



2017–2018 Minerals Yearbook

CUBA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF CUBA

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Note: In this chapter, information for 2017 is followed by information for 2018.

Cuba's mineral industry continued to be dominated by the production of nickel and cobalt. In 2017, the country was estimated to rank fourth among the world's leading producers of cobalt (as a byproduct of nickel processing). Other mineral commodities produced in the country included bentonite, cement, feldspar, gypsum, kaolin, lead, lime, limestone, marble, salt, silica sand, raw steel, sulfuric acid, zeolites, and zinc. Cuba also produced crude petroleum, natural gas, and petroleum refinery products. Identified mineral resources in the country included metallic minerals, such as chromium, copper, gold, iron, manganese, silver, and tungsten, and industrial minerals, such as asbestos, barite, basalt, clay, kyanite, gabbro, garnet, graphite, magnesite, mica, olivine, phosphate rock, quartz, quartz sand, quartzite, and semiprecious stones. During the year, the Empresa Mixta Minera del Caribe (Emincar) began operations at the Castellanos lead and zinc mine, which was the first new mining project in the country in more than 20 years (Ministerio del Comercio Exterior y la Inversión Extranjera, 2018, p. 197; Trafigura Group Pte. Ltd., 2018, p. 30; Oficina Nacional de Estadística e Información, 2019a, p. 1; Shedd, 2019).

Cuba's slow economic growth over the past year was attributed in part to the inability to secure crude petroleum from Venezuela. Venezuela's crude petroleum supply was greatly reduced owing to that country's economic and political crisis. In 2016 (the latest year for which data were available), crude petroleum imports from Petróleos de Venezuela S.A. (PDVSA) decreased by about 55% compared with those of 2011. The Government-owned Union Cuba-Petróleo (CUPET) was responsible for exploring for, producing, refining, and marketing the country's petroleum and refinery products. Cuba's proven crude petroleum reserves were estimated to be 124 million barrels, and its natural gas reserves were estimated to be 70.8 billion cubic meters (U.S. Energy Information Administration, 2016; Petróleos de Venezuela S.A., 2017, p. 75; Oficina Nacional de Estadística e Información, 2018c, p. 8, 11–15, 18; U.S. Central Intelligence Agency, 2020).

Minerals in the National Economy

In 2017, Cuba's real gross domestic product (GDP) increased by 1.8% compared with that of 2016. The increase was attributed to an increase in the agriculture, construction, and tourism sectors. The country's economy, however, was affected by Hurricane Irma, as well as the continued economic and political crisis in Venezuela. The mining and quarrying sector made up less than 1% of the total GDP and less than 1% of total employment. Employment in the mining and quarrying sector decreased to 21,800 workers in 2017 from 22,000 workers in 2016. During the year, about 315 enterprises operated in the industrial manufacturing sector and about 20 enterprises operated in the mining and quarrying sector (Economic Commission for

Latin America and the Caribbean, 2018, p. 1, 4; Oficina Nacional de Estadística e Información, 2018a, p. 12; 2018b, p. 7).

According to the Portfolio of Opportunities for Foreign Investment 2018–2019, published by the Ministerio del Comercio Exterior y la Inversión Extranjera (Ministry of Foreign Trade and Investment), in 2017, the most significant sectors of foreign capital investment were the energy and mining, industrial manufacturing, and tourism sectors. In the mining sector, the country offered foreign investment opportunities for prospecting, exploration, mining, and commercialization of such metals as copper, gold, lead, silver, tungsten, and zinc, and of such industrial minerals as kaolin and mica. Concession areas included the regions of Central Cuba (9 prospects for copper, gold, lead, silver, and zinc), Ciego-Camagüey-Tunas (14 prospects for copper, gold, lead, silver, and zinc), Holguin and Macizo Sagua-Baracoa (12 prospects for chromite, copper, gold, lead, silver, and zinc), Sierra Maestra (10 prospects for copper, gold, lead, silver, and zinc), and the Special Municipality of the Isle of Youth (8 prospects for kaolin, mica, and tungsten). In the energy sector, Cuba offered joint ventures in petroleum extraction from onshore and offshore fields, including 49 offshore blocks located in Cuba's Exclusive Economic Zone in the Gulf of Mexico; 19 onshore blocks available throughout the country; and 8 shallow-water blocks located in the Provinces of Artemisa, Camaguey, Ciego de Avila, Granma, Matanzas, Mayabeque, Pinar del Rio, Sancti Spiritus, and Villa Clara (Ministerio del Comercio Exterior y la Inversión Extranjera, 2018, p. 12–13, 180–183, 197–219; 2019, p. 16).

Government Policies and Programs

Cuba's mining sector is regulated by the Ley de Minas [Mining Law] (law No. 76 of 1994), which establishes the country's mining policy and legal regulations for mineral resources. The Ministerio de Energía y Minas [Ministry of Energy and Mines] (Law Decree No. 301) is the entity responsible for establishing Government policy for the energy and mining sectors. The Ley de Inversión Extranjera [Law of Foreign Investment] (law No. 118) establishes the legal framework for foreign investment in the country (Gaceta Oficial de la República de Cuba, 2014, p. 177–178).

Production

In 2017, sulfuric acid production increased by 71% to 913,000 metric tons (t); bentonite, by 51% to 589 t; unspecified silica sand, by 16% to 22,000 t; estimated nickel ammoniacal liquor precipitate, by 16% to 740 t; and gypsum, by 15% to 85,000 t. The production of several petroleum refinery products also increased during the year, including kerosene, by 67%; liquefied petroleum gas, by 50%; naphtha, by 38%;

and fuel oil, by 13%. Kaolin production decreased by 40% to 1,500 t, and natural gas, by 11% to 1.1 billion cubic meters. The production of certain petroleum refinery products, such as petroleum coke and gasoline, decreased by 80% and 25%, respectively. Data on mineral production are in table 1.

Structure of the Mineral Industry

Emincar, a joint venture between Government-owned Geominera S.A. (51%) and Trafigura Group Pte. Ltd. of Singapore (49%), began operations at the Castellanos Mine. Nickel and cobalt were produced in the country by Government-owned Empresa Niquelífera Ernesto Che Guevara and by Moa Nickel S.A. [a 50–50 joint venture between Sherritt International Corp. of Canada (Sherritt) and the Government]. Sherritt also held 100% working interests in production-sharing contracts (PSCs) with CUPET, including for the Puerto Escondido and Yumuri oilfields, to produce crude petroleum and natural gas. Sherritt reported that the terms of the original PSC for Varadero West (Block II) expired in November and that the PSC was returned to Government ownership (Sherritt International Corp., 2018a, p. 5, 22; Trafigura Group Pte. Ltd., 2018, p. 30). Table 2 is a list of major mineral industry facilities.

In August, CUPET acquired full ownership of the Camilo Cienfuegos petroleum refinery, of which PDVSA had held a 49% interest. Cienfuegos was revived in 2007, in a joint venture between CUPET (51% interest) and PDVSA, and was processing only Venezuelan crude petroleum. The refinery, located in Cienfuegos Province, had the capacity to produce about 65,000 barrels per day (bbl/d). The country also produced petroleum refinery products at the Hermanos Díaz, the Nico López, and the Sergio Soto refineries, all of which were owned by CUPET (U.S. Energy Information Administration, 2016; Diario de Cuba, 2017; Marsh and Parraga, 2017).

Mineral Trade

In 2017, the total value of Cuba's exports was about \$96 million¹ compared with about \$100 million in 2016. Mining products accounted for 26% of Cuba's total exports compared with 20% in 2016. The country's major export partners were, in order of export value, Canada (which received 19% of Cuba's exports), Venezuela (16%), China (15%), and Spain (9%). The total value of Cuba's imports was \$407 million in 2017 compared with \$444 million in 2016. Venezuela, which supplied 18% of the Cuba's total imports, continued to be the country's major import partner (Oficina Nacional de Estadística e Información, 2018c, p. 8, 11–15, 18; 2019d, p. 12, 14–15, 17).

Commodity Review

Metals

Cobalt and Nickel.—Moa Nickel mined and processed mixed sulfides containing nickel and cobalt at its facilities in Holguín Province. The mixed sulfides from Moa Nickel

were transported by ocean freight to Canada and then by rail to Sherritt's refining facilities in Fort Saskatchewan, Alberta, Canada. Moa Nickel operations included Central Moa (Camarioca Norte, Camarioca Sur, Limestone Mud, Moa Occidental, Moa Oriental, Playa La Vaca-Zona Septentrional II, and Yagrumaje Oeste concessions) and Eastern Satellites projects (Cantarrana, La Delta, and Santa Teresita concessions), which covered a total area of 12,508 hectares. As of December 31, total proven and probable reserves at the Central Moa and the Eastern Satellites projects were reported as 56.83 million metric tons (Mt) at average grades of 1.15% nickel and 0.12% cobalt. In 2017, total production of finished nickel and cobalt was 31,523 t and 3,601 t, respectively. Sherritt expected to produce about 31,500 t of nickel and 3,500 t of cobalt in 2018. In September, the company fully commissioned its third sulfuric acid plant, which was completed in 2016, and had the capacity to produce 2,000 metric tons per day of sulfuric acid. Sherritt reported that, with the startup of the plant, it was no longer necessary to purchase sulfuric acid to support the Moa Nickel operations (Sherritt International Corp., 2018a, p. 1, 5, 17–18, 90; 2018b, p. 41).

Lead and Zinc.—In 2017, Emincar began operations at its Castellanos lead and zinc mine, which was located in Minas de Matahambre, Pinar del Río Province. The Castellanos Mine had the capacity to produce 100,000 metric tons per year (t/yr) of zinc concentrate and 50,000 t/yr of lead concentrate and had an estimated mine life of 22 years. At yearend, the company also commissioned its 1-million-metric-ton-per-year processing plant located at the Castellanos facility (Trafigura Group Pte. Ltd., 2018, p. 30).

Mineral Fuels

Petroleum.—During the year, PJSC Rosneft Oil Co. (Rosneft) of Russia signed an agreement with the Government of Cuba to supply crude petroleum and diesel fuel to the country. Cuba received the first delivery of 250,000 barrels of refined products from Rosneft in May. In October, Rosneft announced plans to develop a cooperative arrangement with the Government of Cuba. The parties discussed additional crude petroleum supplies and refined petroleum products, joint production projects, and cooperation for the modernization of the Cienfuegos refinery; however, details concerning the progress of this cooperation were not available (Adams, 2017; Frank, 2017; PJSC Rosneft Oil Co., 2017; Soldatkin and Tsvetkova, 2017).

In 2017, Sherritt's share of the petroleum produced from the Puerto Escondido and Yumuri oilfields (based on the gross working interest) was 13,479 bbl/d compared with 15,452 bbl/d (revised) in 2016, which was a decrease of 13%. The terms of the original PSC for the Puerto Escondido and Yumuri fields, which were set to expire in March 2018, were extended on new contract terms until March 2021. Sherritt also held 100% working interests in PSCs with CUPET for Block 8A and Block 10, which were in the exploration phase. Block 8A was located in Central Cuba and Block 10 was located on the northern coast of Cuba. In February, the company completed the Block 10 exploration well; however, the well did not reach its intended target because of unexpected geologic complexities resulting in wellbore instability. In August, Sherritt began

¹Where necessary, values have been converted from Cuban pesos (CUP) to U.S. dollars (US\$) at an annual average exchange rate of CUP25.00=US\$1.00 for 2017 and CUP22.22=US\$1.00 for 2016.

drilling a sidetrack from the existing well to reach the original target; however, in December, the company again suspended drilling because of geologic complexities. Drilling was scheduled to resume in the second quarter of 2018, and results were expected to be announced in the third quarter of 2018. Sherritt also expected to acquire two-dimensional seismic data for Block 8A in 2018. In November, the company was awarded a new PSC for Block 6A, which is also located on the north coast of Cuba. Sherritt reported that initial commitments (first subperiod) on Block 6A included the review and reprocessing of two-dimensional seismic data and the subsequent integration into a geophysical and geologic model. Based upon the results of the first subperiod, the company would decide whether to continue into the second subperiod or to terminate the Block 6A PSC. Sherritt reported that future petroleum and gas production would depend upon new reserves in Blocks 10, 8A, and 6A, or the ability to obtain and develop additional PSCs. Sherritt stated that it could not provide assurance that its exploration or development efforts in Blocks 10, 8A, and 6A would result in new commercial production, however, nor yield new petroleum and gas reserves to replace or expand current reserves (Sherritt International Corp., 2018a, p. 5, 22, 35, 54).

Melbana Energy Ltd. of Australia, which held the PSC for Block 9, continued exploration in 2017. Block 9 is located on the north coast of Cuba about 140 kilometers east of Havana. The exploration period for the block was split into four subperiods with withdrawal options at the end of each subperiod. Melbana completed its first exploration subperiod during the year and provided official notification to the Government regulatory authorities of its commitment to the second exploration subperiod. In the second subperiod, the company planned to begin drilling up to two exploration wells in mid-2018 (Melbana Energy Ltd., 2017a, p. 1; 2017b).

MINERAL INDUSTRY HIGHLIGHTS IN 2018

In 2018, the country's real GDP increased by 2.2% compared with that of 2017. The output value of the mining and quarrying sector continued to make up less than 1.0% of Cuba's GDP. Employment in the mining and quarrying sector, which decreased to 21,500 workers in 2018, continued to account for less than 1.0% of the country's total employment. During the year, 310 enterprises operated in the industrial manufacturing sector and 20 enterprises operated in the mining and quarrying sector. The total value of Cuba's exports decreased to about \$95 million² in 2018. Major recipients of Cuba's exports were, in order of export value, Canada (which received 22% of Cuba's exports) and China and Venezuela (19% each). The total value of the country's imports increased to \$459 million, and Venezuela supplied 23% of Cuba's imports (Oficina Nacional de Estadística e Información, 2019a, p. 12; 2019b, p. 12; 2019c, p. 7; 2019d, p. 12, 14–15, 17; U.S. Central Intelligence Agency, 2020).

Emincar continued ramping up production at the Castellanos Mine. The company's processing plant, which was commissioned in 2017, treated about 800,000 t of ore during

²Where necessary, values have been converted from Cuban pesos (CUP) to U.S. dollars (US\$) at an annual average exchange rate of CUP25.00=US\$1.00 for 2018.

the year. Estimated zinc production from the Castellanos Mine was 45,000 t in 2018 compared with 5,000 t in 2017 (table 1; Trafigura Group Pte. Ltd., 2019, p. 32).

In 2018, total production of finished nickel and cobalt at Moa Nickel was 30,708 t and 3,234 t, respectively. The decrease in the production of finished nickel and cobalt compared with that of 2017 was attributed to a disruption in the supply of hydrogen sulfide (which is used in the production of finished nickel and cobalt), a reduction in the availability of mixed sulfides owing to high rainfall at Moa during the year, and rail transportation delays to Fort Saskatchewan. As of December 31, total proven and probable reserves at the Central Moa and Eastern Satellites projects were reported as 54.90 Mt at average grades of 1.15% nickel and 0.12% cobalt. Sherritt reported that the concessions of Moa Nickel were planned to be mined until at least 2034, based on current depletion rates. The company also reported that Moa Nickel was expected to produce between 31,000 and 33,000 t of nickel and between 3,300 and 3,600 t of cobalt in 2019 (Sherritt International Corp., 2019a, p. 3, 7, 17; 2019b).

Sherritt's share of the crude petroleum produced from Puerto Escondido and Yumuri was 4,839 bbl/d in 2018, which was a decrease of about 64% compared with that of 2017. The decrease was attributed to natural reservoir declines from maturing fields and the decrease of Sherritt's PSC percentage to 6% from 45% with the renewal of the Puerto Escondido and Yumuri PSCs in March. The company expected to produce between 3,800 and 4,100 bbl/d and did not plan to drill any additional development wells in Puerto Escondido or Yumuri in 2019. Sherritt reported that Block 10 drilling was scheduled to resume in March 2019 and was expected to be completed in the second quarter of 2019. Melbana Energy continued exploration at Block 9. The company completed an assessment for Block 9 in August and expected to continue advancing its plan to drill up to two exploration wells at the block in 2019 (Melbana Energy Ltd., 2019, p. 4, 7; Sherritt International Corp., 2019a, p. 3, 22; 2019b).

Outlook

Cuba's economic outlook is expected to remain stable. The slow growth in the economy is expected to continue owing to the United States policy of strengthening Cuban sanctions in 2019, as well as the economic and political crisis in Venezuela, which is Cuba's main trading partner. The country's GDP is expected to increase by about 0.5% in 2019. Cuba will continue to seek foreign direct investment to further develop its hydrocarbons and its nonfuel mineral resources, such as copper, gold, lead, silver, and zinc (Economic Commission for Latin America and the Caribbean, 2019a, p. 1; 2019b; U.S. Department of the Treasury, 2020).

References Cited

- Adams, David, 2017, Cuba and Russia renew oil ties, after Venezuela's supply runs dry: Univision Communication Inc., May 10. (Accessed October 24, 2018, at <https://www.univision.com/univision-news/latin-america/cuba-and-russia-renew-oil-ties-after-venezuelas-supply-runs-dry>.)
- Diario de Cuba, 2017, La estatal CUPET se queda con la participacion de PDVSA en la refineria de Cienfuegos [The State CUPET took over PDVSA participation in the Cienfuegos refinery]: Diario de Cuba, Havana, Cuba, December 15. (Accessed October 24, 2018, at http://www.diariodecuba.com/cuba/1513327423_35962.html.) [In Spanish.]

- Economic Commission for Latin America and the Caribbean, 2018, Estudio económico de América Latina y el Caribe—Cuba [Economic survey of Latin America and the Caribbean Cuba]: Economic Commission for Latin America and the Caribbean, 242 p. (Accessed August 17, 2021, at https://repositorio.cepal.org/bitstream/handle/11362/43964/141/S1800837_es.pdf.) [In Spanish.]
- Economic Commission for Latin America and the Caribbean, 2019a, Preliminary overview of the Economies of Latin America and the Caribbean—2019: Economic Commission for Latin America and the Caribbean, December, 3 p. (Accessed September 3, 2020, at https://repositorio.cepal.org/bitstream/handle/11362/45001/107/BPI2019_Cuba_en.pdf.)
- Economic Commission for Latin America and the Caribbean, 2019b, Update of growth projection for Latin America and the Caribbean in 2019 and 2020—As of November 2019: Economic Commission for Latin America and the Caribbean, 1 p. (Accessed March 24, 2020, at https://www.cepal.org/sites/default/files/pr/files/table-growth_projections_november-2019_eng_rev.pdf.)
- Frank, Marc, 2017, Russia resumes oil shipments to Cuba helps fill Venezuelan breach: Thomson Reuters, May 3. (Accessed October 25, 2018, at <https://www.reuters.com/article/us-cuba-energy-russia-idUSKBN17Z2B8>.)
- Gaceta Oficial de la República de Cuba, 2014, Gaceta oficial de la República de Cuba—Ministerio de Justicia [Official gazette of the Republic of Cuba—Ministry of Justice]: Havana, Cuba, Gaceta Oficial de la Republica de Cuba, April 16, 240 p. [In Spanish.]
- Marsh, Sarah, and Parraga, Marianna, 2017, Cuba takes over Venezuela stake in refinery joint venture: Rigzone.com, Inc., December 14. (Accessed October 24, 2018, at https://www.rigzone.com/news/wire/cuba_takes_over_venezuela_stake_in_refinery_joint_venture-14-dec-2017-152814-article/.)
- Melbana Energy Ltd., 2017a, Cuba—Block 9 production sharing contract: Melbourne, Victoria, Australia, Melbana Energy Ltd., 7 p. (Accessed October 23, 2018, at http://www.melbana.com/site/PDF/2333_0/CubaBlock9ProjectFlyer6September2017.)
- Melbana Energy Ltd., 2017b, Cuba—Melbana commits to second sub-period exploration program for Block 9: Melbourne, Victoria, Australia, Melbana Energy Ltd. press release, October 11, 2 p. (Accessed October 23, 2018, at http://www.melbana.com/site/PDF/2381_0/MelbanaCommitsToBlock9SecondSubPeriod.)
- Melbana Energy Ltd., 2019, Annual report 2018: Melbourne, Victoria, Australia, Melbana Energy Ltd., 68 p. (Accessed October 1, 2019, at http://www.melbana.com/site/cpfile/2742_1/MAY_2033594.pdf.)
- Ministerio del Comercio Exterior y la Inversión Extranjera, 2018, Cuba—Cartera de oportunidades de inversión extranjera 2017–2018 [Portfolio of opportunities for foreign investment 2017–2018]: Havana, Cuba, Ministry of Foreign Trade and Investments, 299 p. [In Spanish.]
- Ministerio del Comercio Exterior y la Inversión Extranjera, 2019, Cuba—Cartera de oportunidades de inversión extranjera 2018–2019 [Portfolio of opportunities for foreign investment 2018–2019]: Havana, Cuba, Ministry of Foreign Trade and Investments, 323 p. (Accessed March 24, 2020, at https://www.mincex.gob.cu/files/cartera_de_opportunidades_de_inversion_extranjera_2018-2019_web_opt_0.pdf.) [In Spanish.]
- Oficina Nacional de Estadística e Información, 2018a, Anuario estadístico de Cuba 2017—Empleo y salarios [Statistical yearbook of Cuba 2017—Employment and salaries]: Oficina Nacional de Estadística e Información, 19 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2018b, Anuario estadístico de Cuba 2017—Organización institucional [Statistical yearbook of Cuba 2017—Institutional organization]: Oficina Nacional de Estadística e Información, 10 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2018c, Anuario estadístico de Cuba 2017—Sector externo [Statistical yearbook of Cuba 2016—External sector]: Oficina Nacional de Estadística e Información, 46 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2019a, Anuario estadístico de Cuba 2018—Cuentas Nacionales [Statistical yearbook of Cuba 2018—National accounts]: Oficina Nacional de Estadística e Información, 23 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2019b, Anuario estadístico de Cuba 2017—Empleo y salarios [Statistical yearbook of Cuba 2018—Employment and salaries]: Oficina Nacional de Estadística e Información, 19 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2019c, Anuario estadístico de Cuba 2018—Organización institucional [Statistical yearbook of Cuba 2018—Institutional organization]: Oficina Nacional de Estadística e Información, 10 p. [In Spanish.]
- Oficina Nacional de Estadística e Información, 2019d, Anuario estadístico de Cuba 2018—Sector externo [Statistical yearbook of Cuba 2018—External sector]: Oficina Nacional de Estadística e Información, 47 p. [In Spanish.]
- Petróleos de Venezuela, S.A., 2017, Informe de gestión anual 2016 [Annual management report 2016]: Caracas, Venezuela, Petróleos de Venezuela, S.A., 136 p. (Accessed March 23, 2019, at <http://www.pdvs.com/images/pdf/Inversionistas/INFORMEDEGESTION2016.pdf>.) [In Spanish.]
- PJSC Rosneft Oil Co., 2017, Rosneft to develop cooperation with Cuba: Moscow, Russia, PJSC Rosneft Oil Co. press release, October 7. (Accessed October 25, 2018, at <https://www.rosneft.com/press/news/item/188017/>.)
- Shedd, K.B., 2019, Cobalt: U.S. Geological Survey Mineral Commodity Summaries 2019, p. 50–51.
- Sherritt International Corp., 2018a, 2017 annual information form: Toronto, Ontario, Canada, Sherritt International Corp., March 20, 101 p. (Accessed October 19, 2018, at [https://s2.q4cdn.com/343762060/files/doc_financials/2017/Sherritt-AIF-Printer-Version-\(revised\).pdf](https://s2.q4cdn.com/343762060/files/doc_financials/2017/Sherritt-AIF-Printer-Version-(revised).pdf).)
- Sherritt International Corp., 2018b, Sherritt 2018 investor day: Toronto, Ontario, Canada, Sherritt International Corp., May 30, 99 p. (Accessed October 19, 2018, at https://s2.q4cdn.com/343762060/files/doc_presentations/2018/05/2018-05-31-Sherritt-Investor-Day-Final.pdf.)
- Sherritt International Corp., 2019a, 2018 annual information form: Toronto, Ontario, Canada, Sherritt International Corp., February 13, 106 p. (Accessed October 1, 2019, at https://s2.q4cdn.com/343762060/files/doc_financials/2018/Q4/SEDAR_AIF.PDF.)
- Sherritt International Corp., 2019b, Sherritt announces 2018 production results and guidance for 2019: Toronto, Ontario, Canada, Sherritt International Corp., January 28. (Accessed October 1, 2019, at <https://www.sherritt.com/English/Investor-Relations/News-Releases/News-Release-Details/2019/Sherritt-Announces-2018-Production-Results-and-Guidance-for-2019/default.aspx>.)
- Soldatkin, V., and Tsvetkova, M., 2017, Rusa Rosneft negocia suministro de petróleo a Cuba [Russian Rosneft negotiates oil supply to Cuba]: Thomson Reuters, December 18. (Accessed August 17, 2021, at <https://jp.reuters.com/article/petroleo-cuba-rusia-idLTAKBN1EC130-OUSLB>.) [In Spanish.]
- Trafigura Group Pte. Ltd., 2018, 2017 annual report: Singapore, Trafigura Group Pte. Ltd., 88 p. (Accessed October 15, 2018, at <https://www.trafigura.com/media/364892/trafigura-2017-annual-report.pdf>.)
- Trafigura Group Pte. Ltd., 2019, 2018 annual report: Singapore, Trafigura Group Pte. Ltd., 100 p. (Accessed September 27, 2019, at <https://www.trafigura.com/brochure/2018-trafigura-annual-report>.)
- U.S. Central Intelligence Agency, 2020, Cuba, *in* The world factbook: U.S. Central Intelligence Agency, August 10. (Accessed August 26, 2020, at <https://www.cia.gov/library/publications/the-world-factbook/geos/cu.html>.)
- U.S. Department of the Treasury, 2020, Resource center—Cuba sanctions: U.S. Department of the Treasury. (Accessed March 23, 2020, at <https://www.treasury.gov/resource-center/sanctions/programs/pages/cuba.aspx>.)
- U.S. Energy Information Administration, 2016, Cuba—Analysis: U.S. Energy Information Administration, July. (Accessed October 12, 2018, at <https://www.eia.gov/international/analysis/country/CUB>.)

TABLE 1
CUBA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2014	2015	2016	2017	2018	
METALS						
Cobalt, mine, Co content ^c	3,300 ^r	4,000 ^r	3,900 ^r	3,900	3,500	
Iron and steel, raw steel	257,700	221,800	205,000	210,100	222,000	
Nickel, Ni content:						
Mine, laterite ore	51,600	53,800 ^r	51,600	52,800	51,000	
Intermediate: ^c						
Ammoniacal liquor precipitate and unspecified	620	690	640	740	700	
Nickel cobalt sulfide	36,700	36,700	34,800	35,200	34,800	
Oxide sinter, including oxides	13,252	14,667	15,006	15,751	16,000	
Lead, mine, Pb content	--	--	--	3,000 ^e	24,000 ^e	
Zinc, mine, Zn content	--	--	--	5,000 ^e	45,000 ^e	
INDUSTRIAL MINERALS						
Abrasives, volcanic ash	131,200	99,900	105,000	98,300	93,300	
Cement, hydraulic	1,579,900	1,517,800	1,492,600	1,430,600	1,590,200	
Clay:						
Bentonite	700	500	389	589	630	
Kaolin	1,700	1,500	2,500	1,500	2,700	
Feldspar	3,600 ^e	3,300 ^e	3,900	3,600	3,000	
Gypsum, mine	thousand metric tons	98	91	74	85	100
Lime	51,500	51,500	48,600	47,600	50,000	
Salt	thousand metric tons	243	285	248	246	193
Sand and gravel, industrial, silica	47,000	25,000	19,000	22,000	23,000	
Stone, sand and gravel, construction:						
Sand and gravel, sand, calcareous ³	thousand metric tons	2,700	2,900	2,800	2,600	2,800
Stone:						
Crushed:						
Limestone	do.	2,000	1,900	1,900	1,900	2,100
Other, unspecified ³	do.	7,000	7,200	6,800	6,300	6,900
Other, size and shape unspecified, marble ³		18,000	13,000	16,000	19,000	21,000
Sulfur, compounds, sulfuric acid	thousand metric tons	404	406	533	913	945
Zeolites	43,100	50,800	52,800	56,500	52,600	
MINERAL FUELS AND RELATED MATERIALS						
Natural gas, marketable	thousand cubic meters	1,199,900	1,244,500	1,185,400	1,050,800	970,100
Petroleum:						
Crude	thousand 42-gallon barrels	21,296	20,685	19,199 ^r	18,000	18,000 ^e
Refinery: ⁴						
Asphalt	do.	370	390 ^r	350 ^r	350	350 ^e
Fuel oil	do.	17,000	17,000	8,000 ^r	9,000	9,000 ^e
Gasoline, motor	do.	4,700	3,800	1,600 ^r	1,200	1,200 ^e
Kerosene	do.	190	220	12 ^r	20	20 ^e
Liquefied petroleum gas	do.	780	590	400 ^r	600	600 ^e
Lubricants	do.	330 ^r	350	350	350	350 ^e
Naphtha	do.	1,800	2,000	1,300 ^r	1,800	1,800 ^e
Petroleum coke	do.	70	50	50	10	10 ^e
Total	do.	25,000	24,000	12,000 ^r	13,000	13,000 ^e

^eEstimated. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through October 3, 2019. All data are reported unless otherwise noted. Totals, estimated data, and some reported data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the commodities listed, crude construction materials and lead may have been produced, 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.

⁴Units of measurement were converted to thousand 42-gallon barrels from metric tons. Data are rounded to no more than two significant digits.

TABLE 2
CUBA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
Cement		Cementos Cienfuegos S.A. (Government, 50%, and LafargeHolcim Ltd., 50%)	Cienfuegos, Cienfuegos Province	1,500
Do.		Cementos Curazao N.V.	Barrio Mujica, Mariel, Artemisa Province	1,110
Do.		Fábrica de Cemento 26 de julio	Nuevitas, Camaguey Province	600
Do.		Fábrica de Cemento Mártires de Artemisa	Artemisa, Artemisa Province	600
Do.		Fábrica de Cemento Siguaney	Siguaney, Sancti Spiritus Province	300
Cobalt, mine, Co content		Moa Nickel S.A. (Government, 50%, and Sherritt International Corp., 50%)	Moa Bay Mine and processing plant, Moa, Holguin Province	4
Gypsum		Empresa de Materiales de la Construcción de Ciego de Avila	Punta Alegre, Ciego de Avila Province	NA
Lead, mine, concentrate		Empresa Mixta Minera del Caribe (Emincar) (Geominera S.A., 51%, and Trafigura Group Pte. Ltd., 49%)	Castellanos Mine, Minas de Matahambre, Pinar del Rio Province	50
Natural gas	thousand cubic meters	Empresa de Perforación y Extracción de Petróleo del Centro	Northern coast between Havana and Cardenas primarily Mayabeque Province	900,000
Do.	do.	Sherritt International Corp. (gross working-interest production in production-sharing contracts with the Government)	Puerto Escondido and Yumuri oilfields	NA
Nickel, mine, Ni content		Empresa Niquelífera Ernesto Che Guevara (Government, 100%)	Ernesto Che Guevara Mine and processing plant, Punta Gorda, Holguin Province	34
Do.		Moa Nickel S.A. (Government, 50%, and Sherritt International Corp., 50%)	Moa Bay Mine and processing plant, Moa, Holguin Province	37
Petroleum:				
Crude	thousand 42-gallon barrels	Empresa de Perforación y Extracción de Petróleo del Centro	Northern coast between Havana and Cardenas, primarily Mayabeque Province	10,000
Do.	do.	Sherritt International Corp. (gross working-interest production in production-sharing contracts with the Government)	Puerto Escondido and Yumuri oilfields	5,000
Refinery products	do.	Union Cuba-Petróleo (Government, 100%)	Camilo Cienfuegos refinery, Cienfuegos, Cienfuegos Province	23,700
Do.	do.	do.	Hermanos Díaz refinery, Santiago de Cuba, Santiago de Cuba Province	8,000
Do.	do.	do.	Ñico López refinery, City of Havana	44,500
Do.	do.	do.	Sergio Soto refinery, Cabaiguan, Sancti Spiritus Province	NA
Sand, silica		Algaba quarry	Near Trinidad, Sancti Spiritus Province	50
Do.		Cajobabo	Imías, Guantanamo Province	NA
Do.		Malabe quarry	NA	30
Steel		Grupo Metalúrgico Acinox (Government, 100%), including: Empresa Siderurgica Jose Marti	Cotorro, La Havana Province	NA
Do.		Camagüey	Las Tunas, Las Tunas Province	NA
Sulfuric acid	thousand metric tons per day	Moa Nickel S.A. (Government, 50%, and Sherritt International Corp., 50%)	Moa, Holguin Province	2

See footnotes at end of table.

TABLE 2—Continued
 CUBA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
Zeolites	Empresa Geominera Holguin (Government, 100%)	San Andres plant, Holguin Province	75
Do.	Empresa Geominera de Camaguey (Government, 100%)	El Chorillo plant, Camaguey Province	NA
Do.	Empresa Geominera del Centro (Government, 100%)	Tasajeras plant, Villa Clara Province	NA
Zinc, mine, concentrate	Empresa Mixta Minera del Caribe (Emincar) (Geominera S.A., 51%, and Trafigura Group Pte. Ltd., 49%)	Castellanos Mine, Minas de Matahambre, Pinar del Rio Province	100

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