

Electricity and development in China

Lights and action

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China is parlaying its hunger for power into yet more economic clout

AFTER a brief blip caused by the global economic slowdown, the electricity business in China is back to normal: in other words, it is buzzing. On April 26th Huaneng Power, the country's biggest utility, began work on a nuclear reactor on the island of Hainan. The week before, the firm had announced that its power output had risen by 40% during the first quarter. The day before that, Datang International Power, the second-largest utility, had said its output was up by 33%. Surges of this magnitude, unimaginable in most countries, are commonplace in China.

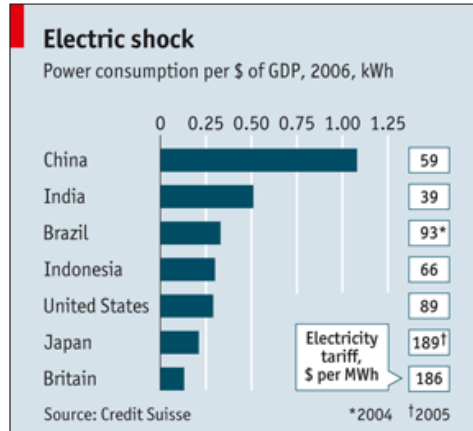
China's endless power-plant construction boom has accounted for 80% of the world's new generating capacity in recent years and will continue to do so for many years to come, says Edwin Chen of Credit Suisse, an investment bank. Capacity added this year alone will exceed the installed total of Brazil, Italy and Britain, and come close to that of Germany and France. By 2012 China should produce more power annually than America, the current leader.

Behind the transformation are myriad forms of government intervention. Although no country has a purely private market for electricity generation, in China the meddling is especially pervasive. Five big state-controlled utilities, including Huaneng and Datang, control 45% of the market and smaller state-controlled entities control another 50%. Most lost money in 2008, made fairly low returns in 2009, and, thanks to a government policy of holding down tariffs, are unlikely to be particularly profitable in the future.

Nonetheless, again because of government directives, the utilities invest spectacular amounts in capital equipment, financed largely by cheap loans from state-controlled banks. This not only allows utilities in China to produce power more cheaply than those in other developing countries, but also does away with the uncertainty and delay of negotiating guarantees with international development outfits or bilateral export-credit agencies.

The huge expansion of generating capacity serves many purposes, not least of which is bolstering national pride, especially in rural areas that, not long ago, were consigned to darkness after sundown. Officials are also aware that China's abundant power helps attract investors who are leery of the flickering industrialisation of other emerging markets. Cheap, reliable electricity is one reason why China remains the preferred destination for manufacturing even as its wages rise above those in such countries as Bangladesh, Indonesia, the Philippines and Vietnam.

This success has come at a cost. Cheap power has fuelled the expansion of energy-intensive heavy industries, such as steelmaking and aluminium smelting, which have made China more dependent on electricity than any other big economy (see chart). That, in turn, has left the Chinese economy ever more exposed to shifts in the prices of coal, oil and natural gas. It also turns China into an international environmental villain, thanks to its billowing emissions of greenhouse gases.



Chinese officials, all too aware of these problems, have long been pushing expensive measures to develop alternative forms of generation and cut back on profligate power consumption. The use of power derived from coal will continue to grow in absolute terms (although new coal-fired plants are to be more efficient and cleaner), but its share of total Chinese output will fall from 75% to 65%, estimates Credit Suisse's Mr Chen. Hydropower will expand by more than half, but its share of the total will drop a bit, from 21% to 20%. Wind power will see a big expansion, taking its share from 3% to 7%, as will nuclear, up from 1% to 5%. The rest will come from such niches as solar panels and incinerators.

As with the provision of power in general, the government hopes to capitalise on this transition to spur economic development. Three more state-controlled firms—Shanghai Electric, Harbin Power Equipment and Dongfang Electric—already receive an inordinate number of contracts for electrical equipment from the state-owned generators. The huge volume of orders produces economies of scale which have allowed Dongfang, in particular, to earn spectacular returns.

Suzlon Energy, an Indian wind-turbine manufacturer, is largely blocked from selling into China's booming market. But it makes its turbines in China regardless because similar gains in efficiency, off the back of huge orders won by local firms, have led to very low component prices. Hong Kong-based CLP, one of the few non-local generators allowed to operate in China, says the cost of building power plants has dropped by half in the past decade, thanks mainly to falling equipment costs.

When foreign suppliers are permitted to sell in China, they are usually required to transfer technology to local firms. China's massive expansion of nuclear power provides a good example. Over the next ten years the authorities plan to spend a trillion-odd yuan (\$150 billion or so) to increase its capacity ninefold. The country has 21 nuclear reactors under construction—far more than any other country.

Naturally, China hopes to acquire lots of nuclear know-how along the way. Half the content of a unit of the Lingao plant, in Guangdong, where construction began in 2005 and is due to be completed at the end of this year, will be made at home; in the next unit, to be completed next year, the share of local content will be 70%. By 2020, China's goal is to build advanced reactors entirely by itself, and to export its prowess abroad. Chinese firms have already built one reactor in Pakistan, are working on another and plan two more. China is harnessing its hunger for electricity, in other words, to increase its economic power.