



2015 Minerals Yearbook

SURINAME [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF SURINAME

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In 2015, Suriname's mineral output included alumina, bauxite, cement that was produced from imported clinker, clay, crude petroleum, crushed stone, gold, gravel, refined petroleum products, and sand. Suriname was among the world's leading producers of two mineral commodities in 2015; the country ranked 14th and 13th, respectively, in the production of alumina and bauxite, with each providing about 1% of world output. Depletion by mining led to the curtailment of bauxite mining operations by the end of the year, as well as the curtailment of alumina operations. Suriname also accounted for about 1% of the world's gold mine production (Bray, 2017; George, 2017).

Minerals in the National Economy

Suriname's real gross domestic product (GDP) increased by 0.2% in 2015 but was projected to decrease by 2.0% in 2016; the country's nominal GDP was about \$5.2 billion. The economy of Suriname was not heavily dependent on the mining industry, as the mining and quarrying sector accounted for only approximately 3.1% of the country's real GDP, and the construction sector, about 8.0%. The Government's revenue from mining fell to just 1.7% of the GDP in 2015, which was down from a high of 9.8% in 2011. In 2015, approximately 58% of the Government's mineral sector revenue came from gold production; 33%, from crude petroleum production; and 9%, from bauxite production. Within the mineral industry, the gold sector employed about 2,500 people, the crude petroleum sector employed nearly 900 people, and the bauxite sector employed about 500 people. (Central Bank of Suriname, 2016a, p. 19, 78–80; 2016b; International Monetary Fund, 2016a, p. 173; 2016b).

In 2015, the value of Suriname's total exports decreased by 26% to approximately \$1.65 billion (down from \$2.15 billion in 2014). Gold exports accounted for 56% of total exports and was valued at \$0.92 billion; alumina accounted for 14.1% and was valued at \$0.23 billion; and crude petroleum accounted for 9.4% and was valued at \$0.16 billion. The total value of exports to the United States in 2015 was \$146 million (down from \$452.6 million in 2014). Mineral-related exports to the United States included gold, which was valued at \$10.4 million; fuel oil, \$5.8 million; copper, \$1.1 million; bauxite and alumina, \$270,000; nonferrous metals, \$160,000; and gemstones, \$15,000. The value of Suriname's total imports was estimated to be \$2.0 billion, which was essentially unchanged from the estimated value of \$2.0 billion in 2014. The total value of imports from the United States was \$443.6 million and included excavating machinery valued at \$22.9 million; other petroleum products valued at \$12.5 million; specialized mining equipment, \$10.1 million; finished metal shapes, \$9.2 million; drilling and oilfield equipment, \$9.2 million; and iron and steel products, \$2.2 million (Central Bank of Suriname, 2016a, p. 45, 54, 82; U.S. Census Bureau, 2016a, b).

The law that controls all activities dealing with mineral exploration and mining in Suriname is the Mining Decree of May 8, 1986. The decree provides the basis for mining

agreements. Mining licenses are negotiated with the Government and promulgated as laws by De Nationale Assemblée (DNA) [the National Assembly]. Modifications of and extensions to formal mining licenses are issued as legislative amendments. The petroleum sector is also covered by the Mining Decree. It grants exclusive petroleum concession rights to state-owned mining companies. The Petroleum Law of 1990 authorizes the state-owned mining company Staatsolie Maatschappij Suriname N.V. to enter into agreements with foreign petroleum companies (Staatsolie Maatschappij Suriname N.V., undated).

Production

Significant changes in mineral production in 2015 were seen in that of refined petroleum products, which increased by 99%; bauxite and alumina, which decreased by 41% and 35%, respectively; and gold, which decreased by an estimated 15%. The increase in the production of refined petroleum products was attributed to the country's only facility being brought back online after an expansion was completed. The decreases in the production of bauxite and alumina were attributed to unfavorable market conditions, limited bauxite reserves, and the subsequent curtailment of alumina refining operations. The decrease in gold production was owing to labor issues and a decrease in gold prices (table 1; Alcoa Inc., 2016a, p. 5, 11; Caribbean Development Bank, 2016, p. 6; Staatsolie Maatschappij Suriname N.V., 2016b, p. 14–15).

Structure of the Mineral Industry

The Ministerie van Natuurlijke Hulpbronnen [Ministry of Natural Resources] governs the mining industry in Suriname and is responsible for the development and management of the energy, mineral, and water resources of Suriname. The Nationaal Instituut Voor Milieu & Ontwikkeling in Suriname [National Institute for Environment and Development in Suriname] is responsible for ensuring sustainable development by creating a framework for environmental policy. The Geologische Mijnbouwkundige Dienst [Geological Mining Service] is the Government agency responsible for the mining industry. The Bauxiet Instituut Suriname [Bauxite Institute of Suriname] collects data on bauxite. The state-owned Grasshopper Aluminium Co. (Grassalco N.V.) holds interests in some bauxite, clay, gold, sand, and stone production operations. Staatsolie (the state-owned petroleum company) explores for and produces crude petroleum, operates the country's petroleum refinery, and enters into production-sharing agreements with domestic and international crude petroleum companies. Since 2011, the multicommitee Ordening Goudsector [Planning Commission for the Gold Sector] has been in charge of registering small-scale miners, the location of mining operations, and mining equipment (Staatsolie Maatschappij Suriname N.V., 2016a; Kabinet van de President, undated).

Privately owned mineral companies mined bauxite and refined it into alumina. These included companies involved in the joint venture of Suriname Aluminum Company L.L.C. (Suralco) (55%) and N.V. Alcoa Minerals of Suriname (AMS) (45%), both of which were subsidiaries of Alcoa World Alumina L.L.C. Alcoa World Alumina was a joint venture of Alcoa Inc. of the United States (60% equity interest) and Alumina Ltd. of Australia (40%) (Alcoa, Inc., 2016b, p. 4).

Vensur N.V. produced cement near Paramaribo in Suriname. Surcol Houdstermaatschappij N.V. owned an 82.24% interest in Vensur N.V. A grinding facility processed imported cement clinker. Surcol was a joint venture of C. Kersten en Co. N.V. of Suriname and Cementos Argos S.A. of Colombia (Kersten Holding N.V., 2016).

Rosebel Gold Mines N.V. was Suriname's only large-scale gold producer. It was a subsidiary of IAMGOLD Corp. of Canada (95% equity interest) and N.V. Grassalco (5%). Sarafina N.V. and NaNa Resources N.V. were medium-scale domestic gold miners. Table 2 is a list of the major mineral industry facilities in Suriname (Kraaijer, 2013; McArarney, 2013).

Commodity Review

Metals

Bauxite and Alumina.—At the end of 2015, Alcoa closed all its bauxite mines owing to a depletion of reserves; bauxite production for the year totaled 1.6 million metric tons (Mt) compared with 2.7 Mt in 2014. In addition, Alcoa closed its alumina refinery at Paranam owing to the depletion of bauxite reserves and a long-term energy source; alumina production for the year totaled 0.7 Mt compared with 1.1 Mt in 2014 (Alcoa Inc., 2016a, p. 5, 11).

Gold.—The Rosebel gold mine, which was owned by Rosebel Gold Mines, is located in the mineral-rich Brokopondo District in northeastern Suriname. In 2015, gold production at Rosebel amounted to approximately 9,400 kilograms (kg), which was a decrease of 1,200 kg from the production of 10,600 kg in 2014; the decreased production was the result of a work stoppage related to a labor dispute in December. As of December 31, 2015, Rosebel's proven and probable gold reserves were approximately 70 Mt grading 1.0 gram per metric ton (g/t), which contained an estimated 73 metric tons of gold (IAMGOLD Corp., 2016, p. 13, 29).

The Merian gold project, located 66 kilometers (km) south of Moengo, was 75% owned and operated by the Suriname Gold Company, LLC (Surgold—a fully owned subsidiary of Newmont Mining Corp. of the United States) and 25% owned by Staatsolie. Construction of a mine began in August 2014, and operations at the mine were expected to begin at the end of 2016, with two open pits and a processing plant. As of December 31, 2015, gold reserves at Merian were approximately 111 Mt at an average grade of 1.1 g/t gold. Average annual gold production was estimated to be between 12,000 and 16,000 kilograms per year (kg/yr) for the first 5 years and between 9,000 and 12,000 kg/yr for the 11-year life of the mine. Surgold expected to employ 2,500 people during project development and 1,300 during full operation (Newmont Mining Corp., 2014; 2016, p. 41, 52).

The Nassau gold project was still in the exploration stage in 2015. In late 2014, Mariana Resources Ltd. (Mariana) of Australia entered into an agreement to earn up to a 50.01% interest in Nassau Gold Ltd., which was a joint venture established between Mariana and Sumin Resources Ltd. for the development of the Nassau gold project. The project is located 20 km south of Newmont Mining's Merian gold project in northeastern Suriname (Mariana Resources Ltd., 2016, p. 6).

Suriname's first gold refining facility, the Kaloti Suriname Mint House, began operating in February 2015. The facility was an equity joint venture among the Government of Suriname, Dubai's Kaloti Group, and private investors. The production capacity was expected to be 60 metric tons per year, and the refinery would source gold from not only Suriname but from the neighboring countries of Guyana and French Guiana as well (Sahoo, 2015).

Mineral Fuels

Petroleum.—In 2015, Staatsolie produced crude petroleum from 1,729 wells across the onshore Calcutta, Tambaredjo, and Tambaredjo North-West oilfields in the Saramacca District. The crude petroleum was transported 55 km to the refinery at Tout Lui Faut. As of December 31, Suriname's proven crude petroleum reserves were estimated to be 84 million barrels (Mbbbl), which was a decrease of 16 Mbbbl since the end of 2014. Staatsolie also continued to promote its offshore acreage and launched an initiative to attract companies to partner with it to explore, develop, and produce petroleum offshore (Staatsolie Maatschappij Suriname N.V., 2016b, p. 12; 2016c).

In early 2015, Apache Suriname Corp. LDC (a subsidiary of Apache Corp. of the United States) started its exploration drilling program in Block 53; this program was considered groundbreaking for Suriname, as it was the first time that a 6th generation drill ship (that is, one capable of drilling in water depths of about 3,000 meters), the *Stena Drill Max*, operated offshore Suriname. Apache had signed a production-sharing contract with Staatsolie in 2012 for the block. After acquiring the block, CEPESA Suriname SL acquired a 25% interest in Block 53 and Apache retained a 75% interest. Staatsolie had the option to obtain a 20% interest in any commercial fields discovered in the block (Williams, 2014a, b; Staatsolie Maatschappij Suriname N.V., 2015).

Staatsolie's refinery expansion project at Tout Lui Faut was completed in December 2015; the project took nearly 10 years to complete. The refinery, which was located about 19 km south of the capital city of Paramaribo, produced primarily ultra-low-sulfur diesel and gasoline for the local market, along with fuel oil and asphalt. The expansion doubled the refinery's capacity to 15,000 barrels per day (bbl/d) from 7,500 bbl/d (Brelsford, 2016; Staatsolie Maatschappij Suriname N.V., 2016b, p. 9).

Outlook

Suriname's economy has slowed during the past few years and is forecast to remain weak for the near future. Alcoa's decision to close its bauxite mines and alumina operations and leave Suriname marks an end of an era, as its bauxite and

mining operations have had a presence in Suriname for nearly 100 years. The outlook for the gold sector is more positive. With several projects in various stages of development, the industry is poised for growth. Newmont's Merian gold project, at which commercial production is anticipated to begin by late 2016, is expected to provide a boost to overall gold production in the coming years, whereas the Nassau gold project is still in early stages of exploration (International Monetary Fund, 2016a; Pittsburgh Post-Gazette, 2017).

Crude petroleum production is also expected to continue to increase. Suriname's offshore area is relatively unexplored for crude petroleum; however, the petroleum sector has been active, with production remaining steady or slightly increasing during the past several years. Crude petroleum was produced from onshore fields. The doubling of Staatsolie's refinery capacity to 15,000 bbl/d is expected to cause a reduction in imports of refined products and improve the trade balance in the near future.

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TABLE 1
SURINAME: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
Aluminum:						
Bauxite, gross weight	3,236	2,873	2,706	2,708	1,600	
Alumina	1,421	1,203	1,149	1,149	748	
Cement, hydraulic ^c	74	114	131	160 ^c	160 ^c	
Gold, mine output, Au content	kilograms	32,308	33,474	34,213	33,000 ^c	28,000 ^c
Petroleum:³						
Crude	thousand 42-gallon barrels	5,990	5,940	5,980	6,130	6,189
Refined petroleum products	do.	2,630	2,310	2,780	1,460	2,900

^cEstimated; estimated data are rounded to no more than three significant digits. do. Ditto.

¹Table includes data available through September 7, 2016.

²In addition to the commodities listed, clay, gold metal, gravel, sand, and crushed stone also were produced, but information was inadequate to make reliable estimates of output.

³Source: Staatsolie Maatschappij Suriname N.V.

TABLE 2
SURINAME: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Joint venture of Suriname Aluminum Company, L.L.C. (Suralco), 55%, and N.V. Alcoa Minerals of Suriname, 45%)	Suralco refinery at Paranam, about 25 kilometers south-southeast of Paramaribo	2,207 ¹
Bauxite	do.	Caramacca Mine, about 40 kilometers southeast of Paramaribo	NA ²
Do.	do.	Coermotibo area open pit mines, about 100 kilometers east-southeast of Paramaribo	NA ²
Do.	do.	Onverdacht area open pit mines, about 20 kilometers south-southeast of Paramaribo	NA ²
Cement	Vensur N.V. (Surcol Houdstermaatschappij N.V., 82.24%)	Clinker grinding facility near Livorno, about 5 kilometers south of Paramaribo	160
Gold:			
Mine	kilograms	Rosebel Gold Mines N.V. (IAMGOLD Corp., 95%, and N.V. Grassalco, 5%)	12,500
Do.		NaNa Resources N.V.	NA
Do.		Sarafina N.V.	NA
Do.	kilograms	Artisanal miners	25,000 ^c
Refined	do.	Kaloti Suriname Mint House (The Government, Kaloti Jewellery Group, and private investors)	60,000
Petroleum:			
Crude	thousand 42-gallon barrels	Staatsolie Maatschappij Suriname N.V. (Government, 100%)	6,200
Petroleum products	do.	do.	5,500
		Crude petroleum refinery at Tout Lui Faut, near Livorno, about 5 kilometers south of Paramaribo	

^cEstimated. Do., do. Ditto. NA Not available.

¹Alumina facility closed in 2015.

²Bauxite mines closed in 2015.