



## Energy and the Rise of Asia<sup>1</sup>

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### 1. Energy consumption growth moves east

As the source of global economic growth shifts towards emerging economies and especially fast-developing Asia, so does the geography of energy consumption growth.

In 2010, the developed economies of the OECD consumed 2.4% more energy than they did in 2000. The European Union's energy consumption has been flat over the same period. However, energy demand has grown 63% outside the OECD and nearly doubled in emerging Asia<sup>2</sup>.

Recent projections by several organisations show a continuation of this trend: emerging Asia would account for about 60% of global energy consumption growth in the next twenty years and non-OECD countries in general between 90% and 100%<sup>3</sup>.

The energy impact of the economic rise of China is very large. In 1975 China represented 5% of global primary energy consumption; it was 10% in 1995 and more than 20% in 2010, when it overtook the US as the world's largest energy consuming country. Each year, Chinese energy consumption now grows by the equivalent of the total energy consumption of the UK (see Figure 1) – and potentially significantly more in the coming years.

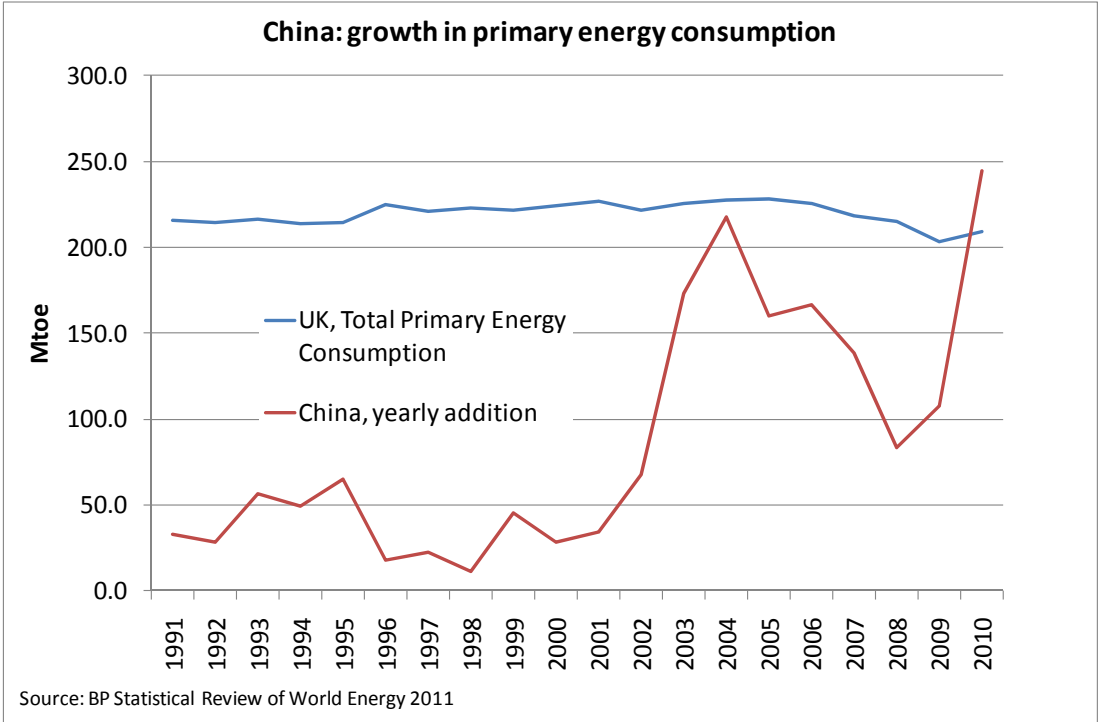
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<sup>1</sup> This is a version of a paper written for the Economist Intelligence Unit as part of the Global Energy Conversation project.

<sup>2</sup> Asia-Pacific region less Australia, New Zealand and Japan. Unless otherwise noted, data is from BP Statistical Review of World Energy 2011.

<sup>3</sup> See BP, *BP Energy Outlook 2030*, London, January 2011, p. 16-17; International Energy Agency, *World Energy Outlook 2010*, Paris, p. 622 ("New Policies" scenario); ExxonMobil, *The Outlook for Energy: A View to 2030*, Irving (TX), 2010, pp. 7-8; US Energy Information Administration, *International Energy Outlook 2010*, Washington DC, table A1.

**Figure 1. China annual growth in energy consumption now bigger than total UK energy consumption**

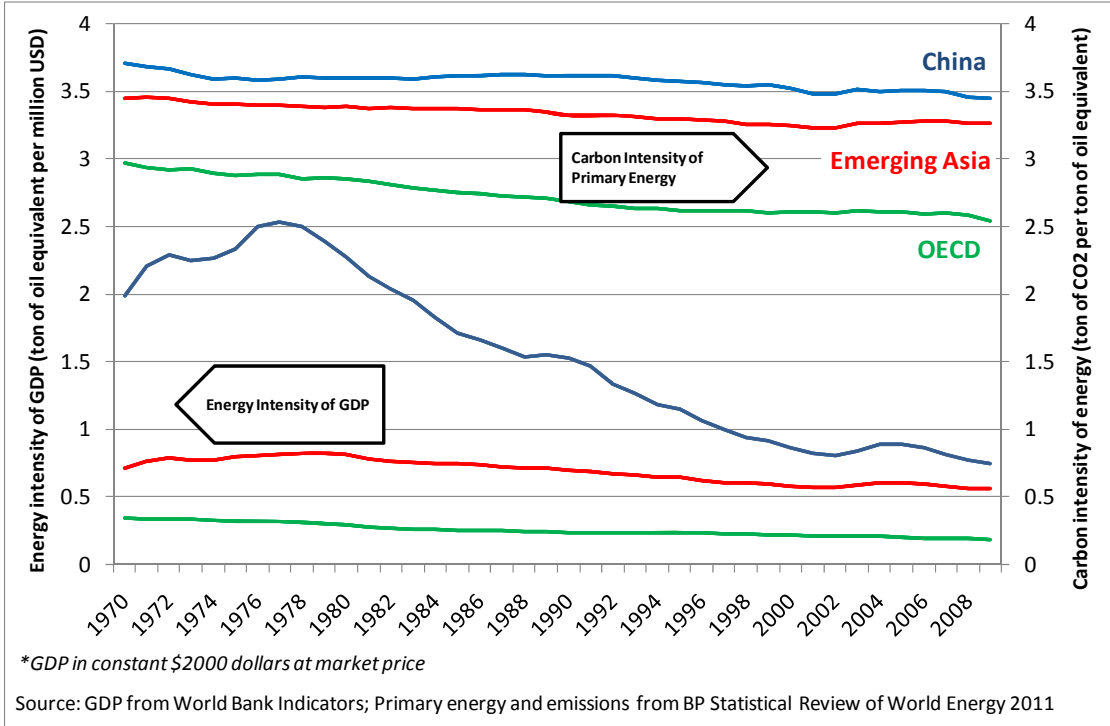


The rise of Asia has profound implications for the main two items on the global energy policy agenda: the fight against global climate change and the link between energy and international security.

**2. Implications for global climate change policy**

Economic growth in emerging Asia is three times more energy intensive than in OECD economies (four times in China), while the carbon intensity of energy is 28% higher in developing Asia than in the OECD (36% in China) – see Figure 2. As hundreds of millions of people in this region move from poverty to middle class over a few decades, the rise of Asia is a key reason why meaningfully addressing climate change will prove very challenging.

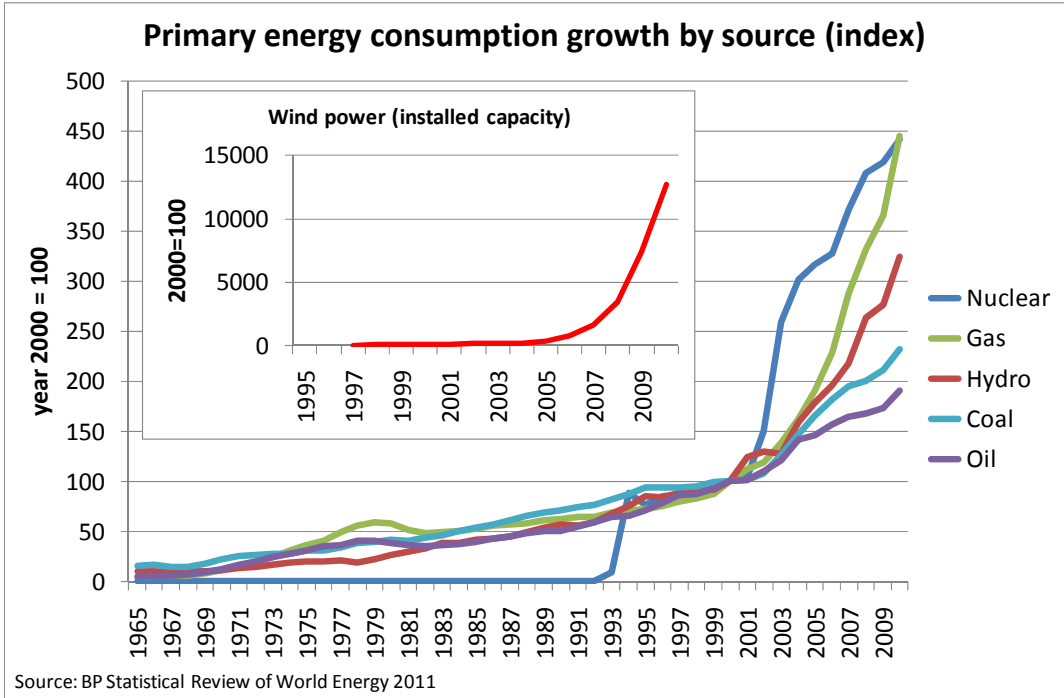
**Figure 2. Carbon intensity of energy and energy intensity of GDP – Asia is much less efficient and dirtier than OECD countries**



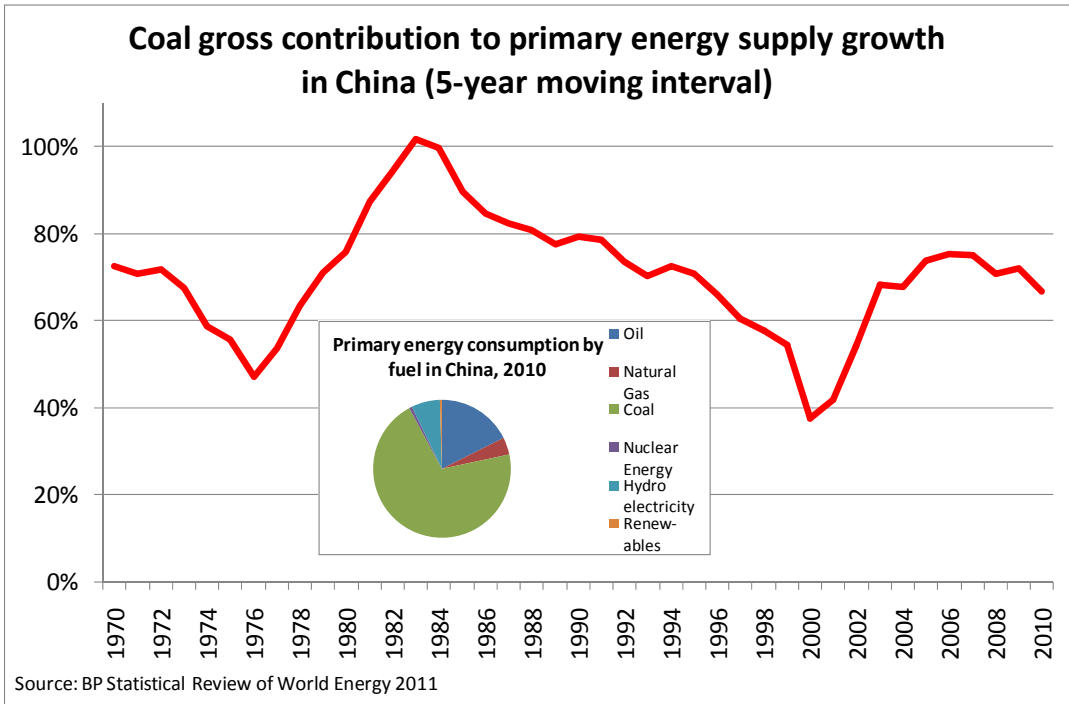
Coal, the most carbon-intensive of fossil fuels, plays a major role in fuelling economic growth in Asia and especially in China. Despite the impressive growth in nuclear, gas and even renewables (see Figure 3) – in 2010 China accounted for half of global wind energy capacity installation – coal still covers between two thirds and three quarters of growth in primary energy consumption (see Figure 4). In 2010 China represented 48% of world coal consumption. Since 2000 the country has accounted for nearly 85% of the growth in global coal demand.

Because of its very high energy intensity, China consumes as much energy as the United States and emits more CO<sub>2</sub>, despite an economy 25% the size of the US.

**Figure 3. Primary energy consumption by source in China since 1965 (rebased)**



**Figure 4. Coal contribution to the growth in Chinese primary energy supply since 1970**



Absent a quick and dramatic fall in the cost of carbon-free sources of electricity and heat in the years to come, the rise of the emerging world, especially energy and carbon-intensive Asia, will mean that global CO<sub>2</sub> emissions will continue to rise steadily – if at a slowing pace – way beyond 2030.

In Europe, the public could realise that no matter how much they are willing to pay to decarbonise their economies the global problem is not meaningfully addressed, leading to erosion in the support for green policies.

Internationally, the focus of climate policy could move towards adaptation and geo-engineering. In particular, if China and India happen to be exposed to severe impacts of climate change they could support ambitious programmes to develop and test geo-engineering solutions.

### **3. Energy and international security**

Between 2000 and 2010 China's oil consumption doubled and the country accounted for 42% of global oil consumption growth. China's net oil imports have grown 13% per annum on average since 2000 and the country now relies on international markets for 55% of its consumption, a level comparable to the United States. BP projections suggest that Chinese oil consumption could double and its import triple by 2030, while natural gas consumption is multiplied by four and gas imports grow steadily to cover a third of consumption by 2030<sup>4</sup>.

The growing reliance of China (and increasingly India) on internationally traded energy will open a new era in international oil security policy. For several decades the US has been at the centre of the international oil security regime. It has "sanctuarised" Saudi Arabia from regional security threats and provided security to global sea lanes. The US has also initiated a multilateral regime of emergency oil stock co-ordination through the International Energy Agency, part of the OECD.

Because the oil market is globally integrated oil security is a global public good: provided someone takes care of it, all importing countries enjoy roughly the same level. However, China (and later India) will demand to participate in securing international energy markets on which they are so dependent. This could prove politically tricky.

The co-operation between the US, China and India on energy market security will have to develop in a context where numerous issues could generate tensions – Taiwan, South China Sea, development of Chinese power projection and "access denying" capabilities, Sino-Indian rivalry and lack of confidence.

Objectively, the US and emerging Asian great powers have the same interests regarding international energy market security. Whether they can learn how to advance them collectively will be determined by many geopolitical issues, most of which have nothing to do with energy.

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<sup>4</sup> BP, *Energy Outlook 2030*, op. cit., pp. 32 and 54.