

Center for Strategic and International Studies ■ Washington, D.C.

## China's Energy Outlook: Securing a Path for Development

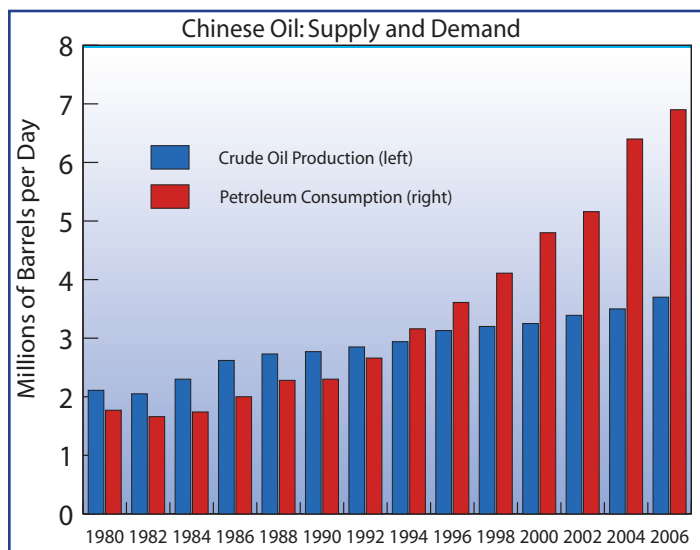
Over the past decade, all eyes have turned to China as its breakneck economic growth has propelled the Asian giant onto the world stage. Simultaneously, many scholars have wondered whether China can maintain such development and at what cost. At the heart of the issue is China's quest to secure the energy resources necessary to continue economic growth and expand the benefits of rising standards of living across the country.

For nearly three decades, China has been the world's fastest-growing economy. Since economic reform began in 1978, China has expanded its services sector and maximized its massive supply of cheap labor. As a result, real per capita output has increased nine times over.<sup>1</sup> Today, China is the world's fourth largest economy, following the United States, Japan, and Germany. With such expansion comes a reduction in poverty as well as a new capacity for citizens to enjoy a higher quality of life. As a result, more Chinese are driving automobiles than ever before. Today, traffic in Beijing alone consists of 2.6 million cars, growing at a rate of more than 1,000 new cars every day, and is expecting up to 3.5 million vehicles on the streets by 2008.<sup>2</sup> These changes have drastically increased China's demand for oil—today, China is the world's second-largest oil consumer, surpassed only by the United States.

### The Energy Problem

China lacks the natural resources to independently support such rapid sustained economic growth. With oil demand far exceeding domestic supply, China must rely on foreign oil to fulfill its energy needs. Already China meets nearly half of its petroleum demand with imports, thus contributing to recent rises in world oil prices.<sup>3</sup> Comparatively, in 2005 the United States met 59.8 percent of its petroleum demand with imports.<sup>4</sup>

With China's dependence on foreign oil, its energy problem is exacerbated by the limited spare producing capacity worldwide. In the past decade, members of the Organization of the Petroleum Exporting Countries (OPEC) have gradually worked off their spare producing capacities to such an extent that they have jeopardized their ability to swiftly respond to spikes in world oil demand.



In recent decades, petroleum consumption has surpassed crude oil production in China. (Source: International Energy Agency, *Monthly Oil Market Report*, April 2006, and Energy Information Administration, *International Energy Annual 2003*.)

China's foreign policy is heavily influenced by the need to diversify its oil imports and to acquire equity oil—owned by China—abroad. Like the United States, if it continues to rely on foreign oil, China's energy supply will remain vulnerable to terrorist attacks and fluctuations in the global market.

China's energy problem is also compounded by the inefficient use of natural resources. China's energy consumption per unit of output is more than double the world average.<sup>5</sup> In a recent issue of *Newsweek*, the China Sustainable Energy Program stated, "For every dollar of economic output, China wastes three times more energy than the global average, and 11 times more than Japan." This inefficiency is primarily due to widespread construction of wasteful power plants with inadequate transmission networks.<sup>6</sup>

### Geopolitical Implications

Because China must acquire natural resources from abroad in order to sustain economic growth and maintain social stability, its diplomacy is often guided by energy-related issues. A recent CSIS-IIE publication, *China: The Balance Sheet*, affirms that almost half of China's oil imports come from the Middle East, and to diversify sources, Chinese

companies are vigorously searching for energy assets in countries such as Venezuela, Burma, Nigeria, and Sudan.

This strategy becomes problematic when it intersects with other international negotiations relating to issues like nonproliferation and human rights. For example, with a vested interest in its growing Iranian oil trade, China might not be willing to support a UN Security Council resolution that would involve sanctions on Iran for violating International Atomic Energy Agency (IAEA) nuclear safeguards obligations. Similarly, China has spent a significant amount of time and money exploring and developing oil services in Sudan, currently yielding 6 percent of China's oil imports.<sup>7</sup> Beijing does not allow Sudanese human rights abuses to disrupt business.

Not only is China currently reliant on foreign oil, but it also must transport the vast majority of its oil imports with tankers passing through the Strait of Malacca. The risks of collision, grounding, oil spill, terrorist attacks, and piracy loom over this chokepoint. Therefore, it is probable that China will attempt to increase energy security by growing blue-water naval capabilities and by developing more overland pipelines.<sup>8</sup> Such measures would likely increase competition with the United States and other oil-importing nations.

### Alternative Energy Sources

In his CSIS publication, *China's Energy Future*, Robert E. Ebel—chairman of the CSIS Energy Program—provides a thorough overview of China's significant non-oil energy base. Coal is both produced and consumed more in China than anywhere else in the world. In 2002, coal accounted for 64 percent of China's net energy consumption and is projected to account for 61 percent in 2020. Unfortunately, frequent mining-related deaths and injuries, as well as detrimental environmental effects of burning low-quality coal, have brought much criticism on China's coal sector. Ebel also notes that China plans to construct numerous nuclear power plants to replace coal-fired electric power and to relieve current electricity shortages. Natural gas imports are also expected to rise, as China has signed contracts with Australia, Iran, and Indonesia to receive liquefied natural gas for use in generating electric power. Renewable sources of energy—hydroelectric, solar, wind, biomass, and geothermal power—are extremely important for China's future. Although hydropower is already China's second-largest energy resource after coal, further expansion of renewables will enable China to better secure energy diversity and mitigate energy-related environmental damages.

### Looking Forward

Both China and the United States are approaching an energy crossroad. As Frank Verrastro—director and senior fellow in the CSIS Energy Program—suggests, “Clearly the U.S. and China—as the number one and two consumers of energy—have much in common. Cooperation, especially with respect to improved efficiency and clean fuels technologies, rather than competition or confrontation, should be encouraged.”

Collaboration in this realm is already underway as the U.S. Department of Energy and China's National Development and Reform Commission (NDRC) launched the U.S.-China Energy Policy Dialogue in May 2004. The Dialogue builds on existing joint ventures in high-energy nuclear physics, fossil energy, energy efficiency, renewable energy, and energy information exchanges.<sup>9</sup>

Independently, China has begun to push forward with energy policy reform. The State Council has approved the 11th Five-Year Plan (2006–2010) for national economic and social development that aims to improve national energy efficiency by 20 percent. Last year, China adopted vehicle fuel economy standards that could potentially save more than a half-billion barrels of oil by 2030.<sup>10</sup>

China's success at moving away from fossil fuel dependence will have a significant impact on its long-term environmental and economic development goals. This journey will likely be long and expensive, and the question remains: will China be able to make wise choices when attempting to balance economic, security, environmental, and political needs?

### Endnotes

<sup>1</sup> C. Fred Bergsten, Bates Gill, Nicholas R. Lardy, and Derek Mitchell, *China: The Balance Sheet* (New York: PublicAffairs, 2006).

<sup>2</sup> Ching-Ching Ni, “Pollution Getting Worse, China Admits,” *Los Angeles Times*, June 6, 2006, sec. A, p. 15.

<sup>3</sup> Robert E. Ebel, *China's Energy Future: The Middle Kingdom Seeks Its Place in the Sun* (Washington, D.C.: CSIS, 2005).

<sup>4</sup> Energy Information Administration, “Basic Petroleum Statistics,” April 2006, <http://www.eia.doe.gov/ncic/quickfacts/quickoil.html>.

<sup>5</sup> Bergsten and others, *China: The Balance Sheet*.

<sup>6</sup> Douglas Ogden, “We Don't Need More Power,” *Newsweek* (International Ed.), February 6, 2006, p. 1.

<sup>7</sup> Jon D. Markman, “How China Is Winning the Oil Race,” April 26, 2006, <http://moneycentral.msn.com/content/PI49330.asp>.

<sup>8</sup> Bergsten and others, *China: The Balance Sheet*.

<sup>9</sup> U.S. Department of State, “Background Note: China,” April 2006, <http://www.state.gov/r/pa/ei/bgn/18902.htm>.

<sup>10</sup> Ogden, “We Don't Need More Power.”