

CHAPTER 3

CHINA'S ENERGY SUPPLY

3.1 Energy Supply from Domestic Sources

China's Oil Production

China's proved oil reserves, as of January 2005, are presently estimated at about 15-18 billion barrels; these are mostly located in the northeastern part of the country, though most of the onshore exploration is taking place in the western part of the country. About 90% of China's oil production presently comes from onshore sources. China is currently the fifth-greatest crude oil producing country and accounts for about 4.9% of the world's total annual crude oil production. China's growing demand for oil (which increased at more than 5.5% per year during the 1990s) has greatly outstripped its domestic production capabilities and in the early 1990s it became a net oil importer; by the year 2030, China may have to import more than 80% of the oil it annually consumes.

Xinjiang is currently China's third largest oil producing area.⁴ In the long run, Xinjiang is expected to pump 100 million tons of crude oil a year, or nearly 60 percent of China's total last year. The targets, if realized, will help China greatly offset the slowing production of its older oilfields. As oilfields such as Daqing that accounts for one-third of China's oil production become depleted, the central government is pinning its oil hopes on vast virgin fields in Xinjiang to boost production. Xinjiang sits on 30 percent of the nation's total oil reserves and 34 percent of its natural gas resources, said the chairman. He vowed to further expedite oil exploration in potential areas, including Karamay, Turpan Basin and Tarim Basin.

⁴ Sun Shangwu and Xie Ye, "Xinjiang plans to be China's top oil producer," *China Daily*, June 14, 2005.

China's Natural Gas Production

Driven by an increasing recognition of the many advantages of natural gas and by the need to diversify its coal-dominated energy supply, China's natural gas industry is poised for rapid expansion. Some major gas infrastructure projects have been launched to support ambitious gas growth targets in the country for the next five years and beyond.

According to the analysts, China is expected to boost its use of natural gas for industry and power generation as it tries to diversify its energy mix and reduce reliance on coal, a major source of pollution. They said that electric power will still be the main user of natural gas but industrial demand is growing fast as seen with plans to build a pipeline extension to Shanghai Baosteel for use in its smelting operations.

They also noted that a second west-east pipeline is now being studied and could be ready to carry more gas to industrial users in the south in the next two to three years.

China's Coal Production

China energy supply is dominated by coal, which currently accounts for about two thirds of primary commercial energy use. China is the largest producer and consumer of coal in the world, and many of China's large coal reserves have yet to be developed. China holds an estimated 126.2 billion short tons recoverable coal reserves.⁵ Northern China contains most of China's easily accessible coal and virtually all of the large state-owned mines. China's coal industry has traditionally been spread out among large state-owned coal mines, local state-owned coal mines, and thousands of town and village coal mines.

⁵ Energy Information Administration (EIA), Country Analysis Brief: China, August 2006.
<http://www.eia.doe.gov/>

Coal production in China doubled between 2000 and 2005, largely reflecting the reopening of many previously closed small mines at the township and village level as well as an increase in the mechanization of coal mines. Township, village and local state mines tend to have a smaller production capacity than key state mines.

In 2005, coal production in China increased by 8 percent to 2.1 billion tons. Production at local state mines is estimated to have declined by 3 percent in 2005 to 286 million tons but this was offset by production from key state coal mines and township coal mines, which increased by 10 percent and 9 percent respectively. Coal is produced across China, with the top six provinces accounting for 67 percent of production in 2005. The largest five coal producing companies last year were Shanhua, Zhongmei, Shanxi Coke, Datong, and Longmei.

Investment in the coal industry has increased significantly in the past three years. Fixed asset investment in 2005 increased by 66 percent, compared with an increase of 26 percent of total fixed investment across all sectors.⁶ This follows an increase in investment in the coal industry of 58 percent in 2004 and 52 percent in 2003. This investment has led to a substantial rise in production capacity and the supply of coal for domestic consumption in the past three years and has reduced upward pressure on prices.

However, unsafe mining practices can affect production through temporary closures enforced by safety inspectors. According to the National Development and Reform Commission, the central government agency that formulates policies for economic and social development, out of 5000 mines that breached safety standards, only 2157 were closed in 2005. Whereas, the State Administration of Work Safety claims that 5290 small mines were closed in 2005. The difference in reported figures may be attributed to temporary mine closures. The NDRC has allocated US\$750

⁶ Andrew Wright, "China's Coal Sector," *Australian Commodities* 13, no. 3 (September quarter 2006): pp. 546-549.

million to improve mine safety, with the aim of reducing the number of coal mine accidents by 7 percent by 2007.

The closure of small coal mines does have an impact on coal production in the short term. However, increased mechanization and improvement in mining processes are expected to counteract any declines in production resulting from mine closures in the medium to long term.

3.2 Energy Supply from Outside

Besides domestic measures, two strategies have been used by China to diversify and secure their oil supplies. The government has expanded energy cooperation with other countries by using its diplomatic resources to lock long term supply and transport agreements with producing countries. While bilateral cross-investments in the oil and gas industry were encouraged by SOOE's involvement and the attraction that the Chinese market exercises on foreign companies.

Significantly, the Chinese oil companies are the key drivers of investment in overseas oil fields. This initiative has broad support throughout the Chinese system as a source of energy security, and is encouraged by senior leaders.

The major Chinese oil companies comprise the China National Petroleum Corporation (CNPC), the China National Petrochemical Corporation (Sinopec) and the China National Offshore Oil Corporation (CNOOC), and their partially privatized subsidiaries, are the key drivers of China's "supply side" energy security policies. The influence of these companies is a result of both their oil expertise and their political clout, derived from the Chinese government's increasing fiscal dependence on them and from the fact that their top positions are appointed by the Central Committee of the Chinese Communist Party (CCP), which gives them direct access to the Chinese leadership. The oil companies are routinely consulted by the government on policy matters. The oil companies are strong advocates of investment in overseas oilfields

because it helps them to realize their twin objectives of enhancing national energy security and gaining the international experience critical to the realization of their ambitions to be competitive with the world's top oil companies.

Chinese oil companies began to establish an international presence in 1992. They have projects in countries including Algeria, Azerbaijan, Indonesia, Iran, Iraq, Kazakhstan, Peru, Sudan and Venezuela.

China & Russia Energy Cooperation

A second central thrust of China's "oil diplomacy" was aimed at Russia. Indeed, for quite some time now scholars and pundits alike have pondered the possibilities of energy cooperation in Northeast Asia. But, 15 years after the dissolution of the Soviet Union, most of these promises are still left on the drawing board. This state affairs has been especially discomfoting for Beijing that had seen energy as the backbone of the Sino-Russian strategic partnership. Of central importance was the Angarsk-Daqing pipeline, which was supposed to carry 20 million tons of crude oil per year in 2005, and 25 by 2010. However, Sino-Russian energy cooperation is not limited to oil. It also includes natural gas, electricity and nuclear energy.

A memorandum of understanding was signed during Putin's China visit between the China Petroleum and Natural Gas Group and Russia's Natural Gas Corp Ltd on Russia supplying gas to China. According to the agreement, Russia will start supplying 30 to 40 billion cubic metres of natural gas yearly to China from 201 1, via two trans-Siberian pipes.

During Russian President Vladimir Putin's visit to China in March 2006, Sino- Russian energy cooperation entered a new phase where a package of agreements and protocols on energy-cooperation were signed. The close cooperation has been increasing because of many reasons. For example, Russia is the world's leading exporter of energy resources while China is the world's second-biggest oil

consumer and the second-largest petroleum importer. (China, Russia Benefit from Energy Cooperation) Russia and China are each others biggest neighbor. These geographic advantages are multiplied by the fact that China has a massive demand for energy.

China in Central Asia

Another important expression of Beijing oil diplomacy was the plan to build a pipeline between the Caspian oil basin and its own oil infrastructures in Xinjiang. China's growing engagement with Central Asia has been motivated by a number of strategic interests. China led the creation of the Shanghai Cooperation Organization (SCO), which began as the Shanghai Five in 1996.⁷ This body was formed in the presence of a civil war in Tajikistan, Taliban rule in Afghanistan, a series of terrorist attacks in Xinjiang, and Islamist revivalism in Uzbekistan under the Islamic Movement of Uzbekistan/Turkestan (IMUIIMT) and more recently by Hizb-ut Tahrir.

On its western borders, China has been an active player in the new great game. As part of its "Go West" development policy, China's longest pipeline, the 4,200 kilometer Tarim Basin to Shanghai gas pipeline, came online in August 2004. China's west-to-east pipeline could potentially be extended to Kazakhstan and Turkmenistan and even further to Iran and the Caspian Sea. In October 2004, construction began on a 988 kilometer pipeline from Atasu in northwestern Kazakhstan to Alataw Pass in China's Xinjiang province, which will carry 10 million tons of oil a year once it is completed in 2005. The Chinese are also helping to develop oil fields in Uzbekistan and hydroelectric power projects in Kyrgyzstan and Tajikistan.

⁷ Zhao Huasheng, "The Shanghai Cooperation Organization at 5: Achievements and Challenges Ahead," *The China and Eurasia Forum Quarterly* Vol 4, No 3, (August 2006): pp. 99-108.

China Expands in the Middle East

China has also attempted to improve relations with its already-established oil suppliers, such as Saudi Arabia and Iran, by selling them military technology, investing in their industries and energy infrastructure and looking the other way with respect to their human-rights records.

Currently, China derives 13.6% of its oil imports from Iran. In March 2004, China signed a \$100 million deal with Iran to import 10 million tons of liquefied natural gas over a 25-year period in exchange for Chinese investment in Iran's oil and gas exploration, petrochemical and pipeline infrastructure.

Growing Sino-Iranian relations are undermining US sanctions against Iran. The Bush administration has sanctioned Chinese companies 62 times for violating US or international controls on the transfer of weapons technology to Iran and other states.

The US Central Intelligence Agency has submitted a report to US Congress stating that Chinese companies have "helped Iran move toward its goal of becoming self-sufficient in the production of ballistic missiles". In the ongoing controversy over Iran's uranium enrichment program, China has also opposed bringing the issue before the UN Security Council, and has even threatened to veto any resolution that is brought against Iran.

As Saudi-US relations have soured in the post-September 11 world, the Saudi-US strategic partnership may be supplanted by a Sino-Saudi partnership. Saudi oil shipments to the US declined in 2004, while they increased to China. Sinopec has won the right to explore for natural gas in Saudi Arabia's al-Khali Basin and Saudi Arabia has agreed to build a refinery for natural gas in Fujian in exchange for Chinese investment in Saudi Arabia's bauxite and phosphate industry. Cooperation in the economic and energy spheres complements an already burgeoning relationship in the military sphere, as seen with China selling Saudi Arabia Silkworm missiles during the

Iran-Iraq War in the 1980s, and both states having strong relations with Pakistan.

China Expands in Africa and the Americas

As China has made limited progress in accessing energy resources on its doorsteps due to poor relations with neighboring states, it has shown growing interest in accessing energy resources further field. For example, a consortium 40% owned by China's CNPC pumps over 300,000 barrels per day in Sudan. China is also a major supplier of arms to the Sudanese government, which has just concluded a peace agreement with the main rebel group in the south, the Sudan People's Liberation Movement (SPLM), ending 20 years of conflict sparked over the allocation of oil revenues. The Sudanese government is still engaged in a conflict in the Darfur region of western Sudan using proxy militias. China is also vying for energy resources in Angola and other energy-rich African states by offering arms and aid for oil. China is also acquiring energy resources in the Americas. While attending the annual Asia-Pacific Economic Cooperation summit in Chile in November 2004, Chinese President Hu Jintao announced an energy deal with Brazil worth \$1.0 billion, supplementing a \$1.3 billion deal between Sinopec and Petrobras for a 2000 kilometer natural gas pipeline. China is also acquiring oil assets in Ecuador, as well as investing in offshore petroleum projects in Argentina.⁸ During Venezuelan President Hugo Chavez's visit to Beijing last December and Chinese Vice President Zeng Qinghong's visit to Venezuela in January, China also committed to develop Venezuela's energy infrastructure by investing \$350 million in 15 oil fields and \$60 million in a gas project in Venezuela. During Canadian Prime Minister Paul Martin's visit to Beijing on January 20, China and Canada also signed a joint statement on energy cooperation which included accessing Canada's oil sands and uranium resources. China's growing energy interests in the Americas have been accompanied by a growing involvement in the region's security. In October, China sent a UN peacekeeping contingent to Haiti in its first military deployment to Latin America. Ironically, Haiti is one of only 25 states that recognize Taiwan rather than China. The US is looking on with caution as China

encroaches on a region that has traditionally been under its sphere of influence and a major supplier of energy resources. Venezuela and Canada together provide the US with a quarter of its energy imports.

South China Sea

Beijing's negotiating position over the South China Sea has correlated to movements in global oil-price indexes, shifting from implacable opposition to a deal during the formative growth years of the late 1990s, when it laid claim to 80% of the entire sea area, to a cautious flexibility in the face of a looming energy crunch. Expected to be the world's second importer this year, China is struggling to cool an overheating manufacturing base that consumed 6 million barrels of oil a day in 2003, a rise of 11.5%, according to research by British oil company BP. About 30% of China's energy requirements are purchased abroad, including half of its crude-oil supplies and massive amounts of coal and natural gas that are shipped from other parts of Asia and Australia to maintain industrial power generation.

In a flurry of recent activity, China's national oil companies have drawn up exploration plans for zones in the East China Sea and South China Sea that all are potential flashpoints because of overlapping economic zones or unresolved territorial claims. In November 2003, the China National Offshore Oil Corp. (CNOOC) sealed an agreement with a subsidiary of Philippines National Oil Co. (PNOC) to undertake the joint exploration and development of oil and gas projects in the South China Sea. However, Japan has protested vehemently against exploration plans by China National Offshore Oil Corp (CNOOC) in waters near the island group of Diaoyu - known by the Japanese as Senkaku -which are also claimed by Taiwan. CNOOC has installed a drilling plant close to Japan's exclusive economic zone to look for natural gas, and said this year that it had been authorized by Beijing to construct an underwater pipeline to China.

⁸ Cindy Hurst, "China's Oil Rush in Africa," in *Energy Security*, July 2006. by the Institute for the Analysis of Global Security (Washington: IAGS, 2006).