



2019 Minerals Yearbook

ISLANDS OF THE CARIBBEAN [ADVANCE RELEASE]

THE MINERAL INDUSTRIES OF THE ISLANDS OF THE CARIBBEAN

ARUBA, DOMINICAN REPUBLIC, HAITI, JAMAICA, TRINIDAD AND TOBAGO, AND OTHER ISLANDS

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ARUBA

In 2019, mining did not play a significant role in Aruba's economy. In October, the Government of Aruba reached an agreement with United States-based CITGO Petroleum Corp., which was an indirect wholly owned subsidiary of *Petróleos de Venezuela S.A. (PDVSA)*, to end its commercial agreement for the restart of the country's sole petroleum refinery. The former commercial agreement, signed in 2016, included the refurbishment of the 209,000-barrel-per-day (bbl/d) refinery and commissioning of operations as well as the leasing of the refinery for 15 years with a 10-year extension option. In 2018, CITGO had slowed down its plans to refurbish Aruba's refinery owing mainly to additional financial sanctions imposed by the United States on the Government of Venezuela in August 2017. The imposed sanctions prohibit all transactions related to providing financing or conducting other dealings by a United States citizen or person within the United States, on behalf of, or for the benefit of, the Government of Venezuela, including PDVSA. As a result, CITGO, as an indirect subsidiary of PDVSA, was unable to obtain additional funding for the project. The refinery was idled in 2012 after its former operator, Valero Energy Corp. of the United States, suspended operations owing to inadequate profit margins (Valero Energy Corp., 2012; CITGO Petroleum Corp., 2016a, b; 2019; Thomson Reuters, 2018, 2019; U.S. Department of the Treasury, 2020).

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DOMINICAN REPUBLIC

The Dominican Republic occupies the eastern part of the Island of Hispaniola in the Caribbean region. The country's mineral industry continued to be dominated by the production of copper, gold, ferronickel, nickel, silver, and zinc. Other mineral commodities produced in the country included cement, clay, gypsum, sand and gravel, and stone. In 2019, the Dominican Republic's real gross domestic product (GDP) increased by 5.1% compared with that of 2018. The GDP growth was attributed mainly to a 10% increase in the output of the construction sector. The country's mining and quarrying sector accounted for nearly 2.0% of the GDP. However, the total value of mineral exports, which included copper, ferronickel, gold, silver, and other minerals, accounted for more than 15% of the country's total exports. Pueblo Viejo Dominicana Corp., which operated the Pueblo Viejo Mine, continued to be the leading gold producer in the Dominican Republic, accounting for about 96% of the country's total gold production (tables 1, 2; Banco Central de la República Dominicana, 2020a, p. 5, 13, 31; 2021b).

Minerals in the National Economy

In 2019, the value of the mining and quarrying sector increased by 3.4% compared with a decrease of 1.3% in 2018. This increase was mostly attributable to an increase in the production of ferronickel by more than 45%. Falconbridge Dominicana S.A (Falcondo), which was the country's sole producer of ferronickel, operated at full capacity during the year. In 2019, the manufacturing industry (which included mining and quarrying) employed 476,355 people and accounted for about 10% of the total employment in the country (Falconbridge Dominicana S.A., 2018, 2020; Banco Central de la República Dominicana, 2020a, p. 14; Oficina Nacional de Estadística, 2021).

The total value of the Dominican Republic's exports increased by 2.9% to about \$11.2 billion in 2019 from about \$10.9 billion in 2018. Mineral exports accounted for about \$2.0 billion of the total exports, which was an increase of 15.4% compared with that in 2018. Gold continued to be the leading mineral

export, accounting for about \$1.5 billion of the country's total exports, followed by ferronickel (\$383.4 million), silver (\$54.4 million), and copper (\$26.8 million). The increase in the value of total mineral exports was mainly attributed to increases in the export values of gold, by 13.5%, and ferronickel, by 64%. However, the export values of copper and silver decreased by 55.2% and 43.3%, respectively (Banco Central de la República Dominicana, 2020a, p. 31).

The legislative framework for the mineral sector in the Dominican Republic is provided by law No. 146 of June 4, 1971. According to the law, exploration concession licenses grant companies exclusive exploration rights for a maximum of 3 years, and mining concession rights for a maximum of 75 years. The Ministerio de Energía y Minas (MEM) is responsible for administering state policy in the energy and mining sectors. The Viceministerio de Minas, which operates under the MEM, is the agency responsible for regulating, auditing, promoting, and developing the mining sector (Ministerio de Energía y Minas, 2019, p. 6, 9; 2021a, b).

Production

In 2019, the production of gypsum increased by 69%; that of mined nickel (Ni content), by 64%; pozzolan, by 51%; nickel contained in ferronickel, by 48%, and zinc, by 37%. During the year, silver production decreased by 35%, and copper production, by 30%. The production of silica sand, travertine, and marble (all of which are industrial minerals) decreased by 72%, 21%, and 17%, respectively. Data on mineral production are in table 1.

Structure of the Mineral Industry

Pueblo Viejo Dominicana was a joint venture between Barrick Gold Corp. of Canada (operator, 60%) and Newmont Corp. of United States (40%). Pueblo Viejo Dominicana, which was located in the Sanchez Ramirez Province, had the capacity to produce about 35,000 kilograms per year (kg/yr) of gold. Perilya Ltd. of Australia, through its subsidiary Corporación Minera Dominicana (CMD), owned Cerro De Maimón, which is located in Monseñor Nouel Province. Cerro De Maimón continued to be the sole producer of zinc and the major producer of copper in the country. Falcondo was jointly owned by Americano Nickel Ltd. of Canada (85.3%), the Government (10%), Franco-Nevada Corp. of the United States (4.1%), and private interests (0.6%). The Falcondo smelter, located in Loma Las Peguera, Bonao, had the capacity to produce about 30,000 metric tons per year (t/yr) of contained nickel in ferronickel. Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Gold.—Barrick Gold continued with its plans to expand the Pueblo Viejo processing plant and tailings capacity, with an estimated initial investment of more than \$1.0 billion. Ongoing studies and test works were underway during the year, and a feasibility study for Pueblo Viejo's expansion was expected to be completed in 2020. The company reported that

the proposed expansion was expected to increase throughput to 14 million metric tons per year (Mt/yr), which would allow the Pueblo Viejo Mine to maintain an average production of about 25,000 kg/yr after 2022. The proposed expansion also had the potential to extend the mine's life into or beyond 2030. Barrick Gold also reported, however, that without the completion of the expansion project, mining at Pueblo Viejo was expected to end in 2021 and that production would likely end in 2029 (Barrick Gold Corp., 2019a, p. 17; 2019b; 2020, p. 7, 19, 30, 76; Oficina Nacional de Estadística, 2020, p. 126).

As of yearend, Antilles Gold Ltd. of Australia (formerly known as PanTerra Gold Ltd.) ceased all its operations at its Las Lagunas gold and silver project. The project, which began operations in 2012, consisted of the recovery of about 5.0 million metric tons (Mt) of stored refractory tailings from the Pueblo Viejo Mine. The company reported that Las Lagunas Albion carbon-in-leach plant, which had an installed capacity of 200,000 t/yr, was expected to be dismantled in early 2020. During the year, silver production from Las Lagunas decreased by 24% to 3,100 kilograms (kg), and gold production, by 15% to about 1,100 kg (PanTerra Gold Ltd., 2020, p. 2; Oficina Nacional de Estadística, 2020, p. 126; Antilles Gold Ltd., 2021).

Nickel.—Mined ore from Falcondo's nickel mine in the city of Bonao, Monseñor Nouel Province, was processed at the company's smelter to produce ferronickel. In 2019, ferronickel (Ni content) production from the smelter increased to 28,450 metric tons (t) from 19,214 t in 2018, which was attributed to the commissioning of a second production line in the last quarter of 2018 (tables 1, 2; Banco Central de la República Dominicana, 2020a; Falconbridge Dominicana S.A., 2020, p. 13).

Outlook

The economy of the Dominican Republic is likely to be significantly affected by the coronavirus disease 2019 (COVID-19) pandemic in 2020. Strict sanitary measures to contain the spread of the virus are likely to affect the country's major contributors of development and economic growth, including the mineral industry. As a result, the country's real GDP is expected to decrease by about 6.7% in 2020 compared with an increase of 5.1% in 2019. The mineral industry is likely to be affected by an expected reduction in mining and quarrying activities and personnel, which could result in significant decreases in the production of the Dominican Republic's metals and industrial minerals. Gold is likely to remain the country's leading mineral product and to continue to be a significant source of Government revenue (Banco Central de la República Dominicana, 2020b, p. 5–6, 9–10, 14, 32; 2021a, p. 5, 14, 35; International Monetary Fund, 2021).

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HAITI

Haiti occupies the western part of the Island of Hispaniola in the Caribbean Region and possesses similar economic mineral deposits to the Dominican Republic, although Haiti's mineral resources remained largely undeveloped. The geology of northern Haiti hosts numerous copper, gold, and silver occurrences and prospects. The country remained the poorest country in the Western Hemisphere, with close to 60% of the population living below the national poverty line. Haiti's economy continued to be hindered by political instability, civil unrest, the depreciation of the national currency, high unemployment, and natural disasters. According to the Institut Haitien de Statistique et d'Informatique, in 2019, the country's real GDP decreased by 1.7% compared with that of 2018. The mineral sector did not play a significant role in Haiti's economy, and the production of mineral commodities contributed only about 1% to the country's GDP. The country's mineral industry continued to be largely based on the production of cement; however, available information was inadequate to make reliable estimates of output (EMX Royalty Corp., 2021; Institut Haitien de Statistique et d'Informatique, 2021, p. 11; U.S. Central Intelligence Agency, 2021; World Bank, The, 2021).

Exploring for or mining mineral and energy resources in Haiti requires authorization from Le Bureau des Mines et de l'Energie [Bureau of Mining and Energy], which was under the Ministère des Travaux Publics, Transports et Communications [Ministry of Public Works, Transport, and Communications]. Prospecting, exploration, and mining permits were granted only to companies established in Haiti. In 2012, for the first time in more than 30 years, the Government awarded mining permits to two domestic companies to mine for gold and copper. Mining permits were awarded to the Société Minière du Nord-Est S.A. and Delta Société Minière S.A. In 2013, however, the Government suspended all mining permits in the country, including those granted to Société Minière du Nord-Est S.A. and Delta Société Minière S.A., while it began working on new legislation to reform the 1976 mining law. The Government submitted a draft mining law to the Parliament in 2017. Under the new draft law, exploration permits and mining projects would no longer require the approval of the country's Parliament, but only authorization from the Prime Minister, the Minister of Finance, and the Bureau of Mining. New legislation to reform Haiti's mining law continued to be under revision in the Parliament as of yearend (Jamaica Observer, 2012; U.S. Department of Commerce, 2018, p. 42; U.S. Department of State, 2019; EMX Royalty Corp., 2021).

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JAMAICA

Jamaica's mineral industry continued to be dominated by the production of bauxite and alumina. In 2019, the country was ranked sixth among the world's leading producers of alumina and seventh among the world's leading producers of bauxite. Bauxite and alumina also continued to be the main source of foreign trade, accounting more than 50% of the country's total export revenue. Other minerals produced in Jamaica included cement, clay, gypsum, lime, limestone, pozzolan, sand and gravel, and silica. Petroleum refinery products continued to be produced at the country's sole petroleum refinery, which was operated by Petrojam Ltd. (tables 1, 2; Bray, 2021; Statistical Institute of Jamaica, 2021d).

Minerals in the National Economy

In 2019, Jamaica's real GDP increased by 0.9% compared with that of 2018. However, the value added of the mining and quarrying sector as a whole decreased by about 12% owing mainly to the suspension of all operations at Alumina Partners of Jamaica's (Alpart's) alumina refinery in September. Jiuquan Iron & Steel (Group) Co., Ltd. (JISCO) of China, which owned Alpart, began a modernization and expansion program during the year. As of October 2019, about 6,900 workers were employed in the mining and quarrying sector, which accounted for less than 1% of the workforce in the country (Myers, 2019; Bank of Jamaica, 2020, p. 28; Statistical Institute of Jamaica, 2021a–c).

The total value of goods exported from Jamaica was about \$1.6 billion in 2019 compared with about \$1.9 billion in 2018. The value of bauxite exports was about \$90 million compared with about \$100 million in 2018, which was a decrease of 10%, and the value of alumina exports was about \$735 million compared with about \$1.1 billion in 2018, which was a decrease of 35%. The decrease in the value of both bauxite and alumina exports was also attributed to the temporary suspension of the Alpart alumina refinery. Bauxite and alumina exports to the United States were valued at about \$82.6 million in 2019 compared with \$77.5 million in 2018 and continued to account for about 20% of the total value of Jamaica's exports to the United States (Jamaica Bauxite Institute, 2021a; 2021b, p. 3; Statistical Institute of Jamaica, 2021d; U.S. Census Bureau, 2021).

The legislative framework for the mineral sector in Jamaica is provided by the Mining Act of 1947, which was amended in 1995. The Ministry of Science, Energy, and Technology is the Government agency responsible for the energy and mining

sectors of Jamaica. The Jamaica Bauxite Institute, which was established by the Government in 1975, is responsible for monitoring and studying the aluminum industry. It also serves as the Government's adviser in all matters concerning the bauxite and alumina industry domestically and internationally (Jamaica Bauxite Institute, 2021c).

Production

In 2019, the production of gypsum and petroleum refinery products increased by 17% each, and that of silica sand increased by 13%. Production of limestone decreased by 21%; shale clay, by 15%; and pozzolan, by 14%. During the year, the production of bauxite decreased by 10% to 9.0 Mt and the production of alumina decreased by 13% to 2.2 Mt owing to the shutdown of the Alpart alumina refinery in September (Linton, 2017; Myers, 2019). Data on mineral production are in table 1.

Structure of the Mineral Industry

On February 22, the Government of Jamaica enacted "The Compulsory Acquisition (Shares in Petrojam Limited) Act, 2019." Under the Act, the Government, through the Account General's Department, completed the compulsory acquisition of PDVSA's 49% shares in Petrojam Ltd. Prior to February 22, the Government, which had entered into a joint-venture agreement with PDVSA in 2006, held the remaining 51% shares of the country's sole petroleum refinery. The decision to reacquire PDVSA's 49% shares was mainly attributed to continued delays in completing an expansion program at Petrojam. The expansion program, signed by the joint venture in 2017, was expected to increase the refinery's production capacity to 50,000 bbl/d from 36,000 bbl/d (Petrojam Ltd., 2017; 2020, p. 5; 2021; Jamaica Observer, 2019). Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Bauxite and Alumina.—JISCO temporarily suspended, for up to 2 years, all operations at the Alpart refinery while modernization works are underway. Once the modernization works are completed, the company expected to increase its production capacity to 2.0 Mt/yr from 1.65 Mt/yr. JISCO held 100% interest in Alpart (Linton, 2017; Myers, 2019).

Outlook

Jamaica's economy is expected to be significantly affected by the coronavirus disease 2019 (COVID-19) pandemic in 2020. The country's economy is projected to decrease by about 10% in 2020, mostly as a result of reduced activity in the tourism sector and a decrease in exports of alumina, which are Jamaica's main sources of revenue. Bauxite and alumina are likely to remain the leading mineral products in terms of generating Government revenues and the leading mineral export products. However, bauxite and alumina production and exports are likely to decrease in the near term owing mainly to the ongoing suspension of Alpart's operations as well as to an expected

lower capacity utilization at the country's bauxite and alumina plants owing to the global pandemic and the resulting decrease in demand (Bank of Jamaica, 2021, p. 21–23).

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TRINIDAD AND TOBAGO

Trinidad and Tobago continued to be the leading crude petroleum and natural gas producer in the Caribbean region. In 2019, the country ranked sixth among the world's leading producers of ammonia. The manufacturing sector (including the outputs of fertilizers, methanol, and natural gas liquids) and the mining and quarrying sector (including the outputs of crude petroleum and natural gas) continued to be main contributors of development and economic growth in the country (table 1; Central Bank of Trinidad and Tobago, 2020, p. 8; Apodaca, 2021; Central Statistical Office, 2021a, b).

According to the BP Statistical Review of World Energy, Trinidad and Tobago's proven crude petroleum reserves were estimated to be about 200 million barrels (Mbbbl), and its proven natural gas reserves were estimated to be about 0.3 trillion cubic meters. Trinidad and Tobago housed one of the Western Hemisphere's largest natural gas processing facilities—the Phoenix Park Gas Processors Ltd.—as well as 11 ammonia plants and 7 methanol plants. The Ministry of Energy and Energy Industries (MEEI) is the Government entity responsible for the management of the energy and mineral sectors (BP p.l.c., 2020, p. 14, 32; Ministry of Energy and Energy Industries, 2021a–c).

Energy exports, which included crude petroleum, refinery petroleum products and related materials, and petrochemicals, continued to be significant contributors to the country's economy, accounting for about 80% of export revenue in 2019. According to the BP Statistical Review of World Energy, Trinidad and Tobago continued to be world's seventh-ranked liquefied natural gas (LNG) exporter. In 2019, the country was the leading supplier of imported LNG to the United States, accounting for about 90% of the United States' LNG imports (BP p.l.c., 2020, p. 42; Central Bank of Trinidad and Tobago, 2021a).

Minerals in the National Economy

Trinidad and Tobago's real GDP decreased by 1.2% in 2019 compared with that in 2018. The manufacturing and mining and quarrying sectors continued to be major contributors to the country's GDP, accounting for about 19% and 18% of the total GDP, respectively. During the year, the value added of the mining and quarrying sector decreased by 3.1%, however, and the value added of the manufacturing sector decreased by 2.9%. The decreases in value added were partly attributed to a 7% decrease in the production of crude petroleum as well as the shutdown of operations of the state-owned Petroleum Company of Trinidad and Tobago Ltd. (Petrotrin), including the Point-a-Pierre refinery in yearend 2018. In 2018 (the latest year for which data were available), 48,200 people, or about 8% of the total labor force, were employed in the manufacturing sector (including mining and quarrying) and 13,700 people, or 2% of the total labor force, were employed in the petroleum and natural gas sector. In 2019, the total value of the country's exports decreased by about 19% to \$8.8 billion compared with that in 2018. The decrease was mainly attributed to a decrease in the value of energy exports, by 23% (Central Bank of Trinidad and Tobago, 2020, p. 8; 2021a, b; Central Statistical Office, 2021a, b).

Production

In 2019, the output of petrochemicals, such as urea, increased by about 14%, and the output of ammonia, fertilizers, and methanol increased by 12% each. There was no production of petroleum refinery products in Trinidad and Tobago because of the shutdown of the country's sole petroleum refinery in 2018 (table 1).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Industrial Minerals

Nitrogen.—In November, Yara International ASA (Yara) of Norway, through its subsidiary Yara Trinidad Ltd., announced the closure of its wholly owned Trinidad plant, located in the Point Lisas Industrial Estate. The plant, which was one of the company's smallest ammonia plants, had the capacity to produce about 270,000 t/yr of ammonia. Yara stated that the plant was no longer profitable owing mainly to lower ammonia prices in the international market. The company also reported that negotiations with the National Gas Company of Trinidad and Tobago, which were aimed at reaching an agreement to establish a plan that could sustain Trinidad plant operations, were unsuccessful. As a result, Yara shut down all operations at its Trinidad plant in yearend 2019. Yara also operated Trinidad Nitrogen Co. Ltd.'s (Tringen) I and Tringen II plants, which were also located in the Point Lisas Industrial Estate and had the capacity to produce about 1.0 Mt/yr of ammonia. Tringen was a joint venture between the state-owned National Enterprises Ltd. (51%) and Yara (49%) (table 2; Yara International ASA, 2020a; 2020b, p. 95, 121, 143).

Mineral Fuels

Petroleum and Natural Gas.—During the year, the production of crude petroleum decreased by 7% as a result of the continued challenges in maintaining crude petroleum outputs from mature acreage, as well as adverse effects of aging infrastructure. In 2018, the Government announced the closure and restructuring of Petrotrin, which was overburdened with debt, as its net debt position at yearend 2015 amounted to \$11.4 billion. As part of the restructuring, Petrotrin was retained as an entity to deal with legal matters and three new companies were created—Guaracara Refining Co. (to handle all refinery assets), Heritage Petroleum Co. Ltd. (to operate exploration and production) and Paria Fuel Trading Co. (to conduct trading and marketing). All four companies were subsidiaries of Trinidad Petroleum Holdings Ltd. (tables 1, 2; Central Bank of Trinidad and Tobago, 2019, p. 99; Ministry of Finance, 2019, p. 40).

In February, BP Trinidad and Tobago LLC (BPTT), which was a joint venture between BP p.l.c. of the United Kingdom (70%) and Repsol S.A. of Spain (30%), began natural gas production at the Angelin project. The project, which is located 60 kilometers (km) off the southeastern coast of Trinidad in water depths of about 65 meters, had the capacity to produce

about 17.0 million cubic meters per day of natural gas. Natural gas was expected to be distributed through a new 21-km-long pipeline extending from the new platform to the existing Serrette offshore hub, which is located in southeastern Trinidad. BPTT continued to be the leading producer of natural gas, accounting for 53% of the country's total natural gas output in 2019 (BP p.l.c., 2011, 2019, Ministry of Energy and Energy Industries, 2020, p.15).

DeNovo Energy Ltd., which was a subsidiary of Proman Group of Switzerland, began commercial production at its Iguana natural gas field in 2018. The Iguana field, located within Block 1(a) about 45 km offshore from the Point Lisas Industrial Estate, was the first field being developed along the western coast of Trinidad. Iguana had the capacity to deliver about 2.3 million cubic meters per day of natural gas to the petrochemical plants in the Point Lisas Industrial Estate (table 2; Proman Group, 2018, 2019, 2021).

Outlook

Trinidad and Tobago's economy is forecast to decrease by 7.8% in 2020. The country is likely to be significantly affected by the coronavirus disease 2019 (COVID-19) pandemic in 2020. An expected decrease in commodity prices and in global demand is likely to affect the profitability of domestic energy producers, resulting in the temporary reduction of operations as well as a decrease of the country's energy and manufacturing exports and Government revenues. The country is expected to have continuing challenges maintaining crude petroleum production from mature acreage (Central Bank of Trinidad and Tobago, 2020, p. 7; Ministry of Finance, 2020, p. 31–32; International Monetary Fund, 2021).

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THE BAHAMAS, BARBADOS, GUADELOUPE, MARTINIQUE, AND OTHER ISLANDS OF THE CARIBBEAN

Mining did not play a significant role in the economies of The Bahamas, Barbados, Guadeloupe, Martinique, and other islands of the Caribbean. In many cases, mining was limited to the production of industrial minerals for domestic consumption, such as those used for construction. Barbados, Guadeloupe, and Martinique produced cement. Trinidad Cement Ltd., through its subsidiary Arawak Cement Company Ltd., held 100% interest in the Arawak Cement plant located in Checker Hall, Barbados. LafargeHolcim Ltd. of Switzerland held a 69.7% interest in Société des Ciments Antillais, which operated two cement plants located in Baie Mahault, Guadeloupe, and in Fort-de-France Bay, Martinique. Bahamas Oil Refining Company International Ltd., which was owned by Buckeye Partners, L.P. of the United States (80%), served as refined petroleum product storage facility. Buckeye Bahamas Hub, located in Freeport, Grand Bahama Island, had a storage capacity of about 26.2 Mbbl. Buckeye Bahamas Hub storage included capacity for crude petroleum, fuel oil, diesel fuel, and gasoline (table 2; Buckeye Partners, L.P., 2021).

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TABLE 1
ISLANDS OF THE CARIBBEAN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019	
DOMINICAN REPUBLIC						
Bauxite	1,724,162	7,318	--	--	--	
Cement, hydraulic	thousand metric tons	5,181	5,171	5,254	5,430	5,644
Clay, unspecified ³		150,000	250,000	300,000	400,000 ^r	420,000
Copper, mine, concentrates, Cu content		7,324	9,725	9,618	8,588	6,047
Gold, mine, Au content	kilograms	30,454	37,933	33,910	31,633	31,800
Gypsum ³		240,000	140,000	110,000	130,000	220,000
Ferroalloys, ferronickel, smelter output:						
Gross weight		--	33,203	43,894	53,697 ^r	78,661
Ni content		--	9,913	15,632	19,214	28,450
Nickel, mine, laterite ore:						
Gross weight		--	1,557,847	2,208,371	2,502,980	3,902,012
Ni content ^e		4,000	19,900	28,300	34,700	56,900
Sand and gravel, industrial, silica ³		27,000	74,000	94,000	46,000	13,000
Silver, mine, Ag content	kilograms	99,800	121,749	151,757	166,500	108,700
Stone, sand, and gravel construction, stone: ³						
Crushed:						
Dolomite		13,000	4,400	5,900	3,700	4,000
Limestone		2,800,000	4,300,000	6,000,000	6,000,000	6,000,000
Dimension, travertine		17,000	13,000	13,000	14,000	11,000
Other, size and shape unspecified:						
Marble		2,000	1,600	1,000	1,200	1,000
Pozzolan		61,000	53,000	82,000	73,000	110,000
Zinc, mine, Zn content		4,655	3,636	3,920	4,038 ^r	5,527
GUADALOUPE						
Cement, hydraulic ^e	thousand metric tons	300	300	300	310	310
JAMAICA						
Aluminum:						
Bauxite, dry basis	thousand metric tons	9,629	8,540	8,245	10,058	9,022
Alumina	do.	1,865	1,865	1,782	2,484	2,173
Cement, hydraulic	do.	808	911	846 ^r	787 ^r	759
Clay, shale	do.	NA	NA	NA	255	217
Gypsum		42,833	49,703	50,000 ^e	47,350 ^r	55,391
Lime ^e		105,000	105,000	110,000	110,000	110,000
Petroleum, refinery	thousand 42-gallon barrels	8,239	7,263	7,056	7,340	8,590
Pumice and related materials, pozzolan		130,000	128,630 ^r	130,000 ^e	93,191 ^r	80,339
Sand and gravel, industrial, silica		15,554	19,757	20,000 ^e	22,300 ^r	25,185
Stone, sand and gravel, construction:						
Sand and gravel, unspecified	thousand metric tons	2,208	1,766	1,800 ^e	1,327 ^r	1,323
Stone, dimension, limestone	do.	1,782	2,748	2,700 ^e	4,028 ^r	3,164
TRINIDAD AND TOBAGO						
Cement, hydraulic	thousand metric tons	840	721	670	663	678
Fertilizers	do.	5,453	5,522	5,595	5,431	6,104
Iron and steel:						
Direct-reduced iron ⁴		2,520,000	1,500,000	1,590,000	1,540,000	1,560,000 ^e
Raw steel		266,500	--	--	--	--
Methanol	thousand metric tons	5,516	4,655	4,975	5,081	5,672
Natural gas	million cubic meters	39,603	34,418	34,690	37,500	37,200
Nitrogen, N content:						
Ammonia, anhydrous		4,032,000	4,040,000	4,144,000	3,988,000	4,475,000
Urea		547,400	607,367	553,996	579,970	659,538

See footnotes at end of table.

TABLE 1—Continued
ISLANDS OF THE CARIBBEAN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019	
TRINIDAD AND TOBAGO—Continued						
Petroleum:						
Crude ⁵	thousand 42-gallon barrels	28,710 ^r	26,164 ^r	26,216 ^r	23,176 ^r	21,481
Natural gas liquids	do.	10,992	9,214	9,806	8,695	8,530
Refinery	do.	45,766	54,256	47,720	36,000	--
Sulfur, S content		10	16	1	-- ^r	--

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

¹Table includes data available through December 21, 2020. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²The countries or territories of Aruba, the Bahamas, Barbados, Dominica, Martinique, and St. Kitts and Nevis are known to have production of such mineral commodities as aragonite, lime, limestone, petroleum refinery products, pumice, salt, sand and gravel, stone, and sulfur, but available information was inadequate to make reliable estimates of output. Barbados also produces cement; the Dominican Republic, petroleum refinery products; Haiti and Martinique, cement; Jamaica, marble and marl; and Trinidad and Tobago, clay, limestone, and sand and gravel, but available information was inadequate to make reliable estimates of output.

³Units of measurement were converted to metric tons from cubic meters. Data are rounded to no more than two significant digits.

⁴Source: Midrex Technologies, Inc.

⁵Includes condensate.

TABLE 2
ISLANDS OF THE CARIBBEAN: STRUCTURE OF THE MINERAL INDUSTRIES IN 2019

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
BAHAMAS, THE				
Petroleum, refined	thousand 42-gallon barrels	Bahamas Oil Refining Company International Ltd. (Buckeye Partners L.P., 80%)	Buckeye Bahamas Hub storage facilities, Freeport	26,200
BARBADOS				
Cement		Arawak Cement Company Ltd. (Trinidad Cement Ltd.)	Plant at Checker Hall, Saint Lucy	360,000
DOMINICAN REPUBLIC				
Cement		Cementos Cibao, S.A.	Plant at Santiago Province	1,300,000
Do.		CEMEX, Dominicana S.A. (CEMEX, S.A.B de C.V., 100%)	Plant at San Pedro de Macoris Province	2,600,000
Do.		Domicen S.A.	Plant at Sabana Grande de Palenque, San Cristobal Province	1,900,000
Do.		Argos Dominicana S.A. (Cementos Argos S.A, 46.7%)	Plant at Nigua, San Cristobal, Province	550,000
Copper		Corporación Minera Dominicana (CMD) (Perilya Ltd., 100%)	Cerro de Maimon Mine, Monsenor Nouel Province	15,000
Do.		Pueblo Viejo Dominicana Corp. (Barrick Gold Corp., 60%, and Newmont Corp., 40%)	Pueblo Viejo Mine, Sanchez Ramirez Province	1,000
Gold	kilograms	Corporación Minera Dominicana (CMD) (Perilya Ltd., 100%)	Cerro de Maimon Mine, Monsenor Nouel Province	600
Do.	do.	PanTerra Gold. Ltd., 100%	Las Lagunas Project, ¹ Sanchez Ramirez Province	1,600
Do.	do.	Pueblo Viejo Dominicana Corp. (Barrick Gold Corp., 60%, and Newmont Corp., 40%)	Pueblo Viejo Mine, Sanchez Ramirez Province	35,000
Gypsum		CEMEX, Dominicana S.A. (CEMEX, S.A.B de C.V., 100%)	Plant at Las Salinas, Barahona Province	NA
Nickel		Falconbridge Dominicana S.A (Americano Nickel Ltd., 85.3%; Government, 10%; Franco-Nevada Corp., 4.1%; private interests, 0.6%)	Falcondo Mine, Loma Las Peguera, Bonao, Monseñor Nouel	NA
Nickel, Ni content of ferronickel		do.	Falcondo smelter, Loma Las Peguera, Bonao Monsenor Nouel	30,000
Petroleum, refined	42-gallon barrels per day	Refinería Dominicana de Petróleo PDV S.A. (Government, 51%, and Petróleos Venezuela S.A., 49%)	Refinery at Haina Port, Haina, San Cristóbal	34,000
Silver	kilograms	Corporación Minera Dominicana (CMD) (Perilya Ltd., 100%)	Cerro de Maimon Mine, Monsenor Nouel	15,000
Do.	do.	PanTerra Gold. Ltd., 100%	Las Lagunas tailings operation, ¹ Sanchez Ramirez Province	14,000
Do.	do.	Pueblo Viejo Dominicana Corp. (Barrick Gold Corp., 60%, and Newmont Corp., 40%)	Pueblo Viejo Mine, Sanchez Ramirez Province	110,000
Zinc		Corporación Minera Dominicana (CMD) (Perilya Ltd., 100%)	Cerro de Maimon Mine, Monsenor Nouel	NA
GUADALOUPE				
Cement		Société des Ciments Antillais (LafargeHolcim Ltd., 69.7%)	Plant at Baie Mahault	600,000
HAITI				
Cement		Cimenterie Nationale S.E.M. (Cementos Argos S.A., 37.7%)	Plant at Cabaret	600,000

See footnotes at end of table.

TABLE 2—Continued
ISLANDS OF THE CARIBBEAN: STRUCTURE OF THE MINERAL INDUSTRIES IN 2019

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity ^c
JAMAICA			
Alumina	Alumina Partners of Jamaica (Alpart) (Jiuquan Iron & Steel (Group) Co., Ltd 100%)	Refinery at Nain, St. Elizabeth ²	1,650,000
Do.	Jamaica Aluminum Co. (Jamalco) (Noble Group Ltd., 55%, and Government, 45%)	Refinery at Halse Hall, Clarendon	1,400,000
Do.	West Indies Alumina Co. (Winalco) (United Company RUSAL Plc, 100%)	Refinery at Ewarton Works, St. Catherine	500,000
Bauxite	Alumina Partners of Jamaica (Alpart) Jiuquan Iron & Steel Co., 100%)	Mine at Nain, St. Elizabeth	4,900,000
Do.	Jamaica Aluminum Co. (Jamalco) (Noble Group Ltd., 55%, and Government, 45%)	Mine at Manchester	1,800,000
Do.	Noranda Bauxite (New Day Aluminum Holdings LLC, 49%, and Government, 51%)	Mine at St. Ann	5,300,000
Do.	West Indies Alumina Co. (Winalco) (United Company RUSAL Plc, 100%)	Mine at Russell Place and Schwallenburgh	4,000,000
Cement	Caribbean Cement Co. Ltd. (Trinidad Cement Ltd., 74%)	Plant at Rockfort, Kingston	1,800,000
Petroleum, refined	42-gallon barrels per day Petrojam Ltd. (Government, 100%)	Refinery at Kingston Port	36,000
MARTINIQUE			
Cement	Société des Ciments Antillais (LafargeHolcim Ltd., 69.7%)	Plant at Fort-de-France Bay	350,000
TRINIDAD AND TOBAGO			
Ammonia	Caribbean Nitrogen Co. (EOG Resources Trinidad Ltd., KOCH Industries, Man Ferrostaal, and Proman Group)	Plan at Point Lisas Industrial Estate	650,000
Do.	Methanol Holdings (Trinidad) Ltd. (Proman Group)	Ammonia Urea Nitrate Melamine Plant, Point Lisas Industrial Estate	650,000
Do.	Nitrogen (2000) Unlimited (EOG Resources Trinidad Ltd., KOCH Industries, Man Ferrostaal, and Proman Group)	Nitrogen 2000 Plant, Industrial Estate Point Lisas	650,000
Do.	Nutrien Ltd.	Nutrien Ammonia 1, 2, 3, 4 plants, Point Lisas Industrial Estate	2,200,000
Do.	Point Lisas Nitrogen Ltd. (CF Industries Holdings Inc., 50%, and KOCH Fertilizer LLC, 50%)	Plant at Point Lisas Industrial Estate	650,000
Do.	Trinidad Nitrogen Co. Ltd. (Government, 51%, and Yara International ASA, 49%)	Tringen I and II plants, Point Lisas Industrial Estate	1,000,000
Do.	Yara Trinidad Ltd. (Yara International ASA, 100%)	Yara Trinidad Plant, Point Lisas ³ Industrial Estate	270,000
Cement	Trinidad Cement Ltd. (CEMEX, S.A.B de C.V., 69.8%)	Plant at Claxton Bay	2,500,000
Clay	Trinidad Aggregate Products Ltd.	Mine at Depot Road, Longdenville	NA
Liquefied natural gas	BP (Barbados) Holding SRL, 34%; BG Atlantic 1 Holding Ltd., 26%; Shell LNG Port Spain BV, 20%; NGC Trinidad and Tobago LNG Ltd., 10%; Summer Soca LNG, 10%	Train 1, Point Fortin	3,000,000
Do.	BP Train 2/3 Holding SRL, 42.5%; BG 2/3 Investment Ltd., 32.5%; Shell LNG Port Spain BV, 25%	Trains 2 and 3, Point Fortin	6,600,000
Do.	BP (Barbados) Holding SRL, 37.78%; BG Atlantic 4 Holdings Ltd., 28.89%; Shell LNG Port Spain BV, 22.22%; Trinidad and Tobago LNG, 11.11%	Train 4, Point Fortin	5,200,000

See footnotes at end of table.

TABLE 2—Continued
ISLANDS OF THE CARIBBEAN: STRUCTURE OF THE MINERAL INDUSTRIES IN 2019

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity ^c
TRINIDAD AND TOBAGO—				
Continued				
Methanol		Methanex Corp., 63.1%, and BP Trinidad and Tobago LLC, 36.9%	Atlas plant, Point Lisas Industrial Estate	1,700,000
Do.		do.	Titan plant, Point Lisas Industrial Estate	850,000
Do.		Methanol Holdings (Trinidad) Ltd., of which: Caribbean Methanol Company Methanol IV Company Ltd. M5000 Methanol Trinidad and Tobago Methanol Company Ltd.	Plants at Point Lisas Industrial Estate	4,800,000 (550,000) (580,000) (1,900,000) (1,050,000)
Natural gas	cubic meters per day	BP Trinidad and Tobago LLC (BP p.l.c., 70%, and Repsol S.A., 30%)	Angelin gasfield, 60 kilometers offshore southeastern Trinidad	17,000,000
Do.	do.	do.	Juniper gasfield, 80 kilometers offshore southeastern Trinidad	16,700,000
Do.	do.	DeNovo Energy Ltd. (Proman Group)	Iguana gasfield, offshore west Trinidad	2,300,000
Do.	do.	Greater Angostura (BHP Billiton Ltd., 45%; Government, 30%; Chaoyang Petroleum, 25%)	Greater Angostura oilfield, 40 kilometers offshore east Trinidad	9,600,000
Natural gas liquids	42-gallon barrels per day	Phoenix Park Gas Processors Ltd. (National Gas Company NGL Company Ltd., 51%; Trinidad and Tobago NGL Ltd., 39%; Pan West Engineers & Constructors LLC, 10%)	Plant at Point Lisas Industrial Estate	70,000
Stone, limestone, blue		Cumaca Blue Limestone Products Ltd.	Quarry at Cumaca Road, Valencia	NA
Do.		Cumana Enterprise Ltd.	Quarry at Toco Road, Cumana	NA
Do.		Harripersad Dookeran	Quarry at Quarry Road, Guaracara	NA
Do.		Hermitage Limestone Ltd.	Quarry at Tumbason Road, Arima	NA
Do.		Saiscon Ltd.	Quarry at Corosal Road, Mayo	NA
Do.		Springbank Quarry Ltd.	Quarry at Heights of Guanapo, Arima	NA
Do.		St. Alban's Sand and Gravel Co. Ltd.	Quarry at Cumaca Road, Cumaca	NA
Do.		RRJ Ltd.	Quarry at Tabaquite Road, Guaracara	NA
Petroleum:				
Crude	42-gallon barrels per day	BHP Billiton Ltd., 45%; Government, 30%; Chaoyang, 25%	Greater Angostura oilfield, 40 kilometers offshore east Trinidad	100,000
Do.	do.	Heritage Petroleum Co. Ltd. ⁴ (Government, 100%)	Coora 1, Coora 2, WD-4, WD8, ⁵ oilfields, onshore south Trinidad	1,600
Refinery	do.	Guaracara Refining Co. ⁴ (Government, 100%)	Refinery, ⁶ Pointe-a-Pierre	168,000
Urea	metric tons	Methanol Holdings Ltd.	Ammonia Urea Nitrate Melamine complex, Point Lisas Industrial Estate	800,000
Do.	do.	Nutrien Ltd.	Nutrien urea plant, Point Lisas Industrial Estate	700,000

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

¹Las Lagunas tailings operation was closed at yearend 2019.

²Temporarily suspended.

³Closed at yearend 2019.

⁴Subsidiary of Trinidad Petroleum Holdings Ltd.

⁵Operated by Touchstone Exploration Inc. (100% working interest).

⁶Closed in 2018.