

GOLD REFINING IN GHANA

MARKET RESEARCH



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EXECUTIVE SUMMARY

The gold production sector is by no means slowing down. Its year-on-year growth is expected to equate to 2.2%, driven by the increasing gold mining operations as well as the use/demand of refined gold in the jewelry, industrial fabrication and the electronics sectors.

Out of the 125 active gold refineries around the world, only a handful (10) are responsible for processing over 90% of the world's gold. These corporations are mainly present in Switzerland and the United Arab Emirates among others.

Ghana represents Africa's top gold producer, producing approximately 150 tonnes of gold per annum, where a total of 9 gold refineries were identified. Ghana's gold is mainly exported to other countries (bought by foreign corporations), where it's refined or processed in some ways. Ghana sees less than 1.7% of its gold production. However, there are attempts to establish more national Ghanaian gold refineries so that the raw annual gold exports are reduced, and Ghana enjoys greater economic benefits.

The use of refined gold is mainly used by three sectors, jewelry, investment, central banks, and technology/electronics. The jewelry and goldsmith landscapes account for 50% of the total gold demand, whereas the investment sector only 1%. The technology and electronics sector uses gold as components of bigger products, thus the usage is very diverse and wide-reaching.

The external political and legal factors which can have a potential impact on Ghana's gold production and refining sector, are represented by the Minerals and Mining (General) Regulations, Ghanaian Labor Law, the Minerals Commission, as well as the freedom of the press among others.

Some of the economic and environmental external factors encompass the harmful environmental effects originating from the operations of the small-scale and the artisanal gold miners. The negative of the use of mercury in the gold refining process is also an issue. On the other hand, Ghana's inflation rate decreased by 0.58% and its GDP growth is estimated at 6.7%.

The plethora of technological and social external factors affecting Ghana's gold mining and gold refining sectors, in part are represented by the adoption of contemporary

technologies that deliver commercial-scale gold processing that releases less hazardous chemicals, among others.

Some of the organizations and entities which can provide more detailed insights regarding Ghana's gold mining and refining operations, requirements, procedures, guidelines, etc., include the Chamber of Mines, the Environmental Protection Agency, the Ministry of Lands and Natural Resources, the Forestry Commission, the Centre for Public Interest Law, as well as the Wassa Association of Communities Affected by Mining.

The analyzed gold refining competitors in Ghana, showcased that they offer other services in addition to gold processing, such as gold exploration, bullion transportation, gold assaying and safekeeping services. The competitors' headquarters are in Ghana's capital city, Accra, and a large part of their clientele includes various jewelry shops, mineral and precious stone trading entities, electronics as well other sectors that use gold in their offerings.

Looking at the best practices from the world's largest gold refineries, special attention to the legality, origin, and ethicality of the supplied gold should be paid. Moreover, practices that minimize the destruction of the environment are greatly encouraged, as well as participating in industry forums and events

INTRODUCTION

This document represents market research that provides insights into Ghana's gold refining industry, its market, regulations as well as the gold refining competitors in the country. The research includes information from a variety of articles, reports and other information sources that contain relevant data for this research. The following segment of the document encompasses an overview of Ghana's gold refining industry and market.

INDUSTRY AND MARKET OVERVIEW

Driven by the gold production in the gold mines, the supply of gold in 2018, according to [Creamer Media's – Mining Weekly](#), was expected to increase by 2.2% year-on-year. The article points out the jewelry, industrial fabrication and the electronics sector as the main gold consumption sectors.

Gold in its originally-mined state cannot be commercially used in greater lengths, therefore it has to be properly refined. Interestingly, over **90% of the world's gold is refined by not more than 10 companies** - according to Human Rights Watch's [report](#), located in Switzerland, the United Arab Emirates (UAE).

In West Africa, Ghana has become Africa's top gold producer. According to data from [Creamer Media's Mining Weekly](#) - the country's gold output climbed 12% in 2018, with the country benefiting from lower-cost mines than South Africa, more attractive mining policies and the development of new projects.

According to the [article](#) by the online news company – Graphic Online, approximately **140 tonnes of gold** was produced in the country in 2018 but almost all of it was exported in its raw state. Around [35%](#) of the country's gold is produced by Artisanal and small scale mining operations.

Data provided by a [study](#) conducted by the Bank of Ghana, concludes that despite Ghana being the largest exporter of gold in Africa (also one of the largest in the world), **less than 1.7% of global returns make it back to the country**. This means that 98.3% of Ghana's gold remains in the hands of multinational corporations.

However, there are intentions to change this as the online news portal [GhanaWeb](#), elaborates more on the 1st state-owned gold refinery in Ghana, that once construction

finishes (initial completion date was by April 2019) the refinery will have the capacity to refine and **reduce the annual exports of raw gold from Ghana by 50%**.

According to goldbarsworldwide.com globally there are approximately **125 active gold refineries** whose relevant gold bars are accepted as “good delivery” by one or more of the associations and exchanges.

In Ghana, there are **13 Licensed Gold Buying Companies** according to a [report](#) (first link on the page) by the consulting company SRC Consulting. The gold sales from artisanal and small-scale miners in Ghana for 2013 amounted to US \$2 billion.

Based on the data available in one of the market research company Research Gate’s [reports](#), Ghana’s gold top exportation destinations between 2014 – 2017 have been India (\$3.21B), Switzerland (\$1.39B), China (\$1.06B), the Netherlands (\$669M), and France (\$607M).

GOLD DEMAND SECTORS

According to information available on the World Gold Council’s [website](#), the sectors that use gold the most for their operations, include:

- **Jewelry** - the largest source of annual demand for gold per sector. This has declined over recent decades, but it still accounts for around 50% of total demand. India and China are by far the largest markets, in volume terms, together accounting for over 50% of current global gold demand.

Although the exact number of jewelry stores and/or goldsmiths in Ghana couldn’t be uncovered, according to the news [website](#) – Ghana Business News, in the Federation of Ghanaian Jewelers, there are about **700 members**. **80%** of the Goldsmith sector in Ghana is based upon the gold provided by the small-scale and artisanal gold miners, according to [GhanaWeb](#).

- **Investment** - Gold has unique properties as an asset class. Modest allocations to gold can be proven to protect and enhance the performance of an investment portfolio. Even so, globally, gold still only makes up less than 1% of investment portfolios.

- **Central Banks** - The past decade has seen a fundamental shift in central banks' behavior with respect to gold, prompted by a reappraisal of its role and relevance after the 2008 financial crisis. Emerging market central banks have increased their official gold purchasing, while European banks have ceased selling, and the sector now represents a significant source of annual demand for gold.

According to an [article](#) published by Pulse Ghana – a news and media publisher, in order to replenish its gold reserves, the Bank of Ghana will start purchasing gold via selected local gold buying agencies, therefore shortening the bank's hold of the gold.

- **Technology** - Gold has long been central to innovations in electronics. Today the unique properties of gold and the advent of 'nanotechnology' are driving new uses in medicine, engineering, and environmental management. Most technological applications use low volumes of gold, their impacts are very diverse and wide-reaching.

According to a PwC [report](#), the country's ICT industry comprises telecommunications operators, internet service providers, very small aperture terminal (VSAT) data operators, software manufacturers, broadcast institutions, ICT education providers, internet cafés, etc.

Ghana has 6 registered mobile operators, 398 radio stations and 88 TV broadcasting stations. Additionally, there are 4 broadband wireless access licensees and 52 authorized Internet Service Providers providing data services in the market.

In the following section of this document, an overview of some of the external factors which surround Ghana's mining and gold refining sectors are presented via the PESTLE analysis.

GOVERNMENTAL OVERVIEW

This part of the document contains an overview of the external factor which are impacting Ghana's gold mining and refining spheres. The data is structured in the PESTLE analysis presented below.

PESTLE ANALYSIS

The PESTLE analysis is a method of obtaining knowledge of some of the top external factors that surround a specific country, industry or sector's profitability. These key factors (as per the acronym) encompass the Political, Economic, Social, Technological, Legal and Environmental influences.

Below is the representation of Ghana's PESTLE analysis, which is in relation to gold mining since it's the precursor to the refining sector – which did not have a lot of data available.

Political	<ul style="list-style-type: none"> • Considered one of the more stable countries in West Africa since its transition to multi-party democracy in 1992
	<ul style="list-style-type: none"> • Despite losing the status of Africa's best-ranked country in the World Press Freedom Index and having a third of the media owned by the state, Ghana still supports media pluralism and independence.
	<ul style="list-style-type: none"> • An application by a person other than a holder of a mining license, to purchase an export, sell or dispose of gold or other precious minerals, requires the applicant to satisfy the Minister that the minerals will be refined or polished in Ghana or that only refined or polished minerals will be purchased for export. In practice, there is very little refinery capacity in Ghana, this requirement is hardly enforced.
	<ul style="list-style-type: none"> • Under the Minerals and Mining (General) Regulations, 2012, (L.I. 2173), mine support service providers, holders of mineral rights and holders of a license to export or deal in minerals are required to submit a 5-year Procurement Plan to the Minerals Commission for approval. In the preparation of the Procurement Plans, companies are required to take into account the requirements of a Local Procurement List of goods and services with Ghanaian content, which the Commission shall make available annually to the mining industry.
Economic	<ul style="list-style-type: none"> • Ghana's economy continued to expand in 2019 as the first-quarter gross domestic product (GDP) growth was estimated at 6.7%, compared with 5.4% in the same period of last year.
	<ul style="list-style-type: none"> • Ghana's Gross National Disposable Income per Capita is 2,539,350 GHS.

	<ul style="list-style-type: none"> • Ghana's unemployment rate for 2019 was 6.78%, a 0.07% increase from 2018. • 9.26% was Ghana's inflation rate in 2019, a decrease of 0.58% from 2018. • Interest Rate in Ghana is expected to be 14.50% by the end of this quarter, according to Trading Economics global macro models and analysts' expectations.
Social	<ul style="list-style-type: none"> • Stigmas surrounding Ghana's gold mined by children under the age of 18, as well as other aspects of conflict gold. • Ghana's government Minerals Commission (which provides gold export licenses), not requiring human rights due diligence in the export of the country's gold. • Due to the contraction of the COVID-19 virus by one of the largest gold mining corporations in Ghana – AngloAshanti, all non-essential staff is required to continue working from their homes. • The practice in small-scale gold mines where gold ore is mixed together with the mercury in order to extract the gold is a major concern for children, as well as the other people working in these mines.
Technological	<ul style="list-style-type: none"> • Mercury Free Mining's GOLDROP tech to be tested in Ghana potentially providing artisanal miners with a mercury-free alternative to traditional gold panning. • Saubatech's gold-from-fine-carbon-residue incinerator is a reliable and cost-effective method to recover gold without compromising on the environment. It also requires little maintenance. • Some mining operations, such as Sandvik's are adopting modern technologies, equipment and digital solutions that enhance gold gains from mines. • A new technology that delivers commercial-scale, cyanide-free gold processing has been released by Australian-based company Clean Mining. The process replaces cyanide with a safer, less hazardous chemical reagent called 'Thiosulphate'. This inorganic compound helps dissolve fine gold out of ores into a solution, which can then be recovered through further processing.
Legal	<ul style="list-style-type: none"> • Ghanaian Labor Law requires that the contract of employment should be provided in writing for workers employed for six months or longer periods. This written statement must include information about the worker and employer, date of appointment, job title, wage rate, and payment interval, work hours, overtime payment, annual leave, conditions relating to incapacity for work due to injury or sickness, length of termination notice required by the worker and employer and details of social security or pension scheme.

	<ul style="list-style-type: none"> • For more than three decades since the country attempted to have a consumer protection law, the draft bill has now been listed among the list of bills to be considered by Parliament this year. It appears there is a diminished interest in the bill by government and businesses that is why the bill has taken a long time to get passed. • The Minerals Commission is the main promotional and regulatory body for the minerals sector in Ghana. The Commission's primary responsibility is to foster the efficient and effective regulation and management of the utilization of Ghana's mineral resources. It is also responsible for the coordination and implementation of policies relating to mining and ensures compliance with Ghana's mining and mineral laws and regulations through effective monitoring. • The previously identified gold refineries in Ghana run bigger furnaces for smelting and final refining of gold prior to export. Under section 7 of their agreement with Minerals Commission, they are mandated to provide details on weight, assay figures and revenue monthly to the Minerals Commission.
Environmental	<ul style="list-style-type: none"> • Some Artisanal and Small-scale gold mining operations contribute to devastating impacts on the environment and ecosystems. These effects include; deforestation and land degradation from the clearing of the mining sites, over-stripping of overburden and burning of bushes • Mercury is one of the most toxic metals. It bio-accumulates in the food chain and becomes increasingly concentrated at higher levels. While there are no data available in ComTrade for imports of mercury to Ghana, Ghana's government data indicate that in 2011, 2012 and 2013 approximately 19.26MT, 9.6MT and 2.5 MT of mercury respectively were legally imported into Ghana. • Other environment-harming aspects of gold mining and gold processing plants include – water contamination, poisoning drinking water (exposing deep earth to air and water causing chemical reactions that produce sulfuric acid) natural habitat destruction, as well as work risks and accidents.

With the PESTLE analysis concluded, the following paragraphs present a few organizations and establishments with potential influence in the gold mining and refining landscapes.

OTHER ORGANIZATIONS

Here are some organizations and agencies which can stir up the gold mining and processing/refining sectors in Ghana:

- The **Ghana Chamber of Mines** has been the bulwark of the mining industry and the fulcrum around which the private sector and government address policy initiatives. On the one hand, they help to shape policies and address the industry's challenges and, on the other, they provide a platform for engagement with the government.
- The **Environmental Protection Agency** is a statutory agency established to deal with environmental protection, pesticide control and regulation of environmental issues and its related purposes. The agency is dedicated to improving, conserving and promoting the country's environment and striving for environmentally sustainable development. Holders of mineral rights will need an environmental permit from the EPA.
- The **Ministry of Lands and Natural Resources** is a Government of Ghana ministry with the responsibility of formulating policies and exercising oversight responsibilities for all land and resources in Ghana.
- The **Forestry Commission** of Ghana is responsible for the regulation of utilization of forest and wildlife resources, the conservation and management of those resources and the coordination of policies related to them. The Commission embodies the various public bodies and agencies that were individually implementing the functions of protection, management, the regulation of forest and wildlife resources.
- The **Centre for Public Interest Law (CEPIL)** is a right based non-governmental not for profit organization established in 1999 and incorporated under the Companies Code 1963 (Act 179) as a company limited by guarantee. The Center for Public Interest Law (CEPIL) focuses on using the Ghanaian legal system to protect people in mining areas and improve public oversight of mining operations.
- **Wassa Association of Communities Affected by Mining (WACAM)** is an environmental and Human Rights NGO formed in 1998. It is a grassroots

organization working with communities affected by the operations of multinational mining companies. The aim is to train and strengthen communities affected by mining to assertively and effectively engage in dialogue with mining companies, as well as to protect the environment surrounding mining sites.

ESTABLISHING A BUSINESS IN GHANA

Due to information regarding the establishment of a gold refining business in Ghana is very sparse (almost non-existent), the closest business operations orbiting gold refining – is gold trading/exporting.

An [article](#) published by the Legal Services Company - Legalstone Solicitors LLP, goes into detail on the steps on how to set up a mineral (gold) purchasing/exporting company with a license from the Minerals Commission. Any person be it a citizen or a foreigner who intends to engage in the purchase and export of minerals including gold must be granted a special license by the Minerals Commission.

To apply for the license, a person must comply with the regulatory regime of these institutions in Ghana. These are:

- Registrar General's Department
- Ghana Investment Promotion Center
- Minerals Commission of Ghana

Aside from the above principal institutions, an incorporated entity must also be registered with the following;

- Ghana Revenue Authority (GRA) - For the purposes of tax compliance in Ghana (That is payment of corporate tax, income tax and Pay as You Earn (PAYE)).
- Social Security and National Insurance Trust (SSNIT)

In order to be licensed to buy and deal in minerals including gold, one of the conditions of the Minerals and Mining Act is, that the entity must be incorporated per the dictates of the Companies Act, 1963 (Act 177). With regard to the Companies limited by shares, the Act sets down the following minimum requirements:

- At least one shareholder is required
- At least two Directors

- An Auditor
- Company Secretary Completion and submission of Company registration documents including that of Regulations

The general guidelines for any new business in Ghana include:

- **Procurement of a Tax Identification Number (TIN)**, via providing a colored copy of a National ID Card or securing the TIN number in a Bank, any Ghana Revenue Authority branch or the Registrar General's Department
- **Registering the Business at the Registrar General's Department**, which require the name of the company, the kind of business/industry will the company operate in, names and addresses of the shareholders, their percentage shareholdings, respective occupation, and any directorships in any other company.

Furthermore, the company must have a minimum of 2 directors and at least one must be a resident in Ghana. The Company's secretary and auditor's full names and address will also have to be disclosed.

- **Opening a Business Bank Account** – these are the requirements:
 - Company regulations
 - Certificate of incorporation
 - Certificate to commence business
 - Signatures of the authorized company representatives
 - Reference from Auditors
 - Proof of residence of Authorized Signatories
 - Completed account opening forms
 - 2 passport-size photographs of Signatories
 - ID's and TIN of Directors/Signatories
 - Company TIN
- **Application for Business Operating Permit from the Metropolitan /Municipal / District Assembly** – the requirements include:

- Purchase application form from the Cash Offices of the various sub-metros
- Complete in full the application form and submit it to the Revenue Mobilization Officer (RMO) at the Assembly's main office.
- Must have registered with the Registrar General's Department and have been issued with Business Registration Certificate.
- Registration Certificate from other recognized bodies as may be applicable.
- Tax clearance Certificate from Internal Revenue Service (IRS).
- **Register for Social Security** – these are the steps on how to register:
 - Book an appointment at the nearest SSNIT office.
 - Take the required documents to the nearest office.
 - Certificate to Commence business
 - Company's Regulations
 - Tax Identification Number for the company/ business entities
 - Profile of Directors or Local Managers
 - Copies of the Directors' or Local Manager's valid ID (e.g. Voter's ID, passport, driver's license)
 - Directions to Taxpayer's Premises using the Ghana Post (GPS).
 - List of employees with their SSNIT numbers, basic salaries, and contributions.

With the PESTLE analysis, some of the other organizations having a potential impact on the mining and gold processing landscape, as well as the general guidelines on how to establish a business in Ghana concluded, the following segment of the research provides insights regarding the benchmarks based on some of the best gold refineries in the world, as well as insights into the competing gold refineries within Ghana,

COMPETITION & BENCHMARK

The following section of the document present the data which was uncovered on Ghana's gold refineries. In addition to that information, benchmarking on the world's top 5 gold refineries was also conducted.

The detailed analysis can be accessed on Google Spreadsheet named "[Gold Refinement Ghana - Competitors & Benchmark](#)", where the 1st tab is for "Competitors" analysis, and the 2nd tab is the "Benchmarks" analysis.

COMPETITORS OVERVIEW

The research managed to identify a total of 9 gold refineries situated in Ghana. In the spaces below are the insights and information gathered from analyzing them.

The competitor gold refineries didn't provide a lot of information on their websites, however these are the conclusions based on the data:

- All of the refineries are located in Accra, apart from Affinery Gold Ghana Limited which is located in Tema.
- The general services these gold refineries provide include
 - Gold Exploration and Refining
 - Bullion Transportation & Logistics
 - Gold Assaying
 - Safe Keeping & Vault Services, among others.
- These gold refineries' clients are mainly other jewelry shops, other precious stone/mineral trading entities, as well as other industries which use gold in their regular processes such as Auto & Truck Parts Industry, Electronic Instruments & Controls Industry, Software & Programming, etc.

BENCHMARKING

In this section of the document, the main insights extracted from the benchmark analysis on the 5 biggest gold refineries in the world are presented. The analysis included Valcambi, Metalor, Rand Refinery, PAMP and the Argor-Heraeus gold, mineral and precious metal refineries.

These are the most important benchmarks extrapolated from the aforementioned gold refineries:

- Analysis, inspection, and testing of the gold received from suppliers, before starting refining operations.
- Having the best gold refining techniques at disposal (Miller chlorination gold refining, Wohlwill electrolytic gold refining, etc.).
- Establishing business partnerships with other members in the gold value chain, internal and external stakeholders. These partnerships can be just partnerships, or they can be viewed as potential clients (mines, traders, bullion houses, central and commercial banks, mints and jewel and watch manufacturers, as well as industrial consumers).
- Be mindful and transparent of the purity of the gold, while striving to achieve the highest possible purity.
- In time, seek to expand the physical gold delivery/transportation network to other countries through reliable and trustworthy industrial partners, banks and so on.
- Enact proper benefits, education, and training for the staff, in order to assure the best and the most efficient production output.
- Look for other suppliers apart from gold mines, alternative environmentally-friendly such as industrial scrap or recycled gold (e.g., old jewelry).
- Ratify, support and endorse the legitimate, ethical and responsible supply of gold.
- Participation in events, conferences, and forums surrounding the best-practice and sourcing supply chain landscape.
- Guaranteeing a representative sample at each stage of processing.