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July 2004

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China

The People's Republic of China (China) is the world's most populous country and the second largest energy consumer (after the United States). Production and consumption of coal, its dominant fuel, is the highest in the world. Rising oil demand and imports have made China a significant factor in world oil markets. China also surpassed Japan as the world's second-largest petroleum consumer in 2003.

All information contained in this report is the best available as of July 2004 and is subject to change.



GENERAL BACKGROUND

China is the world's most populous country, with a rapidly growing economy. Economic development has proceeded unevenly, with urban coastal areas, particularly in the Southeast,

experiencing more rapid economic development than other areas of the country. China has a mixed economy, with a combination of state-owned and private firms. A number of state-owned firms have undergone partial or full privatization in recent years. The Chinese government has encouraged foreign investment -- in some sectors of the economy and subject to constraints -- since the 1980s, offering several "special economic zones" in which foreign investors receive preferable tax, tariff, and investment treatment.

In March 2003, a long-expected transition in China's political leadership took place. Hu Jintao assumed the country's presidency, as well as chairmanship of the ruling Communist Party. Wen Jiabao became the new premier. Former president Jiang Zemin has retained the chairmanship of the Central Military Commission.

With China's entry into the World Trade Organization (WTO) in November 2001, the Chinese government made a number of specific commitments to trade and investment liberalization which, if fully implemented, will substantially open the Chinese economy to foreign firms. In the energy sector, this will mean the lifting or sharp reduction of tariffs associated with imports of some

classes of capital goods, and the eventual opening to foreign competition of some areas such as retail sales of petroleum products.

Despite moves toward privatization, much of China's economy remains controlled by large State Owned Enterprises (SOE's), many of which are inefficient and unprofitable. Restructuring of the SOE sector, including the privatization of some enterprises, is a major priority of the government, as is restructuring of the banking sector. Many Chinese banks have had to write off large amounts of delinquent debts from state-owned enterprises.

Layoffs have been part of the restructuring of the SOEs, as many were severely overstaffed. This has created unemployment, and also has been a burden on the government budget, as the government begins to provide social benefits which were previously the responsibility of the SOEs. The geographic concentration of privately-owned industry in the urban centers along the coast also has created social strains.

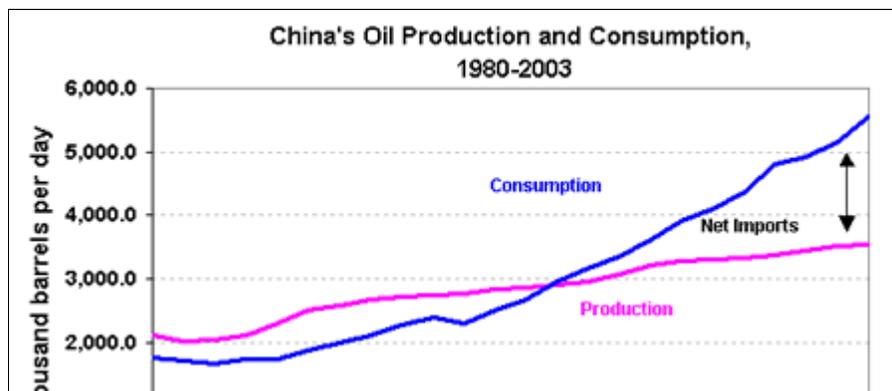
China's real gross domestic product (GDP) grew at a rate of 9.1% in 2003, up from 8.0% in 2002. Real GDP for the first quarter of 2004 was up 9.8% year-on-year -- a pace many observers see as unsustainable. Real GDP growth is forecast to drop to 8.1% for 2004 as a whole. Much of the increase in the GDP growth rate has come from excessive spending on capital goods and construction, particularly in the state sector. In an effort to cool an economy seen as overheating, the Chinese government has taken a number of steps in the second quarter of 2004 designed to counter this trend. Monetary policy has been tightened, and measures have been adopted to slow spending on capital projects and rein in bank lending. China's banking sector remains a key concern for the country's economic stability, as the ratio of problem loans has been rising.

Inflows of foreign direct investment (FDI) into China in 2003 totalled \$53.5 billion, a new record, but with the year-on-year growth rate slowing considerably. Japan, Taiwan, and the United States are China's most important sources of FDI.

After a sharp rise in 2002, China's trade surplus shrank in 2003. The 2003 trade surplus was \$25.3 billion, down from \$30.3 billion in 2002. Imports increased by 39.9% in 2003, largely capital goods being acquired to refurbish outdated industrial facilities. Exports increased by 34.6% in 2003.

OIL

China was the world's second largest consumer of petroleum products in 2003, surpassing Japan for the first time, with total demand of 5.56 million barrels per day (bbl/d). China's oil demand is projected by EIA to reach 12.8 million bbl/d by 2025, with net imports of 9.4 million bbl/d. As the source of around 40% of world oil demand growth over the past four years, Chinese oil demand already is a very significant factor in world oil markets.



China's petroleum industry has undergone major changes over the last decade. In 1998, the Chinese government reorganized most state owned oil and gas assets into two vertically integrated firms -- the China National Petroleum Corporation (CNPC) and the

China Petrochemical

Corporation (Sinopec). Before the restructuring, CNPC had been engaged mainly in oil and gas exploration and production, while Sinopec had been engaged in refining and distribution. This reorganization created two regionally focused firms -- CNPC in the north and west -- and Sinopec in the south, though CNPC is still tilted toward crude oil production and Sinopec toward refining. Other major state sector firms in China include the China National Offshore Oil Corporation (CNOOC), which handles offshore exploration and production and accounts for more than 10% of China's domestic crude production, and China National Star Petroleum, a new company which was created in 1997. Regulatory oversight of the industry now is the responsibility of the State Energy Administration (SEA) which was created in early 2003.

The intention of the restructuring was to make these state firms more like similar vertically integrated corporate entities elsewhere. In connection with this process, the firms have been spinning off or eliminating many unprofitable ancillary activities such as running housing units, hospitals, and other services near company facilities. Massive layoffs also have been undertaken, as like many other Chinese SOEs, they were severely overstaffed.

The three largest Chinese oil and gas firms - Sinopec, CNPC, and CNOOC - all have successfully carried out initial public offerings (IPOs) of stock between 2000 and 2002, bringing in billions of dollars in foreign capital. CNPC separated out most of its high quality assets into a subsidiary called PetroChina in early 2000, and carried out its IPO of a minority interest on both the Hong Kong and New York stock exchanges in April 2000. The IPO raised over \$3 billion, with BP the largest purchaser at 20% of the shares offered. Sinopec carried out its IPO in New York and Hong Kong in October 2000, raising about \$3.5 billion. Like the PetroChina IPO, only a minority stake of 15% was offered. About \$2 billion of the IPO was purchased by the three global super-majors - ExxonMobil, BP, and Shell. CNOOC held its IPO of a 27.5% stake in February 2001, after an earlier attempt in September 1999 was canceled. Shell bought a large block of shares valued at around \$200 million. In 2002, Chinese oil companies began to look at separating out some of their business units into subsidiaries. CNPC has set up subsidiaries for drilling services and geological survey work, and plans to eventually spin them off through international IPOs. CNOOC also has created an oilfield services unit -- China Oilfield Service, Ltd. (COSL) -- which was listed on the Hong Kong stock exchange in November 2002.

Some aspects of these stock offerings were atypical. First, they all involved only minority stakes. Second, they have not given the foreign investors a major voice in corporate governance. The Chinese government still holds majority stakes in all three firms, and the foreign investors have not received seats on their boards of directors. Analysts have generally seen these investments as attempts by the supermajors to gain a foothold in China, which will necessarily involve partnerships with the Chinese majors. Even with the opening to foreign investment envisioned in China's commitments for membership in the WTO, it is still likely that almost all major oil and gas projects in China will involve one of the Chinese majors. The Chinese government stipulated in July 2001 that only CNPC and Sinopec will be allowed to open new retail filling stations prior to fulfillment of China's market-opening commitment in 2004. This is seen as an attempt to strengthen their control of retail sales of petroleum products and ensure that foreign firms will have to partner with one or the other of the Chinese majors to enter the retail market, even after 2004. All three of the global supermajors, BP, ExxonMobil, and Shell, are planning to enter the Chinese retail market in partnership with CNPC, Sinopec, or both.

As a net oil importer since 1993, China's petroleum industry is focused on meeting domestic demand. China had sold a modest quantity of very light crude oil for direct burning in Japanese power plants, but exports to Japan were halted in January 2004.

Most Chinese oil production capacity, close to 90%, is located onshore. One field alone, Daqing in northeastern China, accounts for about 1.0 million bbl/d of China's production, out of a total crude oil production of around 3.4 million bbl/d. Daqing is a mature field, however, having begun production in 1963, and production fell by 3.5% in 2003. At China's second-largest producing field, Liaohe in northeastern China, CNPC has contracted with several foreign firms for work to enhance oil recovery and extend the life of the field. Chinese authorities announced a "major" new find in April 2004 in the area of the existing Shengli field in the northeast, but it is still under assessment. Government priorities focus on stabilizing production in the eastern regions of the country at current levels, increasing production in new fields in the West, and developing the infrastructure required to deliver western oil and gas to consumers in the East. Offshore development also is a high priority. Chinese officials have said that they expect production in Xinjiang to reach 1 million bbl/d by 2008, but that seems ambitious, given that transportation of that oil to consumers in the East remains a major obstacle.

Recent offshore oil exploration interest has centered on the Bohai Sea area, east of Tianjin, believed to hold more than 1.5 billion barrels in reserves, and the Pearl River Mouth area. ConocoPhillips announced in March 2000 that it had completed its appraisal drilling of the Peng Lai find in Block 11/05, and would proceed with development. Commercial production began in December 2002, and is around 32,000 bbl/d as of mid-2004. CNOOC signed a production sharing contract with Canadian independent Husky Oil in July 2001 for Block 39-05 in the Pearl River Mouth, near the Wenchang 13-1/13-2 blocks, where Husky Oil and CNOOC currently are producing about 50,000 bbl/d. Another major offshore oilfield has been developed in the Pearl River Mouth area by a consortium including ChevronTexaco, ENI, and CNOOC. The field began production in February 1999. ChevronTexaco also concluded an agreement with CNOOC in October 2002 for the development of the Bozhong field in the Bohai Sea, which has reserves estimated at 1.3 billion barrels. Meanwhile, improvement in Sino-Vietnamese relations has opened the way for oil and gas exploration in the Beibu Gulf (known in Vietnam as the Gulf of Tonkin). China and Vietnam signed an agreement in December 2000 which settled their outstanding disputes over sovereignty and economic rights in offshore areas near their border. CNOOC opened a tender for 10 new exploration blocks in May 2004.

With China's expectation of growing future dependence on oil imports, China has been acquiring interests in exploration and production abroad. CNPC has acquired oil concessions in Kazakhstan, Venezuela, Sudan, Iraq, Iran, and Peru, and Azerbaijan. Sinopec also has begun seeking to purchase overseas upstream assets. The Greater Nile Petroleum Operating Company (GNPOC), the Sudanese oil project in which CNPC owns a stake, began exports in August 1999. CNOOC also has purchased an upstream equity stake in the small Malacca Strait oilfield in Indonesia. Despite efforts to diversify its sources of supply, roughly half of China's imported oil comes from the Middle East, with Saudi Arabia alone accounting for 17% in 2003.

The most significant deal thus far is CNPC's acquisition of a 60% stake in the Kazakh oil firm Aktobemunaigaz, which came with a pledge to invest significantly in the company's future development over the next twenty years. The Kazakh and Chinese governments signed an agreement in May 2004 for the construction of a \$700-million pipeline to export Kazakh crude oil into western China. The pipeline would run from Atasu in central Kazakhstan to Xinjiang, supplying three refineries with about 200,000 bbl/d of crude oil. While the intergovernmental agreement cites a completion date of late 2005, this is considered unlikely, and negotiations on a binding contract and pricing continue.

Russia's Far East is seen as a potential source of Chinese crude oil imports. The Russian and Chinese governments have been holding regular discussions on the feasibility of pipelines to make

such exports possible. One proposed plan is a pipeline which would carry as much as 1 million bbl/d of crude oil from Anagarsk in Russia to join the existing Chinese pipeline network at Daqing. Yukos Oil of Russia and CNPC signed a memorandum of understanding in June 2003 for sales of oil via the pipeline, contingent on the pipeline being built. An alternative plan, proposed by Russian pipeline operator Transneft, would take Russian crude from both West Siberia and East Siberia via a 1 million bbl/d pipeline to an export terminal at the Pacific coast port of Nakhodka. Japan and China each have undertaken intense efforts to sway Russia toward their preferred pipeline option. As of mid-2004, most analysts expect the Nakhodka pipeline to prevail, with Japan offering to heavily subsidize the construction of the pipeline and provide other financial assistance to Russia, but no binding agreement has yet been concluded.

Downstream infrastructure development in China centers primarily on upgrading existing refineries rather than building new ones, due to overcapacity. In the late 1990s, the Chinese government shut down 110 small refineries, which generally made inferior quality petroleum products. Dozens of other small refineries owned by provincial and local governments have been merged into CNPC and Sinopec. Another major issue in the Chinese downstream sector is the lack of adequate refining capacity suitable for heavier Middle Eastern crude oil, which will become a necessity as Chinese import demand rises in the mid-term future. Several existing refineries are being upgraded to handle heavier and more sour grades of crude oil. With consumption of petroleum products rising so rapidly, some interest is being rekindled in the construction of more modern greenfield refineries. Shell has reportedly been in discussions with CNOOC on a possible project in Guangdong.

Chinese officials have spoken of their intention to build a national strategic petroleum reserve, and Chinese officials announced a policy decision in February 2003 to support the creation of a strategic petroleum reserve, and have reportedly been studying several options for the development of storage capacity. In the meantime, anecdotal evidence has suggested that China may have built up its petroleum stocks substantially in 2003 and 2004. According to press reports, work has already begun preliminary work in early 2004 on four initial storage facilities, which would provide 30 days of import cover by 2008.

NATURAL GAS

Historically, natural gas has not been a major fuel in China, but given China's domestic reserves of natural gas, which stood at 53.3 trillion cubic feet (Tcf) at the beginning of 2004, and the environmental benefits of using natural gas, China has embarked on a major expansion of its gas infrastructure. Until the 1990s, natural gas was used largely as a feedstock for fertilizer plants, with little use for electricity generation. Natural gas currently accounts for only around 3% of total energy consumption in China, but consumption is expected to nearly double by 2010. This will involve increases in domestic production, and imports, by pipeline and in the form of liquefied natural gas (LNG).

The country's largest reserves of natural gas are located in western and north-central China, necessitating a significant further investment in pipeline infrastructure to carry it to eastern cities. CNPC has a pipeline under construction, the "West-to-East Pipeline," from natural gas deposits in the western Xinjiang province to Shanghai, picking up additional gas in the Ordos Basin along the way. Construction began in July 2002, and a section of the pipeline east of the Ordos Basin began operation in early 2004. The segment connecting to Xinjiang will be completed by 2005. While it was expected initially that several major foreign oil and gas companies would take stakes in the project, it has progressed without foreign equity participation.

China announced the discovery of a major gas field at Sulige in the Ordos Basin in the Inner Mongolia Autonomous Region, adjacent to the Changqing oilfield, in 2001. While the field is still

under evaluation, unofficial reserve estimates cited in the trade press put reserves in the range of 16-21 Tcf, substantially more than was assumed when the discovery was first announced. Some natural gas from the Ordos Basin is likely to be put into the West-to-East Pipeline, which was to run through the area in any case, to help make it economically viable. A pipeline was completed in 1997 between the Ordos Basin and Beijing, and a second pipeline may become necessary, as demand for natural gas in Beijing, Tianjin, and nearby Hebei province already is outstripping the capacity of the original pipeline. If reserves prove adequate, the pipeline to Beijing may eventually be extended to other cities to the northeast.

Another proposed pipeline project would link the Russian natural gas grid in Siberia to China and possibly South Korea via a pipeline from the Kovykta gas fields near Irkutsk, which hold reserves of more than 50 Tcf. The cost of the project has been estimated at around \$12 billion. The pipeline would have a planned capacity of 2.9 billion cubic feet per day (Bcf/d), of which China would likely consume about 1.9 Bcf/d and South Korea 1 Bcf/d. The main South Korea gas company, Kogas, formally joined the feasibility study in November 2000, and both Kogas and CNPC signed letters of intent for the project in November 2003. The main foreign backer of the project is BP, which owns a 30% stake in Russia Petroleum, the license holder for the Kovykta gas field. Due to tensions on the Korean peninsula, the route currently under consideration for the section of the pipeline to South Korea would bypass North Korea by running undersea from the city of Dalian in China to the South Korean coast near Seoul. The new route also would bypass Mongolia. Gazprom has taken an increasingly prominent role in the negotiations for the final contract in 2004, and Chinese and South Korean observers have increasingly seen LNG imports as a viable alternative if agreement cannot be reached on pricing and terms for Russian natural gas imports.

Aside from these huge projects, other pipelines are being developed to link smaller natural gas deposits to other consumers. A pipeline was completed in early 2002 linking the Sebei natural gas field in the Qaidam Basin with consumers in the city of Lanzhou. Another planned project would link gas deposits in Sichuan province in the southwest to consumers in Hubei and Hunan provinces in central China at an estimated cost of \$600 million.

One major hurdle for natural gas projects in China is the lack of a unified regulatory system. Currently, natural gas prices are governed by a patchwork of local regulations. The Chinese government is in the process of drafting a new legal framework for the natural gas sector, but the process has been slow, and there are still considerable uncertainties regarding price regulation and taxation issues dealing with natural gas sales.

Offshore gas projects also are becoming a significant part of China's gas supply. The Yacheng 13-1 field, developed in the mid-1990s, has been producing gas for Hong Kong and Hainan Island since 1996. The Chunxiao gas field in the East China Sea, being developed by China National Star Petroleum, is also expected to become a significant producer within the next decade. The company puts the field's reserves at more than 1.6 Tcf. Another area where exploratory drilling is planned is the Xihu Trough, in the East China Sea about 250 miles east of Shanghai. Shell concluded an agreement with CNOOC and Sinpec for development of the Xihu Trough reserves in January 2004.

Imported liquefied natural gas (LNG) will be used primarily in China's southeastern coastal region, with possible later expansion in the north, particularly if Russian supplies fail to materialize. Guangdong province already has launched a project to build six, 320-megawatt (MW) gas-fired power plants, and to convert existing oil fired plants with a capacity of 1.8 gigawatts (GW) to LNG. In March 2001, it was announced that BP had been selected to build China's first LNG import terminal, to be located near the city of Guangdong. BP will take a 30% equity stake in the

project, with CNOOC holding 31% and the rest held by local firms from Guangdong and Hong Kong. A supply contract has been signed for LNG from Australia's North West Shelf LNG terminal. Earlier delays have been resolved, and the terminal is expected to begin operation before the end of 2005. A second LNG terminal is planned for Zhangzhou, in Fujian province farther up the coast. A supply agreement has been concluded with BP for LNG from its Tangguh project in Indonesia. A third LNG import project in Zhejiang is under consideration for a startup date around 2010, but it is in the preliminary stages and has not secured government approval. China has been increasingly interested in LNG suppliers in the Persian Gulf, and has held talks with Iran, which resulted in a preliminary "framework agreement" for LNG sales, which was signed in March 2004.

COAL

Coal makes up the bulk, 65%, of China's primary energy consumption, and China is both the largest consumer and producer of coal in the world. China's coal consumption in 2002 was 1.42 billion short tons, or 27% of the world total. The Chinese government has made major upward revisions to coal production and consumption figures covering the last several years. The new figures show coal consumption rising sharply in 2001-2002, reversing the decline seen from 1997 to 2000. The decline during that period also is much less than the previously reported data.

China's coal industry has had a serious oversupply problem in recent years, particularly in the late 1990s, and the government has begun implementing major reforms aimed at reducing the oversupply, returning large state-owned mines to profitability as a prelude to possible future privatization, and reducing mine accidents. Large state-owned coal mines had experienced buildups of unused inventories in the mid-to-late-1990s, and many were operating at a financial loss. A large number of small, unlicensed mines also have added to the oversupply. In 1998, the government launched a large-scale effort to close down the small mines. Many small coal mines were ordered closed. It has become clear, however, through much anecdotal evidence, that not all of the "closed" mines have actually ceased operation, and the upward revisions to the Chinese State Statistical Bureau's production and consumption figures appear to reflect this. China also is increasingly seeking export markets for its coal as a way of dealing with its surplus production, and as of 2002 it was the world's second-largest coal exporter. Japan and South Korea are the primary markets, and China is beginning to emerge as a serious competitor to Australia for Japanese coal imports. India also has been importing modest quantities of Chinese coal. Increased domestic demand for thermal coal in 2004, however, has led to a sharp dropoff in coal exports, reversing the price decline in the Asian coal market which had taken place in response to the expansion of Chinese exports.

Over the longer term, China's coal demand is projected to rise significantly. While coal's share of overall Chinese energy consumption is projected to fall, coal consumption will still be increasing in absolute terms. Several projects exist for the development of coal-fired power plants co-located with large mines, so called "coal by wire" projects. Other technological improvements also are being undertaken, including the first small-scale projects for coal gasification, and a coal slurry pipeline to transport coal to the port of Qingdao. Coalbed methane production also is being developed, with recent American investors in this effort including BP, ChevronTexaco, and Virgin Oil, which was awarded a concession for exploration in Ningxia province in January 2001. ChevronTexaco is the largest foreign investor in coalbed methane, with activities in several provinces. Far East Energy of the U.S. received approval from Chinese authorities in April 2004 for a farmout agreement with ConocoPhillips, under which it would undertake exploratory drilling for coalbed methane in Shaanxi province, in a location near the West-to-East Pipeline route.

In contrast to the past, China is becoming more open to foreign investment in the coal sector, particularly in modernization of existing large-scale mines and the development of new ones. The China National Coal Import and Export Corporation is the primary Chinese partner for foreign

investors in the coal sector. Areas of interest in foreign investment concentrate on new technologies only recently introduced in China or with environmental benefit, including coal liquefaction, coal bed methane production, and slurry pipeline transportation projects. Over the longer term, China plans to aggregate the large state coal mines into seven corporations by the end of 2005, in a process similar to the creation of CNPC and Sinopec out of state assets. Such firms might then seek to pursue foreign capital through international stock offerings.

China has expressed a strong interest in coal liquefaction technology, and would like to see liquid fuels based on coal substitute for some of its petroleum demand for transportation. A coal liquefaction facility is under construction by the Shenhua Group in Inner Mongolia, with a projected startup date of 2005. Despite the high costs, Chinese officials have shown increasing interest in further research into improving coal liquefaction technologies, in the hope that it may eventually provide an economically viable domestic source of liquid fuels.

ELECTRICITY

As with coal, China's electric power industry experienced a serious oversupply problem in the late 1990s, due largely to demand reductions from closures of inefficient state-owned industrial units, which were major consumers of electricity. The Chinese government responded to the short-term oversupply in part by implementing a drive to close down small thermal power plants and by imposing a moratorium (with a few exceptions) on approval of new power plant construction, which ran through January 1, 2002. Until recently, the backlog of projects approved in the mid-1990s had kept pace with demand increases. In 2003, however, the Chinese government has approved 30 major new electric power projects, with a total of around 22 gigawatts (GW) of capacity. With the surge in economic growth in 2003 came a surge in electric power demand, which has outpaced previous demand forecasts, leading to a shortage of generating capacity and even load-shedding in some areas. A shortage of rainfall in some areas in 2003 and early 2004 has worsened this problem.

The largest project under construction, by far, is the Three Gorges Dam, which, when fully completed in 2009, will include 26 separate 700-MW generators, for a total of 18.2 GW. Plans were announced in March 2002 to reorganize the Three Gorges project into the China Yangtze Three Gorges Electric Power Corporation. The reservoir created by the dam began to fill in June 2003, and it began operating its initial turbines in July 2003.

Another large hydropower project involves a series of dams on the upper portion of the Yellow River. Shaanxi, Qinghai, and Gansu provinces have joined to create the Yellow River Hydroelectric Development Corporation, with plans for the eventual construction of 25 generating stations with a combined installed capacity of 15.8 GW.

Many of the major developments taking place in the Chinese electricity sector recently involve nuclear power. China's total installed capacity for nuclear power generation increased from 2.1 GW at the beginning of 2002 to 8.7 GW as of June 2004. The first generation unit of the Lingao nuclear power plant in Guangdong province began commercial operation in May 2002, with a capacity of 1-GW. The second 1-GW generating unit began operating in January 2003. An additional 600-MW generating unit at the Qinshan nuclear power plant in Zhejiang province began operation in February 2002, and another 600-MW unit at the same site came online in December 2002. A new 6-GW nuclear complex is planned for construction at Yangjiang in Guangdong province, to begin commercial operation in 2010. A second generating facility also is planned for Daya Bay.

A major issue for China's electric power industry is the distribution of generation among power

plants. China's stated intention eventually is to create a unified national power grid, and to have a modern power market in which plants sell power to the grid at market-determined rates. In the short term, though, traditional arrangements still hold sway, and state-owned power plants which have government connections tend to have a higher priority than independent private plants. Additionally, some private plants with "take-or-pay" contracts, which provide for guaranteed minimum sales amounts, have had trouble getting the provincial authorities running the local grids to honor those terms. In the short term, the strong growth in electricity demand in 2003-2004 has lessened this problem.

Growth in Chinese electricity consumption is projected at an average of 4.3% per year through 2025. The largest future growth in terms of fuel share in the future is expected to be natural gas, due largely to environmental concerns in China's rapidly industrializing coastal provinces, though the largest increase in absolute terms is likely to be coal. If a truly competitive market for electric power develops as planned, the Chinese market may once again become attractive to foreign investment. At present, foreign direct investment is allowed only in power generation, but loan financing has been obtained for some power transmission projects.

The Chinese government is in the early stages of formulating a fundamental long-term restructuring of their electric power sector, embodied in the National Power Industry Framework Reform Plan promulgated by the State Council in April 2002. As with many other countries reform programs, generating assets are being largely separated from transmission and distribution. The State Power Corporation (SPC) divested most of its generating assets and was split into 11 regional transmission and distribution companies in December 2002. Electricity prices will still be regulated, but there are likely to be major changes in tariffs and the overall regulatory structure for electricity pricing. The process is at an early stage, and many of the details remain to be worked out. A new electricity law, superseding the one established in 1995, is expected to be promulgated within the next year.

ENVIRONMENT

China suffers from major energy-related environmental problems. According to a report by the World Health Organization (WHO), seven of the world's ten most polluted cities are in China. The country's heavy use of unwashed coal leads to large emissions of sulfur dioxide and particulate matter. China also is important to any effort to curb emissions of greenhouse gases, as it is projected to experience the largest absolute growth in carbon dioxide emissions between now and the year 2020.

China is a non-Annex I country under the United Nations Framework Convention on Climate Change, meaning that it has not agreed to binding targets for reduction of carbon dioxide emissions under the Kyoto Protocol. While the Chinese government is concerned with its environmental problems, it tends to be more concerned with local problems, such as particulate matter and sulfur dioxide emissions. Thus, it is undertaking efforts to lessen emissions of pollutants such as sulfur dioxide and nitrogen oxide, through improved pollution controls on power plants as well as policies designed to increase the share of natural gas in the country's fuel mix, particularly around major metropolitan areas.

COUNTRY OVERVIEW

President: Hu Jintao (since March 2003)

Premier: Wen Jiabao (since March 2003)

Population (July 2004E): 1.3 billion

Location/Size: Eastern Asia/3.7 million square miles (9.6 million square kilometers, slightly smaller than the United States)

Major Cities: Beijing (capital), Shanghai, Tianjin, Guangzhou, Shenyang, Wuhan, Chengdu, Hong

Kong

Languages: Mandarin (official), many local dialects

Ethnic Groups: Han Chinese (92%); Zhuang, Uygur, Hui, Yi, Tibetan, Miao, Manchu, Mongol, Buyi, Korean, others (8%)

Religion: Officially atheist; Daoist (Taoist), Buddhist, Muslim (1-2%), Christian (3-4%)

ECONOMIC OVERVIEW

Currency: Yuan

Exchange Rate (6/30/04): US\$1 = 8.3 Yuan/Renminbi

Gross Domestic Product (2003E): \$1.41 trillion **(2004F):** \$1.56 trillion

Real GDP Growth Rate (2003E): 9.1% **(2004F):** 8.1%

Inflation Rate (2004F): 2.7%

Current Account Surplus (2004F): \$20.5 billion

Major Trading Partners: Japan, United States, European Union, South Korea, Taiwan

Merchandise Exports (2004F): \$529.3 billion

Merchandise Imports (2004F): \$505.8 billion

Merchandise Trade Surplus (2004F): \$23.5 billion

Major Export Products: Light industrial and textile products, mineral fuels, heavy manufactures, agricultural goods

Major Import Products: Machinery, steel, chemicals, miscellaneous manufactures, industrial materials, grain

External Debt (2004F): \$206.7 billion

ENERGY OVERVIEW

Proven Oil Reserves (1/1/04E): 18.3 billion barrels

Oil Production (2003E): 3.54 million barrels per day (bbl/d)

Oil Consumption (2003E): 5.56 million bbl/d

Net Oil Imports (2003E): 2.02 million bbl/d

Crude Oil Refining Capacity (1/1/04E): 4.5 million bbl/d

Natural Gas Reserves (1/1/04E): 53.3 trillion cubic feet (Tcf)

Natural Gas Production (2002E): 1.15 Tcf

Natural Gas Consumption (2002E): 1.15 Tcf

Recoverable Coal Reserves (2002E): 126.2 billion short tons

Coal Production (2002E): 1.52 billion short tons

Coal Consumption (2002E): 1.42 billion short tons

Electric Generation Capacity (1/1/02E): 338 GW (253 GW thermal; 83 GW hydro; 2 GW nuclear)

Electricity Generation (2002E): 1,575 billion kilowatthours (1,240 conventional thermal; 308 hydro; 23 nuclear)

Statistical note: All data reported here exclude Hong Kong, a former British colony which reverted to China on July 1, 1997.

ENVIRONMENTAL OVERVIEW

Minister of Land and Natural Resources: Tian Fengshan

Minister of Water Resources: Wang Shucheng

Total Energy Consumption (2002E): 43.2 quadrillion Btu (10.5% of world total energy consumption)

Energy-Related Carbon Dioxide Emissions (2002E): 3,322.4 million metric tons of carbon dioxide (13.5% of world carbon dioxide emissions)

Per Capita Energy Consumption (2002E): 33.3 million Btu (vs. U.S. value of 339.1 million Btu)

Per Capita Carbon Dioxide Emissions (2002E): 2.57 metric tons of carbon dioxide (vs. U.S. value of 20.0 metric tons of carbon dioxide)

Energy Intensity (2002E): 7,213 Btu/\$nominal -- PPP (vs. U.S. value of 9,348 Btu/\$ nominal)**

Carbon Dioxide Intensity (2002E): 0.55 metric tons of carbon dioxide/\$nominal -- PPP (vs. U.S. value of 0.55 metric tons/\$ nominal)**

Fuel Share of Energy Consumption (2002E): Oil (24.5%), Natural Gas (3.1%), Coal (64.5%)

Fuel Share of Carbon Emissions (2002E): Oil (20.2%), Natural Gas (2.1%), Coal (77.7%)

Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified January 5th, 1993). Signatory to the Kyoto Protocol (signed May 29th, 1998 - not yet ratified).

Major Environmental Issues: Air pollution (greenhouse gases, sulfur dioxide particulates) from the overwhelming use of high-sulfur coal as a fuel, producing acid rain which is damaging forests; water shortages experienced throughout the country, particularly in urban areas and in the north; future growth in water usage threatens to outpace supplies; water pollution from industrial effluents; much of the population does not have access to potable water; less than 10% of sewage receives treatment; deforestation; estimated loss of one-fifth of agricultural land since 1949 to soil erosion and economic development; desertification; trade in endangered species.

Major International Environmental Agreements: A party to the Antarctic-Environmental Protocol, Antarctic Treaty, Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94 and Wetlands. Has signed but not ratified: Nuclear Test Ban.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP based on OECD figures for Purchasing Power Parity (PPP)

ENERGY INDUSTRY

Organization: *Coal* - China National Local Coal Mines Development Corp., China Northeast & NEI-Mongolia United Coal Co., numerous local state-owned mines and rural collectives; *Coal import/exports* - China Coal Import and Export Group; *Petroleum* - China National Petroleum Corp. (CNPC, PetroChina is its publicly traded subsidiary), China National Offshore Oil Corp. (CNOOC), China National Oil & Gas Exploration & Development Corp. (CNODC), China National Star Petroleum (Star); China National Petrochemical Corp. (SINOPEC); *Oil imports/exports* - China National Chemicals Import and Export Corporation (SINOCHEM), China United Petroleum Corporation (China Oil), China United Petrochemical Corp. (UNIPEC); *Electric power* - China State Power Corp., Huaneng Group, Inc., China National Power Industry Corp. (CNPIC), regional electric power corporations, China National Nuclear Industry Corp., China International Water and Electric Corp. (CWE).; *Energy Finance* - China National Energy Investment Corp.

Major Producing Oil Fields (2002 Production): Daqing (1.0 MMBD), Shengli (0.5 MMBD), Liaohe (0.3 MMBD)

Major Refineries (1/1/04 Capacity): Fushun (184,800 bbl/d), Maoming (170,700 bbl/d), Qilu (160,700 bbl/d), Gaoqiao (150,600 bbl/d), Dalian (142,600 bbl/d), Yanshan (190,800 bbl/d), Jinling (140,600 bbl/d); Zhenlai (160,700 bbl/d)

Sources for this report include: Asia Pulse; China Daily; Coal Week International; Dow Jones Newswire; Economist Intelligence Unit; Financial Times; Global Insight Asia Economic Outlook;

Oil and Gas Journal; Oil Daily; Petroleum Economist; Petroleum Intelligence Weekly; South China Morning Post; U.S. Commerce Department; International Trade Administration -- Country Commercial Guides; U.S. Energy Information Administration; World Gas Intelligence.

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File last modified: July 1, 2004

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