



# 2014 Minerals Yearbook

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## BANGLADESH

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# THE MINERAL INDUSTRY OF BANGLADESH

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In 2014, the mineral industry of Bangladesh produced mainly cement, coal, natural gas, iron and steel, petroleum, salt, and stone. The country lacks reserves of metallic minerals but is prospective for natural gas.

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 July 2014, an arbitral tribunal established under Annex VII of the United Nations Convention on the Law of the Sea (UNCLOS) delimited the maritime boundary between Bangladesh and India, which included the territorial sea, an exclusive economic zone, and the continental shelf within and beyond 200 nautical miles. According to the Bangladesh Government, the Bay of Bengal had great potential for undersea resources; therefore, it was a priority for the Government to resolve the boundary disputes and open up its offshore entitlements to foreign investors for hydrocarbon exploration. In 2012, Bangladesh resolved its maritime dispute with Burma by a ruling made by the International Tribunal for the Law of the Sea (ITLOS) for the settlement of their boundary delimitation (Burke, 2014; Deutsche Welle, 2014).

## Minerals in the National Economy

According to the Central Bank of Bangladesh, in fiscal year 2014 (July 1, 2013, to June 30, 2014), mining and quarrying accounted for about 1.6% of the country's gross domestic product (GDP), and the construction sector accounted for about 6.8% of the country's GDP compared with 6.5% in fiscal year 2013. Total foreign trade increased by 10.3% to \$66.3 billion in fiscal year 2014 from \$60.1 billion in fiscal year 2013. The country's total exports were valued at about \$29.8 billion compared with \$26.6 billion in fiscal year 2013, which was an increase of 12%; similarly, the total value of imports increased by 9% to \$36.6 billion from \$33.6 billion in fiscal year 2013. Imports of iron, steel, and other base metals (unspecified) were valued at \$2.9 billion, which was an increase of 1% compared with that of fiscal year 2013. Imports of crude petroleum were valued at \$72 million, which was an increase of 19.1% compared with that of fiscal year 2013 (Central Bank of Bangladesh, 2015, tables I.1, I.3, IV.3).

## Production

Bangladesh produced small amounts of industrial minerals and processed products. In 2014, the level of production for most commodities remained similar to that of 2013, with the exception of coal, which increased by 10.3% to 942,796 metric tons (t); iron and steel products, which increased by 8.6% to 306,057 t; and granite, which decreased by 86% to 46,726 t (table 1).

## Structure of the Mineral Industry

The Bangladesh Oil, Gas and Mineral Corp. (Petrobangla) is the Government entity that is responsible for the exploration, production, and transmission and distribution of natural gas and oil in Bangladesh. Petrobangla was also in charge of the development of coal and some nonfuel mineral deposits that included industrial mineral deposits. Oversight of the exploration for minerals, however, was the responsibility of the Geological Survey of Bangladesh (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 17–18).

The exploration and production of coal and granite were performed by Petrobangla's subsidiaries Barapukuria Coal Mining Co. Ltd. (BCMCL) and Maddhapara Granite Mining Co. Ltd. (MGMCL), respectively. Eastern Refinery Ltd. (ERL), which was a subsidiary of Bangladesh Petroleum Corp. (BPC), was Bangladesh's sole petroleum-refining company (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 38–39).

The major public gas-producing companies, which were under Petrobangla, were Bangladesh Gas Fields Co. Ltd. (BGFCL), Bangladesh Petroleum Exploration and Production Co. Ltd. (BAPEX), and Sylhet Gas Fields Ltd. (SGFL), and combined produced 46.5% of the country's total gas production for fiscal year 2014. The remaining 53.5% was produced by Chevron Corp., KrisEnergy Bangladesh Ltd., and Niko Resources Ltd. In fiscal year 2014, a total of 19 gasfields were in production from a total of 93 flowing wells (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 19). Table 2 is a list of major mineral industry facilities.

## Commodity Review

### Metals

**Iron and Steel.**—In September, Nippon Steel and Sumitomo Metals Corp. (NSSMC) of Japan announced that it was preparing for the commission of a steel factory in Bangladesh by September 2014; however, commencement of operations could not be confirmed. NSSMC had signed a joint-venture agreement in December 2013, with locally owned McDonald Steel Building Products Ltd. to form Nippon and McDonald Steel Industries Ltd. The newly formed company was to build the factory, which would have had a production capacity of 15,000 metric tons per year of steel products. The factory was located in Chittagong, which is in the southeastern part of the country (Saha, 2014; Tsai, 2014).

### Industrial Minerals

**Cement.**—In March, PT Semen Indonesia announced a proposed investment of \$24.5 million for the installation of a cement grinding facility at an undisclosed site in Bangladesh. The company was also considering the option of buying

an established grinding facility in lieu of constructing a new one. PT Semen planned to source the clinker from the company-owned Thang Long Cement plant located in Vietnam (International Cement Review, 2014).

**Stone, Crushed.**—MGMCL produced granite at Petrobangla's underground mine in the District of Dinajpur. The facility was the main source of construction aggregate in Bangladesh, and the granite produced was mainly sold domestically for use as construction material. In 2014, granite production decreased significantly to 46,726 t from 332,773 t in 2013 owing mainly to a workers' strike and a delay in explosives being supplied that paralyzed the facility for 114 days (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 39).

### ***Mineral Fuels and Related Materials***

**Coal.**—The Barapukuria coal mine, which was managed by BCMCL, was the first and sole operating coal mine in Bangladesh. Commercial production started in 2005. The coal mine helped ease the country's demand for and dependence on natural gas. Coal produced from the mine was used mainly for power generation at the country's sole 250-megawatt capacity coal-fired thermal powerplant located near the mine in Barapukuria, Rangpur Division. Coal was also used in the brick industry and by the steel-rolling mills. During 2014, the Government was working towards the finalization of the National Energy Policy and the Coal Policy, which would set the standards and rules to develop the energy and coal extraction sector (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 22, 38, 44).

In 2014, Petrobangla completed a seismic survey for the feasibility study of the Dighipara coalfield and also undertook the feasibility study for the extraction of coalbed methane at the Jamalganj coalfield. Both coalfields were discovered in 2012, along with the Khalashpir and the Phulbari fields; all these fields are located in northern Bangladesh (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 22, 44).

**Natural Gas.**—In 2014, natural gas accounted for about 73% of commercial energy production in the country, which had undergone an increase in demand in recent years. The major public gas-producing companies in the country, BGFCL, BAPEX, and SGFL, produced a total of 10.8 billion cubic meters of natural gas during fiscal year 2014, which was about 46.5% of the country's total gas production. The international oil companies operating in the country (Chevron, KrisEnergy, and Niko Resources) produced 12.4 billion cubic meters of natural gas, or 53.5% of the country's total gas production (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 19, 22).

In September 2013, Santos International Holdings Pty. Ltd. of Australia, which was the operator of Bangladesh's only offshore gasfield, announced that it was ceasing operations in the Sangu gasfield (Block 16) owing mainly to a significant reduction in natural gas production and to reserve depletion. According to Petrobangla, reserve estimates were lower than expected and over-production from the field led to the decline in output, which made it economically unviable to operate (Quadir, 2013; Bangladesh Oil, Gas and Mineral Corp., 2014, p. 19, 27).

By December 2014, a total of 26 gasfields had been identified throughout the country for a total recoverable proven and probable gas reserve of about 768 billion cubic meters, of which as much as 46% had already been produced. As reserves of natural gas continued to be depleted and demand to increase (mainly owing to increased infrastructure development), Petrobangla continued exploration and drilling activities. During 2014, Bangladesh's sole national exploration company, BAPEX, continued with a three-dimensional seismic survey program to survey and delineate the extension of identified fields, to increase the success rate of exploration and development of wells, and to estimate the content of gas-in-place in the identified fields. Since 2010 and up until 2014, BAPEX had surveyed about 2,400 square kilometers and had identified three new gasfields—the Rupganj, the Sundolpur, and the Srikail (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 6, 8–9).

Gas Transmission Co. Ltd. (GTCL), which was under Petrobangla, was the Government-owned company that expanded, maintained, and operated the national gas grid and was in charge of the supply and usage of natural gas throughout the country. In fiscal year 2014, GTCL installed a total of 590.8 kilometers (km) of new gas transmission pipelines of various sizes across the country. The new addition contributed to Bangladesh's gas pipeline network, and as of December 2014, the total network encompassed nearly 23,027 km, of which 16,102 km was feeder and service lines; 2,570 km was distribution lines; 2,407 km was transmission lines; and 1,949 km was undefined. In December 2014, the Bibiyana-Dhanua (137 km) transmission pipeline was commissioned; it was considered the largest (in diameter) gas transmission pipeline to be built in the country. The Bibiyana-Dhanua pipeline, which passes through the districts of Gazipur, Habiganj, Kishoreganj, and Mymensingh, had a transmission capacity of 18 million cubic meters per day (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 20, 33; Dhaka Tribune, 2014).

In 2014, Petrobangla estimated a supply shortage of liquefied natural gas (LNG) of 14.2 million cubic meters per day (reported as 500 million cubic feet per day). In order to compensate for the shortage, the Government had resorted to importing LNG, and was planning to install a floating LNG terminal and a floating storage and regasification unit in Chittagong. In addition, the Government planned to construct a 115-km-long transmission pipeline to connect Moheshkhali to Foujdarhat in Chittagong; both projects were expected to be completed by 2017 (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 9, 21).

In October 2014, Chevron announced the commencement of natural gas production from the onshore Bibiyana expansion project, which would further increase the natural gas production capacity to 40 million cubic meters per day from 25.5 million cubic meters per day. Chevron's proposal included expanding the existing plant to process greater volumes of gas sourced from the Bibiyana gasfield (the leading supplier of gas to the national grid), developing additional wells, and upgrading the liquid gas recovery unit (Rigzone, 2014).

Petrobangla expected to begin planning for two wells at the Bangora gasfield to start production in 2015 to sustain the field's current production of 3.1 million cubic meters per day. Also,

Petrobangla was planning for a round of bidding for its offshore areas in 2015. As part of the bidding process, Petrobangla would undertake a two-dimensional seismic survey of the country's offshore blocks to provide the necessary information for basin evaluation (Bangladesh Oil, Gas and Mineral Corp., 2014, p. 27–28).

**Petroleum.**—As of December 2014, and according to Government-owned BPC, no significant progress was reported for the installation of a second unit at the ERL refinery, which was scheduled to be commissioned by 2016. The addition of the new unit would increase the refinery's total capacity by 3.5 million metric tons per year (Mt/yr) to a total of about 5 Mt/yr of crude oil. The ERL refinery, which was located in Chittagong in southeastern Bangladesh, refined an average of 1.3 Mt/yr of crude oil (representing about 10% of the country's demand), although it had the capacity to refine 1.5 Mt/yr. BPC announced plans to invite investors to submit proposals for the Government's consideration. Several companies—including China National Petroleum Corp., Engineers India Ltd., and Wuhun Engineering Co. Ltd.—had expressed interest in the project, but no agreement had yet been reached (Ahsan, 2014; Rasel, 2014).

## Outlook

In recent years, demand for primary energy in Bangladesh has increased significantly and Petrobangla has continued its commitment to the identification of new gasfields to increase the country's natural gas reserves by performing exploratory drillings and by conducting seismic surveys. Challenges facing the country include the ability to import and store LNG (projects are expected to commence in 2017) and the ability to accelerate projects that are being explored, develop them, and start production. In the near future, the gap between the demand for and supply of natural gas is expected to decrease as the Government implements projects that have started and progressed during 2014. The development of the coal industry is expected to accelerate as the Government finalizes its Coal Policy and its National Energy Policy.

Major objectives have been achieved by Bangladesh in recent years, mainly the peaceful resolution of its maritime boundary disputes with Burma (2012) and India (2014). These milestones

offer a new opportunity for the country to open its offshore areas to hydrocarbon exploration and to attract foreign investors.

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TABLE 1  
BANGLADESH: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2010	2011	2012	2013	2014
Cement, hydraulic <sup>3</sup> thousand metric tons	13,770	14,690	5,000 <sup>r, e</sup>	3,461 <sup>r</sup>	3,570
Clays, kaolin <sup>3</sup>	8,500	--	--	--	--
Coal, bituminous <sup>3</sup>	666,635	861,072	854,805	854,804 <sup>r</sup>	942,796
Gas, natural, marketed <sup>4</sup> million cubic meters	20,312	20,951	22,670	22,669 <sup>r</sup>	23,232
Iron and steel, metal, steel products <sup>3</sup>	60,000	--	--	281,715 <sup>r</sup>	306,057
Nitrogen, N content of urea, ammonia, ammonium sulfate	1,300,000	--	--	--	--
Petroleum:					
Crude thousand 42-gallon barrels	1,800	--	--	2,580 <sup>r</sup>	2,528
Refinery products do.	9,500	NA	NA	NA	NA
Salt, marine <sup>3</sup>	1,409,239	1,430,329	1,438,805	1,439,000 <sup>r</sup>	1,461,000
Stone:					
Boulder thousand cubic meters	5,521	5,575	5,580	5,335 <sup>r</sup>	5,432
Granite, crushed	300,000	360,071	281,402	332,773 <sup>r</sup>	46,726

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. do. Ditto. NA Not available. -- Zero.

<sup>1</sup>Table includes data available through December 9, 2015.

<sup>2</sup>In addition to the commodities listed, construction materials (such as limestone), fertilizer, and sand and gravel are known to have been produced, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Data are for the fiscal year ending June 30 of the following year.

<sup>4</sup>Gross production was not reported; the quantity vented, flared, or reinjected was thought to be negligible.

TABLE 2  
BANGLADESH: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>e</sup>
Cement		Chhatak Cement Factory Ltd. (Bangladesh Chemical Industries Corp.)	Sunamganj, Chhatak	190.
Do.		Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%	Chittagong	1,000.
Do.		do.	Sylhet	1,100.
Do.		Cemex Cement Bangladesh Ltd.	Mahmudnagar	600.
Do.		HeidelbergCement Bangladesh Ltd.	Chittagong and Narayanganj (near Dhaka)	2,000.
Do.		Holcim (Bangladesh) Ltd.	2 plants in Meghnaghat (Narayanganj) and 1 plant in Mongla (Begerhat)	2,200.
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 Munshigonj	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, Rangpur Division	1,825.
Fertilizer		Di-Ammonium Phosphate Fertilizer Co. Ltd. (Bangladesh Chemical Industries Corp.)	Anowara, Chittagong	528.
Do.		Jamuna Fertilizer Co. Ltd. (Bangladesh Chemical Industries Corp.)	Tarakandi, Jamalpur	561.
Do.		Natural Gas Fertilizer Factory Ltd. (Bangladesh Chemical Industries Corp.)	Fenchugonj, Sylhet	106.
Do.		Polash Urea Fertilizer Ltd. (Bangladesh Chemical Industries Corp.)	Palash, Narsingdi	95.
Do.		Triple Super Phosphate Complex Ltd. (Bangladesh Chemical Industries Corp.)	North Potenga, Chittagong	100.
Do.		Urea Fertilizer Factory Ltd. (Bangladesh Chemical Industries Corp.)	Ghorashal, Narsindi	470.
Gas, natural	million cubic meters per day	Bangladesh Gas Fields Co. Ltd. (BGFCL) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Bakhrabad, Habiganj, Meghna, Narsingdi, and Titas gasfields	23.
Do.	do.	Bangladesh Petroleum Exploration and Production Co. Ltd. (BAPEX) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Fenchuganj, Salda, Semutung, Shahbazpur, Srikail, and Sundalpur gasfields	4.
Do.	do.	Chevron Corp.	Bibiyana gasfield (Block 12)	40.
Do.	do.	do.	Jalalabad gasfield (Block 13)	7.
Do.	do.	do.	Maulavi Bazar gasfield (Block 14)	2.
Do.	do.	Niko Resources Ltd. (100%)	Chattak and Feni gasfields <sup>1</sup>	6.
Do.	do.	Sylhet Gas Fields Ltd. (SGFL) [Bangladesh Oil, Gas and Mineral Corp. (Petrobangla), 100%]	Beanibazar, Kailashtila, Rashidpur, and Sylhet gasfields	5.
Do.	do.	KrisEnergy Bangladesh Ltd., 30%; Niko Resources Ltd., 60%; and Bangladesh Petroleum Exploration and Production Co. Ltd. (BAPEX), 10%	Bangora gasfield (Block 9)	3.
Petroleum, refined	42-gallon barrels per day	Eastern Refinery Ltd. (ERL), Bangladesh Petroleum Corp. (BPC)	Chittagong	34,000.
Steel:				
Crude		Bangladesh Steel and Engineering Corp.	do.	20.
Products		Nippon and McDonald Steel Industries Ltd. (joint venture between Nippon Steel and Sumitomo Metals Corp. and McDonald Steel Building Products Ltd.)	do.	15.
Stone, boulder and crushed granite		Maddhapara Granite Mining Co. Ltd. (MGMCL) [Bangladesh Oil, Gas, and Mineral Corp. (Petrobangla)], 100%	Maddhapara, District of Dinajpur	1,650 (hard rock).

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto.

<sup>1</sup>Inactive as of December 2014.