

# **Management discussion and analysis**

## **MACROECONOMIC AND ELECTRICITY DEMAND**

The growth of the PRC's GDP was 8% in 2000, amounting to RMB8,900 billion. GDP of Shandong Province, the area served by the Group, amounted to RMB850 billion, representing an increase of 10.5% over 1999. Indeed, this was the tenth consecutive year in the province recording a two-digit economic growth rate and this was 2.5 percentage points over the national average.

In 2000, the power consumption of the whole society of Shandong Province was accumulated to 100,071 million kWh, representing an increase of 9.4% over 1999. The industrial sector of Shandong Province consumed 74,538 million kWh, representing an increase of 9.25% over the same period of 1999 and accounted for 74.48% of the total power consumption by Shandong Province. The agriculture, fisheries and water conservancy industries consumed 5,392 million kWh, accounted for 5.39% of the total power consumption by Shandong Province, representing an increase of 3.68% over the same period of 1999. The power consumed by the urban and rural residents was up to 12,255 million kWh, representing an increase of 9.63% over the same period of 1999 and accounted for 12.25% of the total power consumption by Shandong Province. As at 31 December 2000, the total installed capacity of Shandong Province was 19,665.02MW, representing an increase of 7.82% over the same period of 1999.

## **OPERATING REVENUE**

In 2000, the total amount of electricity sold by the Group to the grid during the year reached 23,925 million kWh, resulting in an operating revenue of approximately RMB6,863 million, representing an increase of 19.12% over 1999.

## **OPERATING COSTS**

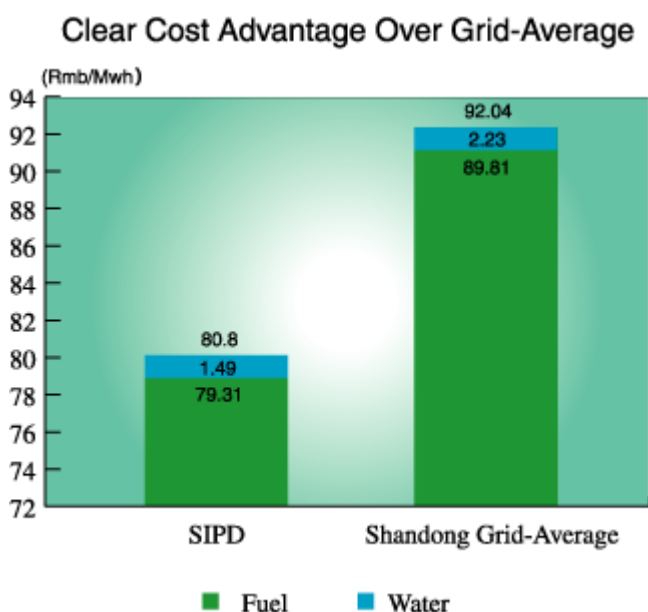
In 2000, unit operating cost of the Group amounted to RMB175.99/MWh, representing a decline of 0.52% over 1999.

The major operating cost of the Company was the cost of fuel, which accounted for 45.06% of the total operating cost. Due to a significant increase in electricity generation in 2000, the fuel cost of the Group was RMB1,897,406,000, representing an increase of 16.82% over 1999. The Group had enhanced its management of facilities and upgraded its technology in order to reduce fuel consumption. The growth rate in fuel cost was lower than that of the

electricity generation.

In 2000, the depreciation of the Group increased by 23.7% over 1999 to RMB1,005 million primarily due to the commencement of operations of the first and the second 300MW units of Laichang Plant during 1999 and 2000 respectively, and the acquisitions of 55% and 30% of the equity interests in Qingdao Plant and Weifang Plant by the Group respectively during 1999, resulting in an increase in its fixed assets as well as the cost of depreciation.

Maintenance and routine repairs mainly comprised major and minor overhauls and other expenses for routine repairs. This rose by 24.59% to RMB423 million over 1999 which was incurred by the maintenance and routine repairs of Laicheng Plant during the year, of which RMB74.6 million was incurred by Qingdao Plant and Weifang Plant according to the interests owned.



Wages and staff welfare increased by 45.17% over 1999 to RMB172 million, which was attributed to the commencement of operation of Laichang Plant and the inclusion of Qingdao Plant and Weifang Plant in accordance with the interests owned, leading to an increase in the number of staff.

Sales and administration expenses totalled RMB502 million, representing an increase of 39.4% over 1999. This increase was mainly attributable to the commencement of operation of Laicheng Plant, the acquisitions of Qingdao Plant and Weifang Plant causing a corresponding increase in expenses and the cost for the disposal of staff quarters by the Group which is amounted to RMB93 million.

## INTEREST

Interest income of the Group for 2000 totalled RMB132 million, representing an increase of 94.17% over 1999. Interest expenses borne by the Group in 2000 amounted to RMB729 million. Interest expenses for the existing Zouxian Plant and Shiliquan plant reduced by RMB90.3 million from 1999.

## **INDEBTEDNESS**

As at 31 December 2000, the borrowings of the Group totalled RMB8,957 million, of which US\$236 million was a loan advanced by the World Bank (US\$12.5 million had been repaid in 2000). As at 31 December 2000, the net liability to asset ratio was 31.68%, representing a decrease of 7.22 percentage points over 1999.

## **PRODUCTION OPERATION AND SAFETY**

In 2000, electricity generation of the Group calculated according to the interests owned by the Group amounted to 25,451 million kWh, representing an increase of 23.4% over the same period of 1999. The equivalent availability factor of the generating units was 94.64%, representing an increase of 6.89 percentage points over 1999. The average utilisation hours of the generation units attained 5,639 hours, which had increased by 287 hours over 1999, being 245 hours above the 5,394 hours achieved on average by the Shandong Provincial Grid. On-grid electricity generation totalled 23,925 million kWh, representing an increase of 23.72% over 1999. The net generation coal consumption rate of the wholly-owned plants was 349.92g/kWh, decreased by 2.35g/kWh over 1999, and was 14.77g/kWh lower than the grid average. This was primarily attributable to the application of energy saving technology and the improvement of on-site operation control of the Group.

In 2000, the average overhaul rate of the Group's electricity generation facilities was 170,600 kWh. A total of 17 major and minor overhauls were undertaken with respect to the wholly-owned plants, resulting in an overhaul rate of 5.28% for the year.

The construction of the second 300MW unit of Laicheng Plant commenced commercial operation on 27 September 2000. The construction technology and quality of the generating units as well as the test run standards complied with the national requirements for high quality projects. Besides, it has made a record of the State of operating safely for 131 consecutive days since it has commenced operation.

## **TECHNOLOGICAL UPGRADE PROJECTS**

In 2000, the technology upgrade projects for the plants which are wholly-owned by the

Group progressed smoothly. A total of RMB108,039,300 was invested in such technology upgrade projects, of which RMB45,897,000, RMB47,029,000 and RMB15,113,000 were attributable to Zouxian Plant, Shiliquan Plant and Laicheng Plant respectively. The primary purpose of these upgrades by the Group during the year was to save energy, reduce consumption and protect the environment. The Group also intends to upgrade the technology of some of its generating units for the purpose of further reducing energy consumption.

The major technology upgrade projects undertaken by the Group during 2000 included:

1. Upgrading of the boiler dust removers of the first generating unit of Shiliquan Plant.
2. Preparatory work in respect of the through-flow project of steam turbine in relation to the fourth generating unit (300MW) of Zouxian Plant and the second generating unit (125 MW) of Shiliquan Plant. The net generation coal consumption rate of such plants will be greatly decreased as a result of the completion of these upgrade projects.



## **OPERATION STATISTICS**

The table below set out certain operation statistics of the power plants owned by the Group:

### **Zouxian Plant:**

	1998	1999	2000
Installed capacity (MW)	2400	2400	2400
Amount of electricity generated (million kWh)	121	131.55	134.51
On-grid electricity generation (million kWh)	114.15	123.69	126.81
Available hours	7455.5	7588.9	8315.7
Operating hours	7041.9	7399.5	7967.4
Average Utilisation hours	5042	5481	5605
Capacity factory (%)	57.56	62.57	63.80
Load factor (%)	71.60	74.07	70.34
Equivalent availability factor (%)	84.66	86.48	94.71
Net generation coal consumption (g/kWh)	349	346	342.1

#### **Shiliquan Plant:**

	1998	1999	2000
Installed capacity (MW)	1225	1225	1225
Amount of electricity generated (million kWh)	65.67	63.09	67.06
On-grid electricity generation (million kWh)	60.67	58.82	62.64
Available hours	7867.2	7564	8240.9
Operating hours	7399.6	7149.5	7726.9
Average utilisation hours	5312	5150	5475
Capacity factory (%)	61.44	60.30	63.21
Load factor (%)	71.79	72.04	70.86
Equivalent availability factor (%)	90.65	88.56	95.15
Net generation coal consumption (g/kWh)	367	365	364

#### **Laicheng Plant:**

	<b>The first 300MW unit 10 December to 31 December 1999</b>	<b>The first 300MW Unit 2000</b>	<b>The second 300MW unit 27 September to 31 December 2000</b>
Installed Capacity (MW)	300	300	300

Amount of electricity generated (million kWh)	0.39	16.92	5.79
On-grid electricity generation (million kWh)	0.36	15.94	5.18
Available hours	520.0	8288.17	2287.0
	1,677.18		
Operating hours	520.0	8181.7	2287.0
Average utilisation hours	129.1	5641.2	1726.0
Capacity factor (%)	19.51	64.22	75.52
Load factor (%)	19.51	68.95	75.52
Equivalent availability factor (%)	100	93.71	99.59
Net generation coal consumption (g/kWh)	385.0	352.7	362.4

### Operation statistics of Qingdao Plant and Weifang Plant:

	Qingdao Plant		Weifang Plant	
	July to December		October to December	
	1999	2000	1999	2000
Installed capacity (MW)	600	600	600	600
Amount of electricity generated (million kWh)	16.56	36.44	7.06	35.95
On-grid electricity generation (million kWh)	15.54	34.30	6.60	33.75
Available hours	4330.99	8359.2	1677.18	8140.3
Operating hours	3761.17	8185.9	1667.25	7910.1
Average utilisation hours	2759.99	6073.9	1175.93	5991.5
Capacity factory (%)	62.5	69.15	53.26	68.21
Load factor (%)	73.38	74.20	70.53	75.74
Equivalent availability factor (%)	98.07	95.16	75.96	92.64
Net generation coal consumption (g/kWh)	343.1	338.9	353	351.2