China

Shenmu-Shuoxian Railway Construction Project (1)-(4)

External Evaluator: Yuko Kishino

Field Survey: November 2004

1. Project Profile and Japan's ODA Loan

Project Site Location Map

Shenshuo Railway

1.1 Background

In China, people's living and economic activities heavily rely on coal, which occupies 70% of primary energy production. Coal reserves are distributed mainly over the northwestern part of China, while the major consumption centers are costal cities in Northeastern, Northern, and Eastern China. Therefore, railways play an important role in coal transportation from production areas to demand areas. At the time of appraisal, however, the railway network and transportation capacity was insufficient, and therefore industrial production was restricted in the coal demand areas due to power shortages. In the coal supply areas, coal production was limited and large volumes of coal were left unshipped.

The Shenfu Dongsheng Coalfield[1] located on the border of the Inner Mongolia Autonomous Region and Shaanxi Province is one of the largest coalfields in China with an estimated reserve of 230 billion tons (115 times as much as that of Kushiro Coalfield in Japan). At appraisal time, the only transportation route for coal from this coalfield was the Baoshen Line (Shenmu-Baotou) with an annual transportation capacity of 10 million tons, and therefore coal production was restricted. In order to increase the coal supply to coastal cities, the Chinese Government drew up a plan to develop this coalfield and construct an 850km electrified double-track railway from Shenmu County in Shaanxi Province to the coal shipping port of Huanghua in Hebei Province (as part of the Shenfu Dongsheng Coalfield Development Plan). It was decided to construct an electrified single-track railway between Shenmu County in Shaanxi Province and Shuoxian in Shanxi Province in the first

[1] A coalfield extending over a total area of 25,000 square kilometers produces high quality coal with low coal and sulfur content and high calorific value. It is designated as a national energy reserve base.

phase (covered by this project, Shenshuo Line） and transport 30 million tons of coal in 1996, and in the second phase to construct an electrified double-track railway between Shenchi in Shanxi Province and Huanghua Port in Hebei Province (Shuohuang Line) and increase coal transportation to 60 million tons in 2000.

1.2 Objective

This project's objective was to construct an electrified single-track railway for transportation between Shenmu County in Shaanxi Province and Shuoxian County in Shanxi Province for the purpose of increasing the transportation of coal, etc., thereby contributing to economic development through the increase in coal production from Shenfu Dongsheng Coalfield and coal supply to cities in Northern China and coastal cities.

Fig.1 Baoshen, Shenshuo, and Shuohuang Lines Covered by the Shenfu Dongsheng Coalfield Development Plan

1.3 Borrower/ Executing Agency

Borrower: Government of People's Republic of China

Executing Agency: Huaneng Jingmei Corporation (at appraisal), Shenhua Group Limited Liability Company (at ex-post evaluation)

Operation and Maintenance Agency: Shenhua Shenshuo Railway Co., Ltd.

1.4 Outline of Loan Agreement

	CX II-P35	CXIII-P35	CXIV-P35	CXV-P35
Loan Amount/ Loan Disbursed Amount	4,200 million yen 4,199million yen	9,940million yen 9,742million yen	1,231million yen 1,231million yen	11,614million yen 10,085million yen
	Total	26,985million yen/ 25,257million yen		
Exchange of Note/ Loan Agreement	December 1990 January 1991	September 1991 September 1991	October 1992 October 1992	August 1993 August 1993
Terms and Conditions - Interest Rate - Repayment Period (Grace Period) - Procurement	2.6% 30 years (10 years) General Untied			
Final Disbursement Date	February 1999	November 1996	November 1997	September 1998
Main Contractors	CITIC INTERNATIONAL COOPERATION CO., LTD (Hong Kong), CHINA RESOURCES METALS & MINERALS CO., LTD. (Hong Kong), SHENZHEN HUA SHEN MATERIAL & EQUIPMENT CO., LTD. (China) etc.			
Consultant	—			
Feasibility Study (F/S) etc.	1989 Chinese Government			

2. Results and Evaluation

2.1 Relevance

This project, which is to expand the capacity of transporting coal from the Shenfu Dongsheng Coalfield, has been consistent with the national policy since the appraisal time to date as stated below.

The Chinese government planned to develop the Shenfu Dongsheng Coalfield under the Seventh 5-Year Plan (1986-1990) and set a target of 3.4% for the annual coal production increase rate for the purposes of addressing the increase in coal demand and developing minority regions and remote poverty regions. The Eighth 5-Year Plan (1991-1995) called for the development of coalfields and the establishment of north-south and east-west coal transportation systems. Particular importance was given both to the development of the Shenfu Dongsheng Coalfield and other coalfields mainly

in the Sanxi Region[2] as a coal supply base and to the establishment of a coal transportation railway trunk line that would accommodate the increase in coal production at an annual rate of 2.4%. The Ninth 5-Year Plan (1996-2000) set the target of increasing production of coal as the basic primary energy source from 1.24 billion tons in 1995 to 1.4 billion tons by 2000. This project, which aims to expand the capacity for transporting coal from Shenfu Dongsheng Coalfield, was therefore of high priority.

Also in the current Tenth 5-Year Plan (2001-2005), development of coalfields and establishment of north-south and east-west coal transportation systems remain a priority issue. One of the concrete goals is to nurture company groups that engage in the entire process from coalmine development to coal production, power generation and shipment in a safe and efficient manner. The executing agency of this project, Shenhua Group, is playing an important role as a leading general coal production company owned by the national government utilizing its own coal distribution network.

In the Outline of the National Long and Medium Term Energy Conservation Plan issued in 2004, energy production and the establishment of an energy transportation network are mentioned as important issues. Thus, this project remains highly important.

2.2 Efficiency

2.2.1 Output

The goal of this project was to construct an electrified single-track railway with a total length of 269km and annual transportation capacity of 50 million tons between Daliuta in Shenmu County, Shaanxi Province and Shuozhou in Shuoxian County, Shanxi Province, which forms the first phase of the plan to construct railways dedicated to coal transportation under the Shenfu Dongsheng Coalfield Development Plan. The ODA Loan financed the entire foreign currency portion, which covered the following (comparison of the planned and actual scope is shown on page 16):

(1) Tracks (main track, side track), roadbed, bridges & culverts, and tunnels
(2) Stations
(3) Substations
(4) Communication and signal equipment
(5) Housing
(6) Railway cars

The above facilities have been constructed almost as planned except for the change in tracks in (1).

The planned length at the appraisal time was 279.4km for the main track and 174.7km for the side track[3], while the actually constructed length was 268.8km for the main track and 105.9km for the

[2] Shaanxi Province, Shanxi Province, and the western part of the Inner Mongolia Autonomous Region
[3] The track other than the main track, which is used for maintenance, freight sorting, changing of train car compositions, etc. and usually not used for train service operation

side track. The shortening of the side track is attributable to the reduction in the length of track necessary for maintenance, which resulted from the reduction in the traffic volume per train from 10,000 tons to 6,000 tons due to safety considerations leading to the reduction in the number of railway cars.

2.2.2 Project Period

At the time of appraisal, the whole project period was planned to be 90 months from January 1991 to June 1998, whereas it actually took 120 months from January 1991 to June December 2000 (133% of the planned period). The reason for the delay was that, immediately before the acquisition of the site for track construction, the Shanxi Provincial Government made a request to purchase the land including a 60km section of the existing Shenhe Local Railway running parallel with the railway covered by the project, and it took time for coordination among parties concerned, redesigning of the plan and getting approval from the State Council. As a result, the project was completed 2.5 years behind schedule.

2.2.3 Project Cost

At the appraisal, it was planned to finance 26,985 million yen, or approximately 25% of the total project cost of 109,373 million yen with the ODA Loan and the remaining 75% with bank loans and the coal-oil replacement fund[4]. The actual project cost was 76,941million yen in total, of which approximately 33%, or 25,257 million yen was covered by the ODA Loan (ODA Loan portion: 94% of the planned amount; total project cost: 70.3% of the planned amount). The main factors that reduced the project cost were:① yuan's depreciation against yen (at appraisal time: 1 yuan=34.4 yen; at evaluation time: 1 yuan=14.7 yen); and ② efficient material procurement through competitive international bidding.

In summary, although the project period was extended to 133% of the planned period, the planned output was mostly achieved except for a 40% reduction in the length of the side track, and the project cost was approximately 70% of the planned amount. Therefore, no specific problem was found with the efficiency of the project.

2.3 Effectiveness

2.3.1 Volume of Coal Transportation

At the time of appraisal, the only route to transport coal from the Shenfu Dongsheng Coalfield was the Bashen Line connecting Shenmu with Baotou 171km north of Shenmu, which has an annual transportation capacity of 10 million tons, and therefore coal production was restricted to the

[4] The fund established in the 1980s when the petroleum prices were soaring with the profit made by controlling domestic petroleum consumption and forwarding it for export

capacity of this line.

The planned annual coal transportation on the Shenshuo Line was 12 million tons for the first year after completion (1999), 20 million tons for the second year (2000), and 50 million tons for the sixth year (2004). Actually it reached 20.22 million tons in the year of completion (2000) exceeding the target for the second year and achieved 47.18 million tons in the second year (2002), which was more than two times the target. The sharp increase in 2002 is due to a substantial expansion of transportation capacity realized by the completion of the electrified double-track railway between Shenchi and Huanghua Port (Shuohuang Line), which makes up the second phase of the 850km long transportation railway, at the end of 2001. Before that, transportation volume on the Shenshuo Line was restricted because of the limited transportation capacity of the Beitongpu Line (Zhonbu-Datong in Shanxi Province) connected to the Shenshuo Line. In 2003, double-tracking of the Shenmubei-Shenchi section was completed, and the transportation volume reached 71.02 million tons (5% of coal consumption in China in 2003, which was 1.42 billion tons).

While project completion was later than planned (December 2002) by 2.5 years, coal was transported by diesel-powered trains during the period between the completion of tracks in 1996 and completion of electrification in late 2000. Although the transportation volume in 1999 was 8.94 million tons, less than the planned 12 million tons, a certain level of transportation volume was reached in spite of the delay in the project.

Table 1 Coal Transportation Volume on the Shenshuo Line

(unit: ten thousand tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Plan			Completion	1st year	2nd year	3rd year	4th year	5th year	6th year
				1,200	2,000				5,000
Actual					Completion	1st year	2nd year	3rd year	4th year
	75	334	474	894	2,022	3,199	4,718	7,102*	—

Source: JBIC's materials for planned figures and Shenhua Group for the actual figures

Note)* The actual result in 2003 includes the transportation volume increased by electrification of the Shenmubei-Shenchi section.

2.3.2 Operation of Passenger Trains

According to the executing agency, the plan to operate two passenger trains a day (one rapid train and one local train) to provide a means of transportation in the region was changed to operate one passenger train (local train) a day. This is because the road connecting Dongsheng-Shenmu-Fugu was improved to be more convenient, and the demand for passenger transportation between Shenmubei and Datong turned out to be 300,000 passengers a year, which is covered by one train a

day (annual transportation capacity is 500,000 passengers). According to the executing agency, by reducing one passenger train, they can operate two additional coal trains that generate a net profit of 34 million yuan a year. Therefore, their decision seems to be appropriate.

2.3.3 Recalculation of Financial Internal Rate of Return (FIRR)

Recalculation of Financial Internal Rate of Return of this project based on the base year of 1996 assuming that the project life is 25 years resulted in 10.5%, which is higher than that calculated at the time of appraisal (7.2%). The costs were calculated using the project cost and the maintenance cost, and the benefits were calculated using the difference in income from coal transportation between the with- and without-project cases. FIRR is higher than the appraisal mainly due to (1) reduction in the project cost (by 30%), (2) increase in the unit transportation charge (0.10 yuan/ton-km→0.15 yuan/ton-km), and (3) increase in the transportation volume (30 million tons→ 47.18 million tons).

2.3.4 Recalculation of Economic Internal Rate of Return (EIRR)

Recalculation of Economic Internal Rate of Return of this project based on the base year of 1996 assuming that the project life is 25 years resulted in 39.2%, which is higher than that calculated at the time of appraisal (36.3%). At appraisal, the project cost and the maintenance cost were included in the costs, and the effects of reduction in operation expenses, savings in maintenance cost, and reduction in transportation time were included in the benefits. For recalculation, the same cost items, i.e. the project cost and the maintenance cost, were used, whereas the effect of the increase in coal production was used as benefits[5].

Judging from the fact that the coal transportation volume steadily increased and IRRs are high, as shown above, it can be said that the initial objective of the project has been achieved.

2.4 Impact

2.4.1 Increase in Coal Production from the Shenfu Dongsheng Coalfield

Of the 850km long railway construction project between Shenmu and Huanghua Port, the Shenshuo Line was completed in 2000 in the first phase, and the Shuohuang Line connecting to the other railway line constructed under the project was completed in 2001 in the second phase. As a result, the coal production from the Shenfu Dongsheng Coalfield has substantially increased from the time when the Baoshen Line was the only transportation route, as mentioned in “2.3 Effectiveness”. As shown in Table 1, over 7,000 tons of coal was transported in 2003, and accordingly the coal production from Shenfu Dongsheng reached 7,384 tons in 2003 as shown in

[5]Since the coal from Shenfu Dongsheng Coalfield is all transported by railway, it is more realistic to consider the increase in coal production as the benefit of the “with-project” case instead of the saving of the diving cost of truck transportation and the reduction in the transportation time.

Table 2, which is more than 13 times as much as that in 1995. According to the interview survey at the Huojitu Coal Mine[6], one of major coalmines in this coalfield, its production has been increasing on a steady basis since the completion of the project in December 2000, from 2.4 million tons in 2001 to 5 million tons in 2002 and 8 million tons in 2003. They predicted that the full production capacity of 9 million tons would be achieved by the end of 2004.

Table 2: Coal Production from the Shenfu Dongsheng Coalfield

(unit: ten thousand tons)

	1995	2000	2001	2002	2003
Plan	4,500	6,000	–	–	–
Actual	553	2,472	3,787	5,165	7,384

Source: Shenhua Group

2.4.2 Increase in Coal Supply to Northern China and Costal Cities, etc.

Around 10 million tons of coal produced from the Shenfu Dongsheng Coalfield is annually consumed by thermal power plants in Beijing, Hebei Province and Tianjin on the way, and the remainder is transported to Huanghua Port via the Shenshuo and Shuohuang Lines, to Quinhuangdao Port via the Shenshuo, Beitongpu and Daqin Lines, and to Tanggu Port via that Fengshada Line. From these major shipping ports, coal is transported to each demand area by sea or river. Table 3 and Fig.2 show the volume of coal shipped from the major three ports. In 2000 when the project was completed, coal shipment from Quinhuangdao Port and Tanggu Port increased sharply from the previous year by 20.2% and 32.6%, respectively. Of the total volume of coal shipped from the major three ports, that transported via the Shenshuo Line occupies as much as 36.1% (as of 2003).

Table 3: Coal Shipment from Major Shipping Ports

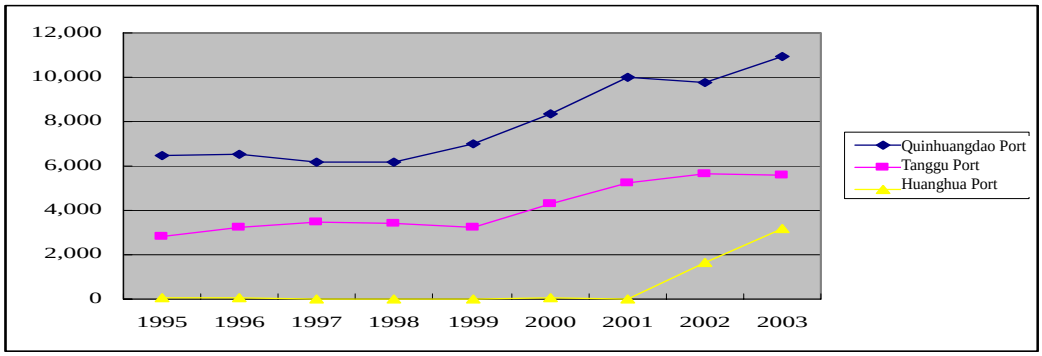
(unit: ten thousand tons)

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Quinhuangdao Port	6,488	6,548	6,169	6,204	6,973	8,378	10,007	9,792	10,959
Tanggu Port	2,826	3,237	3,444	3,434	3,258	4,321	5,259	5,637	5,574
Huanghua Port	35	31	20	15	24	33	18	1,653	3,156
Total	9,349	9,816	9,633	9,653	10,255	12,732	15,284	17,082	19,689
This Project	0	75	334	474	894	2,022	3,199	4,718	7,102
This Project's Share	0%	0.8%	3.5%	4.9%	8.7%	15.9%	20.9%	27.6%	36.1%

Source: "China Electric Power and Coal", Coal Industry Press, 2004

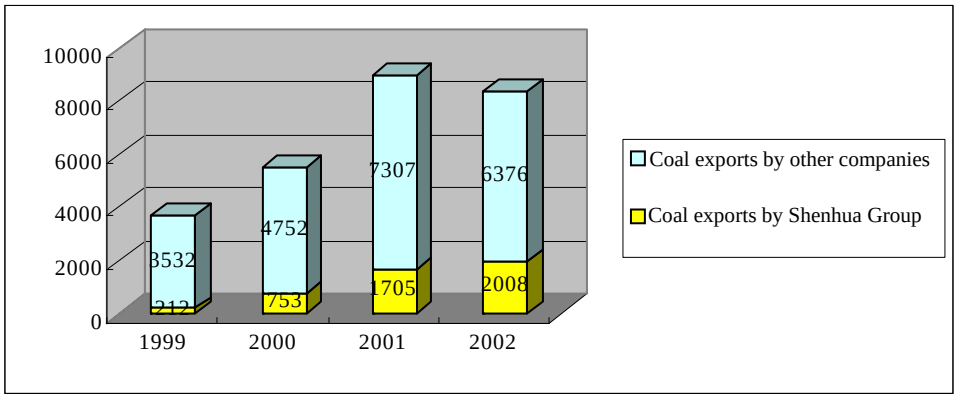
[6] A coal mine with a reserve of 700 milion tons, an area of 63km^2, and productivity of 100tons/person/day

Fig.2 Changes in Coal Shipment from Major Shipping Ports (unit: ten thousand tons)



As shown in Fig.3, China's coal exports[7] have rapidly increased from 37.44 million tons in 1999 to 55.05 million tons in 2000 and 90.12 million tons in 2001, and the Shenhua Group's share in coal exports also increased from 6% to 14% and 19%. In 2002 when coal exports decreased due to the tight demand-supply situation in the nation, coal exports by Shenhua Group stood at 20.08 million tons, and its share increased to 24%. Thus, this project addresses not only the domestic demand but also the overseas demand.

Fig.3 Coal Exports from China (unit: ten thousand tons)



Source: "China Energy Statistical Yearbook 2000-2002" China Statistics Press, Shenhua Group

2.4.3 Increase in Coal Consumption in Coastal Cities

The coal transported to the three shipping ports is transported to coastal cities in Northeastern, Northern, and Eastern China by sea or river. In this survey, the data on shipments from each port by destination was not available, and therefore we cannot make an accurate analysis. However, supposing that the volume of coal transported under the project (Table 1 and Table3) less the volume

[7]The coal export volume is determined by the national policy following the request by the companies authorized to export coal (Shenhua Group, China Export& Import Corporation, and Shanxi Coal Export&Import Group Corporation), and the license to export the determined volume is issued to each company.

exported by Shenhua Group (Fig.3) is shipped to 7 coastal provinces and 1 city[8], this project's share in coal consumption in these regions is estimated to be 1.5%(1999), 2.7%(2000), 3.0%(2001), and 5.0%(2002), indicating that the project made a certain contribution to coal consumption (see Table 4). The number of beneficiaries of this project is estimated at 65 million persons (estimation based on coal consumption and the population in China as of 2003, which are 1.42 billion tons and 1.3 billion, respectively, and the volume of coal transported under the project in 2003).

Table 4 Coal Consumption in Coastal Cities

(unit: ten thousand tons)

	1990	1995	1999	2000	2001	2002
Total of 7 provinces and 1 city[1]	32,829	45,181	45,518	46,875	49,803	54,152
This project[2]	—	—	682	1,269	1,494	2,710
Share	—	—	1.5%	2.7%	3.0%	5.0%

[1] Source: China Statistical Yearbook

[2] Supposing that the coal transported on Baoshen Line is not exported, the exported volume (Fig.3) is deducted from the transportation volume on the Shenshuo Line (Table 1 and Table 3).

2.4.4. Development of Regional Economy

Table 5 shows changes in population and regional economy in Shenmu County in Shaanxi Province, Fugu County in Shaanxi Province and Dongsheng City in the Inner Mongolia Autonomous Region near the Shenfu Dongsheng Coalfield. Although the population of Shaanxi Province remains relatively unchanged, the GRDP growth rate has been high except for 2001. After 2002, in particular, rapid increase in coal production following the completion of this project and the construction of the Shuohuang Line coupled with the temporary rise in coal prices in the international market positively affected the regional economy. Thus, the project contributed to the regional economy to a certain extent.

[8]The 14 coastal cities (Dalian, Quinhuangdao, Tianjin, Yantai, Qingdao, Lianyungang Port, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhangjiang and Behai) belong to 8 provinces and 2 cities. The supposition is that coal is transported to 7 provinces and 1 city other than Hebei Province and Tianjin City where the three shipping ports are located.

Table 5 Changes in Population and Regional Economy

(unit: person) (unit: ten thousand yuan)

		1996	1997	1998	1999	2000	2001	2002	2003	2004
Shenmu County, Shaanxi Province	Population	339,682	345,638	352,230	358,367	369,503	365,954	361,345	366,640	369,400
	Growth rate	N/A	1.8%	1.9%	1.7%	3.1%	-1.0%	-1.3%	1.5%	N/A
	GRDP	124,705	127,929	152,502	170,372	230,000	214,600	331,000	421,000	523,700
	Growth rate	N/A	2.6%	19.2%	11.7%	35.0%	-6.7%	54.2%	27.2%	N/A
Fugu County, Shaanxi Province	Population	201,656	203,916	205,520	207,638	211,836	213,726	215,663	215,440	215,000
	Growth rate	N/A	1.1%	0.8%	1.0%	2.0%	0.9%	0.9%	-0.1%	N/A
	GRDP	61,374	61,854	69,630	79,729	86,974	83,300	104,400	129,800	163,000
	Growth rate	N/A	0.8%	12.6%	14.5%	9.1%	-4.2%	25.3%	24.3%	N/A
Dongsheng City, Inner Mongolia Autonomous	Population	163,601	169,973	175,171	183,944	190,473	197,177	205,500	219,403	N/A
	Growth rate	N/A	3.9%	3.1%	5.0%	3.5%	3.5%	4.2%	6.8%	N/A
	GRDP	145,538	193,721	239,629	285,345	358,108	396,700	490,159	N/A	N/A
	Growth rate	N/A	33.1%	23.7%	19.1%	25.5%	10.8%	23.6%	N/A	N/A

Source: National Bureau of Statistics

2.4.5 Impact on the Environment and Society

17,491km^2 of land was acquired for this project, and the land acquisition cost was 104.16 million yuan (we could not obtain reliable data on the number of relocated residents). As mentioned in 2.2.2, the initial plan to acquire the site alongside the Shenhe Local Railway was changed to purchase part of the site of the Shenhe Local Railway at the request of the Shanxi Provincial Government. As a result, the area of land acquisition was reduced. According to the executing agency, residents were relocated in accordance with the Land Control Law without any problem in the relocation process. No specific adverse impact of railway construction on the environment has been reported.

2.5 Sustainability

2.5.1 Executing Agency

2.5.1.1 Technical Capacity

Among 5,735 employees of Shenhua Shenshuo Railway Co., Ltd., a subsidiary of Shenhua Group in charge of operation and maintenance of the constructed railway, 3,974 are technical staff and all of them are licensed engineers in each specialized field. They are categorized by duties into technical administrators (150), technical experts (277), and skilled operators (3,547). According to the technical level, they are granted one of 3 classes of licenses: senior, semi-senior, and junior (in the case of the skilled operators, 4 classes of licenses are given including the engineer's license above the senior license). The average length of employment of the technical administrators is 14 years, and 11% of them have the senior license, 51% have the semi-senior license, and 38% have the junior license. The average length of employment of the technical experts is 10 years and 4% of them have the senior license, 35% have the semi-senior license, and 61% have the junior license. The average length of employment of the skilled operators is 10 years and 0.8% of them have the engineer's license, 2.7% have the senior license, 32.7% have the semi-senior license, and 63.8% have the junior

license. In total, nearly 40% of the technical staff have the semi-senior or higher classes of licenses. According to the executing agency, there is no specific problem with the level and experience of the technical staff.

As an education system for the technical staff, the technical administrators and technical experts take classes at nearby universities or special schools for 6 months to 2 years every year in wide-ranging fields such as transportation, traction, power supply, communication and signaling, track construction, railway cars, and locomotive crew. In addition to education outside the company, more than 100 skill-training classes are held every year, and most of the technical staff have opportunities to take part in any class.

Thus, the technical staff in sufficient number and quality is secured.

2.5.1.2 Operation and Maintenance System

At the time of appraisal, the executing agency was Huaneng Jingmei Corporation, a lower branch of China Huaneng Group[9] established in 1985. The operation and maintenance of the Shenshuo Line was planned to be conducted by Shenhua Raiway Division, which was scheduled to be established with 1,900 employees under Huaneng Coal Corporation Transportation & Sales Co., a subsidiary of Huaneng Jingmei Corporation. However, in October 1995, with the establishment of 100% state-owned Shenhua Group Corporation under the Corporation Law as part of an effort to modernize corporate management, Huaneng Jingmei Corporation was separated from China Huaneng Group. At present, Shenhua Group is the executing agency of this project and its subsidiary, Shenhua Shenshuo Railway Co., Ltd., is operating and maintaining the Shenshuo Line.

Shenhua Group is the China's largest and the world's fifth largest coal company with 35 subsidiaries, 83,994 employees, and total assets of 117.1 billion yuan. The group engages in development and production of the Shenfu Dongsheng Coalfield, construction and operation of roads, railways, ports and power plants, and marketing with an integrated system. It is given exceptional status under the national plan and is granted foreign investment rights, foreign trade operation rights, coal export rights, and foreign affairs rights by the national government.

Shenhua Shenshuo Railway Co., Ltd. is composed of the Board of Directors, Board of Supervisors, and 11 divisions[10] and 13 departments employing 1,532 full-time workers and 4,203 temporary workers as of November 2004.

[9] A state-owned group company established at the approval of the State Council of China. Using domestic and foreign funds, it engages in power generation and other development and construction activities in the field of energy, transportation, and raw material industry as well as the development of finance and science and technology. It is a nation leading electric power group company, which owns power plants with a maximum out put of 31.36 million W.

[10] Information Center, Multiple Operation Management Division, Discipline, Inspection and Audit Division, Communist Party Committee's Affairs Division, Materials Management Division, Construction Division, Safety Supervision Division, Transportation Management Division, Personnel Affairs and Labor Resource Division, Planning and Finance Division, and Office of General Affairs.

2.5.1.3 Financial Status

The sales of Shenhua Shenshuo Railway Co., Ltd. have been growing rapidly from 463.75 million yuan in 1999 to 663.85 million yuan in 2000, 1,130.09 million yuan in 2001, 1,695.57 million yuan in 2002, and 2,155.74 million yuan in 2003. Both the operating profit and ordinary profit recorded substantial increases from 2002 to 2003.

The sales of the parent company and executing agency Shenhua Group was 26 billion yuan in 2002 and 34.4 million yuan in 2003. The net profit increased from 1.7 billion yuan in 2002 to 1.95 billion yuan in 2003. The shareholders' equity and the equity ratio were 99.7 billion yuan and 34.7% in 2002 and 117.1 billion yuan and 34.2% in 2003, showing that the group is one of the major companies of good standing in China.

All things considered, the financial status has been improving with the increase in sales.

Table 6 Shenhua Shenshuo Railway Co., Ltd. Profit and Loss Statement (unit: ten thousand yuan)

	1999	2000	2001	2002	2003
Sales	463,750,709	663,845,753	1,130,085,024	1,695,565,673	2,155,737,043
Gross Profit	117,005,958	172,777,015	313,674,531	616,864,729	918,690,980
Operating Profit	718,436	1,573,648	71,187,510	59,193,674	284,798,817
Ordinary Profit	0	0	71,007,408	8,202,882	235,774,506
Net Profit	N/A	N/A	71,007,408	7,258,575	-98,188,915

Table 7 Shenhua Shenshuo Railway Co., Ltd. Balance Sheet (unit: ten thousand yuan)

	1999	2000	2001	2002	2003
Assets					
Current Assets	209,222,619	100,728,933	269,542,948	376,692,661	1,211,252,006
Fixed Assets	125,828,755	96,364,915	7,096,676,723	7,585,962,826	7,986,477,456
Other Assets	N/A	N/A	187,662,375	149,436,508	132,175,510
Total Assets	335,051,374	197,093,848	7,553,882,045	8,112,091,995	9,329,904,972
Liabilities					
Current Liabilities	195,200,484	54,064,869	240,633,353	195,839,212	472,453,588
Fixed Liabilities	5,513,372	8,691,460	7,326,307,661	7,919,617,380	8,565,559,111
Total Liabilities	200,713,855	62,756,329	7,566,941,014	8,115,456,591	9,038,012,698
Shareholders' Equity					
Capital	133,927,440	133,927,440	303,446,349	303,446,349	303,446,349
Capital Reserve	410,079	410,079	1,312,732	3,748,530	83,748,530
Excess Reserve	N/A	N/A	809,751	1,730,845	2,886,352
Surplus	N/A	N/A	-318,627,801	-312,290,320	-98,188,948
Total Shareholders' Equity	134,337,519	134,337,519	-13,058,968	-3,364,596	291,892,284
Total of Liabilities and Shareholders' Equity	335,051,374	197,093,848	7,553,882,045	8,112,091,995	9,329,904,982

Table 8 Shenhua Shenshuo Railway Co., Ltd. Financial Indicators

	1999	2000	2001	2002	2003
Operating Income (million yuan)	463.75	663.85	1130.09	1695.57	2155.74
Net Profit (million yuan)	0	0	71	7.26	-98.19
Gross Profit to Sales Ratio	25.23%	26.03%	27.76%	36.38%	42.62%
Operating Profit to Sales Ratio	0.15%	0.24%	6.30%	3.49%	13.21%
Ordinary Profit to Sales Ratio	0.00%	0.00%	6.28%	0.48%	10.94%
Current Profit to Sales Ratio	0.00%	0.00%	6.28%	0.43%	-4.55%
Sales Growth Rate	N/A	43.15%	70.23%	50.04%	27.14%
Current Ratio	107%	186%	112%	192%	256%
Equity Ratio	40%	68%	-0.17%	-0.04%	3.13%

2.5.2 Operation and Maintenance Status

In this survey, it was confirmed that facilities such as tracks, communication equipment, and substations as well as railway cars are properly operated and maintained in general.

Operation and maintenance activities are performed in accordance with the “Railway Technical Management Rules”, “Railway Safety Management Rules”, and “Rules for Railway Operating Organization” maintained by each division. As for the maintenance of vehicles, 129 among 604 employees of the Railway Car Department are divided into 10 teams and engage in the maintenance of locomotives in rotation. There are three types of inspection of locomotives: regular inspections performed after every 50,000km and 150,000km of operation and the daily inspection for maintenance. Wheels and spare parts are always in stock. According to the interview with the executing agency, there is no problem concerning the operation and maintenance of other facilities. Therefore, the effects of the project are expected to continue.

3. Feedback

3.1 Lesson Learned

None

3.2 Recommendations

None

Comparison of Original and Actual Scope

Item	Plan	Actual
① Project Scope		
1. Roadbed	1.Roadbed 178km	1. Roadbed 197km
2. Bridges	2.Bridges Super large: 6 bridges Large: 48 bridges Medium: 75 bridges Small: 22 bridges	2. Bridges Super large: 6 bridges 5,548m Large: 49 bridges 10,599m Medium: 89 bridges 6,841m Small: 16 bridges 418m
3. Culverts	3.Culverts 750 culverts	3. Culverts 695 culverts
4. Tunnels	4. Tunnels 41 tunnels/26,468m	4. Tunnels 44 tunnels/27,710m
5. Stations	5. Stations: 26 stations	5. Stations: 25stations (construction of 24stations and improvement of 1 station (Shuozhou))
6. Substations	6. Substations: 5 substations	6. Substations: 5 substations
7. Tracks	7. Tracks: Main track 279.4km Side track 174.7km	7. Tracks: Main track 268.8km Side track 105.9km
8. Communication and signal	8. Communication and signal: 274km	8. Communication and signal: 282km
9. Electrification	9. Electrification: 269km	9. Electrification: 273km
10. Construction of residences, etc	10. Construction of residences, etc: 260,336 m^2	10. Construction of residences, etc: 221,503m^2
11. Railway cars	11. 50 cars	11. 38 cars
② Project Period	Jan. 1991 - Jun.1998 (90 months)	Jan. 1991 - Dec. 2000 (120 months)
Preparation for Construction	Oct. 1989 - Mar. 1992	Jun. 1990 - Jun. 1993
Roadbed	Oct. 1989 - Jun. 1996	Jan. 1990 - Jun. 1996
Bridges and culverts	Oct. 1989 - Mar. 1996	Jan. 1990 - Mar. 1996
Tunnels	Oct.1989 - Dec. 1995	Jan. 1990 - Dec. 1995
Tracks	Oct. 1990 - Dec. 1995	Mar. 1994 - Dec. 1996
Communication and signal	Feb. 1995 - Jun. 1997	Jan. 1997 - Dec. 1999
Electrification	Feb.1995 - Jun. 1997	Jan. 1997 - Dec. 2000
Construction of residences, etc.	Oct. 1989 - Jun. 1997	Oct. 1998 - Dec. 2000
Procurement of railway cars	Jul. 1994 - Jun. 1998	N/A - Dec. 2000
③ Project Cost		
Foreign Currency	26,985million yen	25,257million yen
Local Currency	82,388million yen (Local currency: yuan)	51,684million yen (Local currency: yuan)
Total	109,373million yen	76,941million yen
ODA Loan Portion	26,985million yen	25,257million yen
Exchange Rate	1 yuan ＝ 34.4 yen	1 yuan ＝ 14.7 yen