



# 2019 Minerals Yearbook

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**GHANA [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF GHANA

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Ghana became Africa's leading producer of gold in 2019 and the sixth-ranked producer of gold in the world, accounting for 4.3% of global output. Ghana was also the third-ranked producer of manganese in Africa, accounting for 7.9% of world production. Other mineral commodities produced in Ghana included aluminum, bauxite, cement, crude petroleum, diamond, natural gas, refined lead (secondary), salt, and silver. The country's real gross domestic product (GDP) growth rate was estimated to be 6.5%, which was a slight increase from the real GDP growth in 2018 of 6.3% (Ghana Chamber of Mines, 2020a, p. 71; Schnebele, 2021; Sheaffer, 2021).

## Minerals in the National Economy

Ghana's mineral sector contributed 10.3% to the country's real GDP in 2019 compared with 9.8% in 2018. The growth rate of the mineral industry, which included petroleum and natural gas extraction and quarrying activities, decreased to 12.6% from 23.3% in 2018. Gold and petroleum exports accounted for about 40% and 29%, respectively, of the total export earnings in 2019. Export revenue from gold increased by about 15% to \$6.23 billion; gold exports by amount increased by 5.8% to about 140,000 kilograms (kg). Export revenue generated by the members of the Ghana Chamber of Mines was \$3.3 billion compared with \$2.8 billion in 2018. The volume of exported petroleum increased by 9.7% to 70,054,551 barrels (bbl), whereas export revenue decreased by 2% to \$4.49 billion. Member companies of the Ghana Chamber of Mines employed a total of 11,899 people compared with 10,109 in 2018. The 18% increase was mostly attributed to additional recruitment at the Ahafo Mine, the Asanko Gold Mine, the Wassa Mine, and the Obuasi Mine (Bank of Ghana, 2020, p. 17; Ghana Chamber of Mines, 2020a, p. 72, 85; 2020b, p. 14).

In December 2018, the Government lifted a ban on small-scale mining. The ban had been imposed in 2017 and was established to control illegal mining activities, which mostly took place in the artisanal and small-scale mining (ASM) subsector. The ASM subsector was estimated to employ more than 1 million people in Ghana and accounted for 35% of the country's gold production in 2019 compared with 41% in 2018. At yearend 2019, the Government was still trying to formalize the ASM subsector through licensing reform, improving the quality of and access to geologic data, and providing better access to finance (Intergovernmental Forum on Mining Mines, Minerals, Metals and Sustainable Development, 2018, p. 7; World Bank, The, 2019, p. 15; Ghana Chamber of Mines, 2020b, p. 10).

## Production

In 2019, production of natural gas increased by 81%; of cement, by 20%; bauxite, by 19%; manganese ore (gross weight), by 18%; manganese (metal content) and crude petroleum, by 14% each. Diamond production decreased by 30%;

gold production by artisanal and small-scale miners, by an estimated 20%; and lead, by an estimated 10%. Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Ministry of Lands and Natural Resources (MLNR) oversees the management of the mineral resources for socioeconomic growth as well as for the development and sustainable management and use of Ghana's lands, forests, and wildlife resources. The Ministry consists of three subsectors: forestry, lands, and mining. The mining subsector is managed by the following six agencies: the Ghana Geological Survey Authority, the Ghana Integrated Aluminum Development Corporation (GIADEC), the Ghana Integrated Iron and Steel Development Corporation (GIISDEC), the Minerals Commission, the Minerals Development Fund, and the Precious Minerals Marketing Company Ltd. (PMMC) (Ministry of Lands and Natural Resources, 2021f).

The Ghana Geological Survey Authority maintains and disseminates geoscientific data and oversees mapping and mineral exploration activities in the country. The Minerals Commission is responsible for the regulation and management of mineral resources as well as the coordination and implementation of policies related to mining. The Commission is also the main promotional body of the mineral sector and ensures that all practices follow Ghana's mining and mineral laws and regulations. The Minerals Development Fund is responsible for providing financial support to communities and mining institutions of Ghana for sustainable development. The GIADEC has the mandate to promote and develop the aluminum industry in Ghana, including bauxite mining and aluminum smelting operations. The GIISDEC, which was established in November 2019, is in charge of developing and promoting the iron and steel industry. The PMMC is responsible for the purchase and marketing of Ghana's diamond from small- and large-scale producers and for promoting the development of the precious minerals and jewelry industry. The PMMC is the assayer of all the gold that leaves the country. Most of the mining operations in Ghana were privately owned, and artisanal mining accounted for a significant portion of the diamond and gold production in the country. Table 2 is a list of major mineral industry facilities (table 2; Ministry of Lands and Natural Resources, 2021a–e; Precious Minerals Marketing Company Ltd., 2018).

## Commodity Review

### Metals

**Gold.**—Gold production by large-scale miners in Ghana increased to 92,968 kg in 2019. Gold Fields Ltd. of South Africa operated the Damang and the Tarkwa Mines and held a

45% stake in the Asanko Gold Mine (Asanko Gold Inc., 45%, and Government, 10%). The Damang Gold Mine increased production by 15% to 6,470 kg owing to increases in the amount of ore processed and mill throughput. The Tarkwa Mine's production decreased by 1% to 16,143 kg, mainly because of a reduction in mill throughput. The Asanko Gold Mine's production increased by 12% to 7,808 kg owing to favorable processing plant and milling performance (Galiano Gold Inc., 2019, 2020; Ghana Chamber of Mines, 2020a, p. 15, 86; Gold Fields Ltd., 2020, p. 31, 50).

Newmont Mining Corp. of the United States operated the Ahafo and the Akyem Mines. In 2019, the Akyem Mine's production increased by 2% to 13,126 kg. In October, Newmont completed the Ahafo mill expansion project, which expanded the mill's annual capacity by 3.5 million metric tons (Mt) through the addition of a crusher, a grinding mill, and leaching tanks. The Ahafo Mine produced about 20,000 kg of gold in 2019 compared with 13,564 kg in 2018 owing to higher ore grade and higher mill throughput on account of the completion of the Ahafo mill expansion project. The mill expansion was expected to increase annual gold production at Ahafo by between 17,000 and 20,000 kilograms per year through 2024 (Newmont Mining Corp., 2019; 2020, p. 42; Ghana Chamber of Mines, 2020a, p. 86).

Golden Star Resources Ltd. of Canada operated the Bogoso-Prestea property, which included the Prestea open pit and underground mine, and the Wassa complex, which contained the underground Wassa Mine and processing plant. Gold production at the Wassa Mine increased by 4% to 4,858 kg. Production at Prestea decreased by 37% to 1,480 kg owing to a reduction in the supply of ore from the open pits and slower than expected rampup of operations at the underground mine. Golden Star reported that the Prestea Mine had underperformed since starting commercial production in 2018 and that, as a result, the company was trying to implement a new mine plan to improve operations (Ghana Chamber of Mines, 2020a, p. 87; Golden Star Resources Ltd., 2020a, p. 9, 45; 2020b, p. 8–9).

In 2019, AngloGold Ashanti Ltd. of South Africa transitioned the Obuasi Mine from care-and-maintenance status back to production. Operations at the Obuasi Mine had been suspended in 2016 so the mining operations program could be amended. Redevelopment of the mine started in 2019 after the signed agreement with the Government to redevelop the mine had been granted in 2018. The redevelopment was expected to be implemented in two phases; the first phase was achieved in 2019, and first pouring of gold took place in December. This first phase also included mine rehabilitation, development, and plant upgrades to facilitate a production rate of 2,000 metric tons per day (t/d) of ore during the first year of operation. For phase 2, AngloGold was expected to reach production of 4,000 t/d by the end of 2020 and to ramp up production to 5,000 t/d by 2023. The mine was expected to produce an average of 12,000 kg of gold annually for the first 10 years and more than 12,000 kg annually for the life of the mine of about 20 years (AngloGold Ashanti Ltd., 2017 p. 26; 2020, p. 39, 119; 2021).

Gold production at the Iduapriem Mine, operated by AngloGold Ashanti, increased to 8,553 kg from 7,900 kg in 2018. The company reported that the 8% increase was owing to

improved grade control and access to a higher grade area of the Teberebie pit, where stripping had started in 2017 (AngloGold Ashanti Ltd., 2020, p. 69).

**Lead.**—In June, Recyclers Ghana Ltd., which was a subsidiary of Gravita India Ltd., started commercial production of a new lead recycling facility in Accra. The plant would process refined lead and lead alloys and had a capacity of about 6,000 metric tons per year (t/yr), which was expected to increase to 12,000 t/yr later in 2019 (Gravita India Ltd., 2019; 2020, p. 9, 25).

**Manganese.**—Ghana Manganese Company Ltd. (GMC), which was owned by Ningxia Tianyuan Manganese Industry Co., Ltd. (TMI) of China, was Ghana's sole producer of manganese. Manganese production increased by 18% to 5,383 Mt in 2019 owing to ramped-up production to meet global demand. Ghana's manganese ore had typically supplied the electrolytic manganese market operations of TMI in China. In February and August, the Government halted operations of GMC owing to allegations of tax evasion and other infractions. In both instances, operations resumed shortly thereafter. At yearend 2019, GMC and the Government were working towards a resolution of the issues raised (Ghanaian-German Economic Association, The, 2019; Modern Ghana, 2019; Ghana Chamber of Mines, 2020a, p. 80; Roskill Information Services Ltd., 2020).

### *Industrial Minerals*

**Diamond, Industrial.**—Ghana's diamond production in 2019 was entirely from small-scale and artisanal miners. In September, the Government took over operations of the former Great Consolidated Diamonds Ghana Ltd. (GCDGL) for alleged breach of contract. GCDGL had acquired the Akwatia Mine in 2011 and, since then, the mine had been on care-and-maintenance status as the company, allegedly, failed to fulfill its obligations, including rehabilitation of the mining facilities. The company was renamed Ghana Consolidated Diamonds Ltd. and remained Ghana's only commercial diamond company. In 2019, Ghana produced a total of 37,726 carats of rough diamond compared with 53,573 carats in 2018. The 30% decrease was owing to low recoveries by small-scale miners (Nyaungwa, 2016; GhanaWeb, 2019; State Interests and Governance Authority, 2019; Kimberley Process Rough Diamond Statistics, 2019, 2021; Ghana Chamber of Mines, 2020a, p. 15, 80).

**Lithium.**—IronRidge Resources Ltd. (IronRidge) of Australia continued exploring for lithium in Ghana in 2019. The company's prospective lithium portfolio, known as Cape Coast Lithium, covered an area of 684 square kilometers (km<sup>2</sup>) and included the Ewoyaa lithium project. The Ewoyaa lithium project had a Joint Ore Reserves Committee (JORC)-compliant mineral resource estimate of 14.5 Mt at a grade of 1.31% lithium oxide (Li<sub>2</sub>O) in the inferred and indicated category, including 4.5 Mt at a grade of 1.39% Li<sub>2</sub>O in the indicated category. Throughout 2019, IronRidge completed a three-phase drilling program that revealed multiple high-grade intersections. At yearend 2019, drilling was ongoing across the project area (IronRidge Resources Ltd., 2019; 2020, p. 2, 8; 2021).

## Mineral Fuels

**Petroleum and Natural Gas.**—Total crude petroleum produced from the three producing fields (Jubilee, TEN, and Sankofa-Gye Nyame) was 71,395,276 bbl compared with 62,770,787 bbl in 2018. In 2019, natural gas production from the Jubilee and the Sankofa-Gye Nyame fields increased by 14% owing mainly to the successful implementation of acid stimulation treatment on production wells and drilling of new production wells (Ministry of Finance, 2019a, p. 11; 2020, p. 15).

In 2019, Tullow Oil plc (Tullow) of the United Kingdom reported that the Turret Remediation Project was close to completion. The project, which started in 2018, required the floating production storage and offloading vessel operating in the Jubilee field to be shut down twice in order to stabilize the turret bearing. Gross production after completion was expected to average about 82,000 barrels per day of oil (Tullow Oil plc, 2020).

In February, the Government released the Renewable Energy Master Plan (REMP). The plan was aiming to boost renewable energy in the national energy generation mix, reduce the dependence on biomass as the main fuel for thermal energy applications, provide renewable energy-based decentralized electrification options, and promote local participation in the renewable energy industry. Implementation of the REMP would have an investment cost of \$5.6 billion, of which more than 80% was to come from the private sector; the plan's objectives were expected to be achieved by 2030 (Energy Commission, 2019, p. iv, vi).

## Outlook

The mining and hydrocarbon sectors continued to play an important role in Ghana's socioeconomic development. The country's Ministry of Finance forecasted real GDP growth of 6.8% in 2020; growth in the mining and quarrying subsector's gross output is expected to decrease to 10.1% from about 13% in 2019. Gold output is expected to continue to increase with the beginning of production at the Obuasi Mine and planned increases in production by most member companies of the Ghana Chamber of Mines. Production and shipments of manganese by GMC may decrease in 2020 owing to the Government's instruction to stop the company's operations. Although the expected outlook for the extractive industry seems favorable, the effects of the coronavirus disease 2019 (COVID-19) pandemic will likely lead to disruptions in mining and mineral processing activities in Ghana (Ministry of Finance, 2019b, p. 79–80; Ghana Chamber of Mines, 2020a, p. 72).

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TABLE 1  
GHANA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>		2015	2016	2017	2018	2019
<b>METALS</b>						
Aluminum:						
Bauxite		1,026	1,144	1,477	1,011	1,200 <sup>e</sup>
Metal, primary <sup>e</sup>		40	40	35	42 <sup>r</sup>	42
Gold, mine, Au content:						
Artisanal and small-scale producers <sup>e</sup>	kilograms	45,000	45,000	46,000	61,000	49,000
Large scale producers	do.	80,325	79,196	87,352	87,336	92,982
Lead, refinery, secondary	metric tons	3,048	1,800	1,150	1,000 <sup>e</sup>	900 <sup>e</sup>
Manganese, mine:						
Gross weight		1,478	1,967	3,004	4,552	5,383
Mn content		416	553	810	1,364	1,554
Silver, mine, Ag content, exported ore <sup>e</sup>	kilograms	3,200	2,300	1,800	1,800	1,800
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic		3,830	4,310 <sup>r</sup>	3,940 <sup>r</sup>	4,990 <sup>r,e</sup>	5,990 <sup>e</sup>
Diamond	thousand carats	174	142	82	54	38
Salt <sup>e</sup>		250	250	250	250	250
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Natural gas	thousand cubic meters	747,648 <sup>r</sup>	665,520 <sup>r</sup>	954,384 <sup>r</sup>	923,232 <sup>r</sup>	1,670,880
Petroleum, crude	thousand 42-gallon barrels	37,412	35,770	58,660	62,771	71,395

<sup>e</sup>Estimated. <sup>r</sup>Revised. do. Ditto.

<sup>1</sup>Table includes data available through January 11, 2021. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

<sup>2</sup>In addition to the commodities listed, clay, lime, limestone, sand and gravel, and stone may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2  
GHANA: 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
Aluminum	Volta Aluminum Co. Ltd. (VALCO) (Government, 100%)	Aluminum smelter at Tema	200.
Bauxite	Ghana Bauxite Company Ltd. (GBCL) (Bosai Minerals Group Co. Ltd., 80%, and Government, 20%)	Bauxite mine at Awaso	1,600.
Cement	Ghana Cement Company Ltd. (GHACEM) (HeidelbergCement AG, 93.1%)	Clinker grinding plant at Takoradi	2,200.
Do.	do.	Clinker grinding plant at Tema	2,200.
Do.	Diamond Cement Ghana Ltd.	Cement plant at Aflao <sup>1</sup>	1,500.
Do.	Savanna Cement Company Ltd. (SAVACEM) and Diamond Cement Ghana Ltd.	Town of Buipe, Central Gonja District	300.
Diamond	thousand carats Ghana Consolidated Diamond Ltd. (Government, 100%)	Akwatia Diamond Mine <sup>2</sup> Birim Valley	360.
Do.	do. Artisanal diamond miners	Alluvials, Birim Valley	500 to 900.

See footnotes at end of table.

TABLE 2—Continued  
GHANA: 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	AngloGold Ashanti Ltd., 90%, and Government, 10%		Obuasi Mine, 60 kilometers south of Kumasi	12,000.
Do.	do.	do.		Iduapriem Mine, 70 kilometers north of Takoradi	8,800.
Do.	do.	Resolute (Bibiani) Ltd. (Resolute Mining Ltd., 90%, and Government, 10%)		Bibiani Mine, <sup>2</sup> 250 kilometers northwest of Accra	3,400.
Do.	do.	Golden Star (Bogoso/Prestea) Ltd. (Golden Star Resources Ltd., 90%, and Government, 10%)		Bogoso-Prestea open pit and underground mine complex, 300 kilometers west of Accra	7,300.
Do.	do.	Golden Star Resources, 90%, and Government, 10%		Wassa Mine, processing plant, 30 kilometers northwest of Tarkwa	7,000.
Do.	do.	Gold Fields Ltd., 90%, and Government, 10%		Tarkwa open pit mine and carbon-in-leach and heap-leach plants, 300 kilometers west of Accra	21,800.
Do.	do.	do.		Damang Gold Mine and carbon-in-leach plant, 360 kilometers west of Accra	6,000.
Do.	do.	Asanko Gold Inc., 45%; Gold Fields Ltd., 45%; Government, 10%		Asanko Gold Mine, Ashanti Region	7,600.
Do.	do.	Newmont Mining Corp., 90%, and Government, 10%		Ahafo Mine-Subika underground mine, Brong-Ahafo region	20,000.
Do.	do.	do.		Akyem Mine, Birim North District	14,700.
Do.	do.	Endeavour Mining Corp., 90%, and Government, 10%		Nzema Mine, 280 kilometers west of Accra, east municipal district	3,100.
Do.	do.	Chirano Gold Mine Ltd. (Kinross Gold Corp., 90%, and Government, 10%)		Chirano Mine, 100 kilometers from Kumasi, southwestern Ghana	9,000.
Do.	do.	Perseus Mining Ltd.		Edikan Gold Mine, Central Region	6,200.
Do.	do.	Artisanal and small-scale gold miners		Alluvial and hard rock throughout Ghana	61,000.
Lead, secondary		Gravita Ghana Ltd. (Gravita India Ltd.)		Recycling plant in Tema, Greater Accra	6.
Do.		Recycler Ghana Limited (Gravita India Ltd.)		do.	6.
Limestone and lime		Carmeuse Lime Products (Ghana) Ltd. (Carmeuse SA)		Plant in Takoradi	100
Manganese ore		Ghana Manganese Company Ltd. (Ningxia Tianyuan Manganese Industry Co., Ltd., 90%, and Government, 10%)		Open pit mine at Nsuta-Wassaw western region	5,500.
Natural gas	thousand cubic meters	Eni Ghana 44.44%; Vitol Ghana 35.56%; Ghana National Petroleum Corp. (GNPC), 20%		Offshore Cape Three Points, Sankofa Main & East and Gye Nyame reservoirs	2,165,000.
Petroleum, crude	barrels per day	Tullow Oil plc, 35.48%; Anadarko Petroleum Corp., 24.08%; Kosmos Energy LLC, 24.08%; Ghana National Petroleum Corp. (GNPC), 13.64%; Petro SA, 2.73%		Jubilee field, 60 kilometers offshore western Ghana	120,000.
Do.	do.	Tullow Oil plc 47.18%; Kosmos Energy LLC 17%; Anadarko 17%; Ghana National Petroleum Corp. (GNPC), 15%; Petro SA 3.82%		TEN field, Tano block, about 60 kilometres offshore western Ghana	80,000.
Do.	do.	Eni S.p.A., 44.44%; Vitol Ghana 35.56%; Ghana National Petroleum Corp. (GNPC), 20%		Offshore Cape Three Points, Sankofa-Gye Nyame field	58,000.
Petroleum products	thousand 42-gallon barrels	Tema Oil Refinery (Government, 100%)		Refinery at Tema	16,400.
Salt		Panbros Salt Industry Ltd.		Salt pan at Mendskrom, near Accra	250.
Do.		Elmina Salt Producers Association		Artisanal salt pan mining near Elmina	NA.

Do., do. Ditto. NA Not available.

<sup>1</sup>Used imported clinker.

<sup>2</sup>On care-and-maintenance status.