

China Sea is one significant example of Canadian participation. China's energy resources are enormous — onshore oil centered in the northeast, offshore oil in the South China Sea and elsewhere, natural gas in Sichuan, massive coal deposits in various regions, and massive hydro potential in the south. The PRC is the fourth-largest producer of commercial energy after the United States, the Soviet Union and Saudi Arabia. (See map at the end of this book.)

Coal

Coal is a central element in China's energy needs. Seventy per cent of China's total energy production is coal-based and the magnitude of China's proven coal reserves, 700 billion tonnes, third-largest in the world, ensures its continuing importance. Production of coal has increased from a little over 60 million tons in 1952 to 666 million tons in 1982.

In 1983, the Chinese Coal Ministry imported coal mining equipment worth U.S. \$600 million from West Germany and U.S. \$250 million from Britain. Estimates are that the PRC could spend \$3 billion in modernizing the coal industry.

The Government of the People's Republic of China has applied for a loan from the World Bank in various currencies equivalent to about U.S. \$120 million for the construction and development of an underground coal mine with a capacity of 4 million tonnes per annum. Goods to be procured under this loan which would be of interest to Canadian companies are:

- shaft hoisting equipment;
- shaft sinking and miscellaneous surface construction equipment;
- mine development equipment, such as drill jumbos, side dump loaders and selective heading machines for driving roadways;
- mine haulage equipment, including belt conveyors and material transport systems;
- longwall face equipment;
- coal preparation plant equipment;
- coal transportation; and
- control, measuring and laboratory devices.

Procurement will be handled by the China National Technical Import Corporation (CNTIC) following international competitive bidding procedures in accordance with World Bank guidelines.

Petroleum and Petrochemicals

In the context of the petrochemical and petroleum sectors, there have been discussions between Canadian companies and Sinopec (the Chinese petrochemical organization) about the establishment of an ethylene plant in the city of Canton. The plant would produce three major products: polyethylene, styrene, and polystyrene. The proposal is to establish the plant as a joint venture.

China is believed to be the world's third-richest oil region, behind the Middle East and North America.

Oil-fired thermal-electric power stations account for 25 per cent of China's fossil-fueled thermal energy production, utilizing onshore resources from Daqing, Dagang, or Shengli crude.

Unofficial World Bank estimates place the recoverable reserves of oil at 1.8 to 2.5 billion tons, and of natural gas, both associated and non-associated, at about 130 billion cubic metres. Major oil producing regions include the Renqui Oilfields in North China, the Karamai, Yumen, and Lenghu Oilfields in the northwest, Daqing in the northeast, and Shengli and Dagang in the North China Basin. The numerous oilfields in northeastern China (Heilongjiang), collectively called Daqing, account for approximately 50 per cent of all reserves, and 50 per cent of current production. Production of oil was about 102 million tons in 1982.

Until southern offshore reserves and more remote onshore fields can be tapped extensively, China is expected to rely heavily on greater output in the North China Basin (which produces some 20 per cent of total yearly output), and offshore reserves in the Gulf of Bo Hai. Total offshore oil reserves are estimated at 30 billion barrels. They are located mainly in the Gulf of Bo Hai and on the continental shelf of the East China Sea.

Opportunities have been identified in the area of enhanced recovery technology for onshore resource development. The Ministry of Petroleum Industry (MOPI) has successfully concluded technology transfers in the area of drill bit manufacturing and digital computer equipment, and is utilizing a leasing approach in obtaining services for seismic surveying as well as renting various types of equipment. MOPI stresses that its assessment of bids is based on favourable quality, price, delivery and service considerations.

Power Generation and Transmission

The potential for the sale of energy equipment to China is estimated to be very large. In the hydroelectric generation sector, for example, the PRC has an estimated potential of 1,900 billion KWH, against the present hydro generation of 74 million KWH. In addition to purchasing specialized equipment, the Chinese are very interested in purchasing technology.

The 13,000 MW Three Gorges Hydro Project on the Yangtze River is now in the evaluation stage. It will be a few years before the detailed equipment requirements are established. When completed the project will be the largest hydroelectric generation installation in the world. Canadian equipment suppliers will be interested in participating in the supply of turbines, generators and associated equipment.

In the high-voltage transmission sector, China does not yet have an interconnected grid system. It is working toward this goal and has advanced rather rapidly through the 330 KV level of operating and maintenance technology to 500 KV which is now being implemented. Canadian electrical utilities have more operating experience at the 500 KV and 735 KV voltage levels than any other country.