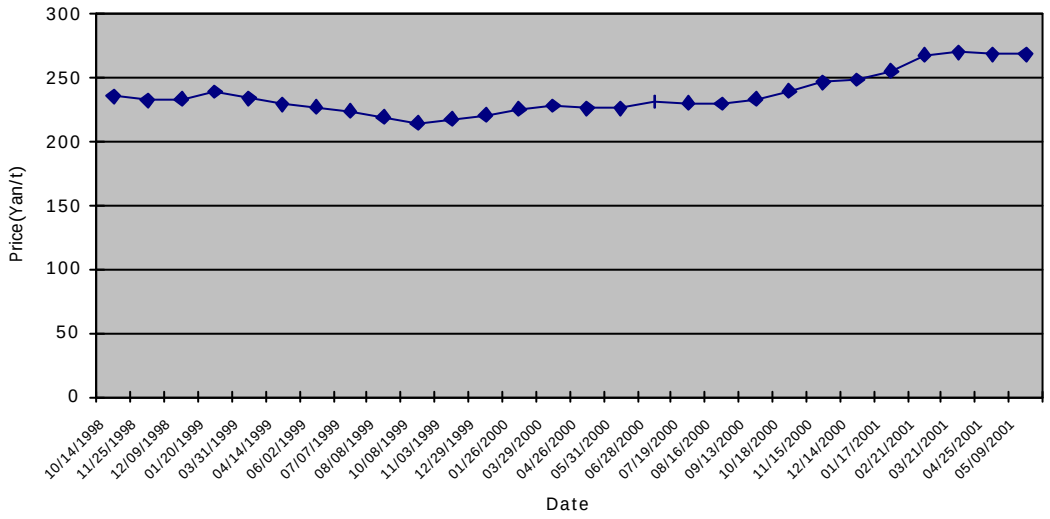

Figure 3 Prices of Shanxi Coal at Qinhuangdao Port from October 1998 to May 2001