



2007 Minerals Yearbook

CAMEROON AND CAPE VERDE [ADVANCE RELEASE]

THE MINERAL INDUSTRIES OF CAMEROON AND CAPE VERDE

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CAMEROON

Cameroon was considered to have significant mineral resources of bauxite, cobalt, iron ore, nickel, and uranium; however, substantial infrastructure development would be required to exploit them. Other mineral resources included cassiterite, lignite, marble, mica, rutile, and tantalite. All mineral resources belong to the state. All prospecting, exploration, and mining activities for any mineral deposit are regulated by permit. Mining in Cameroon in 2007 was limited and involved only artisanal production of diamond, gold, salt, and various building materials.

In 2007, the following five companies in Cameroon had active exploration programs: African Aura Resources Ltd. of the United Kingdom (gold), Geovic Cameroon plc of Canada (cobalt-manganese-nickel), Hydromine Inc. of the United States (iron ore), Mega Uranium Ltd. of Canada (uranium), and Sundance Resources Ltd. of Australia (iron ore). A new port, a hydroelectric plant, and railway projects were to be built to support expected development of the mineral industry (U.S. Department of State, 2007).

Small-scale artisanal miners recovered gold in the eastern and northern parts of the country from alluvial and eluvial deposits. Diamond was also produced throughout the country by small-scale artisanal miners. Numerous local operations produced industrial minerals.

The mining sector has not been a priority of the Government in the past; however, that appeared to be changing in 2007. The Government was attracting new investors that it hoped would invest \$10 billion in the mineral sector during the next few years. The Government was reviewing the 2001 Mining Code; this law gives investors such incentives as a 5-year tax break and free transfer of capital out of the country (Ninemsn Pty Ltd., 2007).

Production

In 2007, the petroleum sector continued to be the most significant segment of Cameroon's mineral industry, and petroleum products were the main export items. Other mineral commodities produced in the country were aluminum, cement, gold that was produced by artisanal miners, and sand. A variety of industrial minerals and other construction materials, such as aggregates, gypsum, limestone, marble, and stone, were also produced. Increased production of aluminum, cement, and petroleum was attributable to increased demand.

Structure of the Mineral Industry

The structure of the mineral industry of Cameroon was modest, and companies were mostly privately owned. The leading companies were Compagnie Camérounaise de

l'Aluminium (aluminium), Les Cimenteries du Cameroun (Cimencam) (cement), and Société Nationale de Raffinage (SoNaRa) (petroleum). Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Aluminum and Bauxite and Alumina.—Hydromine and the Government were negotiating an accord for the planned construction of a 2.8-million-metric-ton-per-year (Mt/yr) alumina plant at Ngaoundal which would process 7 Mt/yr of bauxite. The plant was expected to start up in the next 2 to 5 years, and bauxite for the plant would come from the Minim-Martap and the Ngaoundal bauxite deposits in Adamawa Province. The Government stated that Cameroon had estimated bauxite reserves of about 1.2 billion metric tons. Major infrastructure work would be required to exploit the reserves, however, including construction of 1,000 kilometers (km) of road that would link the Minim-Martap and the Ngaoundal deposits to the coast and upgrading of the Port of Kribi to a deep-sea port (Africa-Reuters, 2007).

Alcan Inc. of the United States and the Government signed a letter of intent to study the economic and technical merits of more than tripling the production at the Edea aluminum smelter. The local operator of the smelter was Societe Camérounaise d'Aluminium (Alucam), of which Alcan and the Government each owned a 46.7% interest. Expansion of the smelter by upgrades to existing potlines and construction of a new potline would raise production from 90,000 metric tons per year (t/yr) to 300,000 t/yr. This option was chosen by Alucam as the most favorable to maintain and reinforce industrial activities in the whole region. The expansion would be combined with hydroelectric development on the Sanaga River and was expected to cost \$1.37 billion (Mining Journal, 2007).

Cobalt.—Geovic Cameroon plc (GeoCam), a subsidiary of Geovic Mining Corp. of the United States, owned seven near-surface cobalt and nickel deposits in Cameroon; these were the Kondong, the Mada, the Messea, the Nkamouna, the North Mang, the Rapodjombo, and the South Mang deposits. GeoCam was planning to start mining cobalt and nickel at the Nkamouna laterite deposit in 2010. This would be the first deposit to be developed. Mining would be by open pit, and processing would be by atmospheric leaching after crushing, washing, and screening to upgrade the ore. GeoCam planned to produce about 4,100 t/yr of cobalt and 3,200 t/yr of nickel for 19 years from 656,000 t/yr of physically upgraded concentrates. Estimated proven and probable ore reserves totaled 54.7 million metric tons (Mt) grading 0.25% cobalt, 1.33% manganese, and 0.69% nickel. The Nkamouna ore body was considered to be

large, predictable, and open for further expansion. If and when the project commences, mining will be relatively inexpensive because the deposits average less than 16 meters (m) deep and blasting would not be required (Geovic Mining Corp., 2007).

Gold.—African Aura Resources was continuing to acquire licenses and to conduct exploration that it had initiated in 2006. In 2007, exploration activities included reconnaissance, soil and pit sampling, and stream sampling at the Djoum Archaean greenstone belt in southern Cameroon, the Kambele prospect in eastern Cameroon, and the Rey Bouba and Tchollire licenses in northern Cameroon. The Djoum greenstone belt, which is located on the Congo Craton, is the largest known greenstone belt in Cameroon and was thought to be similar to the greenstone gold fields of Liberia, Tanzania, and Zimbabwe (Minesite, 2007).

Iron Ore.—Sundance Resources was planning to exploit iron ore at Mbalam. The ore deposit is located near the Gabon border and was expected to produce 35 Mt/yr of iron ore during a period of 20 years. A scoping study, which was delineated by a limited drilling program by the United Nations Development Fund, resulted in an initial estimated inferred resource of more than 800 Mt of iron ore, including 218 Mt grading 60% iron. Sundance planned to confirm and expand on those results with a major exploration program and launched a \$20 million placement loan to fund the development of the project (Nakomo, 2008).

Uranium.—Mega Uranium and NU Energy Uranium Corp. announced that they had signed a letter of intent for Mega to acquire all the outstanding shares of NU Energy, which included a 92% interest in the Kitongo and the Lolodorf uranium deposits. NU Energy had a 1,000-square-kilometer exploration permit to evaluate the Kitongo deposit and a number of other uranium targets previously identified by radiometric surveys. Uranium resources had previously been estimated to be 13,125 metric tons (t) of uranium oxide (U_3O_8). Resources at the Lolodorf uranium deposit had been estimated to be 1,200 t of U_3O_8 . The average grade of these deposits was 0.10% (Mega Uranium Ltd., 2007).

Mineral Fuels

Petroleum.—Cameroon's petroleum reserves were located offshore in the Rio del Rey basin, offshore and onshore in the Douala and the Kribi-Camp basins, and onshore in the Logone-Birni basin in the northern part of the country. The country has experienced a fairly steady decline in its domestic petroleum production during the past 20 years. The country has been

well explored, but no new discoveries have been found. As of January 2006, Cameroon had estimated proven petroleum reserves of 400 million barrels; the majority of these reserves are located offshore in the Douala and the Kribi-Camp basins of the Niger Delta. Cameroon's only refinery, which is located in the port city of Limbe, had a capacity to produce 45,000 barrels per day and is operated by SoNaRa (U.S. Energy Information Administration, 2007).

References Cited

- Africa-Reuters, 2007, Cameroon negotiating 2.8 million ton alumina project, Africa-Reuters. (Accessed August 19, 2008, at <http://africa.reuters.com/country/CM/news/usnL24401270.htm>.)
- Nakomo, Ben, 2008, Cameroon soon to exploit iron ore at Mbalam: Yaounde, Cameroon, *The Entrepreneur Newspaper*, January 4. (Accessed August 14, 2008, at <http://www.entrepreneurnewsonline.com/2008/01/cameroon-soon-t.html>.)
- Geovic Mining Corp., 2007, Cameroon cobalt-nickel-manganese: Geovic Mining Corp. (Accessed August 18, 2008, at www.geovic.net/projects.php.)
- Mega Uranium Ltd., 2007, Mega Uranium to acquire NU Energy Uranium Corp: Toronto, Ontario, Canada, Mega Uranium Ltd. press release, April 27. (Accessed August 14, 2008, at <http://www.marketwire.com/press-release/Nu-Energy-Uranium-Corporation-TSX-VENTURE-NU-648345.html>.)
- Minesite, 2007, African Aura Resources Ltd.—Current operations: London, United Kingdom, Minesite. (Accessed April 16, 2007, at http://www.minesite.com/companies/comp_single/company/african-aura-resources-ltd.html.)
- Mining Journal, 2007, Alucam study begins: London, United Kingdom, *Mining Journal*, January 8, p. 4.
- Ninemsn Pty Ltd., 2007, Cameroon targets \$10 billion mines investment (Accessed August 14, 2008, at <http://www.money.ninemsn.com.au/article.aspx?id=603995>.)
- U.S. Department of State, 2007, Cameroon—2007 investment climate statement: Washington, DC, U.S. Department of State. (Accessed August 19, 2008, at <http://www.state.gov/e/eeb/ifd/2007/80687.htm>.)
- U.S. Energy Information Administration, 2007, Chad and Cameroon: U.S. Energy Information Administration country analysis brief, January. (Accessed August 21, 2008, at http://www.eia.doe.gov/cabs/Chad_Cameroon/Full.html.)

CAPE VERDE

Cape Verde is an archipelago of 10 islands and 8 islets located about 600 km off the western coast of Africa. The mineral industry's contribution to the country's economy was minimal. Most of the country's mineral requirements were imported. Production of mineral commodities was limited to clay on the islands of Boa Vista, Sal, and Sao Vicente; gypsum on the island of Maio; limestone on the islands of Boa Vista, Sal, and Santo Antao; pozzolana on the island of Santo Antao; and salt on the islands of Mindelo and Sal. Cape Verde was not a natural gas or petroleum producer in 2007.

TABLE 1
CAMEROON AND CAPE VERDE: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1, 2}

(Metric tons unless otherwise specified)

| Country and commodity ³ | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|----------------------|------------------------|------------------------|------------------------|------------------------|
| CAMEROON | | | | | |
| Aluminum metal, primary | 77,200 | 85,900 ⁴ | 86,977 ⁴ | 87,000 | 89,500 ⁴ |
| Cement, hydraulic | 948,943 | 1,032,438 ⁴ | 1,000,000 | 1,000,000 | 1,150,000 ⁴ |
| Clay | 24,881 | 15,734 ⁴ | 9,811 ⁴ | 10,000 | 10,000 |
| Diamond carats | 5,500 | 12,000 | 12,000 | 12,000 | 12,000 |
| Gold, mine output, Au content ⁵ kilograms | 700 | 1,500 | 18,895 ⁴ | 20,000 | 20,000 |
| Petroleum: | | | | | |
| Crude thousand 42-gallon barrels | 24,820 ⁴ | 34,675 ⁴ | 30,100 ^{r, 4} | 31,667 ^{r, 4} | 30,364 ^{4, 6} |
| Refinery products do. | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Pozzolana, ash for cement | 600,000 | 600,000 | 600,000 | 600,000 | 600,000 |
| Sand and gravel | 601,201 ⁴ | 601,000 | 601,000 | 600,000 ^r | 600,000 |
| Sapphire kilograms | 1,000 ⁴ | 1,000 | 1,000 | 1,000 | 1,000 |
| Silica sand | 13,927 ⁴ | 14,000 | 14,000 | 14,000 | 14,000 |
| Stone: | | | | | |
| Limestone | 103,420 ⁴ | 103,000 | 103,000 | 100,000 ^r | 100,000 |
| Marble | 468 ⁴ | 500 | 500 | 500 | 500 |
| CAPE VERDE ⁷ | | | | | |
| Cement | 150,000 | 150,000 | 150,000 | 160,000 | 160,000 |
| Salt | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 |

^rRevised. do. Ditto.

¹Estimated data are rounded to no more than three significant digits.

²Includes data available through November 28, 2008.

³In addition to the commodities listed, a variety of industrial minerals and construction materials (aggregate, gypsum, and stone) are produced, and bauxite may be produced, but information is inadequate to make reliable estimates of output. The National Institute of Statistics reports salt production to be less than 1 metric ton per year.

⁴Reported.

⁵From artisanal mining.

⁶Reported by the U.S. Energy Information Administration.

⁷Cape Verde also produced clay, gypsum, limestone, and pozzolana, but output is not reported, and available information is inadequate to make reliable estimates of output.

TABLE 2
CAMEROON AND CAPE VERDE: STRUCTURE OF THE MINERAL INDUSTRIES IN 2007

(Thousand metric tons unless otherwise specified)

| Country and commodity | Major operating companies and major equity owners | Location of main facilities | Annual capacity |
|-------------------------------------|--|----------------------------------|-----------------|
| CAMEROON | | | |
| Aluminum | Compagnie Camérounaise de l'Aluminium (Alcan Inc., 46.7%) | Plant at Edea | 95 |
| Cement | Les Cimenteries du Cameroun (Cimencam) (Lafarge Group, 57%) | Plant at Bonaberi near Douala | 1,200 |
| Diamond carats | Artisanal | Various locations | 12,000 |
| Gold kilograms | Artisanal | Various locations | 1,500 |
| Limestone | Les Cimenteries du Cameroun (Cimencam) (Lafarge Group, 57%) | Figuil | 275 |
| Petroleum, refinery barrels per day | Société Nationale de Raffinage (SoNaRa) (Government, 66%) | Refinery at Limbe | 45,000 |
| Pozzolana | do. | Sud-Quest and Littoral Provinces | 750 |
| CAPE VERDE | | | |
| Cement metric tons | Cimentos de Cabo Verde S.A. | Plant at Santiago | 160,000 |
| Salt do. | Artisanal | Various locations | 1,600 |

do. Ditto.