2006 Minerals Yearbook

GUINEA

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The Mineral Industry of Guinea

By Omayra Bermúdez-Lugo

The Republic of Guinea was among the world's leading producers of bauxite, ranking fourth after Australia, Brazil, and China in terms of bauxite tonnage mined. In 2006, Guinea's production of bauxite together with that of Australia, Brazil, China, and Jamaica accounted for about three-fourths of total world production (Bray, 2007, p. 10.2-10.4). Bauxite mining and alumina operations have historically provided about 80% of the country's foreign exchange. Other commodities produced in the country were cement, diamond, gold, and salt. Undeveloped mineral resources included graphite, iron ore, limestone, manganese, nickel, and uranium.

The Ministère des Mines, de la Géologie et de l'Environnement is the Government agency responsible for the administration of the mining sector. Guinea's Mining Code, which is based on French civil law, was last revised and amended in 1995 and 1998, respectively. The Mining Code established the Centre de Promotion et de Developpement Miniers to deal with all aspects of investment in the mining sector.

In late February and early March 2006, Guinea's main labor union alliance launched a historic general strike demanding wage increases and union participation in the development of Guinea's economic and social policy. As a result of the strike, the unions won a modest salary increase, but in June 2006, a second strike was launched reportedly owing to the Government's inability to control Guinea's rising inflation. The second general strike was marked by intense and widespread violence, which resulted in the deaths of several protesters at the hands of security forces (U.S. Department of State, 2007).

Production

In 2006, production of calcined bauxite declined by 22% to 567,000 metric tons (t) from 730,000 t in 2005; bauxite production, however, increased slightly while diamond and gold production decreased by 13.7% and 27.8%, respectively. Data on mineral production are provided in table 1.

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Bauxite and Alumina.—Alumina Company of Guinea (ACG), Compagnie des Bauxites de Guinée (CBG), and Compagnie des Bauxites de Kindia (CBK) were the country's three bauxite producers. ACG was 100% owned by OAO Russian Aluminium (RUSAL), CBG was a joint venture between Halco Mining Inc. (51%) and the Government (49%), and CBK was 100% owned by RUSAL. Halco, in turn, was a joint venture among Alcan Inc. (Alcan) (45%), Alcoa World Alumina LLC (Alcoa) (45%), and Dadco Group (10%).

Alcoa's basic agreement for the development of the 1.5-million-metric-ton-per-year (Mt/yr) Kamsar alumina refinery was approved by the Guinean National Assembly in May 2006 and was promulgated into law by decree of the President of Guinea in July 2006. During the year, Alcoa completed a biodiversity assessment, a project planning workshop, and the first of a series of meetings on resettlement and community impact for the Kamsar project (Alcoa Inc., 2007, p. 6; Alcoa World Alumina LLC, 2007, p. 12).

In April 2006, RUSAL became the sole owner of the Friguia bauxite and alumina complex. Under the terms of the acquisition agreement signed with the Government for the plant, RUSAL committed to a 3-year expansion program at an investment cost of about $300 million. The expansion program included, among other things, the modernization of existing production systems, installation of new equipment, and expansion of the bauxite mine, which was expected to nearly double production capacity by 2009. The Guinean Government also ceded control of the Dian Dian bauxite concession to RUSAL as part of the company's commitment to develop a bauxite mine and a 2.8-Mt/yr alumina refinery by 2012. The cost of the project was estimated to be $2.5 billion. The project was at the prefeasibility stage in 2006 (OAO Russian Aluminium, 2006a).

In October, RUSAL announced that it had signed an agreement with OAO Sual Holding of Russia and Glencore International AG of Switzerland to merge their respective alumina and aluminum assets under a new company named United Company RUSAL. The companies expected to complete the deal by April 1, 2007, subject to approval by antitrust regulators and the consent of other stakeholders through the exercise of their beneficial rights. If approved, the agreement would create the world's leading alumina and aluminum producer with an annual production volume of about 4 Mt/yr and would employ more than 100,000 people in 17 countries worldwide, including Guinea. The new company would account for about 16% of global alumina production and about 12.5% of global aluminum production (OAO Russian Aluminium, 2006b).

In January 2005, the Government had signed a basic mining agreement with Toronto-based Global Alumina Corporation Ltd. (GAC) for the development of a 2.8-Mt/yr alumina refinery in Boke, which was expected to be completed by 2009. In November 2006, the company announced that it had entered into exclusive negotiations with Melbourne-based BHP Billiton Ltd., Dubai Aluminium Company Ltd. (DUBAL), and Mubadala Development Company PJSC (Mubadala) of the United Arab Emirates for the development of the refinery. If the project were to go ahead, BHP Billiton would hold a 33% interest in the project; DUBAL and Mubadala would hold a 25% and an 8.33% interest, respectively; and GAC would hold the remaining 33% interest in the project. The companies also agreed to provide interim financing of about $100 million to cover project expenditures until a definitive agreement was reached and an additional drawdown of $20 million repayable to the respective parties if a definitive joint-venture agreement was not reached by June 1, 2007 (Global Alumina Corporation Ltd, 2006a-c, e, g). Also in January, GAC announced that it had entered into a three-party agreement with the Government and Compagnie des Bauxites de Guinée (CBG) under which CBG would transfer to the Government mining rights for a certain area near GAC's proposed Boke refinery (area not specified). The Government would then transfer the mining rights for the area to GAC (Global Alumina Corporation Ltd., 2006f).

GAC had signed a 40% alumina offtake agreement with DUBAL in 2005, and in 2006, the company entered into a new offtake agreement with Glencore for 420,000 t of the alumina to be produced by the planned Boke refinery. According to GAC, the new agreement secured long-term offtake agreements for about 55% of GAC's envisioned annual alumina production for a period of 20 years (Global Alumina Corporation Ltd., 2006d).

Gold.—Gold in Guinea occurred as veins and alluvial deposits and was mined at artisanal, small, and industrial scales. The country's main gold-bearing area was the Siguiri Basin, which is located within the Upper Guinea region. Gold is also found in the Fitaba, the N'Zerekore, and the Sierra-Fore areas and was produced by Société Ashanti de Guinée (SAG), Société d'Exploitation Minière d'Afrique de l'Ouest-Guinée (SEMAFO-Guinée), Société Minière de Dinguiraye (SMD), and artisanal and small-scale miners.

Cassidy Gold Corp. of Canada held interest in the seven concession areas of the Kouroussa project, which are located about 570 kilometers (km) from the city of Conakry; these concessions included the 240-square-kilometer (km²) Kouroussa property; the 161-km² Kouroussa North property; the 86-km² Kouroussa South Block 1 property; the 114-km² Kouroussa South Block 2 property; the 226-km² Kouroussa West property; the 207-km² Tambiko Mina property; and the 36-km² Tambiko Mina Block 2 property. In September 2006, Cassidy Gold announced updated resource figures for the Kouroussa project. The resource estimate, which was reportedly interpreted and validated by RSG Global Consulting Pty Ltd. of Australia, yielded an indicated resource of about 4.38 million metric tons (Mt) at a grade of 2.4 grams per metric ton (g/t) gold and an inferred resource of about 5.8 Mt at a grade of 1.97 g/t gold. The company planned to continue with the next phase of resource and exploratory drilling, which consisted of 30,000 meters (m) of reverse-circulation drilling, 5,000 m of diamond drilling, and 5,000 m of aircore drilling focused on the KD-1, the Kinkine, and the Sanu Folo deposits (Cassidy Gold Corp., 2006, 2007).

In January 2006, SearchGold Resources Inc. of Canada signed an option agreement with Bouré Gold Fields SARL to acquire a 100% interest in the 487-km² Mandiana gold property. Termite mound surveys were carried out during the year and a 3,000-m drilling program was started on December 26. Previous exploration by other companies had reportedly produced preliminary drill results of about 3.68 g/t gold at the Karfakolo prospect, and 1.89 g/t gold and 0.94 g/t gold at the Intercolonial prospect. Previous soil geochemical sampling had yielded assays of as much as 65 g/t gold at the N'Diambaye prospect (SearchGold Resources Inc., 2006).

SAG, which was owned by AngloGold Ashanti Ltd. (85%) and the Government (15%), operated the Siguiri gold mine, which is located 800 km from Conakry in northeastern Guinea. In 2006, production at the Siguiri Mine increased by about 4% to 9,362 kilograms (kg) from 8,989 kg produced in 2005. The company attributed the increase in production to the transition from heap-leach operations to a newly commissioned carbon-in-pulp (CIP) plant, which allowed for the mining of saprolitic ores (AngloGold Ashanti Ltd., 2007, p. 71-72).

In June 2006, London-based Crew Gold Corp. acquired the remaining 15% interest in the Lefa Corridor gold project and the Lefa gold mine from the Government. The project had been previously owned 85% by Guinor Gold Corp. of Canada (Crew Gold acquired Guinor in December 2005). Prior to its acquisition by Crew Gold, Lefa Mine had been operated for more than 11 years as a heap-leach operation. A $196 million expansion of the mine was completed by Crew Gold in December 2006 and included the construction of a 7-Mt/yr CIP plant. The CIP plant nameplate production capacity was about 10,900 kilograms per year (kg/yr) (reported as 350,000 troy ounces); full production was expected to be reached in the second quarter of 2007. The company reported that, owing to continuing exploration of the Lefa Corridor, measured and indicated resource estimates for the project increased to 150,000 kg (reported as 4.82 million troy ounces) from about 119,000 kg (reported as 3.84 million troy ounces) (Crew Gold Corp., 2007, p. 5).

SEMAFO-Guinée operated the Kiniero Mine, which is located about 650 km east of the city of Conakry near the town of Kouroussa. The company was owned by Semafo Inc. of Canada (85%) and the Government (15%). The Kiniero Mine produced about 1,468 kg (reported as 47,200 troy ounces) of gold in 2006 compared with 1,900 kg (reported as 61,416 troy ounces) in 2005. The decrease in production was attributed to the processing of lower grade ore. The company's exploration budget for 2007 was $3.1 million and was targeted at increasing the Kiniero Mine reserves by more than 3,100 kg (reported as 100,000 troy ounces). Mineral reserves at the Kiniero Mine were about 3.17 Mt at a grade of 4.28 g/t gold; total measured and indicated resources were about 8.84 Mt at a grade of 2.67 g/t gold (Semafo Inc., 2007a, p. 5, 9, 12; 2007b).

Other companies exploring for gold in the country included Australia-based Burey Gold Ltd. (formerly Mamba Resources Ltd.; the name was changed in March 2006), which entered into a farm-in and joint-venture agreement with Australia-based Caspian Oil and Gas Ltd. to earn a 70% interest in the Mansounia gold project, and Wega Mining ASA of Norway, which held nine exploration licenses in the Guinea Haute region (Burey Gold Ltd., 2006, p. 14; Wega Mining ASA, 2007, p. 28-30).

Iron Ore.—Guinea hosted the Mount Nimba and the Simandou iron ore deposits in the southeastern part of the country. The iron content of these banded iron formation deposits was estimated to be between 66% and 68%. Simandou, which is located along a 115-km-long mountain range in southeastern Guinea within Beyla, Kerouane and Macenta

Prefectures, hosts the Pic de Fon iron ore deposit. Resources at Pic de Fon were estimated to be about 1.2 billion metric tons (Gt) of iron ore. Lateritic iron deposits occur in Lower Guinea and include the Kaloum Peninsula deposit in the Conakry region and other deposits in Forecariah Prefecture. Other iron ore occurrences were identified in the regions of Upper Guinea, Middle Guinea, and Forest Guinea (Ministry of Mines and Geology, 2005c).

In April 2006, London-based Rio Tinto plc through its wholly owned subsidiary SIMFER S.A. was granted a mining concession for the development of the Simandou iron ore project. The company was working on a prefeasibility study for the Pic de Fon deposit (Rio Tinto plc, 2006). The International Finance Corporation (IFC) held a 5% interest in SIMFER. The IFC was to support Rio Tinto and the Guinean Government in conducting the necessary feasibility studies, environmental and social studies, and transportation studies for the development of the Simandou project (International Finance Corporation, 2006).

Other Metals.—In December, Canadian company Mega Uranium Ltd. announced the beginning of a 5,000-m diamond drilling program to test several targets at the Mount Kakoulima copper-nickel-cobalt and platinum-group metal polymetallic deposit, which is located about 35 to 50 km northeast of the city of Conakry. Mega was to invest $2 million or complete a bankable feasibility study to acquire a 100% interest in the project (Mega Uranium Ltd., 2006).

Industrial Minerals

Diamond.—Guinea's main diamond deposits are located in Kerouane, Kissidougou, and Macenta Prefectures along the Baoule, the Diani, and the Milo Rivers. Other diamond occurrences were identified in Forecariah and Kindia Prefectures. Diamond was mined from alluvial, eluvial, and kimberlite deposits. Artisanal and small-scale mining was concentrated mainly in the Banankoro area in Kerouane, on lands reserved by the Government in the Aredor-FCMC SA concession along the Boule River and its tributaries, and in Kindia. Guinea was a participant in the Kimberley Process. Diamond was exported through the National Bureau of Expertise (BNE), which evaluated the diamond and issued certificates of origin in compliance with the Kimberley Process. BNE collected a 3% tax on diamond exports (Ministry of Mines and Geology, 2005a, b).

In 2006, diamond production decreased by about 14% to 474,000 carats from a revised 549,000 carats in 2005. African Diamonds plc operated a trial mine on an alluvial diamond resource along the Bomboko River. The company planned to expand the operation during 2007 by using additional processing equipment, which was to be shipped from a former diamond operation in Sierra Leone (African Diamonds plc, 2007, p. 3, 16).

In March 2006, Canada-based Mano River Resources Inc. and SearchGold signed a joint-venture agreement to develop a diamond mine on SearchGold's Mandala-Ouria alluvial diamond property and to determine the economic potential of Mano River's Bouro kimberlite dykes in the Bouro District. During the year, an engineering study was carried out to design a dual alluvial/kimberlite treatment plant and a field program was initiated to evaluate the existing infrastructure. The company was also to conduct a sampling program to evaluate the alluvial potential of the Mandala-Ouria permit. A budget of $3 million was assigned for the first year of the project, which was to be funded equally by each company (African Mining, 2006; SearchGold Resources Inc., 2006).

De Beers Consolidated Mines Ltd. obtained three diamond exploration permits in 2006 for the Macenta area in southeastern Guinea. Diamond resources in the area have been estimated to be about 100,000 carats (Business Report, 2006).

Mineral Fuels and Related Materials

Petroleum.—Guinea did not produce or refine petroleum and was dependent upon imports for its petroleum requirements. Houston-based Hyperdynamics Corp. (HC) held a 31,000-square-mile acreage offshore Guinea, which was the largest offshore area for petroleum exploration in West Africa. HC began studying existing seismic data for this area in 2002. In September 2006, the company, through its wholly owned subsidiary SCS Corp. signed a production-sharing contract (PSC) with the Government for the exclusive rights to the acreage. Under the PSC, Hyperdynamics has the exclusive rights for exploration, development, and production for approximately 11,000 square miles of the total 31,000-square-mile area (Hyperdynamics Corp., 2006; 2007, p. 4-5).

Uranium.—Australian-based Murchison United NL held six uranium prospecting licenses for three separate concession areas known as Bohodou, Firawa, and Sesse. As of the end of June 2006, the company had completed its initial drilling program at the Firawa prospect and announced that the assay results confirmed significant uranium intersections (Murchison United NL, 2006a, p. 10-11; 2006b).

Perth-based Nova Energy Ltd. held two exploration licenses in northern Guinea. Previous exploration undertaken during the 1970s reportedly had identified uranium mineralization in the area grading from 0.01% to 0.5% U_3O_8, and the company was in the process of verifying this data. Nova planned to locate mineralized units and conduct ground radiometric and geochemical surveys in the area (Nova Energy Ltd., 2006).

Outlook

Mining, and particularly ongoing projects in the bauxite and alumina sectors are likely to play a significant role in Guinea's economic development in the next 3 to 6 years. If Alcoa's, GAC's, and RUSAL's projects are delivered as scheduled, Guinea's installed alumina production capacity will increase to 7.1 Mt/yr by 2012 from its current 640,000 t/yr. Rio Tinto's iron ore Simandou project, which was at the prefeasibility stage, as well as ongoing diamond, gold, and petroleum exploration and the presence of such major players in the international mining sector as BHP Billiton, De Beers, Rio Tinto, and RUSAL suggest that foreign direct investment in the mining sector is likely to continue to grow in the coming years.

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TABLE 1

GUINEA: PRODUCTION OF MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

Commodity[2]		2002	2003[e]	2004[e]	2005[e]	2006
Alumina:						
Production:						
Hydrate		44	8	10	10	6 [e]
Calcined		680	730	877	730	567 [3]
Shipments, calcined		724	738	887	740 [4]	NA
Bauxite:						
Mine production:						
Wet basis[5]		17,480	17,044 [4]	17,200	16,817 [r, 3]	16,956 [3]
Dry basis[e, 6]		15,300	15,000	15,254 [4]	14,600 [r]	14,800
Shipments (dry basis):						
Metallurgical		14,087	13,939 [4]	14,100	14,100	NA
Cement		360	360	360	360	360
Diamond[7, 8]	thousand carats	491	666	674 [r, 9]	549 [r, 9]	474 [9]
Gold[8]	kilograms	16,815	16,622 [4]	11,100	25,097 [r, 3]	18,147 [3]
Salt[e]		15	15	15	15	15

[e]Estimated; estimated data are rounded to no more than three significant digits. NA not available. [r]Revised. -- Zero.

[1]Table includes data available through November 19, 2007.

[2]In addition to the commodities listed, Guinea produced modest quantities of crude construction materials (clays, sand and gravel, and stone), but information is inadequate to make reliable estimates of output.

[3]Reported by the Ministère de l'Économie, des Finances et du Plan.

[4]Reported figure.

[5]Metallurgical ore plus calcinable ore estimated to be 13% water.

[6]Data are for wet-basis ore estimated to be 13% water reduced to dry basis estimated to be 3% water.

[7]Production is approximately 70% to 80% gem quality.

[8]Figures include artisanal production.

[9]Kimberley Process Certification Scheme.

TABLE 2

GUINEA: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina		Alumina Company of Guinea [OAO Russian Aluminium (RUSAL), 100%]	Friguia plant, Fria Prefecture	640,000.
Bauxite		Compagnie des Bauxites de Guinée (CBG) [Halco Mining Inc., 51%, and Government, 49% (Halco Mining is a consortium formed by Alcoa Inc., 45%; Alcan Inc., 45%; and Dadco Group, 10%)]	Kamsar and Sangaredi	14,000,000.
Do.		Compagnie des Bauxites de Kindia (CBK) [OAO Russian Aluminium (RUSAL), 100%]	Debele Mine, Kindia Prefecture	3,000,000.
Do.		Alumina Company of Guinea [OAO Russian Aluminium (RUSAL), 100%]	Friguia Mine, Fria Prefecture	2,800,000.
Cement		Ciments de Guinée (Holcim Ltd., 51%, and Government, 44%)	Plant at Conakry city	360,000.
Diamond	carats	Aredor-First City Mining Company (Government, 15%, and Trivalence Mining Corporation, 85%)	Aredor Mine	38,000.
Do.	do.	Artisanal miners	Mainly in Banankoro	700,000.
Gold	kilograms	Société Ashanti de Guinée (AngloGold Ashanti Ltd., 85%, and Government, 15%)	Siguiri Mine, 800 kilometers from Conakry	9,000,000 ore; 9,300 gold.
Do.	do.	Société Minière de Dinguiraye (Guinor Gold Corp., 85%, and Government, 15%)	Lero-Karta Mine	1,100,000 ore; 3,500 gold.
Do.	do.	Société d'Exploitation Minière d'Afrique de l'Ouest Guinée (Semafo Inc., 85%, and Government, 15%)	Kiniero Mine	400,000 ore; 1,700 gold.
Do.	do.	Crew Gold Corp., 100%	Lefa Mine	10,900 gold.