



Committee of 100

Policy Brief

May 2007

Fueling China's Energy Needs

With its economic expansion, China's energy demands continue to increase at an accelerating rate. The Chinese government acknowledges that its energy consumption is inefficient, expensive, damaging to the environment, and could threaten China's sustainable development and its national security now that China has become an energy importer. How will China secure the power needed to fuel sustainable economic growth?

The Background

From 2000 to 2005, China's energy consumption rose by 60%, accounting for almost half of the growth in world energy consumption. At present, China consumes approximately 15% of the world's energy production to create 5.5% of the world's total gross domestic product.

Until 1993, China was self-sufficient in meeting its energy needs; since then, it has become a net energy importer, and its rate of energy imports is accelerating. Rapid economic development has resulted in a significant increase in energy consumption, increasing harmful emissions and creating power shortages. According to the U.S. Commercial Service, China's total energy consumption increased by 14% while the amount of energy generated grew by 13.5% in 2006, to 283 million kilowatts. Thermal power, primarily coal, still accounts for the bulk of the energy generated, 83%, followed by 14% from hydroelectric sources, 2% from nuclear and less than 0.1% from wind power.

China is the second largest consumer of oil in the world (behind the U.S.) and is the third largest importer of oil in the world, behind the U.S. and Japan. China's demand for imported oil doubled between 2000 and 2005, and is expected to double again before 2010, representing between 60-80% of China's total oil consumption. China's domestic coal fields currently can supply approximately 90% of China's energy requirements, although the percentage of China's energy supplied by coal is expected to drop by 30% in the next five years.

These supply issues are exacerbated by an aging and inefficient power grid. Over the past few years, a series of power shortages, including rolling brownouts, have hit Beijing, Shanghai, elsewhere in Jiangsu province, and Zhejiang and Guangdong provinces. In some cities there is a shortage of more than 10 million kilowatts in the power-using peak-hours.

China's Steps Toward Renewable Energy and Energy Efficiency

In the Eleventh Five-Year Plan (2006-2010), a goal is to build a sustainable economy and develop clean energy substitutes for coal and oil. By 2010, the Chinese Government plans to double its per capita GDP as compared to 2000, but plans to reduce energy consumption per unit GDP by 20% as compared to 2005. However, statistics indicate that energy consumption per unit GDP was up 30.8% for first half of 2006 as compared to 2005.

(continued on next page)



As part of the Chinese government's reaction to potential energy issues, on January 1, 2006, China's *Renewable Energy Law* came into effect, imposing a national renewable energy requirement to increase the use of renewable energy capacity up to 10% of all energy consumed by the year 2020 (in 2003, China's renewable energy consumption accounted for only 3% of the country's total energy consumption).

Under the *Renewable Energy Law*, renewable energy includes hydroelectricity, wind power, solar energy, geothermal energy and marine energy. The Law commits the Chinese government to invest US\$180 billion in renewable energy between 2006-2020; discounted lending and tax preferences for renewable energy projects are to be made available. The *Renewable Energy Law* lists research and development and the industrial development of renewable energy as the preferential area for hi-tech industrial development.

Importantly, the *Renewable Energy Law* requires power grid operators to purchase energy from registered renewable energy producers in its area. The power grid's buying price for renewable energy will be set by the National Development and Reform Committee ("NDRC")—either as a government-set price or a government-"guided" price (grid price less a government subsidy, for example) – which will be adjusted from time to time as necessary. For example, the on-grid price for biomass and wind power will be set by the central government based on the bid-winning price. The price of solar, marine, and geothermal power projects will be determined on an "economic and reasonable" basis. For all renewable power projects approved after 2010, the subsidy provided per kilowatt-hour generated will decrease at an annual rate of 2 percent.

The *Renewable Energy Law* also requires the NDRC to also implement a national renewable energy plan, including specific renewable energy targets that will act as the framework for implementation of the law. Provincial planning agencies will then develop their more specific implementation plans. The *Renewable Energy Law* includes specific penalties for non-compliance with the law.

Further, as part of the Eleventh Five-Year Plan, on January 24, 2006, the Office of the National Energy Leading Group of the NDRC, and 13 other agencies formed a committee to draft China's new *Energy Law*. China has yet to develop a comprehensive energy law, creating energy conflicts as China consumes increasing amounts of energy.

In addition to developing new sources of energy, the Chinese government has set ambitious national goals for energy efficiency improvements (20% by 2010) and assigned each province and provincial-level city an energy reduction target (ranging from 30% to 12%). On January 5, 2007, the NDRC issued *Guidelines for Energy-Conservation Evaluation and Review of Fixed-Asset Investment Projects*. The Guidelines require that "fixed asset projects" be "designed and constructed in conformity with the standards for rational use of energy and for energy conservation design." The Guidelines apply to fixed asset investments of over RMB500,000 in a new construction project, expansion project, renovation project or project designed to enhance production ability or project efficiency. Pursuant to the Guidelines, the NDRC is to accelerate formulation of new or amendment of existing energy conservation standards. The Guidelines require that projects be monitored and corrected, if necessary.

(continued on next page)

The Outlook

China's new emphasis on renewable energy sources and energy conservation could improve China's energy efficiency and security. Changing its energy profile should improve China's environment. Both the U.S. government and U.S. businesses have been active in advising the Chinese government and industry on renewable energy and energy conservation. This area is a success story—albeit a success story in progress—for bilateral cooperation. Continued engagement will be needed to help the Chinese government meet its goals in renewable energy production and energy conservation. Such engagement can benefit U.S. businesses that are able to market their products and services to China.



More Reading

U.S. Energy Information Administration: <http://www.eia.doe.gov/emeu/cabs/China/Background.html>

U.S. Environmental Protection Agency, Clean Air and Energy Projects in China:
<http://www.epa.gov/oia/airandclimate/byregion/chinaair.html>

The China Sustainable Energy Program: <http://www.efchina.org/FHome.do>

The National Renewable Energy Laboratory, Energy Efficiency and Renewable Energy Technology Development in China: <http://www.nrel.gov/international/china/>

U.S. and China Renewable Energy Development and Energy Efficiency Protocol:
<http://www.nrel.gov/international/china/protocol.html>

Chinese Renewable Energy Industries Association: http://www.creia.net/cms_eng/code/english/

China New Energy: <http://www.newenergy.org.cn/english/>

China-US Energy Efficiency Alliance: <http://www.chinausealliance.org/>

Rand Corporation, China's Quest for Energy Security:
http://www.rand.org/pubs/monograph_reports/MR1244/index.html

China Clean Energy Program: <http://www.chinacleanenergy.org/home.asp>

Brookings Foreign Policy Studies Energy Security Series: China:
<http://www.brookings.edu/fp/research/energy/2006china.htm>

China Energy Group: http://china.lbl.gov/china_policy.html

Prepared by Michael Burke, Tovah LaDier and Williams Mullen Strategies

About the Committee of 100

*The Committee of 100 is a non-partisan and non-profit 501(c)(3) organization comprised of distinguished American citizens of ethnic Chinese descent who are the direct beneficiaries of the opportunities, equality, and civil rights provided by America's diverse democracy. Through the Committee, its members contribute to America's dynamic culture and robust economy by helping to build constructive relations between the U.S. and China that serve U.S. national interests and by promoting the full participation of Chinese Americans in all facets of American life. Among the Committee's efforts, its **Public Education Initiative** promotes mutual education and facilitates linkages between Chinese and American people as well as the leaders of the two countries. Visit the Committee of 100 website at www.committee100.org.*