

Shenhua Group – Present and Future



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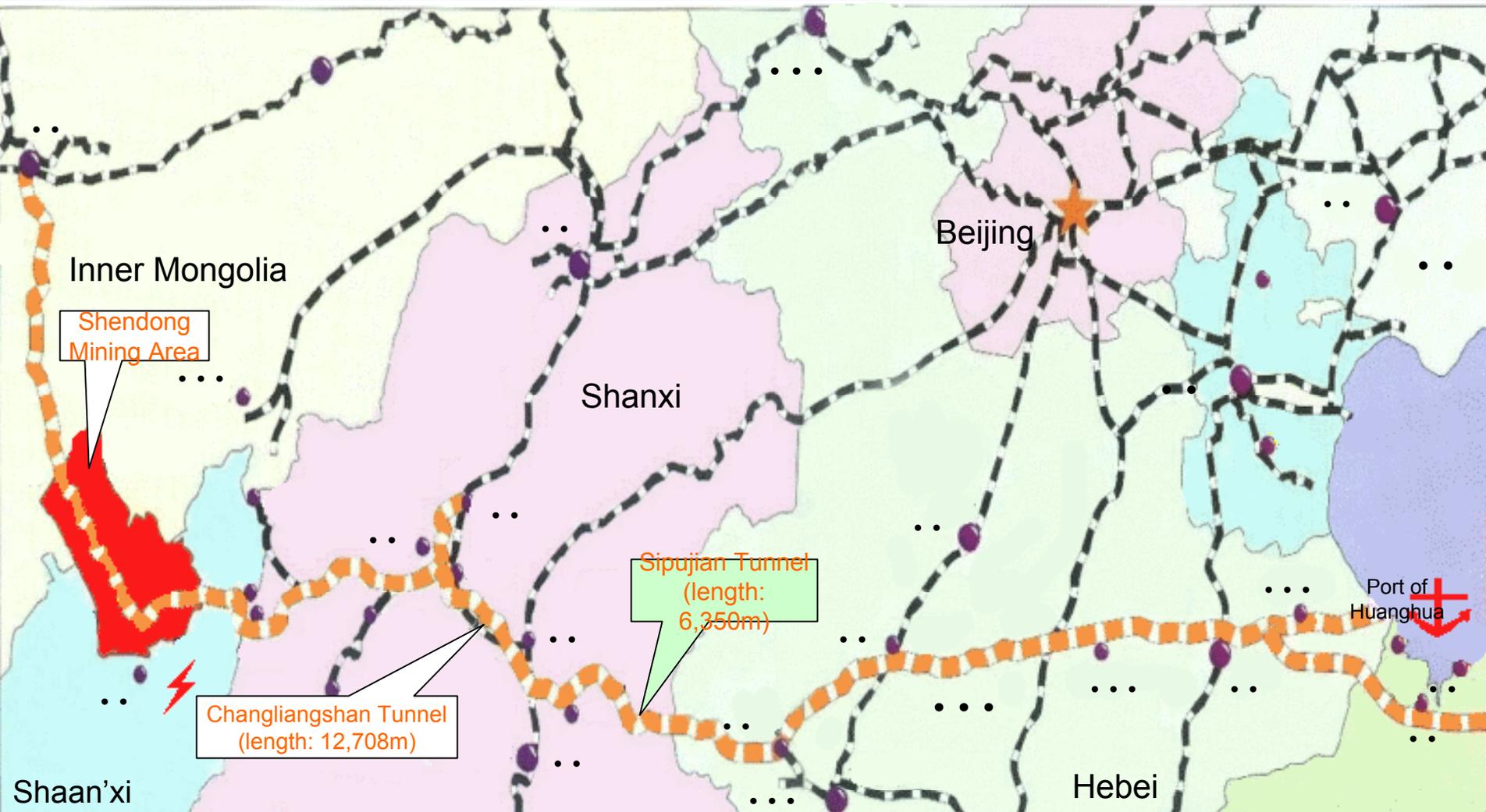
One Group Profile

Shenhua Group Limited Liability Company (“Shenhua Group”) is a state-owned company founded in October 1995 under the auspices of the State Council. It is one of the 44 major backbone enterprises directly controlled by the central government.

Shenhua Group is tasked with the planning, exploring and running of the coal resources at the Shenfu Dongsheng Coal Fields, as well as the affiliated railway assets, power plants, port facilities, shipping fleet, and coal liquefaction projects.

The Shenhua Project was initially launched by the government to address the issue of coal supply failing to meet demand. As a major coal production base built for the 21st Century, it assumes an important role in the domestic economy in terms of speeding up economic growth in mid-west China, enhancing the country’s energy security, and ensuring energy supply for the coastal regions.

Diagram of Shenhua Project Phase 1



Shenhua
Railway



Port of
Huanghua



City



State-run
Railway



1.1 Shenhua Project Phase 1 (original targets)

- Coal production: 40 million tons per year.
 - Total length of railway: 1,040 km, including the Bao-Shen Segment: 172 km, the Shen-Shuo Segment: 269 km, and the Shuo-Huang Segment: 599 km.
 - Annual coal throughput at the Port of Huanghua: 30 million tons.
 - Installed capacity at the affiliated power plants: 224,000 kW.
 - A shipping fleet with matching capacity.
 - Approved investment: RMB 50.1 billion Yuan, with the project to be completed by 2004.
 - By the end of 2002, a total of RMB 43.5 billion Yuan had been deployed, including 13.9 billion Yuan for the mining area, 23.7 billion Yuan for the railway, 4.5 billion Yuan for the port, and 1.4 billion Yuan for other assets. 9 pairs of coal pits had been established, with a total production capacity of 60 million tons.
- Total length of railway: 1,028 km. Throughput of port: 30 million tons.

o Shenfu Dongsheng Coal Fields

The Shenfu Dongsheng Coal Fields are located between the northern edge of Yulin Prefecture, Shaan'xi Province and the southern edge of Erdos City, Inner Mongolia Autonomous Region. The fields are the largest in China and one of the seven largest in the world. It has the following characteristics:

- ❖ Rich reserve of coal, which covers a wide area. The Shenfu Dongsheng Coal Fields extend to an area of 31,000 square kilometres, with an estimated reserve of 223.6 billion tons. Under current plans, an area of 3,481 square kilometres will be developed, with a confirmed reserve of 35.4 billion tons.
- ❖ The coal fields are geologically suitable for exploration, with simple geological structures, stable coal layers, small dip angles ($<5^\circ$), and insignificant amounts of water and gas. The coal layers have a thickness of 3 to 5 metres, suitable for mechanised mining.
- ❖ The coal is of premium grade, with low sulphur (0.35%~0.5%), low ash (6%~8%), medium to high calorific value (lower calorific value: 5800~6200 kcal), and low ash fusion point (1100• -1250•), making it ideal for a variety of applications from power generation, metallurgical engineering, to coal gasification and coal liquefaction.₆

1.2 Shenhua Power Generation Business Stream

To strengthen the Group's leverage in the coal market, Shenhua Group Guohua Power Corporation was formed in March 1999 to acquire power plants that are in operation or under construction. By the end of 2003, the installed capacity reached 5.16 million kW. In 2003, these power plants consumed 10.64 million tons of coal supplied by Shenhua. The plants that are under construction have a combined capacity of 7.20 million kW.

1.3 Shenhua Coal Liquefaction Business Stream

In keeping with the government policy on adjusting energy mix and the Group's growth strategy, coal liquefaction shall be vigorously developed. The government has approved Shenhua's plan for a showcase project of direct coal liquefaction. The project is designed to produce 5 million tons of product oils annually, with the first production line going into trial run by 2006, producing 1 million tons of product oils annually.

Two Current Development of the Group

Evolving Business Streams from Phase 1

Coal

Liquefaction

Phase 1

Power

Over 30
subsidiaries

West Six
Bureau

Achievements

- ❖ Phase 1 Project was completed three years ahead of schedule, 10% below budget, and with superior quality. The vertical integration of production, transport and sales has been conducive to the Group's competitiveness;
- ❖ Shenfu Dongshen Mining Area has emerged, with world-class operating and technological sophistication and an annual production capacity of over 60 million tons;
- ❖ By leveraging government policy and relying on rolling development, Shenhua's power generation business stream has been established, with a total installed capacity of 5.16 million kW, and another 7.20 million kW under construction;
- ❖ The strategically significant Shenhua Direct Coal Liquefaction Showcase Plant has been approved by the government. Construction is under way.

2.1 Coal Production and Sales

- Realigning product makeup of coal, vigorously developing domestic and overseas markets.

Realign product makeup of coal. Focus on quality of coal. Develop coal products in response to customer demand.

- Value our reputation, provide superior services and reasonable pricing.
- Expand the domestic market by focusing on major power plants and by progressively expanding into regional coal markets.
- Vigorously develop overseas markets by executing the strategy of 'Hold Korea, enter Taiwan and Hong Kong, develop Japan, and test water in Europe'. By competing on quality, service as well as prices, export volumes have risen dramatically.

Coal Production, Sales and Export Volumes in 2003

In 2003, the Group produced 101.97 million tons of coal, and sold 101.43 million tons of commercial coal, both of which rank comfortably as No.1 in the country.

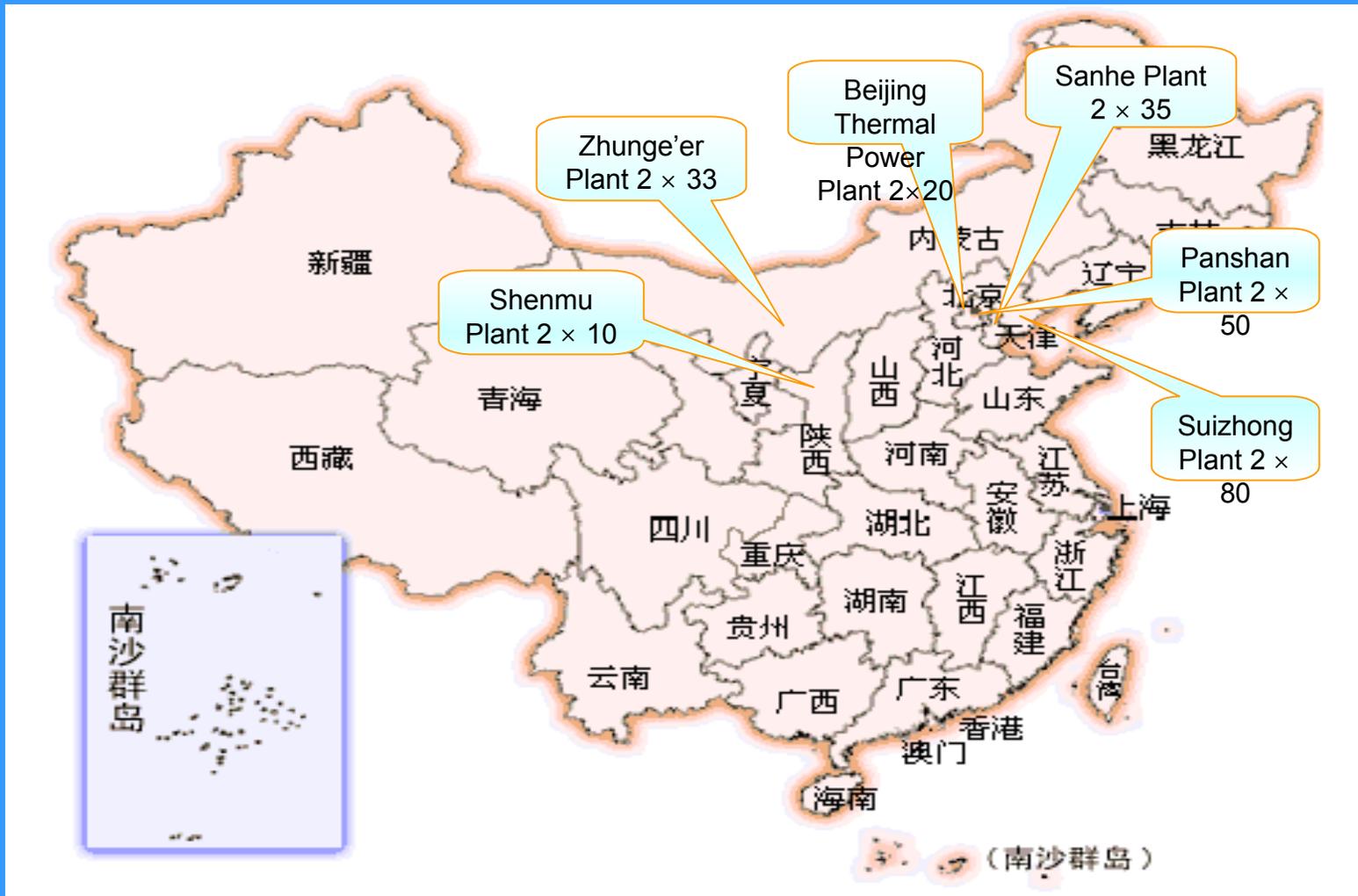
In 2003, the Group exported 26.40 million tons of coal, representing an increase of 6.39 million tons year on year.

2.2 Power Generation Business Stream

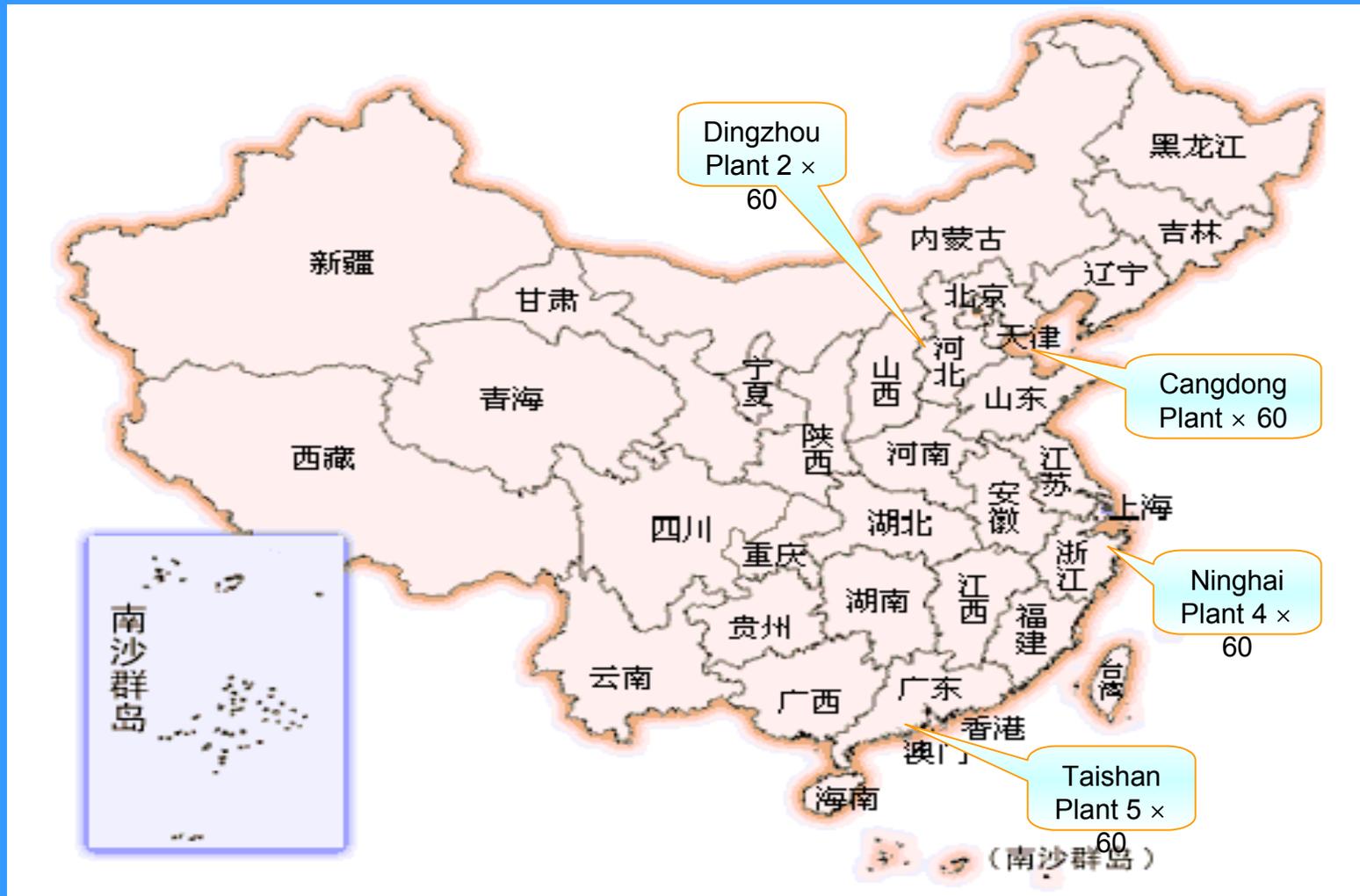
Presently, the Group has controlling stakes in 6 operating power plants, with a total installed capacity of 5.16 million kW and total asset worth of close to RMB 30 billion Yuan, to which are added controlling stakes in power plants that are under construction, which will have a combined capacity of 7.20 million kW. In addition, the Group has non-controlling stakes in 2 operating power plants with a combined installed capacity of 424,000 kW, as well as in 3 power plants that are under construction with a combined capacity of 3.72 million kW.

By 2005 or thereabouts, the total installed capacity will reach 8 million kW, generating a coal market of some 20 million tons for Shenhua.

Power Plants with Controlling Stakes: 4.56 million kW



Power Plants Under Construction: 7.80 million kW



2.3 Develop Coal Liquefaction Business Stream

The government decided to approve Shenhua's direct coal liquefaction project for the following reasons:

- ❖ The severity of oil shortage is getting worse by the day, threatening the country's energy security
- ❖ The need to realign energy mix
- ❖ The need to employ more people in the coal industry
- ❖ The technology for direct coal liquefaction has matured
- ❖ Shenhua Group has a number of advantages for setting up a direct coal liquefaction plant:
 - Uniquely suitable natural resources
 - Good regional environment and infrastructure. Located in western China, the project is in line with the government strategy of developing the west
 - Access to huge oil product markets
 - Initial capital can be arranged by Shenhua itself
 - ❖ The need to set up a showcase facility for the coal industry

The coal liquefaction business stream has been making steady progress

- 1 • The direct coal liquefaction project has undergone process optimisation and fine-tuning to minimise risks. Work is complete on fundamental design and review of same, and on resource survey, credentials verification and contractor vetting for the EPC (Engineering, Procurement & Construction) turnkey contractor.
- 2 • Progresses have been made in R&D, with process flow optimised and validated by experiment, providing reliable design data and technical support for fundamental design and modification. The fundamental design for medium testing PDU (Process Development Unit) is complete.
- 3 • The State Council has approved a plan under which Shenhua Group, Ningxia Coal Corporation and Sinopec, led by the State Development Planning Commission, shall cooperate with Sasol of South Africa in the area of indirect coal liquefaction. Shehua has so far carried out a substantial amount of preparation work, including the compiling and submitting of a project proposal, and the compiling of a preliminary feasibility study report.

Development targets for coal liquefaction:

2007 Total annual production capacity for oil products: 1 million tons (direct liquefaction)

2010 Total annual production capacity for oil products: 5 million tons (direct liquefaction)

2015 Total annual production capacity for oil products: 15 million tons

2020 Total annual production capacity for oil products: 20 million tons

2.4 Actively explore new development models for resource projects

Back in the era of planned economy, the criteria for coal mine development were arbitrarily set to unrealistic and unsustainable levels, often resulting in heavy debt burdens after the coal pits went into operation, creating problems for ongoing operations.

To avoid this predicament, since 1999 Shenhua Group has been actively exploring new models for coal mine development. The main measures adopted are as follows:

- Optimise development processes and shorten construction periods, adopting a model of rolling development, i.e. building and operating coal pits sequentially, with a view to achieving high output with moderate capital outlay.
- Introduce modern mining techniques and equipment suitable for the resources to be mined.
- Reduce non-production staff and facilities to a minimum, attaining the optimum mix of 300 staff per 10 million tons of annual output.

- Shendong Company attain industry-leading performance targets
 - Setting World Record
 - ❖ Since 1998, annual output of coal grew by over 10 million tons for 4 years running;
 - ❖ Daliuta Mine produces 10.94 million tons of coal from ‘one pit, one face’;
 - ❖ Daliuta Mine produces 8.74 million tons of coal annually from mechanised working face;
 - ❖ Shangwan Mine produces 2.24 million tons of coal annually from mechanised working face;
 - ❖ Yujialiang Mine, which has an annual production capacity of 10 million tons, was built in 10 months, with a unit investment of RMB 52.50 Yuan per ton of coal;
 - ❖ Integrated automatic control systems are used for all of the 5 major pits in the mining area;
 - ❖ Yujialiang Mine has achieved an operating efficiency of 671.7 ton/worker at its mechanised working face.

Three Plans for the Future

Stage 1. By 2005, the annual output and sales of coal shall grow to 150 million tons, total installed capacity of power plants which the Group owns or with controlling stakes in shall reach 8 million kW. By 2007, the first million-ton-class direct coal liquefaction production line shall come on stream.

Stage 2. By 2010, the annual output and sales of coal shall grow to 200 million tons, total installed capacity of power plants which the Group owns or with controlling stakes in shall reach 15 million kW, coal liquefaction shall have a production capacity of 5 million tons of product oils.

Stage 3. By 2020, the annual output and sales of coal shall grow to 300 million tons, total installed capacity of power plants which the Group owns or with controlling stakes in shall reach 30 million kW, coal liquefaction shall have a production capacity of 20 million tons of product oils.

Supplement & Extend Shenhua's Value Chain

In view of its current makeup of asset, revenue and earnings, Shenhua Group is undoubtedly a strong industrial conglomerate whose business is dominated by coal and power generation, with services contributing negligibly to the Group's total revenue. The over-reliance on coal and power generation inevitably puts the Group at the mercy of cyclical forces in the economy. Therefore, while coal and power generation shall remain as the mainstay of Shenhua's business, when defining its future growth strategy, the Group should also commit itself to diversify into services related to and targeted at the coal and power generation businesses. The Group's decision to develop a financial service business stream surrounding the main businesses is a good way to supplement and extend the value chain.

Second Route for Shenhua Railway

To support Shenhua Group's coal mine development initiatives, providing sufficient transport capacity for coal, Shenhua Group and Hebei Province, in accordance with the principle of mutual benefits and joint development, have agreed to jointly build a second route for Shenhua Railway as well as the Port of Caofeidian in Hebei Province.

The second route for Shenhua Railway will originate from Batuta Station on Shenhua's Bao-Shen Segment, connect with the Zhun-Dong Railway, enter Hebei Province from Tiancheng Station which is on the Da-Zhun Railway, and finally pass Zhangjiakou and reach the Port of Caofeidian in Hebei Province. The total length of the railway will be 930 kilometres, with a designed transport capacity of 150 million tons. Investment of the project will total RMB 28 billion Yuan. In the meantime, in view of the need to load coal onto ocean-going vessels, Shenhua Group will build a new terminal at the Port of Caofeidian with capacity matching the new railway, for which the total investment will be some RMB 5 billion Yuan.

Strategic Objective:

Shenhua Group shall strive to become a major coal-based energy player with global competitiveness and operations spanning multiple regions and multiple industries, with coal, electricity and oils as our main products, supplemented by financial services, railway and port operations, delivering superb energy products to Chinese and overseas markets.