



Sweltering Shortage or Bountiful Bliss?

With temperatures climbing and memories of last year's power shortages and managed blackouts still lingering, Heiko Bugs assesses what summer may hold in store for Shanghai.

Shop assistants used brochures as fans to bring some light relief; shoppers came in, quickly bought their items and left. This was the scene last June from one of Shanghai's most popular shopping plazas as temperatures reached 39 degrees centigrade. The Parkson department store had to cut the power to all its air conditioners as the city struggled to cope with the stress on its electricity grid

With last year's heat wave sending electricity usage soaring, Shanghai was on the brink of an electricity crisis reaching a record 16.6 million kilowatts (kW) in 2005, up 12.4 per cent on the previous year. Gao Yun, Vice Director of the Shanghai Economic

Committee, forecasts that this year's maximum load in Shanghai will reach 20.5 million kW.

Bearing the Pain

The maximum power generated in Shanghai was only 11.8 million kW, with 5.1 million kW being purchased from outside the city to satisfy demand (some electricity is lost in transfer). These figures together represent approximately twice the maximum load of electricity for Hunan Province last July. Although two new power generation plants were completed in 2004, raising capacity by 0.6 million kW, there is still a huge gap between demand and supply.

Power distribution is divided between private households, manufacturing (domestic and foreign-owned) and non-manufacturing business consumption. Supplying enough electrical power to private houses is given priority by the government. No matter how acute the power shortage, the government has historically guaranteed that private houses would not go without power.

This begs the question of who bears the pain of the shortage? Industrial manufacturers, specifically 700 high-consuming Chinese manufacturers, were asked to shift operations temporarily to the midnight–8am “graveyard shift”. Another 500 small Chinese manufacturers operating in sectors such as steel refining,

cement or iron alloy manufacturing were asked to halt their production in rotation.

Foreign manufacturers, on the other hand, still enjoy favourable treatment. The government tries to guarantee enough electricity to foreign ventures, in part because of the greater energy-efficiency of their operations, but mainly due to fears of negative press coverage. Sino-foreign joint-ventures are stuck somewhere in between, with some facing power restrictions or cuts and some remaining unaffected.

In the past, fairly drastic measures were employed, including offering subsidies for factories to buy their own power generators and asking some companies to give their employees paid vacations in the summer. In 2004, even high-profile multinational companies were not spared. General Motors and Volkswagen were each ordered to suspend production for more than a week.

Seeking Sustainable Solutions

How, then, is the Shanghai government planning to overcome this predicament? Solutions focusing on both power demand and supply have been raised. On the demand side, these are:

- **Tactical Pricing.** To reduce demand, the government raised the price of electricity last summer by RMB0.035 per kW/h, a mere 5.7 per cent increase compared to the normal price of RMB0.61 per kW/h. The new pricing system was aimed at big, energy-consuming companies and private households, and the government hoped it would save 300,000 kW. However, because the monthly energy bill for an average family is around RMB120–150, a 5.7 per cent increase added only RMB7–8 to the bill and did not have the desired impact.

- **Power Rationing.** Apart from manufacturers, the action also targeted shopping centres, office buildings, hotels and entertainment sites which were asked to set their air-conditioning units (accounting for over 40 per cent of power usage) to no lower than 26 degrees centigrade, or faced temporary power cuts in rotation.

In addition to these trouble-shooting activities, long-term plans have been put in place to increase supply:

- **Develop Renewable Energy Sources.** The government is considering a move to solar energy and wind to produce more

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electricity. At the end of 2005, the total generating volume of green power reached 53.7 million kW/h.

Shanghai has a ten-year plan to introduce solar power-generating panels on the roofs of buildings. The government will make use of 100,000 roofs to set up solar power generation units. It is claimed that one roof could generate 4,300 kW/h per year, with all roofs producing 430 million kW/h in one year for Shanghai alone.

Furthermore, four wind generating units were completed in Shanghai’s Fengxian County in 2003, producing 6.1 million kW/h, and additional ones were put into operation last year, producing 20 million kW/h.

The price of green power is not cheap, costing RMB1.14 kW/h, or RMB0.53 higher than the regular electricity price, and began being sold from 1 July 2005. The government has urged certain major energy consumers such as Baosteel, Shanghai Tobacco Group and some government offices to buy green. These companies are not, though, receiving all the green power they pay for, since it is fed into the overall electricity network.

- **Traditional Energy Sources.** Most of the increase in energy capacity will have to come from traditional energy sources, such as coal and hydroelectric power, especially the new Three Gorges Dam (according to the International Rivers Network, China has the highest number of registered dams in the world at 1,855, but with a possible further 20,145 that are unregistered).

Nevertheless, with domestic oil supplies unlikely to be able to keep up with demand, importing will play an ever greater role. President Hu Jintao’s recent visit to Saudi Arabia, where he discussed energy co-operation, particularly with reference to a proposed petroleum storage facility in Hainan, followed by visits to Morocco, Nigeria (Africa’s largest petroleum producer) and Kenya all signify the government’s serious concerns about the energy shortage.

Future Expectation

On account of the general energy shortage in China, the *11th Five Year Development Blueprint* seeks to address this crisis and makes energy production a top priority, setting the target of reducing energy consumption proportionate to GDP by about 20 per cent.

Proposed reforms include encouraging firms in high energy-consuming industries to improve their energy efficiency by updating their technology and providing them with incentives to do so, and exploring potential new energy sources with the aim of decreasing China’s reliance on coal, which provided 83 per cent of China’s total energy output in 2004.

Dealing efficiently with its energy problems will prove vital for China and, in particular, Shanghai. While Shanghai is trying to transform itself into a service hub, it still needs to attract investment from manufacturing firms in order to sustain its rate of economic growth. The Shanghai government is facing a dilemma of balancing this with the demands of these power-hungry businesses.

Moreover, Shanghai must be able to retain the businesses that are already here. In the face of stiff competition from coastal cities such as Dalian in terms of being able to guarantee energy supply to businesses, coupled with other favourable policies to encourage relocation of foreign-invested enterprises, Shanghai definitely has its work cut out. □

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