

THE MINERAL INDUSTRY OF GUINEA

By Philip M. Mobbs¹

As the world's second largest producer and holding the world's largest reserves of bauxite, Guinea's mineral economy continued to be dominated by this ore of aluminum. The minerals sector accounted for about 25% of the nation's gross domestic product (GDP) in 1995 with 20% of Guinea's GDP attributed to bauxite alone. Mineral exports, predominantly alumina, bauxite, diamond, and gold, accounted for more than 90% of the country's total exports and about 35% of Government revenues.

A new mining law was enacted in 1995. The new mining code defined incentives, mineral ownership, mining fees, mining titles, royalties, and other taxes. The Government reserved 15% free equity in gold and gem operations for itself. The state's participation in bauxite- and iron-mining ventures was subject to negotiation. Mineral beneficiation in Guinea was encouraged. Under the new law, the royalty on alumina was 5% and 3.5% on concentrates compared to 10% for bauxite and 7% for other ores.

In addition to possessing significant bauxite reserves, the nation had diamond, gold, granite, and high-grade iron deposits. The Government encouraged the diversification of the mineral industry, in part to reduce the nation's dependence on bauxite. The Ministry of Mines and Geology's Center of Mining Promotion and Development was assembling a mineral database to aid the Government's promotional efforts. The Ministry indicated that chromium, cobalt, graphite, limestone, manganese, nickel, tin, and uranium deposits existed in the country, but need additional investigation.²

The limited domestic demand for produced minerals, especially bauxite, resulted in the mineral sector dominating national exports. Guinea supplied 39% of the United States' total bauxite imports in 1995. Most of Guinea's mineral requirements were imported. Mining companies consumed approximately 55% of the country's petroleum imports.

Commercial production of bauxite and gold was augmented by artisanal production of diamond and gold in 1995. (*See table 1.*) As the year progressed, international market conditions improved, allowing Guinea to increase its bauxite production.

The production of bauxite was dominated by three companies. (*See table 2.*) The Compagnie des Bauxites de Guinée (CBG) operated a number of open pit bauxite mines. The company was expanding its mining operations at Sangarédi in the Boké District to 13.5 million metric tons per year (Mt/yr) and had started mining the Bidikoum

deposit. Also under renovation was CBG's coastal Kamsar plant where the ore was crushed, dried, and shipped.

The Société des Bauxites de Kindia (SBK) was attempting to restore production to the operation's nominal 3-Mt/yr capacity. SBK's production was exported to the Ukraine. The Société d'Economie Mixte Friguia was planning to incrementally increase its alumina capacity to 1.3 Mt/yr from the current 640,000 metric tons per year (t/yr).

Work started on the Government's 600,000-t/yr Dabola bauxite joint venture with the Government of Iran. The joint venture was also evaluating the feasibility of constructing a 1.2-Mt/yr capacity alumina plant at the northern Guinea project. Development of the Dian-Dian bauxite deposit, west of Sangarédi, was reportedly under negotiation with European interests. The Government was projecting a production rate of 11 Mt/yr at Dian-Dian.

Artisanal operators have mined lateritized gold placers for many years in the Kankan, Kourououssa, Mandiana, and Siguiri regions, known as "la zone du Boure;" however, artisanal mining has expanded significantly since 1992. Artisanal miners continued to operate alongside foreign company exploration activities, despite the efforts of the concession holders.

A joint-venture company, the Société Minière de Dinguiraye (SMD), operated a mine at Léro on the Dinguiraye concession in northern Guinea. SMD was held by the Government, by Kenor A.S. of Norway, and by Mine Or, the gold operations subsidiary of the Bureau de Recherches Géologiques et Minières of France and the Normandy Poseidon group of Australia partnership. Razel, a French construction company, had the contract to operate the open pit mine. The heap leach was designed to contend with abundant, fine, clay material in the lateritic ore. Gold was first poured at Léro in April 1995, and production was projected at approximately 1,200 kilograms per year for 4 years. The Government agreed to attempt to end illegal artisanal mining activity on SMD's concession area in return for SMD providing infrastructure and social amenities for local residents. During 1995, SMD also drilled the Fayalala deposit, 8 kilometers (km) from Léro. The company estimated resources at Fayalala to be 4.2 million metric tons (Mt) at 1.7 grams per ton.

Les Minéraux SGV SA, the 50-50 joint venture between West Africa Mining Exploration Corp. Inc.-SEMAFO and St. Geneviève Resources Ltd. of Canada, was sampling the Jean and the Gobeve vein systems on its concession.

A local company, Société Aurifère de Guinée (SAG), completed 70,000 meters of drilling, a geochemical sampling program, and started a feasibility study on the Siguri gold project. SAG's ownership at the end of 1995 was reported to be Golden Shamrock Mines Ltd. (GSM) of Australia (70%), with other equity held by the International Finance Corp. (15%) and the Government of Guinea (15%). SAG, under the previous owners, had mined the adjacent Koron placer until 1992.

Cambrian Resources of Australia was prospecting on the Kouroussa concession, and both Cyprus-Amax Minerals Co. of the United States and the joint venture of Ashanti Exploration of Ghana and IAMGOLD of Canada were exploring in the Mandiana region.

Development of the 6-Mt/yr Nimba iron ore mining project remained on hold because of a lack of financing, inadequate infrastructure, and political instability in Liberia. Because production from Nimba would be shipped via Liberia, the project was adversely affected by the Liberian civil war. A resolution of the Liberian conflict would determine when the development of the Nimba project would begin.

The kimberlite pipes near Banankoro were believed to be the source of Guinea's unusually large, high-quality gemstones. Nationwide, 70% to 80% of diamond production was of gem quality. Diamonds were recovered from alluvial gravels in the valleys of the Baoule and Bimboko Rivers and their tributaries. This area contained about two-thirds of the country's known placer reserves and accounted for approximately 80% of the official production of diamonds. The Aredor³ diamond mine in Gbenko was closed in 1994 by Bridge Oil Co. of Australia because of the continued presence of artisanal miners on the company's concession and increased operating costs.

Hymex Diamond Corp., of Canada's subsidiary Hymex Guinea S.A., began construction of a new wash plant to replace its existing pilot plant that processed 16 cubic meters of gravel per hour to recover diamond. To allow easier access to the site, more than 40 km of road and 11 bridges also were being upgraded. Hymex undertook a drilling and trenching exploration program on its diamond concession in 1995.

In 1995, total bauxite reserves were estimated at about 20 billion metric tons grading more than 40% Al₂O₃ according to the Ministry of Mines and Geology. Iron ore resources at the Nimba Mountains were estimated to be about 350 Mt grading 66.5% iron. Lower grade iron ore resources occurred elsewhere in Guinea, but they were of little or no commercial value. Gold reserves were estimated between 200 and 1,000 tons, and the Government also estimated there were reserves of 20 million carats of diamond in Guinea.

Mining railroads totaled 239 km of standard-gauge line and 806 km of 1-meter (m) line. A 135-km standard-gauge line linked the Sangarédi Mine with the Port of Kamsar, and a 104-km standard-gauge line linked the Kindia Mine with Conakry. A 145-km, 1-m line linked the Fria Mine with Conakry. In addition to the mine railroads, 661 km of 1-m-

gauge line connected Conakry with Kankan; this line was in very poor condition, but was undergoing rehabilitation. The Dabola-Conakry segment of the Conakry-Kankan line needed to be upgraded to support the Dabola project.

Guinea had two main ports: Kamsar and Conakry. Kamsar served the Sangarédi Mine, handling only bauxite shipments. Conakry served the Fria and Kindia Mines and also was the country's main general cargo port. The country had 1,280 km of navigable waterways.

Funding problems for the 75-megawatt (MW) capacity Garafiri hydroelectric project on the Konkoure River continued. In Conakry, a 45-MW expansion of the capacity at Tombo power station was planned and Unified Industries Inc. of the United States began installation of a 25.8-MW diesel plant.

The new mining law significantly improved the business climate and Guinea's infrastructure was slowly improving, but mineral operations remained hampered by infrastructural constraints. The less-than-expected foreign investment was attributed to the country's perceived political and economic risks, as well as civil disturbances in adjacent Liberia and Sierra Leone.

Bauxite and alumina are expected to continue dominating Guinea's economy. The addition of the Bidikoum Mine should help maintain the high quality of the nation's bauxite exports. Alumina production capacity was expected to increase given the proposed renovations, expansions, and new projects. Ventures requiring significant electric power availability, such as an aluminum smelter, could become feasible as the nation's power generation capacity is increased as planned.

Guinea's formal diamond and gold industries could thrive if new investments and exploration programs expanded production and attracted additional international interest. The activation of Léro and the intended production from the Fayalala, Mandiana, and Siguri gold deposits should provide some industry diversification in addition to extra revenue for the Government. The Nimba iron ore project remained dependent upon a solution to Liberia's civil war and access to an export route through Liberia.

¹Text prepared in June 1995 by David Izon, updated Nov. 1996 by Philip M. Mobbs.

²Ministère des Mines et de la Géologie, 1995, Symposium sur les investissements dans le Secteur Minière en Afrique, 8 pp.

³"Aredor" is an acronym for Association pour la Recherche l'Exploitation du Diamants et de l'Or.

Other Source of Information

Ministère des Mines et de la Géologie
Centre de Promotion et du Développement Minier
P.O. Box 295
Conakry, Republic of Guinea
Telephone: (224) 41-51-44
Fax: (224) 41-49-13

TABLE 1
GUINEA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Commodity	1991	1992	1993	1994 r/	1995
Alumina:					
Production:					
Hydrate	640	601	642	648	573
Calcined	610	561	656	640	566
Shipments, calcined	610	553	656	545	587
Bauxite:					
Mine production:					
Wet basis 3/	17,184	14,933	16,259	12,600	15,600 e/
Dry basis 4/	15,466	13,773	14,100	11,290	14,000 e/
Calcined	132	96	90	89	90 e/
Shipments (dry basis):					
Metallurgical	13,533	12,314	13,617	11,033	12,304
Calcined	92	95	90	91	89
Diamond: 5/					
Gem e/	91	90	90	220	274
Industrial e/	6	5	5	76	91
Total	97	95	95 e/	296	365
Gold 6/	4,453	2,113	1,500 r/	5,617	6,911

e/ Estimated. r/ Revised.

1/ In addition to the commodities listed, modest quantities of crude construction materials (clays, sand and gravel, and stone) presumably are produced but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels. Table includes data available through Oct. 31, 1996.

2/ Figures for 1990-93 were reported by Bureau de Stratégie et de Marketing Minier of Guinea.

3/ Metallurgical plus calcinable ore estimated at 13% water.

4/ Data are for wet-basis ore estimated at 13% water, reduced to dry basis estimated at 3% water.

5/ Figures do not include undocumented artisanal production believed smuggled out of the country.

6/ Figures include undocumented artisanal production.

TABLE 2
GUINEA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Société d'Economie Mixte Friguia (FRIALCO Holding Co., 51%; Government, 49%)	Kimbo alumina plant at Fria, 90 kilometers north of Conakry	640
Bauxite	Compagnie des Bauxite de Guinée (Halco Mining Inc., 51%; Government, 49%)	Sangarédi Mine, about 200 kilometers north of Conakry. Bidikoum Mine, about 200 kilometers north of Conakry. Drying and shiploading facilities are at Kamsar, 160 kilometers northwest of Conakry	12,200
Do.	Société d'Economie Mixte Friguia (FRIALCO Holding Co., 51%; Government, 49%)	Fria Mine at Fria, 90 kilometers north of Conakry	2,500
Do.	Société des Bauxites de Kindia (Government, 100%)	Kindia Mine (Debele deposit) at Kindia, about 100 kilometers east northeast of Conakry	3,000
Gold kilograms	Société Minière de Dinguiraye (Kenor A.S. of Norway, 42.5%; Mine Or France, 42.5%; and Government, 15%)	Léro placer mine	2,000