

framework during this period of Chinese history thus begins to make sense. It is apparent that China requires a peaceful security environment that would preserve internal order and forestall external political challenges, thereby allowing unrestrained economic growth and build up of military capacity towards enhancement of its comprehensive national strength. It is conceivable that once the Chinese growth trajectory has acquired critical mass, we could see an incremental process of Chinese attempts at aggressively shaping its strategic environment.

Interestingly, in pursuit of its energy policy to meet burgeoning demand, China is cleverly fixing its gaze at the 'new Silk Route' that could provide unfettered access to West Asia and Eurasia. This, China is attempting by making common cause with Russia and Iran given their combined misgivings of the extra regional hegemon, the United States. Indeed, if one were to accept recent analysis of China's geopolitical intentions ('China Rocks Geopolitical Boat', *Asia Times*, November 6, 2004), both the Kazakhstan and Iranian deals are part of the 'new great game' the purview of which is not merely Central Asia-Caspian Sea basin but a much broader focus that envelops even the Persian Gulf. This could, according to some analysts, result in a new axis comprising China-Russia-Iran, pitched against US hegemony.

Conclusion

It is apparent that China is facing a serious energy crunch. However, what is of interest is that it is taking significant all-round steps, within the larger geo-strategic construct, to cope with the energy deficit to ensure that the pace of its economic reform does not flag. The results should be evident by around 2020.

Brigadier (Dr) Arun Sahgal is a Senior Fellow at IDSA.

reported drought conditions, and drinking water and power shortages. According to 'Early Warning', "A hundred dams are no longer producing electricity because reservoir water is being reserved for agriculture and urban water needs." A fierce debate is raging on the need to step up construction of more hydropower dams – and to ensure they have the water needed to operate at full capacity.

Nuclear Power

China's huge appetite for power to fuel its industrial growth and supply its expanding cities has given an unexpected shot in the arm to international nuclear power suppliers. This industry has been bereft of new orders following some tragic accidents – notably Chernobyl, Three Mile Island and in Japan. No new nuclear stations have come into operation in the US since 1996. In Europe, the last reactor to have come into operation was in France in 1999 and its future is uncertain.

In contrast, Beijing is looking to nuclear power as a means of meeting the phenomenal annual rise in its energy demand. As mentioned earlier, it is keen to reduce its dependence on coal, which provides around two-thirds of its electricity but is seen as inefficient and the cause of major environmental problems. According to reports, 30 per cent of the total land area and more than 60 per cent of cities in South China are reportedly threatened by acid rain.

Concerned about oil price volatility and the likelihood of disruption in supplies that are vulnerable to global instability, Beijing has drawn up ambitious plans to commission more than 30 nuclear power reactors in the coming 15 years, adding to the nine nuclear stations currently operating – the first of which went into service in 1991. The \$45-billion plan would boost output by 30,000 megawatts, with stations being built four at a time rather than the current practice of doing so in pairs. The first four contracts will be for four 1,000-megawatt plants worth \$1.5 billion each. According to the 'Early Warning' report, 'China's Nuclear Power Drive', Beijing favours pressurised water reactors, such as the AP 1000 model developed by Westinghouse that is awaiting approval from the US Nuclear Regulatory Commission.

Consequently, the potential business interests of the main votaries of nuclear proliferation have been involved in some very high profile lobbying that includes US Vice President Dick Cheney, apart from other industry majors like France and South Korea. Is it any wonder that despite serious allegations of nuclear proliferation, China has had a smooth entry into the nuclear suppliers group? China's nuclear power plans, when fructified, will make it a major civilian nuclear power, with more capacity than Canada (by 2015, and Russia (by 2020). They will, however, remain well behind the United States, Japan and France. Still, nuclear reactors would only provide 4 per cent of the country's energy requirement by then.

Geo Strategic Perspective

The Chinese plans to deal with the looming energy crisis extend over the next two decades or more. The central thesis of 'peaceful ascendancy' as the main strategic

by 800,000 tonnes to 7.4 million tonnes. As per current plans, China wants to create a strategic reserve capacity of 30 days by 2010, with the overall intention of upgrading it to 90 days. Storage sites are proposed to be built in Zhejiang, Shandong and Liaoning provinces with a combined capacity of 14 million tonnes.

In its bid to address the problem of energy shortages and increase sources of supply, China is pursuing a multi-pronged approach, including turning to natural gas imports and building pipeline projects as well as developing other sources of energy such as hydro-electricity and nuclear power. For example, China expects natural gas, an energy alternative superior to coal from an environmental point of view, to account for 10 per cent of the country's energy demand by 2020, up from the current 3 per cent.

The government aims to meet the growing demand of natural gas through its own reserves and imports as well as by building gas pipelines with other countries. One case in point is the Guangdong LNG (liquefied natural gas) project, China's first natural gas importing project. In addition, as mentioned, China has signed an agreement with Iran for a natural gas project that is three times the size of the Guangdong LNG project. State-owned oil and gas enterprises are developing ambitious plans for the LNG sector, pushing to build terminals and line up supplies from Australia and Indonesia in addition to Iran and Kazakhstan.

Coal

Coal currently meets nearly 60 per cent of the country's energy needs. According to estimates, coal demand is likely to hit nearly two billion tonnes in 2004, which could rise by a robust 15 per cent in 2005 even if GDP growth was scaled down to anywhere between 8.5 and -8 per cent. In order to keep up with the growing demand, domestic production has been doubled to 1.6 million tonnes. In the bargain, a number of safety norms have been ignored leading to a spate of highly publicised accidents that have left over 200 people dead.

To cope with the rising demand for coal and other energy shortages, China is placing significant emphasis on non-conventional technologies and energy conservation techniques. A mega-capacity wind power station is being built in Hebei Province, south of the capital Beijing. When it goes on line in 2007, the Guangting Wind Power Station will have a capacity of 200mw. It is expected to supply up to 8 per cent of the power needs of the Beijing-Tianjin-Tangshan area. In addition, China is also planning two liquefied coal projects. China has both the incentive and the capability to be a world leader in such technologies and this is an area to watch over in the next decade.

Water and Power

China proposes to double its current installed hydroelectric power capacity, which contributes 5.5 per cent of total energy supply (2003 estimates), by 2020. Development of the hydroelectric sector, however, faces serious problems due to falling water levels at some hydroelectric dams. The provinces of Guangdong and Guangxi in South-West China are facing severe drought – more than two-thirds of Guangxi counties have

in 2005. From being a net exporter of oil as recently as 1995, the country has in the last two years surpassed Japan to become the world's second largest oil importer. In fact, the 2004 oil spike is largely being attributed to rising Chinese demand. Net imports by China are seen increasing by over 40 per cent from 91 million tonnes in 2003 to a projected 130 million tonnes in 2004. This could go up further by another 20 per cent in 2005, when Chinese imports are expected to touch 150 million tonnes.

The problem for China is not only the reality that demand for energy is far greater than the country's domestic supply, but also the fact that China is only a minor player in the international oil and gas exploration and production industry. China's own oil companies are unlikely to improve the country's energy security through drilling alone, and buying proven oil reserves is an expensive way to guarantee energy security. Cumulatively, all such disadvantages have put China in a very vulnerable position as it relies on foreign sources for an ever-greater share of its energy needs.

China's dependency on imports can be gauged by the fact that imports account for more than 40 per cent of its total crude demand. Consequently Chinese oil companies have fanned out across the globe to negotiate oil contracts and projects, particularly upstream projects in Asia, Africa and South America. According to 'Early Warning' report, crude supplies from both Saudi Arabia and Iran are likely to jump by 25 per cent next year, to 400,000 barrels and 310,000 barrels, respectively, as China looks for alternative sources of energy supply.

Interestingly, while commercial contacts are at the core of the relationship, and are set to grow significantly, wider geo-political elements are also coming into play as China attempts to cope with its burgeoning energy requirements. China is all set to become a major political and economic partner of Iran. This is reflected in the recent \$100-billion mega-gas deal between Beijing and Teheran. Billed as the deal of the century by some commentators, it could increase by another \$50 to 100 billion if oil agreements currently being negotiated are signed, taking the total deal size to a staggering \$200 billion. No wonder, Iranian Oil Minister Bijan Namdar Zanganeh recently asserted that Teheran would like to see China replace Japan as the biggest importer of its oil and gas. In return, the Chinese Foreign Minister apparently endorsing Iranian nuclear activities declared that Beijing would oppose any efforts to refer Iran to the Security Council over its nuclear programme. Similar sentiments of assured oil supply forced China to water down a UN resolution that threatened to halt Sudan's oil exports if it did not stop the atrocities in the Darfur region. Yet another important deal has been the agreement between Kazakhstan and China to build a 1,000-km-long pipeline from Kazakhstan's Central Karaganda region to Xinjiang by the end of 2005.

Strategic Oil Reserves

While China is using its political and economic leverages to sign lucrative oil deals, it has simultaneously embarked upon building strategic oil reserves. According to *Asia Pulse* reports, in the first nine months of this year, crude oil stockpiles in China rose by 2.7 million tonnes to 12.5 million tonnes. Refined oil product inventories rose

China Faces Energy Crunch

Arun Sahgal

China is facing an interesting paradox. On the one hand, its economy is booming with economic growth put at 9.4 per cent for the year 2004, a constant now for the past few decades; on the other, increasing energy demand is creating a critical situation which, if not resolved on priority, could in the medium to long-term have the potential of derailing China's economic march. A prescient Chinese leadership recognises the need for a strong economic and military foundation as an important construct of the country's emergence as a world power that has the ability to challenge the supremacy of the US. Thus dealing with the looming energy crisis is not merely an issue of economic growth but a crucial geo-strategic construct linked to Chinese ascendancy (peaceful?) as an important component of its grand national strategy.

During the recently held China Daily CEO Roundtable Conference, 'China: 2005 and beyond', keynote speaker David Li, Chairman and Chief Executive of the Bank of East Asia, highlighted that energy together with currency, domestic interest rates and cross-Straits tension were the four major factors that would have the greatest bearing on the future development of China. There were apprehensions that the growing economy was creating an increasing energy demand that China was finding difficult to cope with, leading to a soaring energy deficit. This commentary attempts to take a closer look at the looming Chinese energy crisis and analyse how China is using it to shape a favourable strategic environment.

The extent of the energy problem in China needs to be recognised, as it will have a direct impact on its future economic reforms as also shape its regional engagement policies. According to *Asia Pulse* and 'Early Warning' reports of *Forbes*, worsening Chinese energy bottlenecks are likely to adversely impact world commodity prices. China's growth in primary energy demand has doubled over the past 18 years – higher than the US, Japan and Russia. The Energy Information Administration, a unit of the US Department of Energy, predicts China's demand for energy will double again by 2020. Some of the key indicators of China's energy sector are discussed below.

Oil and Gas

According to Chinese estimates, oil consumption in the country is set to rise sharply

Strategic Analysis, Vol. 28, No. 4, 2004.

© The Institute for Defence Studies and Analyses