



2019 Minerals Yearbook

VENEZUELA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF VENEZUELA

By Yolanda Fong-Sam

Venezuela accounted for about 1% of global crude petroleum production in 2019 and was the second-ranked petroleum producing country in the region composed of Latin America and the Caribbean, after Brazil, accounting for about 15% of the region's total petroleum output. Proven petroleum reserves in Venezuela represented nearly 18% of the world's total proven petroleum reserves, making it the country with the largest share in the world, followed by Saudi Arabia (17%), Canada (10%), Iran (9%), and Iraq (8%). Venezuela accounted for 1% of global natural gas liquids output in 2019 and for 22% of output from producing countries within the Latin America and the Caribbean region after Argentina and Brazil. Venezuela held 3% of the world's proven natural gas reserves. The most significant nonfuel mineral and mineral-based commodities produced in Venezuela in 2019 were aluminum, cement, gold, and iron and steel. Other nonfuel mineral commodities produced included clay, feldspar, nitrogen (ammonia), phosphate rock, refined lead, and sand and gravel (unspecified). Venezuela was the second-ranked producing country of direct-reduced iron in the Latin America and the Caribbean region after Argentina, accounting for about 27% of the regional supply (table 1; BP p.l.c., 2020, p. 14, 16, 19, 32; World Steel Association, 2020, p. 19).

Minerals in the National Economy

Venezuela's debt was estimated to be about \$148 billion by the end of 2019. Estimates from the Economic Commission for Latin America and the Caribbean (ECLAC) indicated that Venezuela's gross domestic product (GDP) decreased in 2019 by 14% to \$116 billion (at constant 2010 prices) from \$135 billion in 2018. The mining and quarrying sector contributed 13.1% to the real GDP in 2018 (the latest year for which data were available). According to crude petroleum data reported by BP p.l.c., Venezuela's production had decreased during the past 10 years, apart from a modest increase in output in 2014. In 2019, crude petroleum production decreased by 38% compared with that in 2018 (BP p.l.c., 2020, p. 16; United Nations Economic Commission for Latin America and the Caribbean, 2020b, p. 31; 2021a, p. 138; 2021b, p. 31, 51; 2021c).

The United Nations Conference on Trade and Development reported that Venezuela's foreign direct investment (FDI) inflows increased by 5% to \$934 million in 2019 from \$886 million in 2018. This was still far below the \$6 billion of FDI received in 2012. FDI has remained low owing mainly to challenges resulting from Venezuela's economic and political instability. Factors that had contributed to the country's economic challenges included fuel supply shortages, a decrease in tax revenues mainly from the petroleum sector, prolonged electrical power outages, and price controls imposed on the mining sector by the Government (United Nations Economic Commission for Latin America and the Caribbean, 2020a, p. 5; 2021a, p. 137; United Nations Conference on Trade and Development, 2021, p. 250; Lloyds Bank Trade, 2022).

In September, the Government of Venezuela announced that Russia had pledged \$4 billion for new investments in Venezuela's fuel and nonfuel mineral sector and petrochemicals industry, and in the country's national defense program and transportation projects. Both Governments signed a total of 264 agreements. In addition, both parties were working on future long-term mutual investment plans to be extended to 2030 (Dobson, 2019a).

Government Policies and Programs

In January 2019, the U.S. Department of the Treasury announced new sanctions against Venezuela's petroleum company, Petróleos de Venezuela S.A. (PDVSA), in which all its assets under United States jurisdiction were blocked, and all United States citizens and companies were banned from engaging in transactions with PDVSA. However, the United States continued to process crude petroleum transactions from Venezuela provided the proceeds went into blocked (restricted) accounts, thus preventing the Government of Venezuela from accessing financial support from these assets abroad. At the time these sanctions were implemented, U.S.-based Citgo Petroleum Corp. (CITGO), which was majority owned by PDVSA, was allowed to continue operations in the United States as long as the proceeds from the sales of its products were deposited in a blocked account (Vaz, 2019a).

In March, the U.S. Department of the Treasury imposed two additional sets of sanctions on Venezuela. The first was to the C.V.G. Compañía General de Minería C.A. (Minerven) and its president. The sanctions blocked the company and its associates' assets in the United States for which the company and (or) its associates held a more than 50% share and prohibited all U.S. persons and companies from dealing with the company and its associates. Minerven operated in the State of Bolivar and was part of the state-owned Corporación Venezolana de Guayana [Venezuelan Corporation of Guayana] (CVG) conglomerate. Minerven owned the sole gold-processing plants in the country and produced gold bars from state-run and small-scale independent mining operations. Venezuela started looking for other partners for the refining of gold after sanctions were imposed by the United States, Canada, and Europe. In general, the multiple financial sanctions imposed on Venezuela were hampering the country's international transactions and blocking Venezuela's financial accounts abroad; therefore, the country turned to gold as a source of hard currency to fund all imports. The second set of sanctions was imposed on three major Venezuelan public banks, one of which was the Venezuelan Economic and Social Development Bank (BANDES), which had been created mainly to support the country's development projects. The other banks were the Bicentenario Bank and the Bank of Venezuela. The sanctions imposed on these banks were on all assets held by these entities in the United States in which they held more than a 50% share. Additionally, all U.S. persons

and companies were banned from dealing with these banks (Vaz, 2019b, c).

In April, the United States imposed a series of sanctions on Venezuela that ultimately resulted in an economic embargo. The U.S. Department of the Treasury sanctioned Venezuela's banking, mining, and fuel sectors. Funds from CITGO (PDVSA's subsidiary in the United States) and more than \$1.2 billion worth of gold held in the vaults of the Bank of England were frozen. Other measures included marking petroleum vessels as blocked property, which made petroleum shipments more difficult. These sanctions contributed to a sharp decline in Venezuela's petroleum output and worsened the recent electricity crisis (Vaz, 2019d).

Also in April, sanctions were put in place against the Central Bank of Venezuela (BCV). The sanctions called for the restriction of U.S. transactions with BCV and for the prohibition of BCV's access to U.S. currency. In August, the United States introduced even stricter measures on Venezuela owing to political tensions between the two countries through the establishment of an Executive order that prohibits the exportation, payment, transfer, withdrawal of, or dealings with all Venezuelan state-owned assets in the United States unless otherwise exempted by the U.S. Department of the Treasury. All business transactions with any Venezuelan state entities are strictly forbidden. The U.S. Department of the Treasury was also authorized to issue secondary sanctions against non-United States third parties that were considered to have assisted, sponsored, or provided financial aid, material, or technological support, or goods or services to the Government of Venezuela. Whereas previous Executive orders sanctioned foreign entities from dealing with Venezuela's state banks and the mining and the fuel sectors, the embargo of 2019 sanctioned all businesses in all sectors from dealing with Venezuela. Exemptions to the embargo were for such articles as clothing, food, and medicine intended to be used as humanitarian assistance (Koerner and Vaz, 2019b; Seelke, 2019; Vaz, 2019d).

The Ministerio del Poder Popular de Petróleo y Minería [Ministry of Petroleum and Mining] had been the Government entity responsible for all legal matters related to mining and petroleum extraction activities. In 2016, the Ministry was split into two with the creation of the Ministerio del Poder Popular de Desarrollo Minero Ecológico [Ministry of Ecological Mining Development] (MPPDME) and the Ministerio de Poder Popular de Petróleo [Ministry of Petroleum] (MinPetróleo); the split was established by Decree No. 2,413. The Ministerio del Poder Popular para Industrias y Producción Nacional [Ministry of Industries and Production], established by Decree No. 8,609 in 2011, was the Government entity responsible for all legal matters related to industries. In December 2015, Decree No. 6,210 was passed; the law requires that the Government hold a 55% share in all mining projects, sets a license period of no more than 20 years for mining operations, and entitles the Government to a minimum share of 3% and a maximum share of 13% as a royalty on the value of gold production and "other strategic minerals" (not specified). According to the Venezuelan Constitution, all mineral and hydrocarbon resources belong to the state (Agencia Venezolana de Noticias, 2016; Ministerio del

Poder Popular de Petróleo y Minería, 2016, p. 48; Ministerio del Poder Popular para Industrias, 2016, p. 58–61, 67–68).

The Instituto Nacional de Geología y Minería [National Institute of Geology and Mining] (INGEOMIN), established by Decree No. 5,382 of 1999, is the Government entity responsible for research and other matters related to geology, minerals, geophysics, geochemistry, geotechnics, and other resources areas. The INGEOMIN advises both Government agencies and the private sector regarding the optimal utilization of mineral resources and water, prevention and mitigation of the effects of natural hazards, and sustainable development (Ministerio del Poder Popular de Petróleo y Minería, 2016, p. 572).

Production

Production of most mineral commodities decreased owing to the financial strain caused by Venezuela's political instability and weak economy and exacerbated by the economic embargo. Production of some mineral commodities was reported to be zero in 2019, including alumina, bauxite, ferronickel, ferrosilicon, nickel, and silicomanganese. Production of many commodities decreased to a 5-year low, including production of raw steel, which decreased by 96% compared with production in 2015; aluminum, 93%; iron ore, 91%; coal, 88%; direct-reduced iron, 86%; petroleum refinery products, 84%; nitrogen, 81%; crude petroleum, 64%; refined lead, 60%; sulfur, 54%; lime, 46%; cement, 45%; phosphate rock (gross weight), 43%; phosphate rock (P_2O_5 content), 29%; and natural gas and natural gas liquids, 25% each. Data on mineral production are in table 1.

Structure of the Mineral Industry

Government-owned PDVSA had majority control of Venezuela's petroleum sector. The Government-owned Corporación Socialista del Cemento S.A. controlled the cement sector through its subsidiaries C.A. Fábrica Nacional de Cementos S.A.C.A. (FNC), Corporación de Cemento Andino C.A. (Cemento Andino), Corporación de Cementos Catatumbo C.A.; Empresa de Cemento Cerro Azul C.A. (Cemento Cerro Azul), Industria Venezolana de Cementos S.A. (INVECEM), and Venezolana de Cementos S.A.C.A. (VENCEMOS).

Government-owned CVG is a conglomerate of 21 companies and is headquartered in the city of Guayana, Bolívar State. The conglomerate is part of the Empresas Básicas de Guayana, which produces raw material for other companies to produce finished products. The companies that make up CVG are focused in three sectors: aluminum, iron and steel, and mineral-related services. CVG's companies under the aluminum sector were C.V.G. Aluminio de Carabobo S.A. (Alucasa), C.V.G. Aluminio del Caroní S.A. (CVG Alcasa), C.V.G. Aluminios Nacionales, S.A. (Alunasa, located in Costa Rica), C.V.G. Bauxilum C.A. (Bauxilum), C.V.G. Carbones del Orinoco, C.A. (Carbonorca), C.V.G. Empresa Conductores de Aluminio del Caroní, C.A. (Cabelum), C.V.G. Rines de Aluminio, C.A. (Rialca), C.V.G. Venezolana de Aluminio C.A. (Venalum). CVG's companies under the iron and steel sector were Briquetera de Venezuela C.A. (Briqven), Briquetera del Caroní C.A. (Briqcar), Briquetera del Orinoco C.A. (Orinoco Iron), Complejo Siderúrgico de Guayana (Comsigua, C.A.),

C.V.G. Ferrominera Orinoco C.A. (CVG FMO), C.V.G. Refractorio Socialista de Venezuela, C.A. (CVG Refractorios C.A.), and Siderúrgica del Orinoco Alfredo Maneiro (CVG Sidor C.A.). CVG's companies under the mineral-related services sector were C.V.G. Compañía Nacional de Cal, C.A. (CVG Conacal), C.V.G. Fundeporte, C.V.G. Promociones Ferroca, S.A. (CVG Ferrocasa), C.V.G. Técnica Minera, C.A. (Tecmin), and Sociedad de Garantías Recíprocas (SGR) (Heredia Terán, 2019).

The Corporación Venezolana de Minería S.A. (CVM) operated the Mina Norte and the Paso Diablo coal mines located in the State of Zulia; the two mines had a combined production capacity of about 8.3 million metric tons per year (Mt/yr) of coal. Table 2 is a list of major mineral industry facilities.

Before the sanctions were imposed in Venezuela, several transnational companies operated in the petroleum sector, in partnership with state-owned PDVSA. These companies included Chevron Corp. (headquartered in the United States), Repsol S.A. (Spain), China National Petroleum Corp. (CNPC; China), Eni S.p.A. (Italy), Statoil ASA (Norway), and Total S.A. (France) (table 2).

Mineral Trade

In 2019, the total value of exported goods from Venezuela to the United States was \$1.9 billion compared with \$11.3 billion in 2018. Mineral exports to the United States from Venezuela were dominated by mineral fuels, which together were valued at \$1.6 billion, and gold and precious stones, which were valued at \$34 million. Venezuela imported a total of \$1.3 billion worth of goods from the United States compared with \$4.8 billion in 2018. The main items imported from the United States were mineral fuels valued at \$337 million; heavy machinery, \$187 million; and electrical machinery, \$185 million (Office of the United States Trade Representative, 2022).

Commodity Review

Metals

Aluminum.—In March 2019, subsidiaries of CVG—the Alcasa and Venalum smelters—were shut down after a power failure at the Guri Dam hydroelectric powerplant. The capacity utilization at yearend 2018 was 3.7% at the 170,000-metric-ton-per-year (t/yr)-capacity Alcasa smelter and 8.2% at the 440,000-t/yr-capacity Venalum smelter mainly owing to input shortages, power outages, and technical failures. CVG's Carbonorca was the country's sole active operation in the aluminum sector, as Bauxilum had been idle since 2017. Carbonorca however, was operating at a severely reduced rate (Rodríguez, 2019a, b).

Gold.—In November, the Government of Venezuela announced the launch of the Manuel Carlos Piar Complex. This complex is the first gold-processing complex in the Orinoco Mining Arc located in Matanzas, Bolivar State. The complex had an initial processing capacity of 20 kilograms per month (kg/mo) of gold; when completed, the facility would have a projected processing capacity of 200 kg/mo of gold. The complex, which would employ about 150 employees, consisted of nine heap-leaching plants designed to process ore to produce

marketable gold. According to the Government, the country has 32 certified gold fields; however, the country had been mainly dependent on foreign assistance to process the ore. The Government also announced the status of the Special Economic Zones for gold exploration and commercialization, which included three sectors within Bolivar State that are considered rich in minerals. The Special Economic Zones and the new gold complex forms part of the Orinoco Mining Arc. The Manuel Carlos Piar Complex, which was originally launched in 2016, was expected to open the way for other mining projects in Venezuela in consortium with foreign firms. However, it was unclear if the new complex was fully state-owned or if it was a partnership with other companies. The Orinoco Mining Arc has sparked controversy in the past owing to the potential for the open pit mining project to negatively affect the environment and surrounding ecosystems as well as indigenous populations living in the region. The Orinoco Mining Arc is also heavily dependent of foreign investment, which is likely to be constrained as a result of the U.S. economic embargo (Dobson, 2019b).

The gold sector in Venezuela was nationalized in 2011. In 2016, opposition grew against the Orinoco Mining Arc project on the basis of its possible environmental and social consequences and an injunction was filed against it. However, the Supreme Court ruled that the injunction was inadmissible owing to the lack of evidence to support the claims. One of the main objectives of the project was to increase the country's domestic gold processing capacity to limit its strong reliance of ore processing abroad. In recent years, Venezuela has been dependent on such countries as Turkey for the processing of its gold ore. In September 2019, according to the Government, the value of the gold bars stored in the Central Bank of Venezuela was \$4.6 billion, which represented a decrease of 18.5% compared with the value of \$5.7 billion in 2018. The country had increasingly been using gold bar transactions as a form of payment specially for imports of food and medicine. The value of the gold reserved in the Central Bank was considered the lowest in 75 years (Boothroyd-Rojas, 2016; Dobson, 2019b; Koerner and Vaz, 2019a).

Industrial Minerals

Cement.—In 2019, Venezuela's Chamber of Construction (CVC) decreased the capacity utilization rate of the cement industry to 12.5%, which represented about 1.5 million metric tons (Mt) of cement from an estimated installed capacity of 12 Mt/yr. The CVC reported that the decrease in the capacity utilization rate was owing to power shortages. Domestic production of cement in 2019 was considered sufficient to meet local demand from the construction sector mainly because public construction projects had slowed down significantly (Global Cement, 2019).

Mineral Fuels

Coal.—Coal production in Venezuela in 2019 was estimated to be 100,000 metric tons (t), which represented an 88% decrease from the 802,000 t produced in 2015. Venezuela was the third-ranked coal-producing country in the Latin America and the Caribbean region in 2019 after Colombia and Brazil.

Total proven coal reserves in Venezuela by the end of 2019 were 731 Mt of anthracite and bituminous coal; for reference, Brazil and Colombia had proven coal reserves estimated to be 6.6 billion metric tons (Gt) and 4.6 Gt, respectively (table 1; BP p.l.c., 2020, p. 44, 46).

Natural Gas and Petroleum.—In April, Reuters reported that the Spanish petroleum company Repsol was suspending a swap agreement with Venezuela's state petroleum company PDVSA. In the agreement, Repsol was to supply Venezuela with petroleum refining products in exchange for crude petroleum. The Government of Venezuela had resorted to swap agreements as a way to offset the economic embargo and sanctions. The petroleum embargo imposed by the United States had also limited Venezuela's access to products needed to refine its crude petroleum and produce fuel (Vaz, 2019d).

In 2019, petroleum production decreased by about 38% compared with that in 2018, and marketed natural gas decreased by 25%. Venezuela's proven reserves of petroleum remained flat in 2019, at 303.8 billion barrels, which was the same as in 2018. Venezuela accounted for 94% of the proven petroleum reserves of the Latin America region, about 25% of the total proven petroleum reserves of the Organization of the Petroleum Exporting Countries (OPEC), and nearly 18% of global reserves. In 2019, petroleum exploration in Venezuela consisted of 149 active rigs compared with 151 in 2018. Venezuela had the most active rigs in the Latin America and Caribbean region in 2019, accounting for 46% of the region's total, 21% of the total for OPEC (724 rigs), and 6% of the world total (2,352 rigs). According to BP's Statistical Review of World Energy, Venezuela was the 20th-ranked producer of crude petroleum in the world (table 1; BP p.l.c., 2020, p. 16; Organization of the Petroleum Exporting Countries, 2020, p. 23).

Venezuela's proven natural gas reserves in 2019 totaled 5.7 trillion cubic meters, which stayed the same compared with that in 2018; these reserves accounted for 74% of the total for the Latin America and the Caribbean region and about 8% of the total for OPEC (73,136 trillion cubic meters) (Organization of the Petroleum Exporting Countries, 2020, p. 76).

Outlook

The ECLAC projects that Venezuela's GDP will decrease further in 2020, as the country is financially isolated owing to the economic embargo. The toughening of sanctions in 2019 are expected to further restrict PDVSA's options to import gasoline, causing fuel supply problems. That, compounded with restrictions imposed by the coronavirus disease 2019 (COVID-19) pandemic, is likely to further constrain the petroleum sector. New sanctions imposed on companies that trade and transport Venezuela's crude petroleum will also likely have a negative effect on Venezuela's petroleum exports, which will also result in a considerable rise in inventory levels. Total goods imports are expected to fall further in 2020 as a result of a decline in domestic demand and greater external constraints on the country. Fiscal and external restrictions will exacerbate the country's ongoing economic issues, which are likely to result in further decreases in crude petroleum production and exports. Gasoline shortages are also likely to further constrain the

country's electrical grid (United Nations Economic Commission for Latin America and the Caribbean, 2020a, p. 1, 3–5).

References Cited

- Agencia Venezolana de Noticias, 2016 New Venezuelan laws will encourage strategic mining and petrochemical development; Agencia Venezolana de Noticias, January 8. (Accessed November 22, 2017, at http://eeuu.embajada.gob.ve/index.php?option=com_content&view=article&id=522:nuevas-leyes-venezolanas-fomentaran-desarrollo-estrategico-de-sectores-minero-y-petroquimico&catid=3:noticias-de-venezuela-en-el-mundo&Itemid=19&lang=en).
- Boothroyd-Rojas, Rachael, 2016, Supreme court denies injunction request against Orinoco Mining Arc: Venezuelanalysis.com, October 31. (Accessed April 27, 2023, at <https://venezuelanalysis.com/news/12761>.)
- BP p.l.c., 2020, BP statistical review of world energy 2020 (69th ed.): London, United Kingdom, BP p.l.c., 65 p. (Accessed May 10, 2022, at <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf>.)
- Dobson, Paul, 2019a, Venezuela arrests oil exec for corruption, receives \$4 bn in Russian investment: Venezuelanalysis.com, October 7. (Accessed March 22, 2022, at <https://venezuelanalysis.com/news/14682>).
- Dobson, Paul, 2019b, Venezuela unveils first gold processing complex in Mining Arc: Venezuelanalysis.com, November 25. (Accessed May 5, 2022, at <https://venezuelanalysis.com/news/14731>).
- Global Cement, 2019: Cement industry projects 2019 capacity utilization at 12.5%: Global Cement, December 11. (Accessed May 2, 2022, at <https://www.globalcement.com/news/item/10203-cement-industry-projects-2019-capacity-utilisation-at-12-5>.)
- Heredia Terán, César, 2019, Las industrias básicas de Guayana son recuperables [The basic industries of Guyana are recoverable]: Barquisimeto, Venezuela, Cotejo Info, October 25. (Accessed May 2, 2022, at <https://cotejo.info/2019/10/industrias-basicas-guayana-2020/>.) [In Spanish.]
- Koerner, Lucas, and Vaz, Ricardo, 2019a, Venezuela, gold reserves fall to 75-year low as Guaido seeks to restructure debt: Venezuelanalysis.com, September 4. (Accessed April 27, 2023, at <https://venezuelanalysis.com/news/14647>.)
- Koerner, Lucas, and Vaz, Ricardo, 2019b, Washington escalates Venezuela sanctions into full-fledged embargo: Venezuelanalysis.com, August 6. (Accessed May 7, 2022, at <https://venezuelanalysis.com/news/14615>.)
- Lloyds Bank Trade, 2022, Foreign direct investment (FDI) in Venezuela: Lloyds Bank Trade website, April. (Accessed May 9, 2022, at <https://www.lloydsbanktrade.com/en/market-potential/venezuela/investment>.)
- Ministerio del Poder Popular de Petróleo y Minería, 2016, Memoria 2015 [Annual report 2015]: Caracas, Venezuela, Ministerio del Poder Popular de Petróleo y Minería, 852 p. (Accessed November 22, 2017, at <https://drive.google.com/file/d/0B65M4qe0vsR1NVVDeGtkeWVBLTQ/view>.) [In Spanish.]
- Ministerio del Poder Popular para Industrias, 2016, Memoria y cuenta 2015 [Annual report and accounts 2015]: Caracas, Venezuela, Ministerio del Poder Popular para Industrias, 925 p. (Accessed November 22, 2017, at <http://2016.transparencia.org.ve/wp-content/uploads/2012/10/MEMORIA-2015-MPPI.pdf>.) [In Spanish.]
- Office of the United States Trade Representative, 2022, U.S.-Venezuela trade facts: Office of the United States Trade Representative. (Accessed May 10, 2022, at <https://ustr.gov/countries-regions/americas/venezuela>.)
- Organization of the Petroleum Exporting Countries, 2020, Annual statistical bulletin 2020: Organization of the Petroleum Exporting Countries, 90 p. (Accessed May 2, 2022, at https://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB_2020.pdf.)
- Rodriguez, J.M., 2019a, Resurrecting Venezuela's aluminium industry? The Government has a plan: Aluminium Insider, January 29. (Accessed May 10, 2022, at <https://aluminiuminsider.com/venezuela-aluminium-industry-government-plan/>.)
- Rodriguez, J.M., 2019b, The Venezuela blackout spells doom for its aluminium industry: Aluminium Insider, March 20. (Accessed May 10, 2022, at <https://aluminiuminsider.com/the-venezuela-blackout-spells-doom-for-its-aluminium-industry/>.)
- Seelke, C.R., 2019, Venezuela, overview of U.S. sanctions: Congressional Research Service, v. IF10715, August 22, 3 p. (Accessed April 25, 2023, at <https://crsreports.congress.gov/product/pdf/IF/IF10715/22>.)

- United Nations Conference on Trade and Development, 2021, World investment report 2021: United Nations Conference on Trade and Development, 257 p. (Accessed May 10, 2022, at https://unctad.org/system/files/official-document/wir2021_en.pdf.)
- United Nations Economic Commission for Latin America and the Caribbean, 2020a, Economic survey of Latin America and the Caribbean, 2020: United Nations Economic Commission for Latin America and the Caribbean, 8 p. (Accessed May 7, 2022, at https://repositorio.cepal.org/bitstream/handle/11362/46071/89/ES2020_Venezuela_en.pdf.)
- United Nations Economic Commission for Latin America and the Caribbean, 2020b, Statistical yearbook for Latin America and the Caribbean 2019: United Nations Economic Commission for Latin America and the Caribbean, April 7, 143 p. (Accessed May 10, 2022, at https://repositorio.cepal.org/bitstream/handle/11362/45353/S1900583_mu.pdf?sequence=4&isAllowed=y.)
- United Nations Economic Commission for Latin America and the Caribbean, 2021a, Preliminary overview of the economies of Latin America and the Caribbean: United Nations Economic Commission for Latin America and the Caribbean, 189 p. (Accessed May 10, 2022, at https://repositorio.cepal.org/bitstream/handle/11362/47670/3/S2100697_en.pdf.)
- United Nations Economic Commission for Latin America and the Caribbean, 2021b, Statistical yearbook for Latin America and the Caribbean 2020: United Nations Economic Commission for Latin America and the Caribbean, March 24, 149 p. (Accessed May 10, 2022, at https://repositorio.cepal.org/bitstream/handle/11362/46739/S2000544_es.pdf?sequence=1&isAllowed=y.)
- United Nations Economic Commission for Latin America and the Caribbean, 2021c, Venezuela, national economic profile: United Nations Economic Commission for Latin America and the Caribbean. (Accessed May 10, 2022, at <https://statistics.cepal.org/portal/cepalstat/national-profile.html?theme=2&country=ven&lang=en>.)
- Vaz, Ricardo, 2019a, US hits PDVSA with more sanctions as UNSC fails to pass resolution on Venezuela: Venezuelanalysis.com, January 28. (Accessed May 7, 2022, at <https://venezuelanalysis.com/news/14268>.)
- Vaz, Ricardo, 2019b, US imposes new sanctions as Venezuelan Government denounces takeover of diplomatic offices: Venezuelanalysis.com, March 20. (Accessed May 7, 2022, at <https://venezuelanalysis.com/news/14396>.)
- Vaz, Ricardo, 2019c, US sanctions Venezuelan banks after Guaido aide accused of leading “terrorist cell”: Venezuelanalysis.com, March 22. (Accessed May 7, 2022, at <https://venezuelanalysis.com/news/14398>.)
- Vaz, Ricardo, 2019d, US sanctions Venezuela’s Central Bank: Venezuelanalysis.com, April 18. (Accessed May 7, 2022, <https://venezuelanalysis.com/news/14434>.)
- World Steel Association, 2020, World steel in figures 2020: Brussels, Belgium, World Steel Association, 30 p. (Accessed May 10, 2022, at <https://worldsteel.org/wp-content/uploads/2020-World-Steel-in-Figures.pdf>.)

TABLE 1
VENEZUELA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²		2015	2016	2017	2018	2019
METALS						
Aluminum:						
Bauxite	thousand metric tons	992	909	550 ^e	--	--
Alumina	do.	465	301	240 ^e	--	--
Metal, primary	do.	119	147	144	86	8 ^e
Ferrous alloys:						
Silicomanganese		35,000	42,000	18,670	--	--
Ferrous nickel		16,700 ^e	--	--	--	--
Ferrosilicon ^e		74,300	37,000	--	--	--
Gold, mine, Au content	kilograms	558	558	480 ^e	480 ^e	480 ^e
Iron ore:						
Gross weight	thousand metric tons	11,716	12,000	4,005	2,474	1,096
Fe content	do.	7,323	7,500	2,500	1,550	685 ^e
Iron and steel:						
Direct-reduced iron	do.	2,750	1,590	1,680	990	385
Raw steel	do.	1,345	553	444	129	50
Lead, refinery, secondary ^e	do.	20	16	16	9	8
Nickel³:						
Mine, laterite ore		4,800	--	--	--	--
Ni content		4,000	--	--	--	--
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	8,210	5,790 ^r	5,410 ^r	5,100 ^{r,e}	4,500 ^e
Clay, unspecified	do.	20	19 ^e	19 ^e	19 ^e	19 ^e
Feldspar		75,500	80,000 ^e	75,000 ^e	80,000 ^e	80,000 ^e
Lime ^e		350,000	290,000	290,000	230,000	190,000
Nitrogen, ammonia, N content	thousand metric tons	1,000 ^e	830	820	370 ^{r,e}	190
Phosphate rock:						
Gross weight		26,324	25,000 ^e	20,000 ^e	20,000 ^e	15,000 ^e
P ₂ O ₅ content ^e		7,000	6,750	6,000	6,000	5,000
Stone, crushed, other, unspecified ^e		6,800	6,700	6,700	6,700	6,700
Sulfur, byproduct, S content ^e	thousand metric tons	700	700	620	430	320
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous	thousand metric tons	802	700	300	100 ^{r,e}	100 ^e
Natural gas:						
Gross	million cubic meters	80,119	84,600 ^e	83,500 ^e	72,000	60,300 ^e
Marketable	do.	25,943	27,400 ^e	27,000 ^e	23,200 ^e	19,400 ^e
Petroleum:						
Crude	thousand 42-gallon barrels	1,001,000	910,000 ^e	804,000 ^e	580,500 ^e	361,700 ^e
Natural gas liquids	do.	42,669	45,000 ^e	44,400 ^e	38,200 ^e	32,000 ^e
Refinery	do.	394,000 ^e	318,000 ^e	250,000 ^e	140,800 ^e	62,200 ^e

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

¹Table includes data available through August 18, 2021. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, carbon black, common clay, diamond, ferromanganese, kaolin, mined lead, salt, and sand and gravel may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	C.V.G. Bauxilum C.A. [Corporación Venezolana de Guayana (CVG)]	Refinery, Puerto Ordaz, Bolivar State	2,000
Aluminum	C.V.G. Aluminio de Carabobo S.A. (Alucasa) [Corporación Venezolana de Guayana (CVG)]	Aluminum laminate plant, Carabobo State	NA
Do.	C.V.G. Aluminio del Caroní, S.A. (Alcasa) [Corporación Venezolana de Guayana (CVG)]	Smelter, Puerto Ordaz, Bolivar State	170
Do.	C.V.G. Carbones del Orinoco, C.A. (Carbonorca) [Corporación Venezolana de Guayana (CVG)]	Plant in Bolivar State	NA
Do.	C.V.G. Empresa Conductores de Aluminio del Caroní, C.A. (Cabelum) [Corporación Venezolana de Guayana (CVG)]	Aluminum conductors plant, Bolivar State	NA
Do.	C.V.G. Rines de Aluminio, C.A. (Rialca) [Venalum, 90%, and Corporación Venezolana de Guayana (CVG), 10%]	Aluminum plant, Bolivar State	NA
Do.	C.V.G. Venezolana de Aluminio C.A. (Venalum) [Corporación Venezolana de Guayana (CVG), 80%, and Showa Denko K.K., Kobe Steel Ltd., Sumitomo Chemical Co. Ltd., Mitsubishi Materials Corp., Mitsubishi Aluminum Co., and Marubeni Corp., 20%]	Smelter, Puerto Ordaz, Bolivar State	440
Bauxite	C.V.G. Bauxilum C.A. [Corporación Venezolana de Guayana (CVG)]	Los Pijiguaos Mine, Cedeño, Bolivar State	6,000
Cement	C.A. Fábrica Nacional de Cementos S.A.C.A. (Corporación Socialista del Cemento, S.A.)	Ocumare plant, Ocumare del Tuy, Miranda State	1,210
Do.	do.	Tachira plant, Palmira, Tachira State	220
Do.	Corporación de Cemento Andino C.A. (Corporación Socialista del Cemento, S.A.)	Llanadas de Monay plant, Trujillo State	1,350
Do.	Corporación de Cemento Catatumbo C.A. (Corporación Socialista del Cemento, S.A.)	Villa Del Rosario plant, Zulia State	650
Do.	Empresa Cemento Cerro Azul C.A. (Corporación Socialista del Cemento, S.A.)	Cerro Azul plant, Monagas State	1,000
Do.	Industria Venezolana de Cementos S.A. (Corporación Socialista del Cemento, S.A.)	Cumarebo plant, Falcon State	1,590
Do.	do.	San Sebastian plant, San Sebastian de los Reyes, Aragua, State	2,710
Do.	Venezolana de Cementos S.A.C.A. (Corporación Socialista del Cemento, S.A.)	Guayana plant, Bolivar State	330
Do.	do.	Lara plant, Lara State	490
Do.	do.	Mara plant, Zulia State	730
Do.	do.	Pertigalete plant, Anzoategui	2,680
Coal	Carbones de la Guajira S.A. (Government of Venezuela, 100%); operated by Corporación Venezolana de Minería S.A. (CVM)	Mina Norte Mine, Guajira, Zulia State	1,500
Do.	Carbones del Guasare S.A. (Government of Venezuela, 51.63%)	Paso Diablo Mine, Guasare, Guajira, Zulia State	6,800
Ferronickel	Corporación Venezolana de Minería S.A. [Petróleos de Venezuela S.A. (PDVSA) (Government, 100%)]	CVM Loma de Níquel Mine, Aragua and Miranda State	72
Do.	do.	CVM Loma de Níquel Plant (Planta Recuperadora de Níquel), Tiara, Miranda State	3
Ferrosilicon	FerroAtlantica de Venezuela, S.A. [Ferroglobe PLC, 80%, and Corporación Venezolana de Guayana (CVG), 20%]	Plant at Puerto Ordaz, Bolivar State ¹	96
Gold	kilograms C.V.G. Compañía General de Minería C.A. [Corporación Venezolana de Guayana (CVG)]	Capitan Eduardo Vera plant, Bolivar State	NA
Do.	do. do.	Caratal plant, Bolivar State	NA
Do.	do. do.	Colombia Mine, Bolivar State	2,000 °
Do.	do. do.	El Peru plant, Bolivar State	NA
Do.	do. do.	Hansa San Luis Mine, Bolivar State	NA
Do.	do. do.	Isidora Mine, Bolivar State	2,500 °
Do.	do. do.	San Rafael-El Placer Mine, Bolivar State	200 °
Do.	do. do.	Sosa Mendez Mine, Bolivar State	1,700 °

See footnotes at end of table.

TABLE 2—Continued
 VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold—	kilograms	C.V.G. Compañía General de Minería C.A. [Corporación Venezolana de Guayana (CVG)]	Tomí Mine, El Callao, Bolívar State	2,000 °
Continued				
Do.	do.	do.	Union Mine, Bolívar State	NA
Do.	do.	Government	Manuel Carlos Piar Complex, Matanzas, Bolívar State	240
Do.	do.	Promotora Minera de Venezuela (C.V.G. Compañía General de Minería C.A.)	El Choco mines and plant, El Callao, Bolívar State	NA
Gold, refinery	do.	C.V.G. Compañía General de Minería C.A. (Minerven) [Corporación Venezolana de Guayana (CVG)]	Minerven plant at El Callao, Bolívar	NA
Iron and steel:				
Do.		Briquetera del Caroní C.A. (Briqcar) [Corporación Venezolana de Guayana (CVG)]	Briquetted iron plant, Guayana, Bolívar State	870
Do.		Briquetera del Orinoco (Orinoco Iron)	Hot-briquetted iron in Puerto Ordaz, Bolívar State	2,200
Do.		Briquetera de Venezuela C.A. (Briqven) [Corporación Venezolana de Guayana (CVG)]	Briquetted iron plant, Guayana, Bolívar State	440
Do.		Complejo Siderúrgico de Guayana C.A. (Comsigua C.A.) [Corporación Venezolana de Guayana (CVG)]	Hot-briquetted iron in Puerto Ordaz, Bolívar State	1,000
Do.		C.V.G. Ferrominera Orinoco C.A. (Corporación Venezolana de Guayana (CVG))	Altamira, Cerro Bolívar, Las Pallas, Los Barrancos, and San Isidro Mines, Bolívar State	25,000
Do.		do.	Hot-briquetted iron Plant in Puerto Ordaz, Bolívar State	1,000
Do.		do.	Iron ore pellets plant in Puerto Ordaz, Bolívar State	1,100
Do.		Siderúrgica del Orinoco Alfredo Maneiro S.A. (SIDOR) [Corporación Venezolana de Guayana (CVG)-CVG Sidor C.A.]	do.	4,250
Do.		Siderúrgica del Orinoco "Alfredo Maneiro" S.A. (SIDOR) [Corporación Venezolana de Guayana (CVG), 80%]-CVG Sidor C.A.	Steel plant in Puerto Ordaz, Bolívar State	4,300
Do.		Venezolana de Prereducidos de Caroní (International Briquettes Holding, 100%)	Hot-briquetted iron Plant in Puerto Ordaz, Bolívar State	815
Lead, refined	metric tons	Funmetal C.A.	Mariara, Carabobo	NA
Natural gas	million cubic meters	Petroboscán S.A. [Petróleos de Venezuela S.A. (PDVSA), 60.8%, and Chevron Corp., 39.2%]	Boscan Field in Zulia State	70 °
Do.	do.	Petroindependiente S.A. [Petróleos de Venezuela S.A. (PDVSA), 74.8%, and Chevron Corp., 25.2%]	LL-652 Field in Lake Maracaibo	700 °
Do.	do.	Petropiar S.A. [Petróleos de Venezuela S.A. (PDVSA), 70%, and Chevron Corp., 30%]	Hamaca Field in Orinoco Belt	146 °
Nickel, Ni content		Corporación Venezolana de Minería S.A. [Petróleos de Venezuela S.A. (PDVSA) (Government, 100%)]	CVM Loma de Niquel Mine, Aragua and Miranda State	14
Nitrogen content of ammonia		Petroquímica de Venezuela S.A. (Government, 100%)	Jose Antonio Anzoategui Petrochemical complex, Anzoategui State	1,200
Do.		do.	Ana Maria Campos Petrochemical complex, Zulia State	300
Do.		do.	Moron Petrochemical complex, Carabobo State	200

See footnotes at end of table.

TABLE 2—Continued
 VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:				
Crude	thousand	Petroanzoategui S.A. [Petróleos de Venezuela S.A. (PDVSA), 100%]	Junin oil field in the Orinoco Belt	NA
	42-gallon barrels			
Do.	do.	Petroboscan S.A. [Petróleos de Venezuela S.A. (PDVSA), 60.8%, and Chevron Corp., 39.2%]	Boscan Field in Zulia State	10,000 °
Do.	do.	Petrocarabobo, S.A. [Petróleos de Venezuela S.A. (PDVSA), 60%; Repsol S.A. and PC Venezuela Ltd, 11%; Petrocarabobo Ganga B.V., 11%; Indoil Netherlands B.V., 7%]	Carabobo oil field area in Orinoco Belt	11,000 °
Do.	do.	Petrocedeño S.A. [Petróleos de Venezuela S.A. (PDVSA), 60%; Total S.A., 30.3%; Statoil ASA, 9.7%]	Junin oil field in the Orinoco Belt, Zuata Region	73,000 °
Do.	do.	Petroindependiente S.A. [Petróleos de Venezuela S.A. (PDVSA), 74.8%, and Chevron Corp., 25.2%]	LL-652 Field in Lake Maracaibo	370 °
Do.	do.	Petrojunin S.A. [Petróleos de Venezuela S.A. (PDVSA), 60%, and Eni S.p.A., 40%]	Block 5, Junin area in Orinoco Belt	NA
Do.	do.	Petrolerasinovensa, S.A. [Petróleos de Venezuela S.A., 51%, and China National Petroleum Corp. (CNPC), 49%]	Sinovensa plant, Carabobo in Orinoco Belt	NA
Do.	do.	Petromacareo S.A. [Petróleos de Venezuela S.A., 60%, and PetroVietnam (Vietnam Oil and Gas Group), 40%]	Block 2 North, Junin area in Orinoco Belt	NA
Do.	do.	Petromiranda, S.A. [Petróleos de Venezuela S.A. (PDVSA), 60%, and Consorcio Nacional Petroleo SRL, 40%]	Block 6, Junin area in Orinoco Belt	NA
Do.	do.	Petromonagas S.A. [Petróleos de Venezuela S.A. (PDVSA), 83.33%, and BP p.l.c., 16.67%]	Carabobo oil field area in Orinoco Belt	NA
Do.	do.	Petropiar S.A. [Petróleos de Venezuela S.A. (PDVSA), 70%, and Chevron Corp., 30%]	Hamaca Field in Orinoco Belt	3,300 °
Do.	do.	Petrourica S.A. [Petróleos de Venezuela S.A., 60%, and China National Petroleum Corp. (CNPC), 40%]	Block 4, Junin area in Orinoco Belt	NA
Refinery products	do.	Petróleos de Venezuela S.A. (Government, 100%)	Bajo Grande Refinery, Zulia State	5,800 °
Do.	do.	do.	El Palito Refinery, Carabobo State	51,100 °
Do.	do.	do.	Paraguana Refinery, Falcon State	350,000 °
Do.	do.	do.	Puerto de la Cruz Refinery, Anzoategui State	68,300 °
Do.	do.	do.	San Roque Refinery, Anzoategui State	1,800 °
Phosphate rock		Petroquímica de Venezuela S.A. (Government, 100%)	Riecito Mine, Cerro Riecito, Falcon State	400

°Estimated. Do., do. Ditto. NA Not available.

¹On care-and-maintenance status since 2017.