

US\$7.5 billion in fiscal year 1996. It is estimated that India will need over 700 million barrels of petroleum products per year by the turn of the century, and that additional refining capacity of about 110 million tonnes per annum will be required by the year 2010 for domestic consumption alone.

While the Indian production of crude oil has posted an upward trend from 32.24 million tonnes in 1994-95 to 35.20 million tonnes in 1995-96, the gap between demand and supply does not seem to be receding. India will need to triple its oil production over the next 15 years to meet the growing demand. The Ministry of Petroleum and Natural Gas has estimated that, to meet the projected oil demand of the early 21st century, an investment of US\$100 to \$150 billion will be needed over the next 15 years. Distribution infrastructure, such as cross-country pipelines, port terminals and tankages will have to be developed on a massive scale to meet the projected oil requirements.

Liquid Propane Gas (LPG) has recently gained popularity in India as an environmentally friendly and clean fuel that has tremendous potential as a replacement for traditional fuels like coal and firewood. There is unlimited scope in LPG marketing. The bottling capacity in 1996-97 was 4.5 million metric tonnes per annum (MMTPA), with the estimated demand by the year 2001-02 at 8.5 MMTPA. This will leave a gap of approximately 4 MMTPA, which will have to be met through the installation of new bottling plants. India has 18 percent of the world's population but only 0.5 percent of the world's oil and gas reserves. Its hydrocarbon reserves are estimated at 17 billion metric tonnes (crude oil and natural gas). Of these reserves, 63 percent are in the offshore basins, and 37 percent are located in the states of Gujarat, Assam, Rajasthan and Andhra Pradesh. Proven reserves, however, are only 4 billion metric tonnes, of which an estimated 25 percent are considered recoverable.

The hydrocarbon sector is primarily under government control and supervision through public-sector organizations such as the Oil and Natural Gas Corporation (ONGC) and Oil India (OIL) for exploration and production of oil; Gas

Authority Of India Ltd. (GAIL) for distribution of gas; Indian Oil Corporation (IOC) and around 12 other public-sector refineries for refining and marketing of petroleum products.

The government has recognized that participation by the private sector is crucial to attract the substantial investments needed for the oil and gas sector. Consequently, the government recently has allowed Indian and foreign firms to participate in exploration of oil and gas reserves, non-associated gas fields, and production/refining activities at attractive terms and conditions.

Distribution activities are also being opened to private participation. Private companies are now allowed to freely invest in new refineries, with the public sector's share in new refineries limited to 26 percent. Due to the demands by major foreign oil companies, currently under consideration by the government is a plan to permit the oil majors to invest up to 100 percent in the development and exploration of oil fields.

All these areas offer good potential for Canadian oil and gas companies to explore commercial opportunities both in terms of direct sales as well as for collaboration arrangements.

There is also a wide scope for direct exports from Canada in this sector. The annual market for oil and gas-field equipment, which is about US\$3.5 to US\$4 billion, is expected to grow between 12 and 15 percent over the next five years. Almost half of the total requirement is met through imports, which include products like blow-out preventers, hydraulic power tongs, digital seismic units, diamond core bits, well platforms, specialized pumps, well data-acquisition systems, casing pipes and tubing, deck cranes, crude-injection pumps and downhole-production equipment.

Pipeline projects for gas and oil transmission is another key area for participation. Currently, there are eight major product pipelines in the country, with a total length of 4100 km. and a capacity of 22 MMTPA. Studies have identified potential pipeline projects for development totalling almost 4900 km. These do not include major pipeline projects India is negotiating with Oman and Iran, both involving an investment of over US\$5 billion.

