

2016 Minerals Yearbook

GUYANA

THE MINERAL INDUSTRY OF GUYANA

By Philip A. Szczesniak

With an economy measured at about \$3.4 billion in 2016, Guyana's mining and energy industry and overall economy were expected to benefit from the development of the Liza oilfield. The field, which was considered to be one of the world's largest crude petroleum discoveries of the past decade, was an offshore oilfield discovered in 2015 by Esso Exploration and Production Guyana Ltd. (a subsidiary of Exxon Mobil Corp. of the United States, 45%; Hess Corp. of the United States, 30%; and CNOOC Ltd. of China, 25%). The Government announced that crude petroleum production could start by 2020 and add billions of dollars to the economy during the next decade. In 2016, there was no production of mineral fuels in Guyana, but there was some production of metals and industrial minerals, including bauxite, cement, common sand and gravel, crushed stone, diamond, gold, and loam. The Guyana Geology and Mines Commission (GGMC) reported that the country also has occurrences of other minerals, such as chromite, copper, iron ore, mica, peat, phosphate rock, quartz, rare earths, and tin (table 1; Vieira, 2014a–c; WorldOil.com, 2015; Bank of Guyana, 2017, p. 11; International Monetary Fund, 2017b).

Minerals in the National Economy

Guyana's real gross domestic product (GDP) increased by 3.3% in 2016 compared with a 3.2% rate of growth in 2015. The expansion of the economy was owing to growth in the mining sector (namely, increased gold production) and the services sector, which offset decreases in the output of the agriculture sector (owing to operational inefficiencies and poor weather), forestry sector (owing to downsizing of large-scale logging operations), manufacturing sector (owing to decreased output of pharmaceuticals, rum, and stockfeed), and the retail trade and wholesale trade sectors. In 2016, the mining sector expanded by 45.5%; the overall contribution of the mining sector to the GDP increased to 15.4% from 10.9% in 2015. The services sector expanded by 0.8% in 2016 and was the leading contributor to the GDP at 52.9% (table 1; Bank of Guyana, 2017, p. 10–12).

Government Policies and Programs

The GGMC is the Government agency responsible for overseeing the activities of the mining industry. The agency was created in 1979 and is composed of five technical divisions: environment, geological services, land management, mines, and petroleum. The general functions of the GGMC are to enforce the provisions of mining licenses, permits, and concessions, as well as those of prospecting licenses (for large-scale operations), prospecting permits (for medium- and small-scale operations) and quarry licenses; to collect rentals, fees, and other charges that are payable under the law; and to act as a national repository for all information relating to the geology and mineral resources of the country. The Environmental Division coordinates, promotes, and oversees

mineral-processing and mining techniques. The Geological Services Division undertakes geologic fieldwork to survey the geology and mineral resources. The Land Management Division performs cartographic and GIS work as well as mineral property management. The Mines Division regulates the mining sector in accordance with the Mining Act of 1989. The Petroleum Division regulates all activities in the crude petroleum industry; provides economic, environmental, and technical advice; and supports competitiveness and efficiency in the petroleum sector. In Guyana, all mineral rights are owned by the state (Guyana Geology and Mines Commission, 2017).

Production

There were significant increases in the production of cement, diamond, gold, and common sand in 2016. Cement production increased to an estimated 400,000 metric tons (t), or by 300% compared with the 100,000 t (estimated) produced in 2015; the increase was owing to the continued rampup of a cement plant in Everton that was commissioned in 2014. Diamond production increased by 18% to 139,890 carats in 2016 from 118,451 carats in 2015; the increase was attributed to increasing international demand. Guyana also produced 22,168 kilograms (kg) of gold in 2016, which represented a 58% increase compared with the production of gold in 2015. The large increase was owing to an expansion of not only small- and medium-scale mines, but also to increases by two foreign gold mining companies, namely Guyana Goldfields Inc. of Canada and Troy Resources Ltd. of Australia. Common sand production increased by nearly 20% to 2,000,000 t (preliminary), likely owing to the general increase in construction activity in the country (tables 1, 2; Global Cement, 2014; Bank of Guyana, 2017, p. 10–12).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Mineral Trade

The value of Guyana's exports increased by \$289 million to \$1,441 million in 2016 from \$1,151 million (revised) in 2015. The leading mineral commodity exports in 2015 were, in order of value, gold (export value increased to \$830.7 million from \$501.1 million in 2015); bauxite (decreased to \$92.1 million from \$104.3 million in 2015); and diamond (increased to \$18.2 million from \$16.7 million in 2015). The increase in the value of gold exports was attributed to both a 51% increase in the quantity of exports and a nearly 10% increase in the export price of gold. The decrease in the value of bauxite shipments was largely attributed to an 11% decrease in the export price of bauxite. In 2016, the exports of nonmonetary gold to the United States were valued at about \$297 million compared with \$308 million in 2015; the exports of aluminum and bauxite were together valued at \$24 million compared with

\$26 million in 2015 (Bank of Guyana, 2017, p. 11, 16–18; U.S. Census Bureau, 2017b).

Guyana's total imports were valued at about \$1.45 billion in 2016 compared with about \$1.49 billion (revised) in 2015; the decrease was owing to a lower amount of imports of intermediate goods and capital goods. Imports of fuels and lubricants in 2016 were valued at about \$344 million compared with \$367 million (revised) in 2016. The value of mining equipment imports increased to \$36.6 million in 2016 from \$30.7 million in 2015; the increase was partly owing to higher demand for equipment required by the gold industry. In 2016, Guyana's imports of other petroleum products from the United States increased to \$10.1 million from \$8.6 million in 2015 (Bank of Guyana, 2017, p. 18; U.S. Census Bureau, 2017a).

Commodity Review

Metals

Bauxite and Alumina.—Bauxite Company of Guyana Inc. (BCGI) was a leading bauxite producer in Guyana. United Company RUSAL plc of Russia (RUSAL) owned a 90% stake in BCGI, and the remaining 10% was owned by the Government. RUSAL produced bauxite at the Kurubuka Mine located in the Upper Demerara-Berbice Region. As of December 31, BCGI's total bauxite mineral resources were estimated to be about 85.5 million metric tons (Mt), of which measured resources totaled 1.9 Mt; indicated resources, 39.4 Mt; and inferred resources, 44.2 Mt. The company had the capacity to produce 1.7 million metric tons per year of bauxite and a capacity utilization rate of 64% in 2016. The company's production decreased by 7% to about 1.09 Mt in 2016 from about 1.18 Mt in 2015 (table 2; United Company RUSAL plc, 2017, p. 23–25, 54).

The Bosai Minerals Group (Guyana) Inc. (Bosai Minerals Group Co., Ltd. of China, 70%, and the Government, 30%) produced bauxite at the Omai bauxite mine. The mine was located near Linden on the Demerara River and had the capacity to produce 700,000 metric tons per year of bauxite. The company estimated its bauxite reserves to be about 200 Mt (table 2; Bosai Minerals Group Company Ltd., undated).

Gold.—Guyana Goldfields Inc., which was a junior mining company based in Canada, produced gold at its Aurora Mine, which is located in the Cuyuni-Mazaruni Region. In 2016, the mine increased production to 4,712 kg of gold; this was up from the 1,117 kg produced in 2015, when the mine began operating. As of December 31, the mine's total proven and probable reserves were a reported 36.8 Mt at an average grade of 2.99 grams per metric ton (g/t) gold (about 110,000 kg of contained gold); the expected mine life was estimated to be about 15 years (Guyana Goldfields Inc., 2017, p. 7–8, 18).

Troy Resources Ltd., a junior mining company based in Australia, began production in January at its Karouni gold mine, which is located in the Pomeroon-Supenaam Region. In 2016, the mine produced 1,957 kg of gold. As of June 30, 2016, total proven and probable reserves were a reported 3.0 Mt at an average grade of 3.41 g/t gold (more than 10,200 kg of contained gold) (Troy Resources Ltd., 2016, p. 9, 22; 2017, p. 3).

Mineral Fuels

Petroleum and Natural Gas.—In 2016, ExxonMobil announced that its majority-owned subsidiary in Guyana, Esso Exploration and Production Guyana Ltd., had discovered additional high-quality oil-bearing sandstone resources at the Liza field in the offshore Stabroek Block. The block is located approximately 193 kilometers offshore Guyana and is a 26,806-square-kilometer area. ExxonMobil reported that the Liza-2 and Liza-3 appraisal wells confirmed recoverable resources in excess of 1 billion barrels of crude petroleum. In addition to crude petroleum, natural gas resources were also discovered; the reservoir was characterized as having favorable gas-to-oil ratios. In August, ExxonMobil applied for environmental permits for phase I development of the project. The Government announced that production was expected to begin by 2020. ExxonMobil also reported that it would invest \$5 billion in Guyana during the next several years in drilling; manufacturing; procurement of materials; and a floating production, storage, and offloading vessel (FPSO). At the end of the year, ExxonMobil awarded SBM Offshore N.V. of the Netherlands the contract for the FPSO, which would include its engineering, design, construction, installation, and operation (Jamaica Observer, 2016; WorldOil.com, 2016; Exxon Mobil Corp., 2017, p. 6, 32).

Since the initial crude petroleum discovery in the Stabroek Block in 2015, a territorial dispute re-emerged between Guyana and Venezuela. Venezuela's President issued a decree in May 2015 that laid claim to a large part of western Guyana and its territorial waters; the decree effectively challenged a ruling that dates back to the 19th century by an arbitral tribunal that favored the then-colonial British Government. The United Nations commented on the dispute in 2016, noting that the International Court of Justice may have to play a role in settling the dispute (Jamaica Observer, 2017).

Outlook

Guyana's economic growth in the short term is likely to be positive. The Bank of Guyana reported that the economy was projected to expand by 3.8% in 2017; the International Monetary Fund had projected a growth rate that was a little lower at 3.5%. The Bank of Guyana also projected that the value added of the mining and quarrying sector would increase by 2.7%. Bauxite, diamond, and gold are likely to continue to be the dominant nonfuel mineral commodities in Guyana's mineral industry. Offshore hydrocarbon exploration in Guyana was expected to increase following the initial and subsequent crude petroleum discoveries in the Stabroek Block. It was further expected that Guyana would become an oil-producing country by 2020 (Bank of Guyana, 2017, p. 15; International Monetary Fund, 2017a, p. 203).

References Cited

- Bank of Guyana, 2017, Annual report 2016: Bank of Guyana, March 31, 160 p. (Accessed May 23, 2017, at <http://www.bankofguyana.org.gy/bog/images/research/Reports/ANNREP2016.pdf>.)
- Bosai Minerals Group Co., Ltd., [undated], Bosai Minerals Group (Guyana) Inc.: Bosai Minerals Group Co., Ltd. (Accessed June 30, 2017, at <http://en.cqbosai.com/company/gyn/>.)

- Exxon Mobil Corp., 2017, 2016 financial and operating review: Exxon Mobil Corp., 98 p. (Accessed June 30, 2017, at http://cdn.exxonmobil.com/~media/global/files/financial-review/2016_financial_and_operating_review.pdf.)
- Global Cement, 2014, Guyana's first integrated cement plant commissioned in Berbice: Global Cement, December 16. (Accessed June 29, 2017, at <http://www.globalcement.com/news/item/3149-guyana-s-first-integrated-cement-plant-commissioned-in-berbice>.)
- Guyana Geology and Mines Commission, 2017, Who we are: Guyana Geology and Mines Commission web page. (Accessed June 29, 2017, at <http://ggmc.gov.gy/main/?q=content/who-we-are>.)
- Guyana Goldfields Inc., 2017, Annual report 2016: Guyana Goldfields Inc., 87 p. (Accessed June 30, 2017, at https://s21.qcdn.com/896225004/files/doc_financials/2016/GUY-Annual-Report.pdf.)
- International Monetary Fund, 2017a, World economic outlook: Washington, DC, International Monetary Fund, April, 258 p. (Accessed June 29, 2017, at <http://www.imf.org/~media/Files/Publications/WEO/2017/April/pdf/text.ashx>.)
- International Monetary Fund, 2017b, World economic outlook database: Washington, DC, International Monetary Fund, April. (Accessed February 27, 2018, at <http://www.imf.org/external/pubs/ft/weo/2017/01/weodata/weoselgr.aspx>.)
- Jamaica Observer, 2016, Another major oil discovery made offshore Guyana: [Kingston] Jamaica Observer, October 27. (Accessed June 30, 2017, at <http://www.jamaicaobserver.com/news/Another-major-oil-discovery-made-offshore-Guyana>.)
- Jamaica Observer, 2017, UN seeks settlement to Venezuela-Guyana border dispute: [Kingston] Jamaica Observer, February 27. (Accessed June 30, 2017, at <http://www.jamaicaobserver.com/news/UN-seeks-settlement-to-Venezuela-Guyana-border-dispute>.)
- Troy Resources Ltd., 2016, Annual report 2016: Troy Resources Ltd., 92 p. (Accessed June 30, 2017, at http://www.troyres.com.au/images/Reports/TRY_2016_Annual_Report_-_Final.pdf.)
- Troy Resources Ltd., 2017, Consolidated financial report for the half-year ended 31 December 2016: Troy Resources Ltd., 25 p. (Accessed June 30, 2017, at http://www.troyres.com.au/images/Reports/Half_Yearly_Report_for_the_period_ended_31_December_2016.pdf.)
- United Company RUSAL plc, 2017, Annual report 2016—Creating value: United Company RUSAL plc, 340 p. (Accessed June 29, 2017, at <http://www.rusal.ru/upload/iblock/a6d/2016Annual%20Report%20-%20English%20version.pdf>.)
- U.S. Census Bureau, 2017a, U.S. exports to Guyana by 5-digit end-use code 2007–2016: Washington DC, U.S. Census Bureau. (Accessed June 29, 2017, at <https://www.census.gov/foreign-trade/statistics/product/enduse/exports/c3120.html>.)
- U.S. Census Bureau, 2017b, U.S. imports from Guyana by 5-digit end-use code 2007–2016: Washington DC, U.S. Census Bureau. (Accessed June 29, 2017, at <https://www.census.gov/foreign-trade/statistics/product/enduse/imports/c3120.html>.)
- Vieira, Rickford, 2014a, Alternative minerals—Potential for Guyana (part 1): Guyana Geology and Mines Commission, September 9, 24 p. (Accessed June 29, 2017, at <http://www.ggmc.gov.gy/main/?q=documents/alternative-minerals-potential-guyana-part-1>.)
- Vieira, Rickford, 2014b, Alternative minerals—Potential for Guyana (part 2): Guyana Geology and Mines Commission, September 9. (Accessed June 29, 2017, at <http://main.ggmc.gov.gy/sites/default/files/Minerals%20of%20Guyana%20%28Part%202%29.pptx>.)
- Vieira, Rickford, 2014c, Alternative minerals—Potential for Guyana (part 3): Guyana Geology and Mines Commission, September 9. (Accessed June 29, 2017, at <http://main.ggmc.gov.gy/sites/default/files/Minerals%20of%20Guyana%20%28Part%203%29.pptx>.)
- WorldOil.com, 2015, Exxon Mobil's deepwater Liza find could put Guyana-Suriname basin on the map: WorldOil.com, October 22. (Accessed June 29, 2017, at <http://www.worldoil.com/news/2015/10/22/exxon-mobil-s-deepwater-liza-find-could-put-guyana-suriname-basin-on-the-map>.)
- WorldOil.com, 2016, SBM Offshore awarded contracts for Exxon Mobil Liza FPSO: WorldOil.com, December 20. (Accessed June 30, 2017, at <http://www.worldoil.com/news/2016/12/20/sbm-offshore-awarded-contracts-for-exxon-mobil-liza-fps>.)

TABLE 1
GUYANA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity		2012	2013	2014	2015	2016
METALS						
Bauxite, dry equivalent	thousand metric tons	2,210	1,649	1,602	1,498 ^r	1,500 ^p
Gold, mine production, Au content	kilograms	13,643	14,964	12,053 ^r	14,029 ^r	22,168
INDUSTRIAL MINERALS						
Cement, hydraulic		--	--	2,000	100,000 ^e	400,000 ^e
Diamond, gem, unspecified	carats	40,764	63,961	99,950	118,451	139,890
Stone, sand, and gravel:						
Sand and gravel, construction, common sand		1,478,184	2,334,000	4,169,387	1,669,379 ^r	2,000,000 ^p
Stone, crushed, unspecified		483,858	659,969	840,074	373,162	408,405
Stone, size and shape unspecified, loam		92,064	94,559	100,800	105,000 ^e	110,000 ^e

^eEstimated. ^pPreliminary. ^rRevised. -- Zero.

¹Table includes data available through November 29, 2017. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

Source: Guyana Geology and Mines Commission, Bank of Guyana.

TABLE 2
GUYANA: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bauxite	Alcoa Inc.	Berbice Mine, Upper Demerara-Berbice Region	NA
Do.	Bauxite Company of Guyana Inc. (BCGI) (United Company RUSAL plc, 90%, and Government, 10%)	Kurubuka Mine, Upper Demerara-Berbice Region	1,700
Do.	Bosai Minerals Group (Guyana) Inc. (Bosai Minerals Group Co., Ltd., 70%, and Government, 30%)	Omai bauxite mine and processing plant located near Linden on the Demerara River about 100 kilometers south of Georgetown	700
Cement	Caricom Cement Company Inc.	Everton, East Berbice-Corentyne Region	500
Gold and precious stones	Numerous domestic artisanal operations	Various locations	NA
Do.	Ensurge Inc.	Cuyuni-Mazaruni Region	NA
Do.	Goldsource Mines Inc.	Eagle Mountain Mine, Cuyuni-Mazaruni Region	NA
Do. kilograms	Guyana Goldfields Inc.	Aurora Mine, Cuyuni-Mazaruni Region	7,000
Do.	Hunter May Minerals Plc.	Mazaruni and Puruni tailings, Cuyuni-Mazaruni Region	NA
Do.	Mahdia Gold Corp.	Omai Mine, central Guyana	NA
Do. kilograms	Troy Resources Ltd.	Karouni Mine, Pomeroon-Supenaam Region	2,000
Sand and gravel	Baracara Quarries (Rahaman Group)	Quarry near Bartica, Mazaruni-Potaro District	100
Silica sand	Minerals and Technology Ltd. [Minerals and Chemicals of Texas (United States)]	Sand Hills, Demerara River, West Demerara District	300
Stone	BK Quarries Inc. (BK International Inc.)	Mazaruni River	3,650
Do. Ditto. NA Not available.			