



2012 Minerals Yearbook

BANGLADESH

THE MINERAL INDUSTRY OF BANGLADESH

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In 2012, the mineral industry of Bangladesh produced mainly coal, natural gas, salt, and stone. The country lacks reserves of metallic minerals but is prospective for additional reserves of natural gas. According to preliminary data from the Central Bank of Bangladesh, in fiscal year 2012 (July 2012 through June 2013), mining and quarrying accounted for about 1.1% of the country's gross domestic product (GDP), which stayed the same compared with that of 2011; the construction sector accounted for about 8.3% of the country's GDP in 2012 compared with 8% in 2011. Total foreign trade increased by 5.6% to \$55.9 billion from \$52.9 billion in 2011. The country's total exports were valued at about \$24 billion compared with \$22.6 billion in 2011, which was an increase of 6.2%; similarly, the total value of imports in 2012 increased by 5.2% to \$31.9 billion from \$30.3 billion in 2011. Imports of iron, steel, and other base metals (unspecified) were valued at \$2.2 billion, which was an increase of 11% compared with that of 2011 (Central Bank of Bangladesh, 2013, tables I.1, I.2, IV.3).

The Bangladesh Oil, Gas and Mineral Corp. (Petrobangla) is the Government entity that is responsible for the exploration for, production of, and transmission and distribution of natural gas and oil in Bangladesh. In recent years, Petrobangla continued its campaign for the discovery of new gasfields to increase the country's natural gas reserves by performing exploratory drillings and conducting seismic surveys. Petrobangla was also in charge of the development of some of the country's nonfuel mineral deposits, which included deposits of industrial minerals and coal that had been determined to be economically feasible. Oversight of the exploration for minerals, however, was the responsibility of the Geological Survey of Bangladesh (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 8, 15–16).

In June, the Ministry of Finance submitted the National Budget Proposal to the Parliament for fiscal year 2013 that outlined a budget of about \$24.3 billion, which was equivalent to about 18% of the country's GDP. The proposal targeted economic growth of more than 7% per fiscal year and identified the power and energy sector as a priority by allocating 17.3% of the national budget to the development of that sector. In its budget proposal, the Government indicated that it was committed to solving the country's energy crisis as a measure to achieve GDP growth by gradually decreasing the deficits in energy production and the power supply and by improving the energy infrastructure. The Government projected a GDP growth rate of approximately 8% by fiscal year 2015. In addition, the proposal mentioned the 20-year railway master plan, which was under Government consideration and covered the implementation of 231 projects to connect the Bangladesh railway to subregional, regional, and international railway networks. The proposed railway master plan had an estimated cost of \$16 billion (Xinhuanet.com, 2012).

Bangladesh and neighboring countries Burma (to the east) and India (to the west) were involved in a maritime

boundary dispute concerning their respective sovereignty in the Bay of Bengal. For many years, these countries had attempted to negotiate and delimit their claims in the disputed area. In December 2009, Bangladesh and Burma accepted the jurisdiction of the International Tribunal for the Law of the Sea (ITLOS) for the settlement of their boundary delimitation. ITLOS is an independent judicial body established by the United Nations Convention on the Law of the Sea (UNCLOS) that has jurisdiction to arbitrate disputes arising out of the interpretation and application of the Law of the Sea. UNCLOS establishes a legal framework to regulate ocean space and its resources and uses (International Tribunal for the Law of the Sea, 2010).

In September 2011, representatives from Bangladesh and Burma met with the ITLOS in Germany for a final round of arguments regarding the maritime boundary. During the final judgment on March 14, 2012, ITLOS dealt with the delimitation in three parts—the territorial sea, the exclusive economic zones and continental shelf within 200 nautical miles, and the continental shelf beyond 200 nautical miles. ITLOS rendered its judgment regarding the territorial sea by drawing an equidistant line from the countries' baselines. For the exclusive economic zones and continental shelf within 200 nautical miles, the tribunal drew a provisional equidistant line that adjusts to the concavity of the coast of Bangladesh. For the delimitation of the continental shelf beyond 200 nautical miles, the tribunal concluded that it should not differ from that for within the 200 nautical miles and should continue in the same direction beyond the limit of Bangladesh. With the resolution of the boundary dispute, the countries involved would be able to redefine their exploration areas offshore. The maritime dispute with India was set to be resolved in the near future (International Law Observer, 2012; International Tribunal for the Law of the Sea, 2012).

Production

Bangladesh produced small amounts of industrial minerals and processed products. The level of production in 2012 remained similar to that of 2011 (table 1).

Structure of the Mineral Industry

The major public gas-producing companies, both of which were under Petrobangla, were Bangladesh Gas Fields Co. Ltd. (BGFCL) and Sylhet Gas Fields Ltd. (SGFL). Together, the companies produced about 44% of the country's total gas production for fiscal year 2012. In addition to exploring for, producing, and distributing oil and gas, Petrobangla also explored for and produced coal and granite through its subsidiaries Barapukuria Coal Mining Co. Ltd. (BCMCL) and Maddhapara Granite Mining Company Ltd., respectively. Eastern Refinery Ltd. (ERL), which was a subsidiary of

Government-owned Bangladesh Petroleum Corp. (BPC), was Bangladesh's sole petroleum refining company. The refinery, which was located in Chittagong, produced petroleum products from imported crude oil. Output from the refinery met about 10% of the country's demand for petroleum products (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 24–25; Daily Sun, 2012). Table 2 is a list of major mineral industry facilities.

Commodity Review

Industrial Minerals

Cement.—In February, HeidelbergCement Bangladesh Ltd., which was a subsidiary of HeidelbergCement Group of Germany, inaugurated a new cement mill at its Chittagong grinding plant, which had a designed capacity to produce 0.8 million metric tons per year (Mt/yr) of cement. The mill was constructed at a cost of \$16 million (International Cement Review, 2012).

Premier Cement Mills Ltd. announced the completion of an expansion project at the company's facility in West Mukterpur in Munshigonjto, central Bangladesh, to increase the capacity to 2.4 Mt/yr of cement from 1.2 Mt/yr. The estimated cost for the expansion was \$13.56 million (International Cement Review, 2013).

Stone, Crushed.—Maddhapara Granite was responsible for the production of granite at Petrobangla's underground mine in the District of Dinajpur. The facility had the capacity to produce about 1.65 Mt/yr of construction aggregate. For fiscal year 2011 (the most recent year for which reported data were available), the Maddhapara Mine produced 360,071 metric tons (revised) of stone, of which the majority was sold domestically for use as construction material, such as aggregates (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 31).

Mineral Fuels

Coal.—As of 2012, five coalfields had been discovered in the country, which included the Barapukuria, the Dighipara, the Jamalganj, the Khalashpir, and the Phulbari fields, most of which are located in northern Bangladesh. The combined total of probable reserves in the coalfields was estimated to be 3.3 billion metric tons of coal. The Barapukuria coal mine, which was managed by BCMCL, was the first and only operating coal mine in Bangladesh. Coal produced from the mine was being used for power generation by two 150-megawatt (MW)-capacity coal-fired thermal powerplants located near the mine in the District of Dinajpur (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 41).

In 2012, the United Kingdom-based company Global Coal Management Resources Plc. (GCM) through its subsidiary Asia Energy Corp. (Bangladesh) Pty Ltd. was still awaiting approval from the Government to develop the Phulbari coal project located in the northwestern region of Phulbari, Dinajpur District, which is 350 kilometers (km) from Dhaka. Asia Energy held a contract with the Government for the exploration and mining of coal in northern Bangladesh. As part of the application process for the project's mining permit, the company completed a feasibility study and submitted a proposal for

mine development to the Government. The project had already obtained the environmental clearance, and according to the company, if the project is approved, the development of the open pit mine could start immediately and production could start within 3 to 4 years. The Phulbari coal project, which had a coal resource of 572 million metric tons (Mt) and a proposed annual capacity to produce 15 Mt/yr, could potentially alleviate the country's electricity shortages by providing coal to support up to 4,000 MW of power-generating capacity. The project could potentially contribute an amount equal to about 1% of the GDP to the country's revenue; in addition, it could generate approximately 17,000 jobs (CGM Resources, 2012, p. 2, 3; PhulbariCoal.com, 2013).

Natural Gas.—In 2012, Bangladesh's electricity-generating capacity was insufficient to meet the country's increased demand for energy, and power shortages continued to affect the country. Natural gas accounted for about 73% of commercial energy in the country; gas supplies were scarce, which forced authorities to ration the supply between businesses, households, and industries. Since 2009, Petrobangla had been carrying out extensive exploration and drilling activities to increase gas reserves. By 2012, a total of 25 gasfields had been discovered in the country for an overall recoverable proven and probable reserve of 765.7 billion cubic meters, of which about 40% had already been produced as of December. In 2012, the sole national exploration company, Bangladesh Petroleum Exploration and Production Co. Ltd. (BAPEX), which was a subsidiary of Petrobangla, for the first time started running a three-dimensional (3-D) seismic program to survey and delineate the extension of discovered fields, increase the success rate of exploration and development of wells, and estimate the content of gas-in-place in the discovered fields. BAPEX planned to survey about 1,950 square kilometers between 2012 and 2017 using the 3-D technology. According to Petrobangla's annual report, BAPEX announced the discovery of two new gasfields, the Sundolpur and the Srikail fields, during a well-drilling program in 2012 (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 8–9, 17).

As of June 2012, the total gas pipeline network in Bangladesh encompassed nearly 21,380 km, of which 15,036 km was feeder and service lines; 2,431 km was distribution lines; 2,110 km was transmission lines; and 1,800 km was undefined. By the end of the year, a total of 393 km of new transmission pipelines had been installed across the country to contribute to a larger flow of gas in the system. As the gas flow progressively increased in the country (surpassing 62.3 million cubic meters per day by the end of 2012), the Government lifted the ban that it had imposed in July 2010 on the installation of new gas connections from the transmission pipelines to households. According to Petrobangla, a project to expand the gas distribution network in the western and southwestern parts of the country was expected to be commissioned in December 2013. Gas Transmission Co. Ltd. (GTCL) was the state company in charge of the transport of high-pressure gas in the country (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 8–9, 18–19).

By the end of 2012, the following areas had active production-sharing contracts in place between the Government and international oil companies—Block 9 (Bangora gasfield) operated by Tullow Oil plc of United Kingdom;

Block 12 (Bibiyana gasfield), Block 13 (Jalalabad gasfield), and Block 14 (Maulavibazar gasfield) operated by Chevron Corp. of the United States; Block 16 (Sangu and Magnama gasfields) operated by Santos International Holdings Pty. Ltd. of Australia; and Block 17 and Block 18 operated by PTT Exploration & Production Public Co. Ltd. of Thailand. Chevron's Bibiyana gasfield, which had the capacity to produce 22.7 million cubic meters per day of gas, was the leading natural gas producer in the country; Chevron was planning to increase the field's production capacity to 31.1 million cubic meters per day of gas by 2014 (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 20–21).

ConocoPhillips Co. of the United States explored two offshore blocks (Block 10 and Block 11) that covered an area of approximately 566,600 hectares (1.4 million acres) in the Bay of Bengal. In 2012, the company performed seismic surveys on both blocks, and it planned to continue with the analysis of the collected data in 2013 to define a possible drilling location. The company held a 100% interest in both blocks. The Government had awarded ConocoPhillips the two blocks in 2009, and in 2011, the company received approval from the Government for a production-sharing contract, which determines each party's share in the project (Bangladesh Oil, Gas and Mineral Corp., 2012, p. 20; ConocoPhillips Co., 2012, p. 44, 48).

Chevron held 98% interest in its three gasfields in Bangladesh, which were operated under two production-sharing contracts, one for Block 12, and one for Block 13 and Block 14. In April, Chevron announced that it had completed the installation of two turbine compressors at the Muchai compression station to support additional production capacity of 2.3 million cubic meters per day of natural gas from the company's three gasfields. In July, the company announced plans to implement the Bibiyana expansion project, which would include an expansion of the gas plant, development of additional wells, and other upgrades to increase the daily production capacity by 8.5 million cubic meters of natural gas and 4,000 barrels of condensate. The expansion project was expected to be commissioned by 2014 (Chevron Corp., 2012, p. 27).

Petroleum.—During the last quarter of 2012, BPC announced plans to expand the refining capacity at ERL. The expansion, which was projected to cost \$1 billion, would increase the refinery's total capacity by 3 Mt/yr to a total of about 4.5 Mt/yr of crude oil. BPC asked ERL to prepare a project development proposal. ERL is located in Chittagong in southeastern Bangladesh. On average, the facility currently refined a total of 1.4 Mt/yr of crude oil, although the capacity was 1.5 Mt/yr. No expected date was set for completion of the expansion project. In April, BPC submitted a proposal to Kuwait Petroleum International (KPI) that the two companies form a joint venture for the construction and installation of a second oil refinery in the country. KPI requested a feasibility study. The proposed refinery would have a refining capacity of about 5 Mt/yr of crude oil (Daily Sun, 2012).

Outlook

The Government has made investment in the country's power generation platform a priority as a way to help resolve the country's energy crisis. The Government expects to

decrease the deficits in the power supply and energy production through the gradual expansion of the gas distribution network and gas transmission pipelines and the implementation of other infrastructure improvements, such as bridges and a railway system to support these plans. The gap between the demand for and supply of natural gas is expected to be further narrowed as the Government starts the implementation of projects undertaken to increase the production of natural gas. In addition, because the country's dependence on natural gas has skyrocketed in recent years, the Government is considering the use of domestically produced coal as an alternative fuel. The development of the coal sector has been continuing at a slow pace, however, as the Government is still working on the development of the country's coal policy.

In the near future, and taking into consideration the many active development projects in the country, an increase in the demand for building materials, such as cement and crushed stone, is expected. The country is expected to become less dependent on imported industrial materials, such as cement, as expansion projects in the sector have reached the production stage. The fast-growing infrastructure development and the increased demand for materials will most likely influence trading between neighboring countries.

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TABLE 1
BANGLADESH: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2008	2009	2010	2011	2012	
Cement, hydraulic ⁴	5,000,000	5,000,000	5,000,000	NA ^r	NA	
Clays, kaolin ⁴	8,500	8,500	8,500	-- ^r	--	
Coal, bituminous ⁴	857,648 ⁵	730,866 ⁵	790,579 ^{r,5}	820,437 ^{r,5}	820,000	
Gas, natural, marketed ^{4,6}	million cubic meters	18,511 ⁵	19,919 ⁵	20,312 ^{r,5}	20,951 ^{r,5}	21,000
Iron and steel, metal, steel products ⁴	60,000	60,000	60,000	-- ^r	--	
Nitrogen, N content of urea, ammonia, ammonium sulfate	1,300,000	1,300,000	1,300,000	-- ^r	--	
Petroleum:						
Crude	thousand 42-gallon barrels	1,800	1,800	1,800	-- ^r	--
Refinery products	do.	9,500	9,500	9,500	NA ^r	NA
Salt, marine ⁴		1,368,323 ⁵	1,388,557 ⁵	1,409,239 ⁵	1,410,000	1,400,000
Stone, crushed, granite		267,434 ⁵	290,187 ^{r,5}	300,000	360,071 ^{r,5}	360,000

^rRevised. do. Ditto. NA Not available. -- Zero.

¹Estimated data are rounded to no more than three significant digits.

²Table includes data available through February 21, 2014.

³In addition to the commodities listed, construction materials, such as limestone, sand and gravel and other varieties of stone, are known to have been produced, but available information is inadequate to make reliable estimates of output.

⁴Data are for fiscal year ending June 30 of following year.

⁵Reported figure.

⁶Gross production is not reported; the quantity vented, flared, or reinjected is thought to be negligible.

TABLE 2
BANGLADESH: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
Cement		Bangladesh Oil, Gas and Mineral Corp. (Petrobangla)	Chittagong	1,000.
Do.		do.	Sylhet	1,100.
Do.		Cemex Cement Bangladesh Ltd.	Mahmudnagar	600.
Do.		HeidelbergCement Bangladesh Ltd.	Chittagong and Narayangonj (near Dhaka)	2,000.
Do.		Holcim (Bangladesh) Ltd.	Bagerhat and Narayangonj	1,300.
Do.		Lafarge Surma Cement Ltd. (Lafarge Group and Cementos Molins S.A.)	Chhatak, Sunamganj	1,500 (1,150 clinker).
Do.		Meghna Cement Mills Ltd. (an enterprise of the Bashundhara Group of Bangladesh)	Mongla Port Industrial Zone and Pashur River Bank facility	1,000.
Do.		Premier Cement Mills Ltd.	West Mukterpur in Munshigonjto	2,400.
Do.		Shah Cement Industries Ltd.	Dhaka	1,860.
Do.		Unique Cement Industries Ltd.	Chittagong, Dhaka, and Sylhet	1,440.
Do.		Various	18 additional facilities	5,240.
Coal		Barapukuria Coal Mining Co. Ltd. (BCMCL) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Barapukuria	1,000.
Fertilizer		Bangladesh Chemical Industries Corp.	Auganish	560.
Do.		do.	Fenchugani	100.
Do.		do.	Ghorasai	600.
Gas, natural	million cubic meters per day	Bangladesh Gas Fields Co. Ltd. (BGFCL) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Bakhrabad, Habiganj, Kamta, Meghna, Narsingdi, and Titas	22.
Do.	do.	Bangladesh Petroleum Exploration and Production Co. Ltd. (BAPEX) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Fenchuganj and Saldanadi	2.
Do.	do.	Chevron Corp.	Bibiyana gasfield (Block 12)	23.
Do.	do.	do.	Jalalabad gasfield (Block 13)	7.
Do.	do.	do.	Maulavibazar gasfield (Block 14)	2.
Do.	do.	Niko Resources Ltd.	Bibiyana and Feni	6.
Do.	do.	Santos International Holdings Pty. Ltd.	Sangu gasfield (Block 16)	3.
Do.	do.	Sylhet Gas Fields Ltd. (SGFL) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Beanibazar, Haripur, Kailashtila, and Rashidpur	5.
Do.	do.	Tullow Oil plc, 30%	Bangora gasfield (Block 9)	3.
Do.	do.	PTT Exploration & Production Public Co. Ltd.	Block 17 and Block 18	NA.
Petroleum:				
Crude	42-gallon barrels per day	Santos International Holdings Pty. Ltd.	Sangu	30,000.
Refined	do.	Eastern Refinery Ltd. (Bangladesh Petroleum Corp.)	Chittagong	34,000.
Steel, crude		Bangladesh Steel and Engineering Corp.	do.	20.
Stone, crushed, granite		Maddhapara Granite Mining Co. Ltd. [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla)]	Maddhapara, District of Dinajpur	1,650 (hard rock).

^eEstimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.