



Powerful argument for nuclear



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IS URANIUM a good bet? If the evidence from Asia is anything to go by, the answer is yes. The economies of China and India are growing fast. Neither produce enough power for existing requirements.

The US Government's National Intelligence Council has estimated that India's energy consumption will at least double by 2020. China's will rise by 150 per cent. That heralds an environmental disaster.

Why? Because the power that both produce comes largely from the dirtiest, most harmful means: burning coal. The situation is unsustainable. Nuclear power is an obvious solution and, in a few decades, Asia could be home to at least half the world's nuclear reactors.

Coal burning accounts for about 70 per cent of the energy produced in China, compared

with a global average of about 25 per cent. China wants to get this down to 60 per cent by 2020, but even if it is possible it will mean coal-generated power will dramatically increase in absolute terms.

As things stand, China uses more coal than the US, the European Union and Japan combined, and its coal consumption this year is up 14 per cent on last year. According to one report, a new coal-fired power station opens in China every seven to 10 days.

Not surprisingly, China has quickly become one of the most polluted countries. Air quality is abysmal. Official estimates are that 400,000 Chinese die each year from diseases related to air pollution. Separately, the World Bank says 16 of the world's 20 most polluted cities are in China.

Pollution levels in India are

also rising but the problem is not as acute as in China. Nonetheless, India is stepping up its construction of coal-fired plants, meaning that its greenhouse gas emissions will accelerate. And given that India's population is expected to pass China's in 2030, that's a worrying trend.

Both are looking to generate more power from gas and hydro-electric schemes. But both sources will only slow the rate of growth of greenhouse gas emissions. And so nuclear energy is looking increasingly viable, and even desirable.

According to the World Nuclear Association, of the 442 operational reactors in the world, almost a quarter, or 109, are in Asia. Another 28 are under construction worldwide. Fifteen of these are in Asia.



More are planned, so that in total, 285 nuclear reactors are either operational, under construction, planned or proposed for South and East Asia.

The most nuclear of Asia's economies are South Korea, Japan and Taiwan, which generate 45, 29 and 20 per cent respectively of their power from nuclear sources. China's nuclear power plants generate just 2 per cent and India's 2.8 per cent. This is when, worldwide, nuclear accounts for 16 per cent of all the power generated. There is room for growth.

A sign of things to come was the nuclear co-operation treaty between India and the US earlier this year. And the US Government's Export-Import Bank recently provided US company Westinghouse with \$US5 billion in loan guarantees for bids to supply technology to build nuclear power plants in China's Guangdong and Zhejiang provinces.

Australia's agreement to sell uranium to China is instructive, as was the recent announcement that a representative of China's main nuclear power plant operator, the Chinese National Nuclear Corp, had joined the board of South

Australia-based explorer UraniumSA, which is preparing to float on the stock exchange.

China plans a fivefold increase in its nuclear power capacity by 2020. It now has 10 operational nuclear reactors. With five more under construction, 13 more planned and a further 50 proposed, China expects to have at least 78 nuclear reactors in the future.

Assuming that each new plant will consume the same uranium as the average of the existing plants (in fact, the newer plants are likely to consume more), then China's annual demand for uranium will rise to at least 10,093 tonnes, from the current 1294 tonnes.

That's almost a tenfold increase. China produces about half its current uranium needs, suggesting that almost all its future requirements will be imported.

Most of the uranium China imports probably comes from Kazakhstan, Russia and Namibia. We don't actually know because China withholds the data. Certainly, Kazakhstan is the world's fourth-biggest producer of uranium and supplies about 8 per cent of world demand. But a new

source will be Australia.

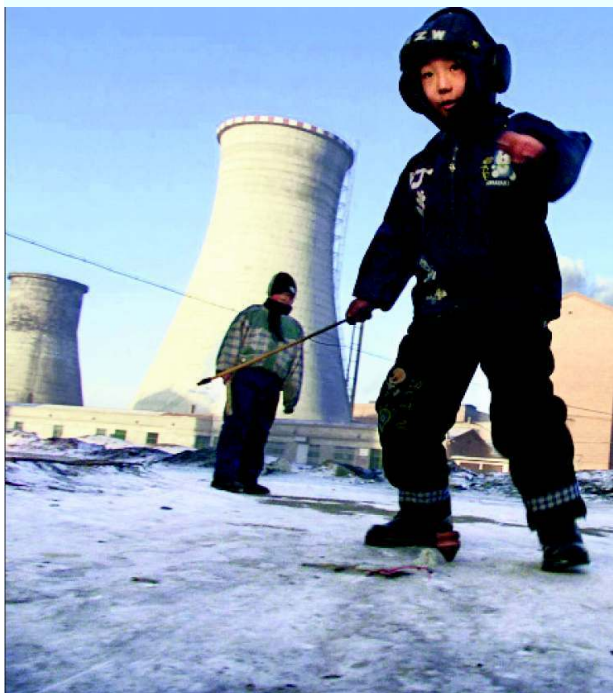
As for India, its long-term plan is to increase nuclear's share of power output to 25-30 per cent by 2050. Government plans are for 47 nuclear reactors in the future, up from 14. Assuming that each new plant consumes the same uranium as the average of existing plants, then India's annual demand for uranium will be 3918 tonnes,

up from 1334 tonnes. India is now self-sufficient in uranium. Eventually, it will become a net importer.

There might be some squeamishness now about China and India's nuclear programs, but if their use of fossil fuels continues to grow exponentially then it may not be long before the world actually begs China and India to build more nuclear reactors.

Even if India and China do nothing more than raise nuclear power's share of the total to the current world average, uranium has a very bright future indeed.

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Cold shoulder: China plans to replace many coal-fired power plants with nuclear reactors.