The Mineral Industry of Guinea
By Omayra Bermúdez-Lugo

In 2009, Guinea was ranked 5th among the world’s leading producers of bauxite, 14th among the world’s leading producers of rough diamond by volume, and 11th among the world’s leading producers of rough diamond by value. Other mineral commodities produced in the country included cement, gold, and salt. Undeveloped mineral resources included graphite, iron ore, limestone, manganese, nickel, and uranium. The Guinean Central Bank estimated that foreign direct investment in Guinea was $125 million in 2006 and $385.9 million in 2007 (the latest year for which data were available). The mineral industry accounted for 67% of these investments (U.S. Department of State, 2009; Bray, 2010; Kimberley Process Certification Scheme, 2010).

Government Policies and Programs

The Ministère des Mines, de la Géologie et de l’Environnement was the Government agency responsible for the administration of the mining sector. Guinea’s Mining Code, which was based on French civil law, was last revised and amended in 1995 and 1998, respectively. Under the Code, mining companies can acquire up to a 100% interest in mining projects. The Government, however, is entitled to “founder’s shares” in all gold, diamond, and other precious stone mining activities. The “founder’s shares” equal 15% of the capital of the operating company, and no financial contribution may be required from the Government for such shares. For bauxite, iron ore, and solid hydrocarbons, no such free shares are authorized. The Government is entitled to a stake in these mineral materials, but the terms are negotiated with the investor. The Mining Code allows favorable tax treatment for the duration of mining claims (including value-added tax exemptions during the prospecting, construction, and expansion stages). Major expatriate companies operating in Guinea, however, reported the Government’s periodic failure to rebate value-added taxes or to grant guaranteed tax exemptions. Also, some business managers reported such practices as judges requesting payments to “escrow accounts” pending court decisions and ordering the locking of office gates until payment of an arbitrary tax was made (U.S. Department of State, 2009).

The Petroleum Code of September 23, 1986 (Code Pétrolier du 23 Septembre 1986), which was also administered by the Ministère des Mines, de la Géologie et de l’Environnement, provides the legal framework for the exploration and mining of all liquid or gaseous hydrocarbons. Under the Code, companies exploring for or mining hydrocarbons in Guinea may negotiate mining contracts held by international mining companies, which included those of AngloGold Ashanti Ltd. of South Africa, London-based Rio Tinto plc, and United Company RUSAL of Russia, were put under scrutiny. In April, the Government initiated legal action against RUSAL over the terms under which the company had acquired ownership of the Friguia alumina refinery and the Debele bauxite mine, which was operated by Compagnie des Bauxites de Kindia. The Government claimed that Friguia was sold for about $20 million, which was an amount that was far below the price of $250 million set by independent valuators. Also in April, workers at the Friguia refinery went on strike, demanding higher salaries. On September 3, a ship carrying alumina from the refinery was prevented from leaving the Port of Conakry and RUSAL was informed that it had been banned from exporting alumina from the country for the nonpayment of an environmental tax. The ban was lifted 6 days later (Africa Mining Intelligence, 2009d, e; Magnowski, 2009a-c; U.S. Department of State, 2010).

A decree to set up a commission to coordinate investments in Guinea made by the China International Fund (CIF) was signed on August 28. The decree resulted from an agreement signed on June 12 between the Government of Guinea and the CIF that called for the creation of a holding company to handle investments in development projects. The holding company, named Guinée Development Corp., was to establish several subsidiaries, including the Guinée Mines Development Corp., which would deal with bauxite, gold, iron, and uranium projects, and the Guinée Petroleum Development Corp., which would deal with fuel minerals (Africa Mining Intelligence, 2009c).

On September 28, a coalition of opponents to the new political regime held a protest rally at Guinea’s national stadium. The protest was suppressed by the military, which opened fire against the crowd that had gathered, killing more than 150 people and wounding more than 1,000 others; the troops also sexually assaulted more than 100 women. On December 3, 2009, the junta leader was wounded in the course of an assassination attempt and sent to Morocco for treatment. An interim President was assigned, and a new coalition government that was formed by civilian political parties was established. Presidential elections were to be held in 2010 (Malone, 2009; U.S. Department of State, 2010).

Production

Production of most mineral commodities decreased during the year. Alumina production decreased by 10.6% to 530,000 metric tons (t) and bauxite production decreased by 15.2% to 15,600 Mt. The most significant drop in production was for diamond, which decreased by 77.5% to 697,000 carats compared with about 3 million carats produced in 2008. Gold production also decreased during the year to 18,091 kilograms (kg) from 19,945 kg in 2008. Data on mineral production are in table 1.
Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Mineral Trade

From 2004 to 2008, Guinea’s exports increased on average by 24% each year and amounted to $1.5 billion in 2008 (the latest year for which information was available), and during the same time period, imports increased on average by 18.9% each year to $1.9 billion. By partner, imports were more diversified than exports, with 17 major partners accounting for 80% of imports compared with 7 major partners for exports. Most exports were destined for France, Russia, and Switzerland. Bauxite accounted for about $596 million, or 40% of the country’s total exports, and gold accounted for about $476 million, or 32% (United Nations Statistics Division, 2009).

In 2009, Guinea’s exports to the United States were valued at about $67.3 million compared with about $106.4 million in 2008. Of this amount, bauxite and alumina accounted for about $62.3 million, or 92.5% of the country’s total exports to the United States, by value; gold accounted for about $1 million; and gem-quality diamond accounted for about $758,000. Imports from the United States were valued at about $94.8 million in 2009 compared with $102 million in 2008; these included nearly $2.9 million in iron and steel mill products, $857,000 in drilling and oilfield equipment, and $6.2 million in excavating machinery (U.S. Census Bureau, 2010a, b).

Commodity Review

Metals

Bauxite and Alumina.—Guinea’s three active bauxite mining operations were located at Boke, Fria, and Kindia. The Boke Mine supplied more than 13 Mt of bauxite to alumina refineries in North America and Europe in 2008. Production of bauxite and alumina was curtailed in 2009 owing to the temporary closure of all bauxite mining operations and of the Friguia alumina smelter as a result of civil unrest. The mine at Fria supplied bauxite to the Friguia plant (the country’s sole alumina refinery), which exported alumina primarily to RUSAL smelters in Russia and Ukraine (Global Alumina Corp., 2010, p. 31).

Navasota Resources Ltd. of Canada announced initial bauxite resources for its Koba bauxite project, which is located in the Boke bauxite belt in northwestern Guinea. Total indicated resources were estimated to be about 343.2 Mt at an average grade of 42.78% Al₂O₃, 2.85% SiO₂, and 27.83% Fe₂O₃, and inferred resources were estimated to be about 63.3Mt at an average grade of 43.81% Al₂O₃, 2.74% SiO₂, and 26.76% Fe₂O₃. The resource study was conducted by Scott Wilson Roscoe Postle Associates Inc., which was part of the Scott Wilson Mining Group. In May, Navasota signed a memorandum of understanding with the Government to allow for the sale of the Koba project to a third party (Navasota Resources Ltd., 2009a, b).

On January 23, the board of directors of the consortium formed by BHP Billiton Ltd. of Australia, Dubai Alumium Company Ltd., Global Alumina Corp. of Canada, and Mubadala Development Company PJSC of the United Arab Emirates deferred consideration of a development plan for the Boke alumina refinery. The Boke refinery project, which was at the feasibility stage, was to undergo a comprehensive review to examine ways to capture cost-reduction opportunities provided by the slowdown in the world economy. A revised development plan, which included a new project timetable, was to be considered by the board. In the interim, the board approved a general work plan for 2009 and 2010 and continued to approve budgets for the project on a monthly basis. The refinery was expected to be capable of producing 3.3 Mt/yr of alumina initially, to reach 3.6 Mt/yr of alumina within 5 years, and gradually to increase to a capacity of 3.95 Mt/yr (Global Alumina Corp., 2010, p. 24, 34-36).

The refinery and associated facilities would be accessed from the main rail system. New road access from the refinery to the main road (comprising the road section from Kamsar to Sangaredi) had been completed, and a haul road system was to connect the mining operations to the refinery. The energy requirements for the refinery were expected to be met by a steam and electricity cogeneration plant. Coal for the powerplant was to be sourced from South Africa. At its nominal capacity of 3.6 Mt/yr, the refinery was expected to produce 4.3 Mt/yr of red mud on a dry basis. Port facilities to service the refinery were located at Kamsar about 160 km northwest of Conakry. The port was connected by road to Boffa and Conakry in the southeast and to Boke and Sangaredi in the northeast.

The alumina refinery would require an expansion of the Port of Kamsar, which was built for and currently served the import and export needs of the existing CBG bauxite mining operations. The expansion was needed to provide storage for caustic soda, diesel oil, heavy fuel oil, imported coal, limestone, sulfuric acid, and other supplies necessary to operate the refinery and to store alumina for export. Construction of the port facilities began in January 2005 (Global Alumina Corp., 2010, p. 24, 34-36).

Gold.—On May 26, the Government placed an embargo on all gold imports and exports from the Siguiri gold mine and on the mine’s imports of diesel. The Siguiri Mine was 85% owned by AngloGold Ashanti. The embargo was lifted in June after the company agreed to advance $10 million to the Government from the mine’s $35 million environmental liability fund (Africa Mining Intelligence, 2009b; AngloGold Ashanti Ltd., 2009a-c; Mathews, 2009; U.S. Department of State, 2010).

Gold production from the Siguiri Mine was 11,600 kg (reported as 372,000 troy ounces) compared with 12,200 kg (reported as 392,000 troy ounces) in 2008. The mine, which was operated by AngloGold Ashanti, was an open pit operation located in the Siguiri district in northeastern Guinea. The drop in production during 2009 was attributable to the mining of lower grade areas following the depletion of the high-grade Bidini and Sanchoro pits and by the loss of 9 days of operation following the Government’s embargo on gold exports from the mine. Reportedly, the initial reason for the embargo was that an AngloGold Ashanti executive failed to attend a mining forum called by the Chief of the military junta, but later the Ministry of the Environment announced that the embargo had been imposed because of the mine’s tax position and environmental
During 2009, two plants were constructed and commissioned that divides the northeasterly flowing Niger tributaries and the southwesterly flowing rivers that drain into the Atlantic Ocean. The Bomboko alluvials lie within the alluvial diamond deposit. The Bomboko alluvials were located about 1,000 km from the capital city of Conakry, Guinea, and were estimated to produce small amounts of diamond at its Bomboko Mine. For the past several years, diamond production had fluctuated dramatically from 549,000 carats in 2005 to more than 3 million carats in 2008 and 697,000 in 2009. The lack of Government oversight in the country’s artisanal diamond mining areas, which are located about 1,000 km from the capital city of Conakry, was cited as one of the possible reasons for such fluctuations in reported production. In July 2008, the Ministry of Mines had recommended that the Government cancel the diamond mining license granted to Azure Resources Corp. of Canada, which was the company that operated the Areedor Mine, owing to inactivity. The mine, which had been idle for 3 years prior to 2008, produced between 12,000 and 38,000 carats per year. In 2009, the Government was seeking interested investors to restart the mine. The mining rights to the Areedor Mine were eventually granted to Batax Bouna International Mining Corp., which was a company owned by Guinean interests (Lewis, 2008; Africa Mining Intelligence, 2009a, f; Partnership Africa Canada, 2009, p. 19-21).

WAD continued to conduct exploration work at the Bomboko alluvial diamond deposit. The Bomboko alluvials lie within the headwaters of the Bomboko River north of the watershed that divides the northeasterly flowing Niger tributaries and the southwesterly flowing rivers that drain into the Atlantic Ocean. During 2009, two plants were constructed and commissioned at Bomboko to process the diamondiferous alluvials. A total of 651 carats was recovered from the Bomboko alluvials in 2009. Gem-quality diamond recovered from these alluvials included a 16.27-carat stone that was sold in Antwerp for $16,000. WAD also held a prospecting license for the Droujba property, which included the diamond-bearing kimberlites and associated secondary diamond deposits around the Bounoudou area in southeastern Guinea. The company planned to continue with its exploration activities in the area in 2010 (West African Diamonds plc, 2010, p. 5-9).

**Industrial Minerals**

**Diamond.**—Most diamond production in Guinea came from alluvial deposits operated by artisanal miners. The Areedor Mine had been the only industrial diamond operation in the country up until 2009 when West African Diamonds plc (WAD) began producing small amounts of diamond at its Bomboko Mine. For the past several years, diamond production had fluctuated dramatically from 549,000 carats in 2005 to more than 3 million carats in 2008 and 697,000 in 2009. The lack of Government oversight in the country’s artisanal diamond mining areas, which are located about 1,000 km from the capital city of Conakry, was cited as one of the possible reasons for such fluctuations in reported production. In July 2008, the Ministry of Mines had recommended that the Government cancel the diamond mining license granted to Azure Resources Corp. of Canada, which was the company that operated the Areedor Mine, owing to inactivity. The mine, which had been idle for 3 years prior to 2008, produced between 12,000 and 38,000 carats per year. In 2009, the Government was seeking interested investors to restart the mine. The mining rights to the Areedor Mine were eventually granted to Batax Bouna International Mining Corp., which was a company owned by Guinean interests (Lewis, 2008; Africa Mining Intelligence, 2009a, f; Partnership Africa Canada, 2009, p. 19-21).

WAD continued to conduct exploration work at the Bomboko alluvial diamond deposit. The Bomboko alluvials lie within the headwaters of the Bomboko River north of the watershed that divides the northeasterly flowing Niger tributaries and the southwesterly flowing rivers that drain into the Atlantic Ocean. During 2009, two plants were constructed and commissioned at Bomboko to process the diamondiferous alluvials. A total of 651 carats was recovered from the Bomboko alluvials in 2009. Gem-quality diamond recovered from these alluvials included a 16.27-carat stone that was sold in Antwerp for $16,000. WAD also held a prospecting license for the Droujba property, which included the diamond-bearing kimberlites and associated secondary diamond deposits around the Bounoudou area in southeastern Guinea. The company planned to continue with its exploration activities in the area in 2010 (West African Diamonds plc, 2010, p. 5-9).

**Mineral Fuels and Related Materials**

**Petroleum.**—Guinea did not produce or refine petroleum and was dependent upon imports for its petroleum requirements. On December 7, Houston-based Hyperdynamics Corp. signed a sale and purchase agreement with Aberdeen-based Dana Petroleum PLC for the acquisition of a 23% participating interest in Hyperdynamics’ oil and gas concession offshore Guinea. The sale was expected to close by January 31, 2010, subject to Government approval. On December 31, the company relinquished 64% of its original offshore oil and gas concession area. The decision was reportedly based on two-dimensional seismic data commissioned during the fourth quarter of 2009, which indicated the location for the most prospective petroleum areas. A three-dimensional seismic survey covering 3,000 square kilometers was planned for mid-2010 to identify specific drilling locations, and the first exploration well was expected to be drilled by 2011 (Hyperdynamics Corp., 2009a, b).

**Uranium.**—Australia-based Forte Energy NL (formerly Murchison United NL; the name was changed on November 25, 2008) continued with its exploration work for the Firawa uranium prospect. During the year, the company completed a resource drilling program at Firawa, and in July 2009, it announced an initial resource estimate based on the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) of 17.7 Mt at 296 parts per million U³O₈ for 11.6 million pounds of contained U³O₈. The company, however, decided to relinquish other properties that it held under concession in Guinea, which included the Bohoduo SE, the Sesse, and the Firawa SW prospects and to reduce the area contained in three other exploration licenses by about 50% (Forte Energy NL, 2010, p. 5).

Australia-based Toro Energy Ltd. relinquished its uranium exploration tenement holdings in Guinea. The company reported that although drilling had been planned for tenement 2006/154 and tenement 2006/153 during the year, the lack of interest from other investors to take part in a joint venture to conduct exploration in these areas and the change in Government in December 2008, which further slowed the process of finding a possible partner, forced the company to withdraw from Guinea (Toro Energy Ltd., 2010).

**Outlook**

Political instability and the uncertainty created by the Government’s actions in reviewing all mining contracts granted to international companies is likely to affect foreign
direct investment in the mining sector negatively. Guinea’s Government was controlled by a military junta and as of yearend was operating without a legislative body. As already shown by the actions of several of the mining companies that withdrew from mineral exploration projects in 2009, prospecting and exploration activities are likely to continue to slow down in the short run mostly owing to the lack of a clear legislative framework that adequately defines the rights and obligations of investors and the Government.

References Cited

Africa Mining Intelligence, 2009a, Alexander Rodionov—Guinea: Africa Mining Intelligence, no. 203, May 20, p. 4.
Africa Mining Intelligence, 2009b, Conakry—Siguiri mine closes then reopens: Africa Mining Intelligence, no. 200, April 1, p. 2.
Africa Mining Intelligence, 2009c, Guinea commission for Chinese investments: Africa Mining Intelligence, no. 209, September 2, p. 3.
Africa Mining Intelligence, 2009d, Moussa Dadis declares war on RUSAL: Africa Mining Intelligence, no. 201, April 15, p. 2.
Africa Mining Intelligence, 2009e, Resolution near on Guinea-RuSaL dispute?: Africa Mining Intelligence, no. 203, May 20, p. 3.
Africa Mining Intelligence, 2009f, Warning for Batax Bouna international: Africa Mining Intelligence, no. 210, September 16-29, p. 1.
Hyperdynamics Corp., 2009a, Hyperdynamics signs binding sale and purchase agreement with Dana Petroleum for participating interest in Guinea oil and gas concession: Hyperdynamics Corp. press release, December 31, 2 p.
Navasota Resources Ltd., 2009a, Navasota and the Government of Guinea to seek sale of Koba bauxite resources: Toronto, Ontario, Canada, Navasota Resources Ltd. press release, May 7, 1 p.
Navasota Resources Ltd., 2009b, Navasota outlines bauxite resources of 343 million tons indicated and 63 million tons inferred at Koba project, Guinea: Toronto, Ontario, Canada, Navasota Resources Ltd. press release, January 23, 4 p.
### TABLE 1
GUINEA: PRODUCTION OF MINERAL COMMODITIES

(Thousand metric tons unless otherwise specified)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina</td>
<td>722</td>
<td>530</td>
<td>527</td>
<td>593</td>
<td>530</td>
</tr>
</tbody>
</table>

**Bauxite:**

<table>
<thead>
<tr>
<th>Mine production:</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet basis</td>
<td>16,817</td>
<td>18,784</td>
<td>18,519</td>
<td>18,400</td>
<td>15,600</td>
</tr>
<tr>
<td>Dry basis</td>
<td>14,600</td>
<td>16,300</td>
<td>16,100</td>
<td>16,000</td>
<td>13,600</td>
</tr>
<tr>
<td>Shipments (dry basis), metallurgical</td>
<td>14,100</td>
<td>NA</td>
<td>NA</td>
<td>13,700</td>
<td>13,600</td>
</tr>
</tbody>
</table>

**Cement:**

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>400</td>
</tr>
</tbody>
</table>

**Diamond**

<table>
<thead>
<tr>
<th></th>
<th>Thousand carats</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>549</td>
<td>474</td>
<td>1,019</td>
<td>3,098</td>
<td>697</td>
<td>2009</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gold, mine output, Au content</th>
<th>Kilograms</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25,097</td>
<td>16,922</td>
<td>15,628</td>
<td>19,945</td>
<td>18,091</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Salt</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

---

1 Estimated data are rounded to no more than three significant digits.  
2 Revised. NA Not available.  
3 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.  
4 Metallurgical ore estimated to be 13% water.  
5 Reported figure.  
6 Data are for wet-basis ore estimated to be 13% water reduced to dry basis estimated to be 7% water.  
7 Production is approximately 70% to 80% gem quality.  
8 Figures include artisanal production.  
9 Does not include artisanal mining production, which has historically ranged between 1,500 and 5,000 kilograms per year.

### TABLE 2
GUINEA: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

(Metric tons unless otherwise specified)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Major operating companies and major equity owners</th>
<th>Location of main facilities</th>
<th>Annual capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina</td>
<td>Alumina Company of Guinea (United Company RUSAL, 100%)</td>
<td>Friguia plant, Fria</td>
<td>700,000</td>
</tr>
<tr>
<td>Bauxite</td>
<td>Compagnie des Bauxites de Guinee (CBG) [Government, 49%, and Halco Mining Inc., 51% (Halco Mining was a consortium formed by Alcoa Inc., 45%; Alcan Inc., 45%; and Dadeo Group, 10%)]</td>
<td>Kamsar and Sangaredi</td>
<td>14,000,000</td>
</tr>
<tr>
<td>Cement</td>
<td>Ciments de Guinee (Holcim Ltd., 51%, and Government, 44%)</td>
<td>Conakry plant</td>
<td>360,000</td>
</tr>
<tr>
<td>Diamond</td>
<td>Association pour la Recherche et l'exploitation du Diamant et de l'Or (Batax Bouna International Mining Corp.)</td>
<td>Are dor Mine</td>
<td>38,000</td>
</tr>
<tr>
<td>Gold</td>
<td>Societe Ashanti de Guinee (AngloGold Ashanti Ltd., 85%, and Government, 15%)</td>
<td>Siguiri Mine</td>
<td>10,300</td>
</tr>
<tr>
<td></td>
<td>Societe Miniere de Dinguiraye (Crew Gold Corp., 85%, and Government, 15%)</td>
<td>Lero-Karta Mine, 700 kilometers northeast of Conakry</td>
<td>3,500</td>
</tr>
<tr>
<td></td>
<td>Societe d'exploitation Mineiere d'Afrique de l'Ouest Guinee (Semafo Inc., 85%, and Government, 15%)</td>
<td>Kiniere Mine, 650 kilometers east of Conakry</td>
<td>1,700</td>
</tr>
</tbody>
</table>

Do., do. Ditto. NA Not available.

GUINEA—2009 20.5