



# 2014 Minerals Yearbook

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## GUYANA

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# THE MINERAL INDUSTRY OF GUYANA

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Guyana is bordered by Venezuela to the west, Brazil to the south, Suriname to the east, and the Atlantic Ocean to the north. Mineral commodities produced in 2014 included bauxite, diamond, gold, loam, and crushed stone. According to the Guyana Geology and Mines Commission (GGMC), the country has occurrences of other minerals, such as clay, feldspar, kaolin, molybdenum, manganese, nickel, niobium, and tantalum (table 1; Guyana Geology and Mines Commission, 2014a–c).

## Minerals in the National Economy

Guyana's real gross domestic product (GDP) increased by 3.9% in 2014, compared with 5.2% in 2013. The growth of the economy in 2014 was owing to favorable performances in the services, agriculture, and manufacturing sectors, which contributed 66.5%, 22.1%, and 3.9%, respectively, to the GDP. The mining and quarrying sector contributed 10.6% to GDP in 2014, compared with 12.1% in 2013. Guyana's mining and quarrying sector contracted by 11.5% in 2014 owing to decreases in the production of bauxite and gold (table 1; Bank of Guyana, 2015, p. 9–10).

## Government Policies and Programs

In Guyana, all mineral rights are owned by the State. The GGMC is composed of five technical divisions: geological services, mines, environment, petroleum, and land management. The functions of the GGMC are to enforce the provisions of the mining licenses, permits, and concessions, as well as those of prospecting and quarrying licenses, and to collect rental fees and other charges, that are payable under the law. The Mines Division regulates the mining sector in accordance with the Mining Act of 1989. The Petroleum Division regulates all activities in the crude oil industry; provides economic, environmental, and technical advice; and supports competitiveness and efficiency in the petroleum sector (Guyana Geology and Mines Commission, 2015).

## Production

The country produced 12,052 kilograms (kg) of gold in 2014, which represented a 19.5% decrease from that of 2013. Bauxite production decreased by 2.9% to about 1.6 million metric tons (Mt) in 2014 compared with that of 2013. The decrease in gold and bauxite production was attributed to lower prices for these commodities on international markets. Sand and crushed stone increased by 79% and 28%, respectively, owing to the expansion of construction activities. Diamond production increased by 79% to 99,950 carats in 2014 compared with 55,928 carats in 2013 in response to favorable international prices (table 1; Bank of Guyana, 2015, p. 9–11).

## Structure of the Mineral Industry

Table 2 is a list of the major mineral industry facilities in Guyana.

## Mineral Trade

The value of Guyana's exports amounted to about \$1.17 billion in 2014 compared with about \$1.38 billion in 2013. The leading mineral commodity exports in 2014 were, in descending order of value, gold, \$469.8 million, which was a decrease from \$648.5 million in 2013; bauxite, \$124.7 million, which was a decrease from \$134.6 million in 2013; and diamond, \$14.7 million, which was an increase from \$12.2 million in 2013. The decrease in the value of gold exports was attributed to the decrease in world market prices as well as to lower export volume; the average export price decreased by 9.4% and the export volume decreased by 20.1% in 2014 compared with those of 2013. The decrease in the value of bauxite shipments was attributed to a 13.3% decrease in the volume of calcined bauxite exports and a 9.6% decrease in the volume of metal-grade bauxite exports. In 2014, the exports of nonmonetary gold and bauxite to the United States were valued at about \$381 million and \$40 million, respectively (Bank of Guyana, 2015, p. 15–17; U.S. Census Bureau, 2015).

Imports were valued at about \$1.78 billion in 2014 compared with about \$1.87 billion in 2013; the decrease was owing to a decline in imports of capital goods, consumption goods, and intermediate goods. Imports of fuel and lubricants were valued at about \$561 million compared with \$596 million (revised) in 2013. The value of imports of mining equipment increased by 133% to \$52.7 million in 2014, compared with \$22.6 million in 2013; the increase was likely owing to the additional equipment requirements of some major bauxite, gold, and oil projects in 2014 (Bank of Guyana, 2015, p. 17–18).

## Commodity Review

### Metals

**Bauxite and Alumina.**—The Bauxite Company of Guyana Inc. (BCGI) was a leading bauxite producer in Guyana. United Company RUSAL Plc of Russia owned a 90% stake in BCGI, and the remaining 10% was owned by the Government of Guyana. As of December 31, BCGI's total bauxite mineral resources were estimated to be 87.2 Mt (measured resource 3.0 Mt, indicated resource 40.0 Mt, and inferred resource 44.2 Mt). The company had a capacity of 1.7 million metric tons per year and a capacity utilization rate of 73% in 2014. The production decreased by 9% to about 1.24 Mt in 2014 from about 1.36 Mt in 2013 (United Company RUSAL Plc, 2015a, p. 16–17, 34).

In 2014, BCGI continued to develop the Kurubuka-22 bauxite deposit, which is located in Aroaima. The first stage of the project was completed at yearend 2014. It was expected that the Kurubuka-22 Mine would add significant high-quality bauxite capacity in 2015. BCGI also owned licenses to develop the Linden, the Kwakwani, and the Ituni bauxite deposits in Guyana (United Company RUSAL Plc, 2015a, p. 16; 2015b).

Bosai Minerals Group Guyana Inc. (a subsidiary of Bosai Minerals Group Company Ltd.—formerly Nanchuan Minerals Group) of China operated a bauxite mine and processing operation near Linden. This operation produced refractory aggregate supercalcinized bauxite, as well as chemical bauxite and metallurgical-grade bauxite. Annual production data were not available for recent years; annual production was estimated to be between 400,000 and 600,000 metric tons (t) since 2012. According to the company, the bauxite produced in Guyana was exported worldwide (Marshall, 2014; Nanchuan Minerals Group, 2015).

On May 6, Bosai Minerals Group announced that it would not be pursuing the \$100 million expansion project at the Block 37 deposit, which is located near Linden in the vicinity of Milly's Hideout. The reserve for the deposit was estimated to be about 95 Mt. The expansion plan was first announced in 2012 and, in 2014, the Government of Guyana decided to retain Block 37 owing to unfavorable international market conditions. Also, the Government was considering other projects including the construction of an alumina plant in the country. A feasibility study conducted by the Bosai Minerals Group in 2013, however, suggested that establishing an alumina plant in Linden was not economically favorable (Marshall, 2014).

**Gold.**—Guyana Goldfields Inc. (GGI), which is a junior mineral company based in Canada, was focused on the exploration and development of gold deposits in the Guiana Shield in South America. On December 12, GGI announced that the semiautogenous grinding mill shells had arrived at its Aurora gold project, which was scheduled to start operations in mid-2015. The mill had installation power of 5.5 megawatts and was capable of processing 5,000 t of ore per day. The measured and indicated resources of the project were estimated to contain about 203,000 kg (6.54 million troy ounces) of gold in 62.83 Mt of resources at an average grade of 3.24 grams per ton (g/t); inferred resources were about 56,000 kg (1.82 million troy ounces) of gold in 16.93 Mt of resources at an average grade of 3.34 g/t. The proven and probable reserves were estimated to be about 108,000 kg of gold (proven reserves of 2.38 Mt at an average grade of 3.04 g/t and probable reserves of 37.22 Mt at an average grade of 2.72 g/t). The project was designed to produce a total of about 102,000 kg (3.29 million troy ounces) of gold during a 17-year mine life with average annual production of 6,030 kg (194,000 troy ounces). GGI also held 19 prospecting licenses for its Aranka project, which is located 19 miles northeast of the Aurora base camp. Current activities at Aranka included field mapping, geochemical sampling, and testing of potential zones by trenching and exploratory drilling (Guyana Goldfields Inc., 2014; 2015a, b).

Mahdia Gold Corp. (Mahdia) of Canada was named for a mining town that is located in central Guyana near the Omai gold mine. Historically, the Omai Mine produced

about 120,000 kg (4 million troy ounces) of gold from two open pits. After identifying the potential of the region, Mahdia acquired the historic Omai Mine. In 2014, Mahdia continued to make progress at Omai. In May, the company reported that alluvial operations on the west deposit were running continuously on a single shift per day. In June, Mahdia announced that 3.69 kg (118.5 troy ounces) of gold were produced and that a 75-metric-ton-per-day wash plant had been installed. In October, Mahdia entered into an agreement with a local partner to gain access to a centrifuge. The company expected to see increased production from all existing dredges in 2015 (Mahdia Gold Corp., 2014a–c; 2015).

Sacre-Coeur Minerals, Ltd. of Canada (SCM) had been conducting exploration activity on gold prospects in the Lower Puruni regional area since 2005. The company held 100% interest in about 978 square kilometers (km<sup>2</sup>) of mineral concessions in Guyana. In September, the company closed its operation because it was unable to raise financing to continue functioning (Campbell, 2014; *Kaiteur News*, 2014).

### *Mineral Fuels and Related Materials*

**Petroleum and Natural Gas.**—The Canada-based oil and gas exploration company CGX Energy Inc. (CGX) was focused on exploration for oil in the Guyana-Suriname basin. In 2014, CGX continued to evaluate the petroleum production potential in the area covered by its 100%-owned Corentyne and Demerara concessions and the 62%-owned Berbice concession. The Corentyne license comprised 11,300 km<sup>2</sup>, of which 10,100 km<sup>2</sup> is offshore and 1,200 km<sup>2</sup> is onshore. The resources on the Corentyne license were estimated to be 779 million barrels (Mbbbl) of oil, 743 Mbbbl of condensate, about 197 billion cubic meters (6,957 billion cubic feet) of gas, plus about 20 billion cubic meters (706 billion cubic feet) of solution gas. The Berbice license comprised 3,295 km<sup>2</sup> onshore Guyana, and the Demerara license (formerly the Annex license) comprised approximately 3,975 km<sup>2</sup> offshore Guyana. Both the Berbice and the Demerara licenses were in the prospecting and advanced exploration stage of development. In November, CGX announced that the Hakuryu-12 rig, a jack-up drilling rig, was on schedule to be completed by the Japan Drilling Co. Ltd. in January 2015. The rig would be used for CGX's exploration well on its 100%-owned Corentyne Block that is covered by the Corentyne license, which is offshore Guyana. The well location had been defined and drilling activities were being planned for 2015. The well, Kabukalli-1, was expected to go 4,502 meters deep and take about 73 days to drill (CGX Energy Inc., 2014; 2015a–c).

Exxon Mobil Corp. of the United States established a local company, Esso Exploration and Production Guyana Ltd., in November. The company shortly thereafter announced its exploratory drilling plan at a cost of \$200 million. Mobilization was expected to begin in the first quarter of 2015, and drilling and exploration were expected to commence in the second quarter of 2015. The exploration well would be at the Liza location in the offshore Stabroek Block, which comprised 26,806 km<sup>2</sup> (Guyana Chronicle Online, 2014; Guyana Times, 2014).

In 2014, Tullow Oil plc (Tullow) of the United Kingdom continued to process the seismic data acquired in late 2013 from the Kanuku Block in the Cuyuni-Mazaruni region, which comprised 6,525 km<sup>2</sup>. Tullow held 30% interest in the license, and the remaining 70% was held by Repsol Exploration S.A. of Spain, which was the operator of the project. Repsol Exploration S.A. was expected to make a decision in 2015 about whether to enter the next period of the license, which includes drilling an exploration well based on the results of geologic studies (Tullow Oil plc, 2015, p. 57, 167).

**Uranium.**—U3O8 Corp. of Canada, through its 100%-owned subsidiary Prometheus Resources Inc. (Guyana), conducted exploration and development of uranium resources in Guyana. The company held exclusive uranium exploration rights from the GGMC for the Kurupung project. According to U3O8, initial exploration drilling results indicated that the Kurupung project was geologically similar to albitite-hosted uranium systems worldwide and that the project may contain a conceptual uranium target of 13 to 18 Mt of ore at a grade of 0.08% to 0.10% U<sub>3</sub>O<sub>8</sub>. Uranium recovery of 82% was achieved using a combination of acidic and alkaline leach. Work on the prospect continued to be suspended in 2014, pending improvements in the availability of funding from the international equity markets and a recovery of demand for ore by the uranium market (U3O8 Corp., 2015, p. 5–6, 12).

## Outlook

The outlook for Guyana's economic growth in the short term is positive. According to the Bank of Guyana, the economy is projected to expand by 5.3% in 2015, and the mining and quarrying sector is expected to grow by 8.4%. Bauxite, diamond, and gold are likely to continue to be the dominant mineral commodities in Guyana's mineral industry. The Kurubuka-22 Mine would add significant high-quality bauxite capacity in 2015. Gold exploration activities are likely to continue as a result of several gold exploration projects that progressed in 2014. The Aurora gold project, which was scheduled to start operations in mid-2015, is expected to increase gold production in the coming years. Offshore hydrocarbon exploration will likely increase as evidenced by the drilling activities planned for 2015, particularly those of Exxon Mobil Corp. Guyana is expected to become an oil-producing country in the near future, and foreign investment is expected to increase if oil production starts (Bank of Guyana, 2015, p. 14).

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TABLE 1  
GUYANA: PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Commodity		2010	2011	2012	2013	2014
Bauxite, dry equivalent, gross weight		1,083	1,828	2,210	1,649	1,602
Diamond, gem	carats	49,920	52,273	40,764	55,928	99,950
Gold, mine output, Au content	kilograms	9,594	11,293	13,643	14,964 <sup>r</sup>	12,052
Loam	metric tons	--	12,133	92,064	94,559	100,800
Sand, common	do.	652,175	674,880	1,478,184	2,334,000	4,169,387
Stone, crushed	do.	514,932	534,058	483,858	654,995	840,073

<sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through July 28, 2015.

<sup>2</sup>Source: Guyana Geology and Mines Commission.

TABLE 2  
GUYANA: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Thousand metric tons)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bauxite	Alcoa Inc.	Berbice, upper Demerara-Berbice	NA
Do.	Bauxite Company of Guyana Inc. (BCGI) (United Company RUSAL Plc, 90%, and Government, 10%)	Kwakwani, East Berbice District	1,700
Do.	Bosai Minerals Group Guyana Inc. (Bosai Minerals Group Company Ltd., 70%, and Government of Guyana, 30%)	Omai bauxite mine and processing plant located near Linden on the Demerara River about 100 kilometers south of Georgetown	600
Gold and precious stones	Numerous domestic artisanal operations	Various locations	NA
Do.	Ensurge Inc.	Cuyuni-Mazaruni Region	NA
Do.	Guyana Goldfields Inc.	Aurora Mine, Cuyuni-Mazaruni Region	NA
Do.	Hunter May Minerals Plc.	Mazaruni and Puruni tailings, Cuyuni-Mazaruni Region	NA
Do.	Mahdia Gold Corp.	Omai Mine, central Guyana	NA
Gravel	Baracara Quarries (Rahaman Group)	Quarry near Bartica, Mazaruni-Potaro District	100
Silica sand	Minerals and Technology Ltd. (Minerals and Chemicals of Texas)	Sand Hills, Demerara River, West Demerara District	300
Stone	BK Quarries Inc (BK International Inc.)	Mazaruni River	3,650

Do., Ditto. NA Not available.