THE MINERAL INDUSTRY OF

CONGO (KINSHASA)

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Introduction

The Democratic Republic of the Congo [Congo (Kinshasa)] is located in the heart of equatorial central Africa and has an area of 2,267,600 square kilometers (km^2), which is about one-fourth that of the United States. The area supported a population of about 55.2 million in mid-2002. The gross domestic product (GDP) per capita was $590 based on 2001 purchasing power parity data (U.S. Central Intelligence Agency, 2002§[1]). Historically, the mining industry accounted for 25% of the GDP and about three-quarters of total export revenues. The International Monetary Fund (2003§), however, reported a drop in the mining sector's estimated share of the GDP in 2000 to 6% and an overall decline in the sector of 21% between 1996 and 2000. In early 2001, with assistance from the World Bank and the International Monetary Fund (IMF) structural reform programs, the Government began turning around the long stagnant economy by stabilizing the macroeconomic situation, liberalizing the Congolese economy, and opening it up to the rest of the world. By yearend 2002, inflation had been reduced to 16% compared with 135% at yearend 2001. The International Monetary Fund (2003§) reported that for the first time in 13 years, real GDP growth in 2002 was estimated to be positive at about 3 %.

Congo (Kinshasa) is richly endowed with such mineral resources as coal, cobalt, columbium (niobium)-tantalum (locally referred to as "coltan"), copper, diamond, germanium, gold, manganese, petroleum, tin, uranium, and zinc. Despite the collapse of much of the formal mining infrastructure, it is still an important world source of industrial diamond and cobalt (table 1).

On December 17, 2002, with international leadership from South Africa, the Congolese government, rebels, and opposition parties signed a peace agreement in Pretoria to end 4 years of civil war and to set up a transitional government. The deal calls for the "first democratic elections since independence from Belgium in 1960, and bring an end to the war-induced hunger and disease that has killed some 2.5 million people. Under the agreement…Congo's president, Joseph Kabila, will remain the interim head of state until the elections can be held in about 30 months. The interim government…will also include four vice presidents named from the government, the two rebel groups and the political opposition" (Guardian Unlimited, 2002§).

Despite ongoing instability and occasional civil unrest in areas controlled chiefly by opposition factions of the Rally for Congolese Democracy (RCD) and the Movement for the Liberation of the Congo (MLC) in the northeastern portion of the country, the rest of the country was returning to some level of normalcy. During 2002, efforts to reestablish a functioning central government, the passing of a new mining law, and relative stability in the main mining areas of Katanga Province saw a return of foreign investors to Katanga to begin reevaluating their existing joint-venture agreements with La Générale des Carrières et des Mines (Gécamines).

In October 2002, the United Nations Security Council (UNSC) issued the final report of "the Panel of Experts on the illegal exploitation of natural resources and other forms of wealth of the Democratic Republic of the Congo" (United Nations Security Council, 2002b§). First empanelled in August 2000, the final report reflected more than 2 years of investigative research and response to public comments from preliminary reports made in April 13, 2001, November 13, 2001, and May 22, 2002 (United Nations Security Council, 2001a§, 2002a§).

The final report noted that even as foreign forces withdrew from Congo (Kinshasa), criminal groups linked to the armies of Congo (Kinshasa), Rwanda, Uganda, and Zimbabwe had built up self-financing war economies, based on the exploitation of farm produce, land, minerals, and even tax revenues and have put in place surrogate groups and front companies to continue the resource plundering under apparent local control. The report explicitly names organizations and individuals associated with these activities. The Panel of Experts stated, "… the elite network of Congolese and Zimbabwe political, military and commercial interests … has transferred ownership of at least $5 billion of assets from the State mining sector to private companies under its control in the past three years with no compensation to the State" (United Nations Security Council, 2002b§). Assets of Gécamines, Société Minière de Bakwanga (MIBA), Sengamines and the Congo (Kinshasa)-Zimbabwe joint stock company, Cosleg (Pty.) Ltd., were all cited in the report. Tremalt Ltd. and Oryx Natural Resources Ltd. (ONR) were singled out as representing covert Zimbabwean military financial interests (United Nations Security Council, 2002b§).

In the Rwanda-controlled parts of eastern Congo (Kinshasa), Rwandan interests continued to exploit artisanal cassiterite (tin ore), coltan, diamond, and gold production at the expense of the local population, often using captive labor. The Panel of Experts report suggests that resource revenue flows from eastern Congo (Kinshasa) may represent a substantial portion of the military budget of the Rwanda Patriotic Army. The report details an elaborate network of Rwanda-controlled coltan "comptoirs" (buyers), export routes to China, Europe, Kazakhstan, and the United States, and laundering of sales revenues. The Panel of Experts estimated that as much as $2 million per month in illegal diamond were being exported from the Kisangani area, many to Dubai; most of these diamonds by-passed the export tax efforts of the Goma faction of the RCD. In its efforts to raise other money to support its own cause, RCD-Goma

[1] References that include a section mark (§) are found in the Internet References Cited section.

requisitioned funds from public utilities, which led to the closure of powerplants and water purification plants in the main regional cities of Bukavu and Kisangani (United Nations Security Council, 2002b§).

In the Uganda-controlled areas of northeastern Congo (Kinshasa), the Panel of Experts described the activities of an elite Uganda-based criminal network that had an almost monopolistic control over the area's principal natural resources, which included coltan, diamond, gold, and timber. This included the major Kilo-Moto gold mining area near Bunia (United Nations Security Council, 2002b§). Until the civil strife in the area comes to an end, major international companies, such as Ashanti Goldfields Co. Ltd and Barrick Gold Corp. will be unable to exercise their exploration and mining leases around Kilo-Moto previously granted by the Congolese Government in Kinshasa.

The report concludes with the recommendations that with the recent signing of peace treaties, international aid to the region should be accelerated to assist in establishing a new transitional government in Congo (Kinshasa) and used for reconstruction and rehabilitation programs aimed at creating jobs and rebuilding infrastructure. International efforts should focus on the establishment of regional economic integration and trade, which will help build regional peace, security, and sustainable development. Detailed recommendations on institutional reform included a review of all mining concessions and formal and informal contracts signed during both civil wars, the use of international technical assistance to raise long-term institutional investment for rehabilitation of the mining sector, and establishment of a sustainable revenue generation. It also recommended imposing a set of restrictive measures, which included travel bans, freezing of assets, and barring access to international banking facilities, on the individuals and companies listed in the report as responsible for the illegal exploitation of natural resources. It also advocated that specialized international mineral commodity organizations monitor trade in commodities from conflict areas with the data to be used as a basis for industry policing of illegal activity and that all affected UN member states participate in the Kimberley Process diamond certificate of origin scheme. It concludes with a recommendation to establish a monitoring process to ensure that the resource exploitation will be significantly curbed (United Nations Security Council, 2002b§).

In January 2003, the UNSC extended the mandate of the Panel of Experts for an additional 6 months to follow up on its findings and to give individual and companies listed in the report an opportunity to clear their names. The list included a number of international mining companies that were considered to be in violation of the Organisation for Economic Cooperation and Development Guidelines for Multinational Enterprises (Organisation for Economic Co-operation and Development, undated§). The Panel was asked to make further recommendations on measures that the transitional government in Congo (Kinshasa) and other governments could use to ensure that resources will be used legally and for commercially fair benefit of the Congolese people (United Nations Security Council, 2003§).

Government Policies and Programs

With the assistance of the World Bank, a new mining code, No. 007/2002, was passed by Parliament on July 11, 2002. A 254-page companion document that implements the regulations was also released. The law promotes mineral development by the private sector with the principal role of the state to promote and regulate the development of the mining industry by the private sector. The law governs the prospecting, exploration, exploitation, processing, transportation, and sale of mineral substances, which include the artisanal exploitation and sale of mineral substances. Mining rights are vested with the state. The President of the Republic has jurisdiction over enactment of the Mining Regulations with the Minister of Mines responsible for day-to-day implementation of the law. The head of the Provincial Mining Division has jurisdiction over the issuing of artisanal miners' cards and the granting of exploration and exploitation rights for quarry products for standard construction materials. Artisanal mining is restricted to Congolese citizens who hold a government-granted "artisanal miners card." Uranium and thorium ores and, in general, all radioactive ores are considered to be "reserve substances" and are subject to special rules.

The law establishes an autonomous Mining Registry under the supervision of the Mines and Finance Ministers. The Mining Registry is in charge of the processing of applications for mining and/or quarry rights, the extension of mining or quarry rights to other substances, the co-ordination of the technical and environmental evaluation of applications for mining or quarry rights, and certifies the minimum financial capacity of the applicants who apply for the mineral and quarry exploration rights.

The law directs the Geological Directorate to promote the mining sector through basic geological research and the dissemination of its findings and the Mining Directorate to be responsible for inspecting and supervising mining activities and quarry works with regard to safety, health, work procedures, production, transport, sale, and social matters and to compile and publish statistics and information about the production and sale, of products from mines and quarries. A department in charge of the protection of the mining environment within the Ministry of Mines will define and implement the environmental regulations that govern mining and quarrying and will evaluate environmental impact statements (EIS) and environmental mining plans (EMP).

Prospecting Certificates are available for a 2-year maximum but convey no mineral rights. Mining and quarrying exploration and exploitation rights can only be granted through an authorized mining and quarrying agent domiciled in the country or, in the case of valuable known mineral deposits, may be subject to a tender process. Set deadlines for processing and approving applications are established in the law. Mining Exploration Licenses are granted for 4 years, and are renewable twice for 2 years each for precious stones. For all other minerals, Mining Exploration Licenses are granted for 5 years, and are renewable twice for 5 years each. Individual exploration licenses are limited to 400 km^2, and the total of all licenses, to 20,000 km^2. Proof of minimal financial capacity to perform exploration is required.

Mining Exploitation Licenses are valid for 30 years, and are renewable several times for a duration of 15 years. Exploitation Licenses are approved after submittal of proof of an economic mineral deposit, a feasibility study, construction plan, and source of financing. Prior to approval, the EIS and EMP must be approved, and 5% of free carried interest company capital shares, transferred to the Government. The export of unprocessed ores requires authorization of the Mines Minister; processed materials are freely exportable. The holder of an Exploitation License may transfer the right to exploit artificial surficial deposits, such as tailings or slag, that are located within his mining Perimeter to a third party while retaining his underground rights. The Minister may also grant a License to Exploit Tailings in areas with no existing Mining Exploitation License. Small-Scale Mining Exploitation Licenses are also available, but they may not exceed 10 years.

Provisions for taxation and customs duties, included selected exemptions, are spelled out. Corporate tax on profits is set at 30%. The mining royalties on sales, less sales transport costs and related expenses, are set at 4% for precious stones, 2.5% for precious metals, 2% for non-ferrous metals, 1% for industrial minerals, solid hydrocarbons and other substances not specifically mentioned, 0.5% for iron or ferrous metals, and 0% for standard construction materials. Royalty payments are to be distributed to the central government (60%), to the provincial government (25%), and to the township (15%) where mining takes place. Currency is fully convertible and transferable, and foreign currency accounts are allowed. "The mine or quarry installations cannot be compulsorily expropriated by the State except in exceptional circumstances set by law, in exchange for fair compensation paid to the holder concerned at least six months prior to the compulsory execution of the decision to expropriate" (Democratic Republic of the Congo, 2002, Article 275, p. 91). The law also spells out terms for compensation to those landowners affected by mining and penalties for noncompliance with License requirements and for illegal sales of minerals. Provisions for dispute settlement by domestic and international arbitration are included.

Production and Trade

Estimated production of mineral commodities for 1998 through 2002 remained flat during 2001 compared with that of 2000 (table 1). Production of refined copper remained around the 30,000 metric ton (t) level, which was less than 6% of capacity, and refined cobalt output declined by 30% to 8,100 t. Formal production of diamond reported by MIBA decreased by 10% to 5.56 million carats, and artisanal diamond production was estimated to be 13 million carats, but actual figures are uncertain owing to the high level of smuggling and undocumented production. Crude petroleum production increased by 17% to around 37,000 barrels per day (bbl/d). Formal gold production was around 50 kilograms (kg); undocumented artisanal gold production in areas controlled by the RCD, however, could range from 3,000 to 6,000 kg. Likewise, reports of columbium (niobium)-tantalum concentrate production vary widely. The sharp drop in prices to a normal level of $39 per pound of tantalum in 2001 from the 2000 spike of $300 per pound, however, would make an estimate for 2002 of around 100,000 kg of concentrate not unreasonable. Reliable trade data were not available. Based on average commodity prices for 2002, however, the value of mineral exports would be on the order of $1.3 billion to $1.9 billion depending on the average dollar-per-carat value assigned for diamond. Historically, the main trading partners of Congo (Kinshasa) have been Belgium, France, Germany, Japan, South Africa, and the United States.

Structure of the Mineral Industry

The Government maintained at least part ownership and generally majority ownership of nearly all the productive and service sectors of the economy. Gécamines produced essentially all of the country's coal, cobalt, copper, and zinc. It also operated subsidiaries that produced cement, coal, and other materials required for its primary mineral interests. MIBA produced about 25% of industrial diamond output from Government-controlled lands in the Kasai Occidental and Kasai Oriental Provinces; the remainder came from a large number of artisanal operators, chiefly within the same regions. MIBA was owned by the Government (80%) and the Sibeka Group (20%), which was owned by N.V. Umicore SA (79%) and De Beers Centenary AG (20%). Société Minière et Industrielle du Kivu (Sominki), which was the columbium (niobium)-tantalum, gold, and tin producer, and Office des Mines d'Or de Kilo-Moto (Okimo), which was the major gold producer, were the other principal parastatal mining companies. The majority of Sominki and Okimo holdings were in rebel-held areas in eastern Congo (Kinshasa) and not officially operating.

During 1997 and 1998, prior to the renewed outbreak of the current civil war, Gécamines used joint-venture agreements to attract the foreign investors needed to revitalize operations. Under these agreements, foreign investors would retain up to 49% equity interest in the joint venture; most equity interests ranged from 20% to 45%. By the beginning of 1998, Gécamines had established 23 cooperative projects, which included development of the Tenke-Fungurume deposits, that it hoped would return annual production levels of copper to 400,000 t and cobalt to 25,000 t. Between 2000 and 2002, however, most of these projects were either on force majeure hold or proceeding cautiously with feasibility work.

Commodity Review

Metals

Copper and Cobalt.—Gécamines' holdings in the Copperbelt in Katanga Province contained one of the greatest concentrations of high-grade copper and coproduct cobalt resources in the world. Since 1993, most mining operations have come to a standstill with total capacity utilization at less than 10%. Gécamines faced multiple crises in finance, production, and transportation. The company's poor condition was attributed to a combination of aging equipment; lack of domestic and international investment; lack of spare parts; shortages of fuel, lubricants, and sulfuric acid; problems with transporting ore and finished products; misdirection of finished products; debts owed to the state electrical company and Société Interrégionale Zaïroise de Rail (Sizarail); flooding of open pit mines; and the inability to retain professional and other personnel because of disruptions caused by the war and other factors. Gécamines' strategy for 2001 and 2002 was to concentrate development and mining activities at the cobalt-rich zones of several copper ore bodies, with plans to produce from 10,000 to 15,000 t of higher value refined cobalt by the end of 2002.

The OM Group, Inc. (OMGI) (55%), of the United States, which was one of world's largest consumers of refined cobalt, and l'Enterprise Generale Malta Forrest SPRL (EGMF) (25%), operated the Luiswishi copper-cobalt mine. The Luiswishi Mine, which is located about 25 kilometers (km) north of Lubumbashi, was the only mine operating in Gécamines' Southern Group, one of its 3 divisions, during 2001 and 2002. By yearend 2001, EGMF had completed a first phase mining of one small oxide deposit at Luiswishi with two oxide and one sulfide deposits remaining. The second phase of mining will develop 3.5 million metric tons (Mt) of oxide reserves at a grade of 2.5% copper and 1.0% cobalt at a rate of 500,000 metric tons per year (t/yr) of ore. The ore was being sent to the Kipushi concentrator for treatment. Before being closed for an overhaul in December 2002, the mine was producing about 500 metric tons per month (t/mo) of cobalt contained in concentrates.

The $130 million Big Hill cobalt smelter in Lubumbashi was run by Le Societe pour le Traitement de la Terril de Lubumbashi (STL), which was a joint venture between OMGI (55%), Gécamines (25%), and EGMF (20%). The smelter was treating an adjacent slag stockpile that had accumulated since 1920 and was referred to as the "Big Hill," which was sufficient to supply the plant for 20 years. Zinc offgases from the process plant were precipitated and recovered in a bag house and returned as zinc oxide pellets to Gécamines' electrowinning plant at Kolwezi. The STL plant was closed for several months in 2002 for a routine relining of the main furnace. The reopened plant was producing at rate of 4,000 t/yr of cobalt contained in copper-cobalt alloy powder. At full capacity, the STL plant can produce 5,000 t/yr of cobalt, 3,500 t/yr of copper, and 15,000 t/yr of zinc oxide. OMGI was committed to take the first 4,000 t/yr of cobalt from the plant with an option to take the full production. OMGI also recovered between 3,500 and 6,000 kilograms per year of germanium from Congo (Kinshasa) materials processed in its Kokkola chemical plant in Finland.

Compagnie Minera De Sakania SPRL (Comisa), which was 100% owned by First Quantum Minerals Ltd. of Canada, operated the Lonshi open pit copper mine. The mine is located in the so-called pedicle extension of southeastern Congo (Kinshasa) into Zambia and is only 35 km east of First Quantum's Bwana Mkubwa solvent extraction-electrowinning (SX-EW) plant in Zambia, where the Lonshi oxide ore was trucked for treatment. Bwana Mkubwa was converted from a tailings retreatment facility to a direct-feed oxide operation to accommodate the Lonshi ore. During its first full year of operation, Comisa mined 951,100 t of high-grade ore at 5.42% [acid soluble copper (ASCu)], 244,200 t of low-grade ore at 0.88% ASCu, and 4.1 Mt of waste. By yearend, 1.1 Mt of ore at a grade of 4.30% ASCu had been stockpiled for future processing. The ore is amenable to direct leaching at an 86% recovery rate. Comisa planned to switch from contract mining to in-house mining during 2003, which it estimated would reduce mining costs by 35%. The company continued to examine several other exploration targets near Lonshi (First Quantum Minerals Ltd., 2003 §).

In September 2002, Anvil Mining NL of Australia and First Quantum, which was its minority partner (18.9%), commissioned the $5.7 million Stage I open pit mine and Heavy Media Separation plant at its high-grade Dikulushi copper-silver deposit, which is located west of Pweto and Lac Moero in southeastern Congo (Kinshasa) near the Zambian border. The project was based on measured, indicated, and inferred reserves of 1.94 Mt at a grade of 8.59% copper and 266 grams per metric ton (g/t) silver. Deep drilling indicated the potential to expand the resource base and to extend the project beyond its current life-of-mine (expected to be about 2010). A high-grade concentrate will be sold to a German metal trading company and railed to South Africa for smelting (Anvil Mining NL, 2003 §). Anvil also held a number of exploration licenses that covered more than 43,000 km^2; these included copper prospects near Lungeshi, copper and gold prospects near Kapulo, and gold and platinum prospects near Kalemie.

Tenke Mining Corp. (TMC) of Canada (55%) in joint venture with Gécamines (45%) held the concession to develop the 1,437- km^2 Tenke-Fungurume copper-cobalt deposits that are located within two concessions in Katanga Province approximately 175 km northwest of the city of Lubumbashi. A description of the project is available at the company website (Tenke Mining Corp, 2003 §). The large high-grade deposit was awaiting a more favorable investment climate for development. In August 2002, TMC announced that BHP Billiton plc of Australia, which held an option to acquire a 45% interest in the Tenke-Fungurume project, had withdrawn its option rights. Phelps Dodge Corp. will replace BHP Billiton as the option holder (Tenke Mining Corp, 2002§).

Kababankola Mining Company (KMC), which was a joint venture between Gécamines (20%) and Tremalt Ltd. (80%) of the United Kingdom (and Zimbabwe interests), operated the Kakanda and the Kambove copper-cobalt mines near Likasi in Gécamines' Central Mining Group. In a 25 year agreement that was signed in 2001, KMC acquired rights to the Kakanda and the Kambove concessions and to export 200 t/mo of cobalt (Financial Gazette (Zimbabwe), 2001§). The KMC joint venture comprised the Kakanda concentrator, and mining concessions in the vicinity of Kakanda. KMC operated the Kakanda concentrator under lease from Gécamines. KMC reported that in early 2002, the President of Congo Kinshasa requested Tremalt Ltd. to return the Kambove concentrator and concessions 14 and 15 surrounding it to Gécamines to enable Gécamines to benefit from a further source of income to alleviate its financial problems caused by accumulated debts going back a number of years. Tremalt accepted this request and handed back the Kambove concentrator and the concessions to the control of Gécamines. In early 2002, KMC was developing the high-grade cobalt oxide cap at the Mukondo copper-cobalt deposit using the Zimbabwean contract mining firm Swanepoel with the subcontracting of mining equipment from Kombinat Gorniczo Hutniczy Miedzi Polska Miedz S.A. (KGHM) of Poland. The Mukondo deposit occurred along a 1.8-km-long strike length of an anticlinal fold structure containing the Central Mine Group sediments. KMC reported resources at Mukonda, during a February 2002 visit, to be 1.8 Mt at a grade of 1.6% copper and 1.2% cobalt. High-grade zones of up to 4% cobalt contained in a black weathered heterogenite (a cobalt oxide mineral) were reported. Concentrates and ore from KMC mining operations were sent to Gécamines' Shituru plant in Likasi for processing. Once the Kakanda concentrator is fully rehabilitated, the mining rate will be close to a level of 170,000 cubic meters per month, including waste. From this ore, KMC will produce about 500 t per month of contained cobalt, in concentrate form (Kababankola Mining Company, 2003a§). KMC and its owners were singled out by the U.N. Panel of Experts report over the propriety of its contractual relations with the Governments of Congo (Kinshasa) and Zimbabwe. Its rebuttal to the UN is presented on its Web site (Kababankola Mining Company, 2003b§).

Société Minière de Kabolela et de Kipese (SMKK), which was controlled by Melkior Resources Inc. of Canada (60%) and Gécamines (40%), owned the Kabolela copper-cobalt mine and the Kipese cobalt-palladium-gold exploration property discovered by Melkior near Likasi. In August 2002, Melkior ended its exploration work at SMKK and wrote off $227,000 in deferred exploration expenses (Melkior Resources Inc., 2003§).

Congo Mineral Developments Ltd. (CMD) was formed in 1998 as a 50-50 joint venture between American Mineral Fields Inc. (AMF) and Anglo American plc of the United Kingdom to operate the Kolwezi copper-cobalt tailings project in partnership (60%) with Gécamines (40%). AMF was a listed company on the Toronto Stock Exchange with headquarters in London. In 1999, Umicore [formerly (2001) N.V. Union Miniere S.A.] of Belgium acquired an 11% equity interest in AMF. In July 2002, Anglo American sold its 50% interest in CMD to AMF for approximately $3.5 million. Subsequently, in February 2003, AMF signed farm-in options with the World Bank's International Finance Corporation and Industrial Development Corporation of South Africa, whereby both organizations could earn a 10% interest in CMD for contributions made to the development of the Kingamyambo Musonoi Tailings (KMT) deposit at Kolwezi. During 2000-01, the successful 12-month testing of an acid-leach SX-EW pilot plant, which showed that high-quality copper and cobalt cathodes with high metal recoveries could be produced from the tailings, was completed. In 2002, AMF began its environmental and social impact assessment of the project, which is required under the new Mining Code, before the Tailings Exploitation Permit could be issued. AMF expected to be in a position to make a decision to go ahead by late 2003.

During 2001, CMD had renegotiated its agreement with Gécamines to allow for the development of the KMT project in two phases. With an investment of $330 million in phase I, the plant will treat approximately 3 million metric tons per year (Mt/yr) of tailings, which will yield as much as 42,000 t/yr of copper and 7,000 t/yr of cobalt. Phase II would increase production capacity to 74,000 t/yr of copper and 14,000 t/yr of cobalt. The renegotiated agreement was awaiting ratification during 2003 under the terms of the proposed new Mining Code. Under the agreement, CMD will pay Gécamines $25 million prior to construction and a further $10 million upon commissioning. When the agreement is ratified, a new operating company, KMT Sarl, will be formed by CMD and Gécamines. The KMT project is based on reprocessing of a resource of nearly 113 Mt of oxide tailings at a grade of 1.49% copper and 0.32% cobalt from the Kingamyambo (42.3 Mt) and the Musonoi (70.5 Mt) tailings dams that accumulated from the Kolwezi area concentrators during a 40-year period. Mining would be by high-pressure water-monitor guns with the material pumped along a slurry pipeline to a new leach SX-EW plant (American Mineral Fields Inc., 2002a§, b§, d§; 2003a§, b§).

Kumba Resources Ltd. of South Africa [formerly (2001) the metal mining component of Iscor Ltd.] held a 1998 agreement with Gécamines to rehabilitate the Kamoto copper-cobalt underground mine and to manage it for an initial 10-year period in return for a relatively low percentage of the profit. Through 2002, Kumba had invested some $8 million, which included the feasibility study for the Kamoto Mine and the provision of plant and equipment to the value of $1.5 million to Gécamines. Kumba reported that owing to political uncertainties, it was not possible either to proceed with a feasibility study on the refurbishment of the Kipushi zinc/copper mine or with an update of the feasibility study conducted in 1998 on the Kamoto copper/cobalt mine during its fiscal year ending June 30, 2003 (Kumba Resources Ltd., 2003§; Spicer, 2001§).

Germanium.—In 2002, OMG began production of germanium oxide as a byproduct of the refining of STL cobalt materials at its Kokkola Refinery in Finland. When Gécamines was operating the Kipushi zinc mine and smelter at full capacity in the 1950s through the 1980s, Congo (Kinshasa) (then Zaire) was the world's largest producer of germanium as a byproduct of zinc processing. Germanium oxide is used in fiber optics systems and in electronic and solar power applications. OMG Kokkola Chemicals reported annual germanium sales of some $3 million for 2002, which would equate to approximately 3,500 kg of refined germanium or 6,000 kg of germanium oxide (Helsingan Sanomat, 2002§).

Gold.—Société Aurifère du Kivu et du Maniema S.A.R.L. (Sakima) was established in January 1997 to operate the former Sominiki gold, tantalum, and tin mines and other land holdings in the region. Sakima was controlled by Banro Corporation of Canada (93%) and the Government (7%). The old Sominiki holdings included 10 mining permits and 47 mining concessions that covered 10,271 km^2. Gold holdings southwest of Bukavu in Kivu Province included the Kamituga-Mobale underground gold mines, which were forced to close during the 1997 civil war, and the Lugushwa, the Namoya, and the Twanziga gold properties. In July 1998, however, the Government, without prior warning or consultation with Banro, dissolved Sakima through which Banro held its mineral properties and carried on business in Congo (Kinshasa), terminated the company's Mining Convention relating to the company's mineral properties, and created a replacement parastatal company, Société Minière du Congo S.A.R.L. (Somico). Following nearly 4 years of international litigation, the differences between Banro and the Government appeared to be resolved. In September 2001, Banro filed a request for judgement of default against Congo (Kinshasa) in the United States District Court in Washington, DC, under terms of the U.S. Foreign Sovereign Immunities Act. In December 2001, Banro reached an agreement in principle with the Government of Congo (Kinshasa) for the return of the company's assets. In February 2002, Banro received an invitation from the Government to finalize implementation of the settlement agreement, and on April 18, 2002, the formal settlement agreement was signed returning to Banro a 100% interest in the Kamituga, the Lugushwa, the Namoya, and the Twanziga gold deposits and reviving its 25-year Mining Convention, which will be rewritten to conform to the new Mining Code. The Government will retain 100% rights to the tin assets formerly held by Sominki. Subsequent to the agreement, Banro filed a notice of dismissal with the Federal District

Court in Washington, DC, with respect to its legal action against the Government of the Democratic Republic of Congo (Banro Corporation, 2001a§, b§, 2002a§, b§, 2003§).

In a joint venture with AngloGold Ltd. of South Africa, Barrick Gold held a 57,000- km^2 exploration concession that was located near the Kilo-Moto goldfields in the Bunia area of northern Congo (Kinshasa) and adjoined Sudan to the north and Uganda to the east. During 2001, Ashanti Goldfields Co. Ltd. of Ghana increased the size of its holdings to 6,000 km^2 from 2,000 km^2 in the Kilo-Moto Mining International S.A.R.L. (Kimin) concession, which covered most of the historically productive Greenstone Belt in the rebel-controlled Eastern Province. Owing to the civil unrest in the region, Ashanti and Barrick conducted no substantive field activity on these holdings during 2000 or 2001.

Zinc.—In January 2002, AMF signed an agreement with Zincor Ltd. (a subsidiary of Kumba Resources) governing the rehabilitation of the Kipushi zinc mine. Zincor will obtain a 50% interest in the project by investing up to $3.5 million to prepare a bankable feasibility study for a small-scale project to produce zinc concentrates. AMF and Kumba will form the joint venture company Zincongo Ltd. to negotiate a framework agreement with Gécamines to govern redevelopment of Kipushi. Scoping studies done during 2001 concluded that mining operations of up to 100,000 t/yr of zinc contained in concentrate could be sustained for 20 years, subject to adequate commodity prices. Concentrates could be sent to Zincor's 120,000-t zinc refinery near Johannesburg, South Africa. The joint venture was expected to negotiate a new agreement with Gécamines in 2003 under the terms of the new Mining Code (American Mineral Fields Inc., 2002c§, 2003a§).

Industrial Minerals

Diamond.—MIBA accounted for about one-quarter of the total national production of diamond from mining operations in Mbuji Mayi in Kasai Province. MIBA reported production to be 5.56 million carats of low-value, near-gem-quality stones in 2002; this was a decrease of 10% compared with that of 2001. Investigations by the UN Panel of Experts, however, suggested that nearly one-half of the estimated 250,000 carats of near-gem-or gem-quality diamond produced by MIBA was being illegally smuggled to South Africa for onward sale and that millions of dollars of MIBA's diamond revenues were being misappropriated (United Nations Security Council, 2001b§).

ONR, which was owned by the Oryx Group of the Cayman Islands, which was the financier and manager of Sengamines, was granted a 25-year Mining Convention that was ratified by the President on the Sengamines' concessions at Mbuji-Mayi in the Kasai Oriental in partnership (49%) with MIBA (16%) and the central Government (33.8%). The Sengamines' concessions reportedly had been expropriated from MIBA and transferred to ONR. ONR was granted an exclusive management contract with Sengamines and its shareholders. By 2002, the company had invested $100 million in infrastructure, mine equipment, and processing plants. The Sengamines' deposits contained mainly low value industrial diamond in very large quantities in six kimberlites and in several alluvial operations. ONR forecast that it would produce 10% of the world's diamond production by 2003. Oryx has drawn a lot of international attention from the UN Panel of Experts report that accused it of ties to the Zimbabwean military and for having won a libel case in July 2002 against the British Broadcasting Corporation (BBC), which had falsely accused Oryx of funding Osama bin Laden and the Al Qaeda network in an October 2001 news story (Oryx Natural Resources, 2002§, 2003§; Wood, 2002§).

In June 2002, the coalition of African and Canadian Non-Governmental Organizations, Partnership Africa Canada published a report aimed at "shedding greater light on, and help to end, the trade in conflict diamonds." It discussed the conflict diamond trade in Angola, the Central Africa Republic, Congo (Brazzavile), and Congo (Kinshasa) (Dietrich, 2002§).

Mineral Fuels

ChevronTexaco Oil Congo (DRC) Ltd., which was owned by ChevronTexaco Corp. of the United States (50%), Teikoku Oil Co. Ltd. of Japan (32.3%), and Unocal Corp. of the United States (17.7%), produced 16,000 bbl/d from eight offshore wells in 2002 (8,000 bbl/d net to Chevron Texaco); this was a 10% decline compared with that of 2001 (ChevronTexaco Corp., 2003§). This represented about 68% of total national production in 2002. The only domestic oil refinery, which was at Muanda, had a rated capacity of 17,000 bbl/d.

Other companies that were operating in Congo (Kinshasa) included Heritage Oil Co. of Canada, Japan National Oil Co., and Shell Lirex (a subsidiary of Shell Petroleum NV).

Reserves

Major mineral resources were generally considered to be sufficient for many years of production with reported copper ore grades running two to eight times the grade of typical copper ore mined in North America and South America. In February 2002, Gécamines reported total "global reserves," expressed in contained metal, of 54 Mt of copper, 6.4 Mt of zinc, and 4.66 Mt of cobalt. The global reserves included proven, possible, and probable in situ material and metal contained in tailings and slag. Gécamines also indicated that the global reserve data were based on old work and needed to be reevaluated in terms of currently accepted world industry practices for reporting of identified mineral resources and ore reserves (La Générale des Carrières et des Mines, 2002). Reserves of oil, gas, and coal were estimated to be 187 million barrels, 1 billion cubic meters, and 88 Mt, respectively (U.S. Energy Information Administration, 2002§).

Infrastructure

Congo (Kinshasa) is an essentially landlocked country with only a small coastal area on the Atlantic Ocean. The main port of Matadi, which has a 160-km river approach, has had difficulty operating at its 2-Mt/yr cargo capacity. Waterfalls below the capital of Kinshasa make the Congo River unnavigable to the sea and limit the world's second largest river as a significant export route, although it is a key inland commercial route.

A combination of air, railroad, river boat, and road transport was used to move equipment, food, and other supplies into the mining and mineral-processing regions and for exporting ores, concentrates, and finished mineral products. Even prior to the breakout of civil war, much of this transport network was in varying degrees of disrepair. Locomotive and rolling stock shortages were also a problem. Sizarail was a critical logistical support link for the diamond industry between Mbuji Maya and the Zambian border.

The majority of companies involved in transportation were Government owned. Small private trucking and river boat companies provided limited local service. Historically, mineral products were shipped from the Copperbelt on one of three routes. The completely internal western route was via the Voie Nationale, which was a difficult road-rail-water route from the Copperbelt to the port of Matadi, which is located south of Kinshasa and below the Inga Dam. The eastern route went through Zambia on the Tazara railroad to the port of Dar es Salaam in Tanzania, and the southern route went through Zambia on rail lines that led to bulk-loading export ports in South Africa. Copper shipments could take 45 days to get from the plant to the dock either south via Zambia and Zimbabwe or eastward along the Tazara railroad via Zambia and Tanzania. Owing to rail and river transport problems, most cobalt and copper wirebar products were shipped via truck convoy to the port of Durban in South Africa. High-value cobalt, diamond, and gold were commonly flown out of the country.

Katanga Province, which was the site of most of the mining activity in the country, historically consumed almost 50% of the nation's generated electrical power. A portion of the electricity used in the Katanga region was delivered by the 1,800-km-long, 500-kilovolt Inga-Shaba transmission line, which runs from the Inga Dam on the Congo River south of Kinshasa to the Copperbelt city of Kolwezi in Katanga Province. In 1999, around 5 billion kilowatthours of electricity was produced, chiefly from hydroelectric powerplants; nevertheless, the tremendous hydroelectric potential of the Congo River remained largely untapped. For energy requirements at its mine and metallurgical operations, Gécamines was dependent on imported coke and refined petroleum products, although small quantities of coal were produced at its Luena coal mine in Katanga Province.

Outlook

With support from the World Bank and the International Monetary Fund, Government efforts during 2002 to rebuild state institutions and to put in place a pragmatic new Mining Code were a positive sign for the future. Despite signed peace treaties, however, Congo (Kinshasa) was still struggling to resolve the ongoing civil war, to reestablish a central Government recognized nationally, and to resolve refugee problems and ethnic conflicts, especially in the eastern provinces bordering Rwanda and Uganda. The decline of copper and cobalt production during the 1990s has led to the deterioration of Gécamines, which is the country's most important company. Despite almost insurmountable operating difficulties, Gécamines continues to operate, albeit at limited capacity. The new mining law, which promotes privatization of the state-run mining sector and stronger guarantees of property title and investment security by the Government, will help to attract new foreign capital and technical expertise needed to redevelop the country. Lack of transparency in business transactions with the Government and weak legal structures remain problems. Because of its size and wealth of resources, the long-term potential of Congo (Kinshasa) is more promising, and the country could return to world markets as an important supplier of cobalt, copper, diamond, and zinc. The future prospects for economic development of Congo (Kinshasa) depended on its ability to achieve political and economic stability and to implement the legal and business frameworks needed to attract new foreign investment.

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TABLE 1

CONGO (KINSHASA): PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity		1998	1999	2000	2001	2002
METALS						
Cobalt:						
Mine output, Co content[e, 2]		5,000	6,000	10,000 [r]	13,000 [r]	12,500
Metal, Co content[3]		4,490	5,180	4,320	4,071	3,000 [e]
Columbium (niobium) and tantalum:						
Columbite-tantalite concentrate:						
Gross weight		NA [4]	NA [4]	450	200 [e]	100 [e]
Nb content[e]		NA	NA	130	60	30
Ta content		NA	NA	130	60	30
Copper:						
Mine output, leaching (electrowon)		34,994	32,000 [e]	21,000 [e]	20,988	32,300
Metal, primary:						
Smelter, electrowon (low grade)		40,000	32,000 [e]	21,000 [e]	20,988	30,000
Refined, electrolytic		38,236	31,225	30,800 [r]	37,800 [r]	30,000 [e]
Germanium	kilograms	--	--	--	--	3,500
Gold[5]	do.	151	207	69 [r]	19 [r]	20 [e]
Silver[e]	do.	4,000 [r]	4,000 [r]	--	--	--
Steel[5]		118,000	87,000	159,000 [r]	80,000	80,000 [e]
Tin[e]		100	150	50	50	50
Zinc, mine output, Zn content		1,147	--	-- [r]	1,014	--
INDUSTRIAL MINERALS						
Cement, hydraulic[5]		134,324	159,100 [r]	169,000 [r]	201,000 [r]	190,000 [e]
Diamond:[5, 6]						
Artisanal	thousand carats	19,252	15,328	11,672 [r]	12,000 [e]	13,000 [e]
Société Minière de Bakwanga[7]	do.	6,443	4,732	4,328	6,200	5,556
Total	do.	25,695	20,060	16,000 [r]	18,200	18,556
Lime[e]		25,000	25,000	25,000	25,000	25,000
Stone, crushed[5]		239,000 [r]	249,000 [r]	260,000 [r]	191,000 [r]	190,000 [e]
Sulfuric acid[e]		92,000	95,000	80,000	80,000	80,000
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous[e]		5,000	--	--	1,000	1,000
Petroleum:						
Crude	thousand 42-gallon barrels	9,444	8,650	8,500 [r]	8,500 [r]	8,500 [e]
Refinery products:[5]						
Liquefied petroleum gas	do.	4	4	-- [r]	-- [r]	--
Gasoline	do.	434	431	-- [r]	-- [r]	--
Kerosene	do.	340	340	-- [r]	-- [r]	--
Jet fuel	do.	175	180	-- [r]	-- [r]	--
Distillate fuel oil	do.	457	460	-- [r]	-- [r]	--
Residual fuel oil	do.	874	880	-- [r]	-- [r]	--
Refinery fuel and losses[8]	do.	200	205	-- [r]	-- [r]	--
Total	do.	2,484	2,500	-- [r]	-- [r]	--

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to total shown. [r]Revised. -- Zero.

[1]Table includes data available through May 2003.

[2]Includes mine production and reprocessed tailings.

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

[4]Columbite-tantalite concentrates are produced by artisanal miners, but data on production are speculative and unreliable for estimating.

[5]Reported data for 1998-2001 from International Monetary Fund Country Report No. 03/175, June 2003.

[6]An estimated 20% of total diamond is gem quality. The majority of production is from artisanal mining.

[7]Société Minière de Bakwanga, 80% owned by Government.

[8]Includes "Other."