

	Year 2000	Year 2020
Coal	218 GW	557 GW
Hydro	78 GW	257 GW
Gas	1 GW	71 GW
Nuclear	2 GW	40 GW
Oil	15 GW	15 GW
Other		10 GW

Projected growth of China's energy sector.

various problem sectors discussed above as well as other issues concerning the tariff structure such as the following:

- The proportion of small and medium-sized coal-fired plants is too large (average size just 50 MW). This results in low productivity, high coal consumption and uncontrolled environment impacts.
- Coal-fired plants altogether have too high a share in the total energy capacity mix. The result is greater pollution and high CO₂ emission levels.
- There are no strict controls governing SO₂, NO_x and particulate emissions. The result is increased local emission levels coupled with a direct increase in healthcare expenses.
- 'Peak and valley' power supply management is becoming a more critical issue. At present the load variation is mainly managed by coal-fired units, which are poor at following load demand, so new solutions are needed to maintain power quality.

Exciting future for Wärtsilä

The National People's Congress (NPC) is also giving high priority to ensuring power security in accordance with the availability of domestic and imported primary energy resources. Moreover, China's State Electricity Regulatory Commission has made power security issues the top priority for the industry this year.

All the macro issues described above will set the business trends that will affect us in Wärtsilä. The foreseen increase in tariffs, usage of cleaner fuels like natural gas, and new government policies are good news for our concept of decentralized energy generation.

It sometimes feels like climbing a mountain, where you have not yet reached the next peak and you are not sure what is to come. But your experience of the past and the information you have gathered during your trek so far tells you that the most interesting part of the trip is yet to come - and we feel sure we are not far from the next peak with its new challenges! ■



The SPCC cement plant close to Jazan.

Power for Saudi cement plants

Wärtsilä will supply power plant extensions for two cement plants near Jazan and Bisha in Saudi Arabia for Southern Province Cement Co (SPCC).

For each plant, Wärtsilä will deliver a generating set powered by a Wärtsilä 18V38B diesel engine. Each complete generating set will be supplied on a turnkey basis, including the civil works and ancillary systems for cooling, fuel handling, exhaust stacks, electrical switchgear and all related control systems. The turnkey project also includes training at both the sites.

The generating set at Jazan will run on heavy fuel oil and at Bisha on crude oil. Both sets will be put into operation during October 2004, and will provide additional power capacity of 10.9 at Jazan and 9.6 MW at Bisha to meet growth in demand, running in parallel with the existing generating plant. The Wärtsilä 38 units will be assembled in Wärtsilä's state-of-the-art assembly plant in Trieste, Italy.

Top Saudi clinker producer

Southern Province Cement Co owns two cement plants. One is near the town of Ahad Al-Masarha about 70 km from the city of Jazan and the other is about 60 km south west of the city of Bisha. The Jazan plant has two production lines with a combined annual output of 2.3 million tonnes of cement clinker, while the Bisha plant has a single line producing 1.8 million tons of clinker a year.

The key factors tilting the decision in Wärtsilä's favour were the lifecycle costs and the after-sales support that the customer gets from the regional office based in Jeddah.

Wärtsilä's association with SPCC goes back almost 23 years when SPCC selected Sulzer engines as the power source for their Jazan cement plant. The Jazan cement plant is powered by 8x16ZV40/48 generating sets delivering 58 MW at the generator terminals. This power plant has accumulated more than one million running hours since installation (1980/81) while each unit operates approx. 7000 hours per year. SPCC claims an overall availability of 100%.

SPCC has also issued a tender for a turnkey project to build a new clinker plant at Al-Majardah, north of Abha. This plant will produce 4000 tonnes a day of clinker and will have its own 50 MW power plant. With this addition SPCC will be one of the leading producers of high-quality clinker in Saudi Arabia. ■

