

THE MINERAL INDUSTRY OF

BANGLADESH

By Chin S. Kuo

Growth of the gross domestic product (GDP) during fiscal year 1996-97 (July 1-June 30) was 5.7% (Far Eastern Economic Review, 1998). This high rate was due to a bumper food-grain harvest helped by favorable weather. The agricultural sector dominated the economy, accounting for one-third of GDP. Industrial growth at 3.6%, however, was down from 5% in fiscal year 1995-96. The country's foreign-exchange reserves were low at around \$1.6 billion at the end of the fiscal year. Inflation also was low at 5%. The Government raised prices of several petroleum products because of import losses and oil price increases in the international market. Bangladesh imported 3.4 million metric tons (Mt) of petroleum products in 1997. The budget deficit in fiscal year 1996-97 was reduced to 5.3% of GDP.

The Government's annual development program allocated only 1.6% of public resources to industry. But a policy reversal indicated that as many as 15 new manufacturing projects, including three fertilizer plants with a total investment of \$700 million, were initiated in the public sector. In the energy sector, however, a private sector power-generation policy was being developed to attract foreign direct investment of \$400 million to \$600 million per year.

State-owned companies collectively lost \$500 million in fiscal year 1996-97. The firms' assets were estimated to be \$16 billion, but they had long-term liabilities of more than \$10 billion and short-term debts of \$4 billion. The Privatization Board planned to float tenders for 61 companies. The Government also was keen to offload its shares in nine firms listed on the Dhaka Stock Exchange.

Bangladesh promoted a liberal open-door policy on investment and offered its best possible incentives and facilities in years to attract foreign investment. The country's production sharing contracts required no signature bonus and no duty for equipment and machinery for petroleum operations during exploration, development, and production. Bangladesh dropped its corporate tax but required companies to pay an income tax and an annual contract service fee. The Government also liberalized economic policies to increase exports and imports.

The country's cement industry was growing because of abundant indigenous limestone. The Jaipurhat Limestone Mining and Cement Works operated a 660,000-metric-ton-per-year cement plant that consumed 1 million metric tons per year (Mt/yr) of limestone. The Chhatak and the Surma plants used a total of 1.1 Mt/yr of limestone to produce cement.

Government-owned Bangladesh Oil, Gas and Minerals Corp. (Petrobangla) signed a contract with China National Machinery Import & Export Corp. in 1994 for development of the 1-Mt/yr Barapukuria underground coal mine. Mine construction was started in 1996, and full production was expected in 2001. The Barapukuria Mine is located in the Dinajpur district, 300 kilometers northwest of Dhaka, and has an estimated minable reserve of 60 to 80 Mt (Mining Magazine, 1997). Construction of the underground and surface

infrastructure included sinking of two 6-meter (m) diameter vertical shafts by using freezing technology; shaft sinking followed ground freezing of the upper 250 m of water-bearing strata. In another development, BHP of Australia began exploration programs at three sites in the Rangpur and the Dinajpur districts and found high-quality bituminous coal in the Dinajpur district.

Tullow Oil Plc of Ireland entered into an agreement with two companies to provide technical and financial support in relation to blocks 17 and 18, offshore Bangladesh and, subject to formal ratification, would acquire a 75% interest in the blocks. The two companies had been awarded blocks 17 and 18. Tullow Oil began reprocessing existing seismic data and reevaluated existing well logs. The company planned to remap the area in preparation for a new seismic program.

Bangladesh's natural gas reserves were estimated to be around 283 billion cubic meters (Journal of Commerce, 1997). The Government forecasted that foreign direct investment worth \$2 billion was needed in gas exploration by 2000. The Government invited 50 international companies to bid for production-sharing contracts to develop natural gas fields in 15 blocks—12 onshore and 3 offshore—in central and western Bangladesh. The most sought-after seemed to be block 10 containing two substantial discoveries that included the Shahabazpur Gasfield, the rights for which were awarded to Unocal Corp. of the United States. The existence of a domestic market with severe gas shortages and a potential export market to India should attract foreign companies to invest.

Royal Dutch/Shell offered an investment of \$2.5 billion in a project to convert gas into petroleum products and other gas byproducts. The project would utilize natural gas from the Shahabazpur Gasfield. The proposal also included setting up a 200-megawatt (MW) powerplant using the surplus heat generated by the gas-processing plant. Shell also offered to look into the problems of the Bakhrabad Gasfield, which was producing impurities, such as sand, water, and mud. As a result of the impurities, gas production from this field had to be reduced.

United Meridian Corp. of the United States and the Government signed a production-sharing contract covering onshore block 22 in the Chittagong Hills area in southeastern Bangladesh. The company would conduct surface geologic mapping and other exploration work. Preliminary plans called for drilling three wells, with the first scheduled in 1998. United Meridian has a 40% working interest in the block and is the operator.

Petrobangla signed a gas purchase and sales agreement with a consortium of Cairn Energy Plc of the United Kingdom, Halliburton Co. of the United States, and Holland Sea Search of the Netherlands. The group would sell 4.5 million cubic meters per day (Mm³/d) of gas beginning in April 1998 when commercial production was to start at the offshore Sangu Gasfield in block 16 in the Bay of Bengal. Gas would be delivered by pipeline to the city of Chittagong.

Halliburton would participate in the field's development and production-related activities. Cairn would continue its exploration program in blocks 15 and 16 offshore Bangladesh and begin appraisal drilling of two wells. The investment deal on gas development was worth \$235 million (Journal of Petroleum Technology, 1997).

Occidental Petroleum Corp. and Unocal, both of the United States, signed a farm-in agreement for transferring a 50% interest in Occidental's production-sharing contracts at Sylhet in northeastern Bangladesh to Unocal. Occidental, with an investment of \$100 million, is the operator for blocks 13 and 14 where the Jalalabad Gasfield had been partially delineated. Production was targeted to begin in mid-1998, and four exploration wells would be drilled in the area covered by the blocks during the next 3 years. A sales contract with Petrobangla for the delivery of 2.8 Mm³/d of gas from Jalalabad was signed in 1996. Unocal was awarded a deal for development of the southern Bhola Gasfield. It also would set up a coal-fired powerplant in the country's northern region.

The Government was moving to accelerate development of the power sector and waiving duties and the value-added tax on imports of generators. Machinery for powerplants, however, was not included. The import duty on generators was 7.5% plus 15% tax. Power shortages averaged 300 MW per day. Bangladesh generated 1,660 MW of electricity and planned to raise capacity to 3,530 MW by 2000 to meet the rising demand.

The Asian Development Bank agreed to provide \$256 million in soft loans for three projects totaling \$602 million. The projects included a \$314 million 650-MW powerplant designed to supply electricity to Dhaka. Occidental Petroleum proposed a 200- to 300-MW powerplant south of Dhaka. Unocal submitted plans for establishing a 150-MW powerplant near the Shahabazpur Gasfield and a pipeline to supply gas to the city of Khulna.

Enron Corp. of the United States, Sumitomo Corp. of Japan, and Daewoo of the Republic of Korea were among the bidders for contracts to set up three 100-MW barge-mounted powerplants estimated to cost \$100 million each (Far Eastern Economic Review,

1996). The winners would be given 10 months to build the powerplants. Enron was the first to receive a pact for one on a build-own-operate basis. Bangladesh Power Development Board would buy electricity at a fixed price for at least 15 years. Two other pacts were won by Smith Cogeneration of the United States and Wartsila Power Development of Hong Kong (Far Eastern Economic Review, 1997).

References Cited

- Far Eastern Economic Review, 1996, Rush for power contracts: Far Eastern Economic Review, December 12, p. 75.
———1997, Two power pacts: Far Eastern Economic Review, July 3, p. 73.
———1998, The Asia 1998 Yearbook: Far Eastern Economic Review, p. 80.
Journal of Commerce, 1997, Bangladesh expects up to 50 foreign bids for oil blocks: Journal of Commerce, July 14, p. 12A.
Journal of Petroleum Technology, 1997, Dateline—Bangladesh: Journal of Petroleum Technology, v. 49, no. 3, March, p. 220.
Mining Magazine, 1997, First underground coal mine in Bangladesh: Mining Magazine, v. 176, no. 3, March, p. 133.

Major Sources of Information

- Ministry of Energy and Mineral Resources
Dhaka, Bangladesh
Bangladesh Oil, Gas and Mineral Corp.
122-124 Motijheel Commercial Area
Dhaka, Bangladesh
Bangladesh Petroleum Corp.
GPO Box 2003
Dhaka, Bangladesh

Major Publications

- Bangladesh Bureau of Statistics, Dhaka:
Monthly Statistical Bulletin of Bangladesh.
Statistical Yearbook of Bangladesh.

TABLE 1
BANGLADESH: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1993	1994	1995	1996	1997	
Cement, hydraulic 3/	275,000	280,000	280,000	285,000	285,000	
Clays, kaolin 3/	7,500	3,283 4/	6,541 4/	7,000	7,200	
Gas, natural, marketed 3/ 5/	million cubic meters	6,000	5,974 4/	6,000	6,100	6,200
Iron and steel, metal: 3/						
Steel, crude (ingot only)	32,000	34,000	36,000	37,000	36,000	
Steel products	85,000	87,000	88,000	90,000	90,000	
Nitrogen, N content of urea, ammonia, and ammonium sulfate 4/	990,900	1,027,400 r/	1,270,600 r/	1,233,000 r/	1,079,600	
Petroleum:						
Crude	thousand 42-gallon barrels	1,300	1,184 4/	1,190	1,200	1,300
Refinery products	do.	7,800	7,600	7,700	7,800	7,900
Salt, marine 3/	340,000	350,000	350,000	350,000	350,000	
Stone, limestone 3/	50,000	25,679 4/	23,474 4/	24,000	25,000	

r/ Revised.

1/ Table includes data available through July 9, 1998.

2/ In addition to the commodities listed, crude construction materials, such as sand and gravel and other varieties of stone, presumably are produced, but available information is inadequate to make reliable estimates of output levels.

3/ Data are for years ending June 30 of that stated.

4/ Reported figure.

5/ Gross production is not reported; the quantity vented, flared, or reinjected is believed to be negligible.