

China's Energy Security in the 21st Century

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China's economic development over the last three decades since the Third Plenum of the 11th Party Congress in 1978 that kicked off the opening up and reform process under Deng Xiaoping has been remarkable. In the last few years, China has posted 10% growth rates year on year, becoming the world's third largest economy, largest holder of foreign currency reserves, and largest attractor of Foreign Direct Investment.

There is a problem with this, which is well caught by the title of Beijing based businessman and journalist James Kynge's 2006 book, 'China, the Rise of a Hungry Nation.' China is a country which is actually quite low in natural resources. It lacks easily accessible oil, having only one major oilfield, Daqing, the world's fourth largest inland oil source, in north east China. Sources have been explored in Xinjiang, and in the Bohai sea, but as yet these do not look easily exploitable. China is a major source however of coal, holding the world's second largest reserves after the US. But it is increasingly hungry for new forms of energy because, in fact, China's current economic model is highly energy inefficient, and, in many senses, unsustainable. Most of China's economic development over the last three decades has been built on the model initially used by Japan under Shigeru Yoshida in the 1960s – manufacturing for export. And what China manufactures is, on the whole, low in technology input. It imports partly finished goods, with the hi-tech component, if it is relevant, already present, finishes off, exploiting the cheap labour in China, and then largely re-exports. Of course, China has diversified somewhat over the last few years, but a large proportion of what China does now is still manufacture based, and based on this model. It is a highly energy-intensive, and environmentally damaging, model. And it also does not help China achieve its real ambition, to be a knowledge economy, and to produce higher up the value chain.

China's energy efficiency is poor. According to Barry Naughton in 'The Chinese Economy' (MIT Press, 2007), China is 7 times less efficient per unit of production than Japan, and 4 times than the UK. This is why it is a hungry power. It is importing increasing amounts of its energy needs, sourcing some of this in the Middle East, some in Africa, and also buying on the international markets. Its energy needs are having a major economic and geopolitical impact.

At the moment, 70% of China's energy is for industrial use. It experienced power shortages in the early 2000s, because of demand galloping ahead of supply. But in the last few years it has been keen to sign deals and ensure that it has stable supply sources. It has taken Liquid Natural Gas from Indonesia, and from Russia. It has expanded its non fossil fuel programmes, and indeed is the world's largest user of solar energy, even though this is only 1% of its energy needs. It is building 2 power generators a week, and adding something like the energy output of Spain to its

national capacity each year. It is also building new nuclear power stations, though on a far smaller scale. China is the world's largest user of all energy sources other than oil, where it runs the US a distant, but rapidly catching up second. A key new point is the rapid increase in car usage over the last decade. The US has 800 cars per 100 people. In the UK this is 500 per thousand. China now has 18 per thousand. This has leaped up from only 6 per thousand in the last decade. Even so, China's cities are clogged with traffic, and its petrol needs have sky rocketed. Air quality as a result of this has also deteriorated. If China is due to become as car-reliant as the rest of the world, we are in big trouble. Even so, China is working hard on producing new technologies for clean cars.

70% of China's energy is produced by coal. In the last two years, China has been in fact a net importer of coal, even though it sits on huge reserves, simply because it has been cheaper and more economical. China's reliance on coal creates a number of problems – firstly, coal is a major cause of pollution. Much of China's coal is poor quality, and extracted, and transported, in non-environmentally friendly ways. It is also mined often from one of China's many thousands of small mines, where, in 2006, over 6000 people died in accidents. China's reliance on coal has led to investigations of clean coal technologies, and to the establishment of world class mining facilities in a few areas. But these are the exception rather than the rule.

Energy security involves key issues of China, and for its development. It illustrates well the mismatch between the central government, and policies they promote and support, and local government. The central government are committed, through the current Five Year Programme that runs from 2006 to 2010, to improving China's energy efficiency. They know this is important for the sustainability of China's economic development. However, local provinces still view things from a more provincial, short term perspective. Their priority is to attract investment from abroad, even when it might be in polluting plants (the Party Secretary of Inner Mongolia, Chu Bo, was recently criticised for this, even though he stayed in his position). As Yasheng Huang, based at MIT in the US has said in his *'Selling China'* (CUP 2004), China remains a fragmented economy. Each of the 31 provinces and autonomous zones have separate priorities and rules. Recruiting them into a national drive to improve energy efficiency and environmental issues has proved difficult.

Energy security also relates intimately to China's impact on the rest of the world. China has become increasingly active in the Middle East, and Africa, signing deals with Iran, and with suppliers of raw materials in Zimbabwe, and the Sudan. These have caused it considerable political flack, particularly unwelcome as it builds up to the Beijing Olympics this summer. China's mode of operation as it does these deals, supplying aid that is less tied to human rights performance and good governance and more to recognition of the PRC over Taiwan, and political alliance with it over issues it regards as a priority, has caused unease in the EU and the US. But it is indisputable that China's economic operations in Africa have delivered some prosperity and development, perhaps more than Western aid. In many ways, China has become a competitor with other counties for energy supply.

China's energy needs, and its need to have a more efficient economic model, doesn't mean that everything is gloomy. China is in the market more than ever before for technology and help in assisting it in its attempts to become more energy efficient. It

knows that the EU in particular can be good partners in this. The only sticking point is what arrangements need to be in place in order to allow this transfer to proceed. China feels that as a developing country the technology should be shared more freely than it is. Western partners feel there needs to be a commercial arrangement, especially in view of the enormous amounts of foreign currency China is sitting on in its central reserves.

In the long term, perhaps more significantly, is the real possibility now that China may well come up with a wholly new economic model – less resource intensive, and energy inefficient. This is its greatest challenge. According to a report issued by the World Wildlife Fund in 2007, were China to use the same development model as the developed world, all the world's resources would be exhausted by the 2030s. China has to come up with a new way of doing things. This dramatically affects the rest of the world, as China's problems now are also the rest of the world's problems. 25% of the pollution in California has been traced back to China. China is in the air we breathe, and is using up the energy in the planet in dramatic ways.

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