



2006 Minerals Yearbook

CONGO (KINSHASA)

THE MINERAL INDUSTRY OF CONGO (KINSHASA)

By Thomas R. Yager

The Democratic Republic of the Congo [Congo (Kinshasa)] played a globally significant role in the world's production of cobalt and diamond. In 2006, the country's share of the world's cobalt production amounted to 38%; industrial diamond, 28%; and gem-quality diamond, 6%. Congo (Kinshasa) accounted for about 49% of the world's cobalt reserves. Copper and crude petroleum production also played a significant role in the domestic economy. The country was not a globally significant consumer of minerals or mineral fuels (Olson, 2007a, b; Shedd, 2007).

Minerals in National Economy

The mining and mineral processing sector accounted for 13.2% of the gross domestic product, and the manufacturing sector, 4.5%. An estimated 700,000 artisanal miners were involved in diamond production; employment in diamond trading amounted to about 100,000 (International Monetary Fund, 2005, p. 48-49; 2007, p. 46).

Government Policies and Programs

The Parliament of Congo (Kinshasa) passed a new mining code in July 2002 that replaced Ordinance No. 81-013 of April 2, 1981. The new code promotes private sector development of the mining industry; the principal role of the Government with respect to mining is to promote and regulate the development of the industry. Mining rights are vested with the Government. Congo (Kinshasa) was a signatory to the Kimberley Process, which established a certification system in November 2002 to reduce the trade in conflict diamond.

Production

In 2006, the production of tungsten in Congo (Kinshasa) increased by 178%; zinc, 120%; copper, 34%; and silver, 26%. Cement output increased by 4% in 2006, but doubled from 2002 to 2006. Tantalum production declined by 58% in 2006; niobium (columbium), by 57%; tin, 22%; and diamond, 19%.

Structure of the Mineral Industry

La Générale des Carrières et des Mines (Gécamines), which was a state-owned company, produced cobalt and copper; other cobalt and copper mining companies were privately owned. The cement producers Interlacs and Lukala Cements Co. were privately owned. The Government held an 80% share in the large-scale diamond producer Société Minière de Bakwanga (MIBA). Artisanal and small-scale miners accounted for most of the diamond, gold, niobium (columbium), tantalum, tin, and tungsten production in Congo (Kinshasa). Artisanal and small-scale miners also played a significant role in the country's cobalt mine production.

Trade

Exports were estimated to be about \$2.32 billion in 2006, and imports, \$2.74 billion. Diamond accounted for 38% of total exports; crude petroleum, 25%; cobalt, 16%; and copper, 11%. Other mineral exports included gold, niobium (columbium), tantalum, tin, tourmaline, and tungsten. The share of diamond in total exports declined from nearly 53% in 2001; the shares of cobalt and copper increased from 8% and 4%, respectively. From 2001 to 2006, diamond exports nearly doubled in value, but cobalt and copper exports increased at a faster rate because of higher prices and increased production. Petroleum products accounted for nearly 6% of total imports in 2006 (International Monetary Fund, 2007, p. 68-69).

Commodity Review

Metals

Cobalt and Copper.—First Quantum Minerals Ltd. of Canada produced copper ore from the Lonshi Mine; the company shipped its ore across the border with Zambia to the Bwana Mkubwa solvent extraction-electrowinning facility. Reserves at the Lonshi Mine were likely to be depleted in 2008 (First Quantum Minerals Ltd., 2007, p. 8, 11).

In April 2006, First Quantum started construction of a new mine at the Frontier copper deposit. The company planned to produce an average of 73,000 metric tons per year (t/yr) of copper during the 19-year life of the mine starting in the third quarter of 2007. The capital costs of the mine were expected to be \$226 million (First Quantum Minerals Ltd., 2007, p. 8).

First Quantum purchased Adastra Minerals Inc. of the United Kingdom in May 2006; Adastra held a 65% interest in the Kolwezi Tailings project. First Quantum was considering the development of a plant with an initial production level of 35,000 t/yr of copper and 5,800 t/yr of cobalt; production could be expanded to 105,000 t/yr of copper and 17,400 t/yr of cobalt in a subsequent phase. The company planned to complete an engineering study in 2007 (First Quantum Minerals Ltd., 2007, p. 27).

Anvil Mining Ltd. of Australia operated the Dikulushi open pit copper-silver mine, which is located near Lake Mweru in Katanga Province. The company exported copper concentrates from the Dikulushi Mine to Namibia for smelting. Anvil produced 22,618 metric tons (t) of copper in 2006 compared with 17,816 t in 2005; silver production increased to 67,633 kilograms (kg) from 53,553 kg. Open pit mining ceased in November 2006; the company planned to mill ore from stockpiles until the planned completion of a new underground mine in the fourth quarter of 2007. Anvil expected production to be 20,000 t of copper and 56,000 kg of silver in 2007. The life of the underground mine was expected to be 6 years (Anvil Mining Ltd., 2007a, p. 3, 7).

Anvil was engaged in a joint-venture agreement with Gécamines and DeMoura Enterprises to mine the Kulu deposit. In 2006, production at Kulu increased to 19,956 t of copper from 1,361 t. In 2007, copper output was expected to be about 16,000 t. Anvil planned to complete an electric arc furnace at Kulu for the production of black copper ingots with a grade of between 90% and 94% copper in the fourth quarter of 2007. The plant was expected to have a capacity of 15,500 t/yr of contained copper and to be fully operational in the first quarter of 2008 (Anvil Mining Ltd., 2007a, p. 8-9).

Anvil held a 95% interest in the mining rights for the Kinsevere and the Nambulwa deposits in Katanga. In the second quarter of 2006, Anvil announced plans to complete the first stage of development at Kinsevere, which included an open pit mine and two electric arc furnaces, in the second half of 2007. The Kinsevere project was expected to produce between 23,000 and 25,000 t/yr of black copper ingots. Anvil planned to complete a feasibility study of the second stage of the project in the second quarter of 2007. Depending on the results of the study, Anvil could build a solvent extraction-electrowinning plant with a capacity of 60,000 t/yr. The combined production from the Dikulushi, the Kinsevere, and the Kulu Mines was expected to be 60,000 t in 2008 and nearly 100,000 t in 2010 (Anvil Mining Ltd., 2007a, p. 10; 2007b, p. 8).

Gécamines and its joint-venture partners produced 36,000 t of copper in 2006 compared with 26,000 t in 2005 and 38,000 t in 2001. The company's production was inhibited by aging equipment; a lack of investment, fuel, and spare parts; and poor infrastructure (International Monetary Fund, 2007, p. 51).

In the second half of 2006, Ruashi Mining SPRL (Metorex Ltd. of South Africa, 67%) started production of cobalt and copper from tailings near the Ruashi Mine. The company reached the full capacity of 10,000 t/yr of copper and 1,000 t/yr of cobalt by the end of 2006. Resources in the tailings stockpile amounted to 3.2 million metric tons (Mt) at grades of 1.86% copper and 0.35% cobalt. The life of the first phase of the project was likely to be about 4 years from 2006 (Mining Review Africa, 2007a).

The second phase of the project involved mining the Ruashi ore body, which had resources of 24.9 Mt at grades of 3.7% copper and 0.71% cobalt. Starting in January 2008, Ruashi planned to produce 45,000 t/yr of copper and 3,000 t/yr of cobalt. The life of the mine was expected to be more than 20 years from 2008 (Mining Review Africa, 2007a).

Nikanor plc started production at the Kananga and the Tilwezembe Mines in late 2006. By the end of the year, Nikanor had produced 6,500 t of cobalt and copper concentrate with an average grade of 18% copper and 5.5% cobalt. Kananga and Tilwezembe had planned capacities of 2,500 metric tons per day (t/d) and 2,000 t/d of ore, respectively (African Mining, 2007; Nikanor plc, 2007, p. 6-7).

Nikanor also planned to restart production at the KOV Mine. The company planned to build a new refinery at the mine to produce 250,000 t/yr of refined copper and 27,500 t/yr of refined cobalt. Nikanor could start production at the refinery by late 2009 and reach full capacity by the end of 2010. The cost of the refinery was estimated to be \$714 million; the KOV Mine, \$440 million; and related infrastructure, \$126 million (Nikanor plc, 2007, p. 4, 7, 9).

Central African Mining and Exploration Company plc (CAMEC) of the United Kingdom started heap leaching operations at its Luita solvent extraction-electrowinning plant near Lubumbashi in 2006. The company planned to produce at a rate of 40,000 t/yr of refined copper, 3,000 t/yr of refined cobalt, and 3,000 t/yr of cobalt concentrate by the end of March 2008. CAMEC planned to increase production to 100,000 t/yr of refined copper and 12,000 t/yr of refined cobalt by the end of 2008 (Central African Mining and Exploration Company plc, 2006).

The Tenke Fungurume project was a joint venture between Phelps Dodge Corp. of the United States (57.75%), Tenke Mining Corp. of Canada (24.75%), and Gécamines (17.5%). In December 2006, Phelps Dodge gave conditional approval for construction of the first phase of the project. Final approval depended upon getting Government signatures for a previously negotiated power supply agreement. If Tenke Fungurume were to proceed, production was expected to begin at a rate of 113,000 t/yr of copper and 8,200 t/yr of cobalt in late 2008 or early 2009. The life of the first phase of the project was estimated to be about 40 years. Capital costs of the project were estimated to be about \$650 million (Tenke Mining Corp., 2006).

In April 2006, Katanga Mining Ltd. (Kinross Forest Ltd., 75%, and Gécamines, 25%) announced the completion of a feasibility study on restarting production at the Kamoto Mine near Kolwezi. Katanga planned to produce nearly 24,000 t/yr of copper and 900 t/yr of cobalt in the first phase of the project; production was expected to increase to 67,000 t/yr of copper and 2,800 t/yr of cobalt in the second phase. Katanga planned to start production in October 2007 (Katanga Mining Ltd., 2006; Arenson, 2007).

Copper Resources Corp. of South Africa planned to restart production at the Kinsenda copper mine by October 2007. The company planned to produce 40,000 t/yr of copper in concentrate. Africo Resources Ltd. completed a feasibility study on the Kalukundi copper-cobalt project in 2006. The company planned to produce 16,400 t/yr of copper and 3,800 t/yr of cobalt. TEAL Exploration and Mining Inc. planned to open a furnace with the capacity to produce 5,000 t/yr of blister copper starting in mid-2007. The furnace would process ore from artisanal miners currently working on TEAL's Kalumines property. TEAL was conducting exploration at Kalumines and a feasibility study on a mine with a capacity of 30,000 t/yr copper (Arenson, 2006; Mining Review Africa, 2007b).

George Forrest International S.A. and its joint-venture partners produced cobalt and copper at the Luiswishi open pit mine and La Société pour le Traitement du Terril de Lubumbashi's (STL) tailings treatment plant in Lubumbashi. From 2004 to 2006, cobalt production amounted to nearly 4,000 t/yr at Luiswishi; output at Lubumbashi was about 5,000 t in 2006 (George Forrest International S.A., 2007, p. 10, 16).

Gold.—Artisanal and small-scale miners produced gold in Ituri Province and South Kivu Province in eastern Congo (Kinshasa). Gold exports from Ituri were estimated to be about 5,200 kilograms per year (kg/yr), and those from South Kivu, 4,800 kg/yr (Tegeera and Johnson, 2007, p. 50, 56).

In August 2006, Moto Goldmines Ltd. of Australia completed a prefeasibility study on the Moto project in Ituri Province.

The company and its joint-venture partners were considering the development of a new mine that would produce an average of 9,000 kg/yr. The life of the mine was expected to be 8 years. Moto planned to complete a feasibility study in mid- to late 2007. In November, Moto revised its estimate of the combined resources of the Moto project deposits to nearly 580 t of contained gold from 490 t. Resources at Chauffeur were estimated to be 278 t of contained gold; Karagba, 84 t; Pakaka, 44 t; Gorumbwa, 43 t; and other deposits, 128 t (Moto Goldmines Ltd., 2007, p. 9-12).

Banro Corp. of Canada held the Kamituga, the Lugushwa, the Namoya, and the Twangiza properties in eastern Congo (Kinshasa). In September 2006, the company revised its estimates of resources at Twangiza to more than 180 t of contained gold from 99 t based on a drilling program started in February. Resources at Lugushwa were estimated to be 85 t of contained gold; Namoya, 34 t; and Kamituga, 28 t (African Mining, 2006a, b).

Niobium (Columbium) and Tantalum.—The production of niobium (columbium) and tantalum in Congo (Kinshasa) has declined sharply in recent years. In 2006, production of niobium (columbium) declined to an estimated 12 t from nearly 390 t in 2003 and 790 t in 2002 because of the closure of the Lueshe pyrochlore mine in Rutshuru District and lower production of columbite-tantalite by small-scale and artisanal miners. The decline in tantalum prices and the increase in tin prices led to artisanal miners abandoning columbite-tantalite mining in favor of cassiterite (Johnson and Tegera, 2005, p. 30, 35-36, 49).

From 2002 to 2006, reported exports of columbite-tantalite from South Kivu Province decreased to 13 t from 493 t; exports from North Kivu Province increased to 39 t from 28 t during the same period. Société Minière du Kivu continued to export from stockpiles from 2004 to 2006 after the closure of the Lueshe Mine (Tegera and Johnson, 2007, p. 22-23, 51).

In 2006, Central African Resources SPRL (CAR) was upgrading a plant to treat columbite-tantalite at Kalima; the plant was partly installed in July. In a second phase of the project, CAR planned to install a refinery at Kalima (Arenson, 2006).

Tin.—Artisanal miners produced cassiterite at Manono in Katanga Province; Kalima and Punia in Maniema Province; the Bisuru Bibatama Mine near Masisi, and the Bisie Mines near Walikale in North Kivu Province; and Nyabibwe in South Kivu Province. The miners were involved in ownership disputes with the Government; the mines were owned by the local landowners under local customs and by the Government under the country's mining code. Mining and Processing Congo (MPC) of South Africa was awarded an exclusive exploration license for four areas that included the Bisie Mines in late September 2006. Subsequent disputes with artisanal miners were reportedly addressed in an agreement between MPC and local chiefs in late December that included preferential employment for local miners (Tegera and Johnson, 2007, p. 26).

Reported exports of cassiterite from North Kivu Province were 2,904 t in 2006 compared with 4,672 t in 2004 and 497 t in 2002. In South Kivu Province, reported exports were 2,974 t in 2006 compared with 2,892 t in 2004 and 871 t in 2002. In 2005 and 2006, tin production declined because of lower tin prices. About 75% of the reported exports from North Kivu Province

were shipped through Uganda; the remainder was shipped through Rwanda (Johnson and Tegera, 2005, p. 49-50, 53; Tegera and Johnson, 2007, p. 22, 24).

Most of the companies that exported cassiterite from Congo (Kinshasa) shipped concentrates with a tin content of between 55% and 60%. MPC sold cassiterite to its sister company Metal Processing Association in Rwanda for further processing. Sodex Mines reportedly processed cassiterite concentrates to a tin content of 78% before export. In 2006, Sodex accounted for 27% of exports from North Kivu Province, and MPC, 15% (Johnson and Tegera, 2005, p. 50-52; Tegera and Johnson, 2007, p. 23-24).

In 2006, CAR was building a new tin smelter at Kalima in South Kivu Province. Some of the plant's equipment was from a disassembled tin smelter in Rwanda. CAR planned to build a smelter with a capacity of 5,000 t/yr and to sell its output to Metmar Trading (Pty) Ltd. in South Africa (Arenson, 2006).

Tungsten.—In 2006, the mining of wolframite (tungsten ore) was the strongest growth sector in the mineral industry of North Kivu Province; wolframite was also mined in South Kivu Province. From 2002 to 2006, reported wolframite exports from South Kivu Province increased to 574 t from 159 t, and those from North Kivu Province, to 401 t from 26 t (Tegera and Johnson, 2007, p. 22-23, 51).

Zinc.—STL produced zinc oxide dust at Lubumbashi. First Quantum and Kumba Resources Ltd. of South Africa planned to reopen the Kipushi zinc-copper mine in Katanga Province. The companies had an exclusive option to submit a proposal for redevelopment of the mine. In the third quarter of 2006, Gécamines cancelled its agreement with First Quantum and Kumba and announced that bidding had been reopened for the right to mine at Kipushi (Swindells, 2006).

Industrial Minerals

Diamond.—MIBA produced mostly industrial and near-gem-quality diamond at Mbuji-Mayi in Kasai-Oriental Province. In May 2006, Mwana Africa plc purchased Sibeka Group, which held a 20% equity interest in MIBA, from Umicore S.A. The company's production decreased to 2.51 million carats in 2006 from 5.8 million carats in 2005; the decline was partially attributable to conflict between MIBA and artisanal miners who reportedly made incursions onto the company's property. MIBA's production was expected to decline to less than 1.0 million carats in 2007 (Arenson, 2006, 2007).

Sengamines SARL (Oryx Natural Resources Ltd., 80%, and MIBA, 20%) operated a diamond mine that was located 40 kilometers southwest of Mbuji-Mayi in Kasai-Oriental Province. The company produced 302,033 carats in 2005. The mine was shut down in May 2005 because of fuel delivery problems. In April 2006, First African Diamonds Ltd. purchased Oryx's share in Sengamines. First African and MIBA agreed to change the company's name to Entreprise Minière de Kasai Oriental (EMIKOR) and to return EMIKOR to exploration status for as long as 18 months. The reopening of the mine depended on favorable results of a feasibility study (Arenson, 2005).

At the end of June 2006, Rockwell Ventures Inc. of Canada agreed to purchase Durnpike Investments (Pty) Ltd. of

South Africa, which held an interest in the Kwango River project. Privately owned Congolese company Midamines SPRL held the exploration license for Kwango River; Durnpike had an agreement with Midamines to manage and carry out exploration and mining. Rockwell agreed to spend \$7 million on a feasibility study of mining at the Kwango River project by the end of August 2007 (Rockwell Ventures Inc., 2006).

Artisanal miners produced diamond at Luozi in Bas-Congo Province; at Gbadolite, Kota-Koli, and Yakoma in Equateur Province; at Bafwansende and Kisangani in Haut-Congo Province; at Lubutu in Maniema Province; and at various operations in Bandundu, Kasai-Occidental, and North Kivu Provinces. Artisanal diamond output declined to about 26 million carats in 2006 from 26.8 million carats in 2005 (International Monetary Fund, 2007, p. 51).

BHP Billiton Ltd. of Australia and SouthernEra Diamonds Inc. of Canada were engaged in a joint venture to explore for diamond in Kasai Province. SouthernEra started a stream sampling program in late 2005; the company planned to complete the program by the end of the first quarter of 2007. In 2006, SouthernEra completed a stream sampling program at the Kabinda North project, which was a joint venture with Nyumba Ya Akiba SPRL. SouthernEra also explored at its Badibanga and Tshikapa alluvial projects (SouthernEra Diamonds Inc., 2007, p. 6-7).

Gravity Diamonds Ltd. of Australia held the Gunge, the Luebo, the Maniamuna, and the Penge concessions on the Kasai Craton. In 2006, the company engaged in a drilling program at Luebo. BRC Diamond Corp. of Canada started an airborne survey and a drilling program at its Kwango River project in Bandundu Province in June. DeBeers explored for diamond near Munkama and Tshimbulu. Dan Gertler International (DGI) had joint-venture exploration agreements with MIBA that covered 15,000 square kilometers (African Mining, 2006b, c; Arenson, 2006).

At the end of 2005, DGI opened the country's first diamond cutting and polishing plant at Kananga. The plant was operated by Examon Finance International, which was a subsidiary of DGI that was responsible for trading 80% of MIBA's production (Arenson, 2006).

Outlook

Production of cobalt, copper, gold, and tin in Congo (Kinshasa) was expected to increase substantially in the near future. Cobalt and copper production could increase because of the Frontier, the Kolwezi Tailings, the Kinsevere, the KOV, the Ruashi, and the Tenke Fungurume projects; gold, because of the Moto project; and tin, because of a new smelter proposed by CAR. The development of these projects depends heavily upon political and economic stability and favorable conditions in world markets. The outlook for gold and tin is particularly dependent upon political stability because of continued civil unrest in eastern Congo (Kinshasa).

References Cited

- African Mining, 2006a, Banro continues to expand Twangiza Namoya gold field: African Mining, v. 11, no. 1, January/February, p. 58-62.
- African Mining, 2006b, Exploration update—DRC: African Mining, v. 11, no. 5, September/October, p. 13-17.
- African Mining, 2006c, Exploration update—DRC: African Mining, v. 11, no. 6, November/December, p. 13-14.
- African Mining, 2007, Eager beavers hard at work on KOV Mine: African Mining, v. 12, no. 1, January/February, p. 30-31.
- Anvil Mining Ltd., 2007a, Annual report 2006: West Perth, Australia, Anvil Mining Ltd., 65 p.
- Anvil Mining Ltd., 2007b, Indaba Conference presentation: West Perth, Australia, Anvil Mining Ltd., 30 p.
- Arenson, Gaelle, 2005, Democratic Republic of Congo, *in* Mining annual review 2005: Mining Journal Ltd., CD-ROM.
- Arenson, Gaelle, 2006, DRC tries to shed legacy of unrest: Mining Journal Ltd., July 28, p. 20-22.
- Arenson, Gaelle, 2007, Politics overshadow DRC development: Mining Journal Ltd., July 27, p. 22-26.
- Central African Mining and Exploration Company plc, 2006, Interim results for the six months ended 30 September 2006: London, United Kingdom, Central African Mining and Exploration Company plc press release, December 5, 13 p.
- First Quantum Minerals Ltd., 2007, Annual report 2006: Vancouver, British Columbia, Canada, First Quantum Minerals Ltd., 72 p.
- George Forrest International S.A., 2007, Presentation GFIA—Liege 2007: George Forrest International S.A. (Accessed November 7, 2007, at <http://www.forrestgroup.com/flash/fr/chap06/pdf/gfia2007.pdf>).
- International Monetary Fund, 2005, Democratic Republic of the Congo—Selected issues and statistical appendix: Washington, DC, International Monetary Fund, October 14, 97 p.
- International Monetary Fund, 2007, Democratic Republic of the Congo—Selected issues and statistical appendix: Washington, DC, International Monetary Fund, September 27, 79 p.
- Johnson, Dominic, and Tegera, Aloys, 2005, Digging deeper—How the DR Congo's mining policy is failing the country: Goma, Democratic Republic of the Congo, Pole Institute, 111 p.
- Katanga Mining Ltd., 2006, Katanga feasibility study: Toronto, Ontario, Canada, Katanga Mining Ltd. press release, April 11, 8 p.
- Mining Review Africa, 2007a, Ruashi Phase II on stream 18 months early: Mining Review Africa, no. 1, p. 36-38.
- Mining Review Africa, 2007b, Teal—Two new copper projects: Mining Review Africa, no. 1, p. 40-41.
- Moto Goldmines Ltd., 2007, December 2006 annual report: Balcatta, Australia, Moto Goldmines Ltd., 48 p.
- Nikanor plc, 2007, Preliminary results announcement for the year ended 31 December 2006: Douglas, United Kingdom, Nikanor plc, 31 p.
- Olson, D.W., 2007a, Diamond (Industrial): U.S. Geological Survey Mineral Commodity Summaries 2007, p. 54-55.
- Olson, D.W., 2007b, Gemstones: U.S. Geological Survey Mineral Commodity Summaries 2007, p. 66-67.
- Rockwell Ventures Inc., 2006, Consolidated Financial Statements—Three and six months ended November 30, 2006: Vancouver, British Columbia, Canada, Rockwell Ventures Inc., 12 p.
- Shedd, K.B., 2007, Cobalt: U.S. Geological Survey Mineral Commodity Summaries 2007, p. 48-49.
- SouthernEra Diamonds Inc., 2007, Annual report 2006: Toronto, Ontario, Canada, SouthernEra Diamonds Inc., 30 p.
- Swindells, Steven, 2006, DRC election—Investors await round two: Mining Journal Ltd., July 27, p. 22-26.
- Tegera, Aloys, and Johnson, Dominic, 2007, Rules for sale—Formal and informal cross-border trade in eastern DRC: Goma, Democratic Republic of the Congo, Pole Institute, 111 p.
- Tenke Mining Corp., 2006, Tenke Fungurume project receives construction approval from Phelps Dodge: Vancouver, British Columbia, Canada, Tenke Mining Corp. press release, December 6, 3 p.

TABLE 1
CONGO (KINSHASA): PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2002	2003	2004	2005	2006 ^e
METALS					
Cobalt:					
Mine output, Co content ^{e, 2}	14,600 ^r	14,800 ^r	20,200 ^r	24,500 ^r	28,400
Metal, Co content ³	2,149	1,200	735	600	550 ⁴
Copper:					
Mine output, Cu content	40,000 ^r	59,000 ^r	73,000 ^r	97,000 ^r	130,000
Smelter, electrowon (low grade)	10,000	8,000	20,000	20,000	20,000
Germanium kilograms	3,500	2,500	2,500	2,500	2,500
Gold, mine output, Au content ^e do.	12,400 ^r	8,900 ^r	10,500 ^r	9,000 ^r	10,000
Niobium (columbium) and tantalum:					
Columbite-tantalite concentrate:⁵					
Gross weight	521 ^r	113 ^r	74 ^r	124 ^r	52
Nb content ^e	120 ^r	26 ^r	17 ^r	28 ^r	12
Ta content ^e	140 ^r	30 ^r	20 ^r	33 ^r	14
Pyrochlore concentrate:					
Gross weight	1,346	733	--	--	-- ⁴
Nb content ^e	670	360	-- ⁴	-- ⁴	-- ⁴
Silver, mine output, Ag content do.	2,108	35,501	32,953	53,553 ^r	67,633 ⁴
Steel	150,000	158,000 ^r	145,000 ^r	110,000 ^r	104,000
Tin, mine output, concentrate:⁵					
Gross weight	1,368	2,411	7,564	6,748	5,878
Sn content ^e	800 ^r	1,400 ^r	4,500 ^r	4,500 ^r	3,500
Tungsten, mine output, concentrate:⁵					
Gross weight	187	236	42	342	975
W content ^e	100	120	20	180	500
Zinc, mine output, Zn content	6,000 ^r	8,000 ^r	8,000 ^r	7,500 ^r	16,500 ⁴
INDUSTRIAL MINERALS					
Cement, hydraulic	265,000	331,000	402,500	511,000 ^r	530,000 ⁴
Diamond:⁶					
Artisanal thousand carats	16,174 ^r	19,141 ^r	21,646 ^r	26,839 ^r	26,030 ⁴
Large-scale do.	6,328 ^r	7,840 ^r	7,870 ^r	8,368 ^r	2,510 ⁴
Total do.	22,502 ^r	26,981 ^r	29,516 ^r	35,207 ^r	28,540 ⁴
Lime ^e	25,000	25,000	25,000	25,000	25,000
Stone, crushed	194,000	203,000	205,000 ^r	210,000 ^r	217,000 ⁴
Sulfuric acid ^e	80,000	80,000	15,000	15,000	15,000
MINERAL FUELS AND RELATED MATERIALS					
Coal, bituminous ^e	1,000	1,000	1,000	1,000	1,000
Petroleum, crude thousand 42-gallon barrels	8,400	9,200	10,100	9,000 ^r	9,000 ⁴

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through October 9, 2007.

²Includes mine production and reprocessed tailings.

³Salable refined production only; excludes white alloy and matte.

⁴Reported data.

⁵Reported exports from North Kivu and South Kivu Provinces.

⁶An estimated 20% of total diamond is gem quality; the majority of production is from artisanal mining.

TABLE 2
CONGO (KINSHASA): 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
Cement	Cimenterie Nationale SARL	Kimpese plant, 40 kilometers south of Kinshasa	318,000.
Do.	Cimenterie du Lukala (The Forrest Group, 80%)	Lukala plant near Kinshasa in Bas-Congo Province	360,000.
Do.	Interlacs (The Forrest Group, 98.7%)	Kabimba plant near Lubumbashi, Katanga Province	50,000.
Do.	Cemenkat [The Forrest Group and La Générale des Carrières et des Mines (Gécamines)]	Lubudi plant, between Likasi and Kolwezi, Katanga Province	200,000.
Coal	La Générale des Carrières et des Mines (Gécamines)	Luenia Mine	800,000 bituminous coal.
Copper-cobalt	Gécamines East Group:		
Do.	La Générale des Carrières et des Mines (Gécamines)	Copper smelter at Lubumbashi ¹	150,000 blister copper.
Do.	La Société pour le Traitement du Terril de Lubumbashi (STL) [OM Group Inc. (OMGI), 55%; Entreprise Generale Malta Forrest SPRL (EGMF), 25%; La Générale des Carrières et des Mines (Gécamines), 20%]	Big Hill tailings and cobalt smelter at Lubumbashi	5,000 Co in a Cu-Co alloy; 3,500 Cu in a Cu-Co alloy.
Do.	Compagnie Minière du Sud Katanga [Entreprise Générale Malta Forrest SPRL (EGMF), 60%, and La Générale des Carrières et des Mines (Gécamines), 40%]	Luiswishi Mine near Lubumbashi	12,000 copper; 4,500 cobalt.
Do.	Gécamines Central Group:		
Do.	La Société Minière de Kabolela et de Kipese SPRL (SMKK) [Melkior Resources Inc. of Canada, 60%, and La Générale des Carrières et des Mines (Gécamines), 40%]	Kabolela Mine near Likasi	NA.
Do.	Kababankola Mining Company (KMC) [Tremalt Ltd., 80%, and La Générale des Carrières et des Mines (Gécamines), 20%]	Kakanda and Kambove Mines near Likasi	NA.
Do.	La Générale des Carrières et des Mines (Gécamines)	Kamwale Mine	60,000 Cu; 1,200 Co.
Do.	do.	Luiisha Mine	620,000 Cu; 20,000 Co.
Do.	do.	Kamoya C Mine	79,000 Cu; 7,100 Co.
Do.	do.	Kamoya S Mine	36,000 Cu; 11,000 Co.
Do.	do.	Kamatanda Mine	57,000 Cu; 4,000 Co.
Do.	do.	Kamfundwa Mine	400,000 Cu; 48,000 Co.
Do.	do.	Kambove concentrator	1,500,000 copper concentrates.
Do.	do.	FEP cobalt plant	1,200 cobalt cathodes.
Do.	do.	Shituru electrowinning copper-cobalt refinery at Likasi	150,000 copper cathodes.
Do.	do.	Panda reverberatory furnaces at Shituru	150,000 wirebar or anodes.
Do.	Gécamines West Group	DIMA-Kamoto concentrator at Kolwezi	8,000,000 ore.
Do.	do.	Luliu hydrometallurgical refinery and leach plant near Kolwezi	175,000 Cu and 8,000 Co in cathodes.
Do.	Compagnie Minière de Sakania SPRL (Comisa), (First Quantum Minerals Ltd., 100%)	Lonshi Mine, Katanga Province	50,000 copper.

See footnote at end of table.

TABLE 2--Continued
 CONGO (KINSHASA): 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
Copper-cobalt--continued	Anvil Mining Ltd.	Dikulushi Mine	20,000 copper.
Do.	do.	Kulu Mine	16,500 copper.
Do.	Ruashi Mining SPRL (Metorex Ltd., 67%)	Ruashi tailings project	10,000 copper; 1,000 cobalt.
Do.	Nikanor plc	Kananga Mine	910,000 ore.
Do.	do.	Tilwezembe Mine	19,000 copper.
Diamond	Société Minière de Bakwanga (MIBA) [Government, 80%, and Sibeka Group (which was owned by Mwana Africa plc), 20%]	Diamond mines at Mbujiimaya, Kasai-Oriental Province, and at Tshikapa, Kasai Occidental Province	10,000,000.
Do.	do.	Extensive artisanal operations	27,000,000. ^e
Gold	Artisanal miners	Various small-scale placer and alluvial operations in Kasai Occidental Provinces, in Bandundu Province, at Bafwansende and Kisangani in Haut-Congo Province, at Lubutu in Maniema Province at Kota-Koli, Yakoma, and Gbadolite in Equateur Province), in North Kivu Province, and at Luozi in Bas-Congo Province	4,800.
Do.	Office des Mines d'Or de Kilo-Moto (Okimo)	South Kivu Province	N.A.
Niobium and tantalum	Artisanal miners	Kilo-Moto Gold Mine near Bunia, Haut-Congo Province	N.A.
Petroleum	Muanda International Oil Co. (subsidiary of Perenco plc), and Congolaise des hydrocarbures	North and South Kivu Provinces	N.A.
Do.	do.	Kifuku, Kinkasi, Liawenda, Makelekese, Muanda, Nsiamfuma, and Tschiente onshore wells	5,480 crude.
Do.	Muanda International Oil Co. (subsidiary of Perenco plc), 50%; Teikoku Oil Co. Ltd., 32.3%; ODS Ltd., 17.7%	GCO, Libwa, Lubi, Mibale, Moko, Motoba, Mwambe, and Tshiala offshore wells	3,650 crude.
Do.	Société Congo-Italienne de Raffinage (SOCIR) (Government, 50%, and Agip SA, 50%)	Petroleum refinery at Muanda ¹	6,200 refined.
Silver	Anvil Mining Ltd.	Dikulushi Mine	62,000.
Sulfur	La Générale des Carrières et des Mines (Gécamines)	Sulfuric acids plant at Kolwezi and Shituru	N.A.
Tin	do.	Manono in Katanga Province; Kalima and Punia in Maniema Province; Bisuru Bibatama Mine near Masisi; the Bisie Mine near Walikale in North Kivu Province; and Nyabibwe in South Kivu Province	N.A.
Tungsten	do.	North and South Kivu Provinces	N.A.
Zinc	La Société pour le Traitement du Terril de Lubumbashi	Big Hill tailings and cobalt smelter at Lubumbashi	15,000 zinc in zinc oxide.
Do.	La Générale des Carrières et des Mines (Gécamines)	Kolwezi zinc leach plant and refinery	30,000.
Do.	do.	Kolwezi zinc smelter	72,000.

NA Not available.

¹Not operating in 2006.