THE MINERAL INDUSTRY OF KENYA

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The mineral industry in the East African country of Kenya was noted chiefly for its production of fluorspar, salt, and soda ash. Other industrial minerals produced in recent years included diatomite, feldspar, gypsum, lime, silica sand, and vermiculite. Building materials produced included cement, coral, granite, limestone, marble, and shale. Kenya produced small amounts of gold, iron ore, lead, secondary aluminum, and steel. The country also produced carbon dioxide gas, gemstones, and refined petroleum products (table 1).

In 2004, Kenya's real gross domestic product (GDP) increased by 3.1% after rising by 1.6% in 2003. The nominal GDP based on purchasing power parity was nearly $35 billion; the per capita GDP based on purchasing power parity was about $1,100. In 2004, manufacturing accounted for 10% of the GDP; building and construction, 4%; electricity and water, 2%; and mining and quarrying, less than 1% (Central Bank of Kenya, 2005b, p. 17; International Monetary Fund, 2005, p. 208; 2005§[1]).

The mining and quarrying sector grew by 2.3% in 2004 compared with 2.9% in 2003 and 1.8% in 2002. Growth in 2004 was partially attributable to higher production of fluorspar and soda ash. The manufacturing sector grew by 4.1% in 2004; building and construction, 3.5%; and electricity and water, 2.1% (Central Bank of Kenya, 2005b, p. 17).

Commodity Review

Metals

Gold.—Kenya's gold production was artisanal and small-scale. National exports of gold amounted to 1,543 kilograms (kg) in 2003 compared with 1,477 kg in 2002 and 388 kg in 1998. In December 2004, Muungano Gold Prospecting Group of Kenya employed about 1,500 miners at six small-scale gold mines in Lirhembe in the Kakamega District. Kansai Mining Corp. completed a drilling program at Migori in southwestern Kenya in the second quarter of 2004. Resources at Migori were estimated to be about 39 metric tons (t) of contained gold. AfriOre Ltd. commenced a drilling program at Masumbi on the Ndori prospect in western Kenya. International Gold Exploration AB of Sweden held Lolgorien and other properties in the western part of the country (Mining Journal, 2004; Oywa and Amadala, 2004; M.J. Njeru, Mines and Geology Department, written commun., August 7, 2003).

Iron and Steel.—Kenya mined small amounts of iron ore for use in cement production. The country's four rolling mills had a capacity of 220,000 metric tons per year (t/yr) and relied upon imported billet (table 2). Madvhani Group of Uganda was considering the reopening of Emco Steelworks and Emco Billets in Nairobi to provide a stable billet supply for its rolling mill in Uganda. These plants have increased their profitability because of the cessation of dumping of Russian and Ukrainian steel in East Africa (Metal Bulletin, 2004).

The International Iron and Steel Institute (2004, p. 81, 91) estimated that Kenya's imports of semimanufactured and finished steel products amounted to 381,000 t in 2003 compared with 411,000 t in 2002 and 250,000 t in 1998. From 1998 to 2003, Kenya's apparent consumption of finished steel rose to 399,000 t from 268,000 t.

Titanium and Zirconium.—Tiomin Resources Inc. of Canada held licenses for the Kilifi, Kwale, Mambrui, and Vipongo heavy mineral sands deposits. The company planned to mine at Kwale; Tiomin expected to begin the 20-month construction phase in the second quarter of 2005. During the first 6 years of the project, Tiomin was expected to produce 330,000 t/yr of ilmenite, 77,000 t/yr of rutile, and 37,000 t/yr of zircon. The expected mine life was 13 years. Capital costs were estimated to be $120 million (Tiomin Resources Inc., 2004a, b).

Industrial Minerals

Cement.—Kenya had three cement producers with a combined capacity of 2.75 million metric tons per year (Mt/yr). National cement production increased to nearly 1.79 Mt in 2004 from a revised 1.66 Mt in 2003. Athi River Mining Ltd. (ARM) planned to increase capacity at its plant at Kaloleni to 200,000 t/yr from 120,000 t/yr starting in the first quarter of 2005 (Daily Nation, 2004; Central Bank of Kenya, 2005a, p. 22; Wahome, 2005).

In 2004, Bamburi Cement Ltd. had a 57% share of the domestic cement market; East African Portland Cement Co. Ltd., 38%; and ARM, 5%. In 2004, Kenya's cement consumption rose to 1.69 Mt from nearly 1.27 Mt in 2003 (Akumu, 2004; Central Bank of Kenya, 2005a, p. 22).

Diatomite.—African Diatomite Industries Ltd. produced high-grade diatomite at Kariandusi and Soysambu in the Nakuru District. Production fell sharply in 2003 (table 1) because of the closure of some domestic companies that consumed diatomite (Mining Journal, 2004).

Fluorspar.—Kenya Fluorspar Ltd. mined fluorspar in the Keiro Valley; the company produced 108,000 t in 2004 compared with 95,278 t in 2003. Most of the company's production was exported. Kenya Fluorspar planned to increase its processing plant capacity to 144,000 t/yr in 2005 from 132,000 t/yr in 2004 and 120,000 t/yr in 2003 (Crossley, 2004).

Gemstones.—Kenya produced gemstones that included amethyst, aquamarine, cordierite, green garnet (tsavorite), ruby, sapphire, and tourmaline. Rockland Kenya Ltd., which operated the John Saul ruby mine, was the leading producer and exporter of ruby. National ruby production fell to 2,310 kg in 2003 from 3,043 kg in 2002 and 4,001 kg in 1998. Corby Ltd. and Kwirintori Mining Society planned to mine ruby in the Baringo District. In November 2004, the companies were

[1]A reference that includes a section mark (§) is found in the Internet Reference Cited section.

discussing compensation with residents of Baringo (Mkawale, 2004; M.J. Njeru, Mines and Geology Department, written commun., August 7, 2003).

Salt.—Magadi Soda Ash Ltd. (a subsidiary of Brunner Mond Group Ltd.) extracted salt from Lake Magadi as a byproduct of the soda ash production process. In 2003, salt output from Lake Magadi was 21,199 t compared with 18,848 t in 2002 and 21,742 t in 1998 (M.J. Njeru, Mines and Geology Department, written commun., August 7, 2003).

Soda Ash.—Magadi mined trona from Lake Magadi. The production of soda ash rose to 355,380 t in 2004 from 352,560 t in 2003 and 245,680 t in 1999. More than 95% of Magadi's output was exported to other African countries, India, the Middle East, and southeast Asia (Central Bank of Kenya, 2005a, p. 22; M.J. Njeru, Mines and Geology Department, written commun., August 7, 2003).

In 2004, Magadi started work on its new processing plant and repairs to its railway. The European Investment Bank, the International Finance Corporation, and Netherlands Development Finance Company FMO agreed to provide $55 million of the necessary funds; Magadi would finance the remaining $43 million. The new plant would have a production capacity of 365,000 t/yr; production was expected to start in mid-2006. The current plant was expected to operate at full capacity until the new plant was commissioned; production would subsequently decline to 75,000 t/yr by 2008 (International Finance Corporation, 2003, p. 1; Brunner Mond Group, 2004).

Mineral Fuels

Petroleum.—Kenya Petroleum Refineries Ltd. produced refined petroleum products from imported crude petroleum. In 2004, the company's output of refined petroleum products increased by about 16% (Central Bank of Kenya, 2005a, p. 23).

Woodside Energy Ltd. of Australia (50%), Dana Petroleum plc (30%), and Star Petroleum International (Kenya) Ltd. (20%) [a subsidiary of Global Petroleum Ltd. of Australia] entered into a joint-venture agreement to explore in offshore Blocks L5, L7, L10, and L11. The companies planned to drill a well in Block L5 by the end of 2005. In 2004, Woodside withdrew from its joint venture with Afrex Ltd. and Pancontinental Oil and Gas NL of Australia for exploration in offshore Blocks L6, L8, and L9. Pancontinental, which held a 40% share in Afrex, announced plans to buy Afrex's remaining shares in November (Africa Energy Intelligence, 2004a; Dana Petroleum plc, 2004).

Infrastructure

The state-owned Kenya Electricity Generating Co. Ltd. (Kengen) generated most of Kenya's electric power. In October 2004, construction resumed on the 60-megawatt (MW) Sondu Miriu hydroelectric plant; Kengen planned to complete the plant in 2007. A proposed second phase would add 21 MW of capacity at Sondu Miriu. In March, the Government announced plans to reduce its share in Kengen from 100% to 30%, and in Kenya Power and Lighting Company, to 39% from 50.8% (Africa Energy Intelligence, 2004b; African Energy Journal, 2004).

Kenya produced 5,033 gigawatthours (GWh) of electricity in 2004 compared with 4,662 GWh in 2003. In 2004, hydroelectric sources accounted for 59.8% of the country's total supply of electricity; thermal, 20.6%; and geothermal, 19.6%. Droughts in the third quarter of 2004 decreased the share of hydroelectric power; the share of geothermal power nearly doubled because of the commissioning of the Okaria II plant in November 2003. Imports from Uganda fell by 14.6%. Electricity consumption rose to 4,219 GWh in 2004 from 3,911 GWh in 2003 (Central Bank of Kenya, 2005a, p. 23).

Outlook

Kenya's GDP was forecasted to grow by 3.3% in 2005 and 3.7% in 2006. In 2005, the resumption of international donor support was expected to support public sector construction projects that would increase cement demand. The outlook for fluorspar, soda ash, and titanium minerals depended heavily upon global market trends (Central Bank of Kenya, 2005a, p. 2, 22; International Monetary Fund, 2005, p. 208).

References Cited

Africa Energy Intelligence, 2004a, East Africa—PanContinental buys Afrex: Africa Energy Intelligence, no. 381, November 17-30, p. 5.

Africa Energy Intelligence, 2004b, Kenya—Nairobi sells off stakes: Africa Energy Intelligence, no. 364, February 25-March 9, p. 6.

African Energy Journal, 2004, Kenya: African Energy Journal, v. 6, no. 6, November-December, p. 4.

Akumu, Washington, 2004, Portland Cement reports a Sh269m loss: Daily Nation [Nairobi, Kenya], November 11, 2 p.

Brunner Mond Group, 2004, Construction to start on new soda ash plant for Magadi Soda: Brunner Mond Group press release, May 25, 2 p.

Central Bank of Kenya, 2005a, Kenya monthly economic review: Nairobi, Kenya, Central Bank of Kenya, January, 47 p.

Central Bank of Kenya, 2005b, Kenya monthly economic review: Nairobi, Kenya, Central Bank of Kenya, July, 45 p.

Crossley, Penny, 2004, Fluorspar in focus: Industrial Minerals, no. 436, January, p. 26-37.

Daily Nation, 2004, Cement firm's profits up by 69 per cent: Daily Nation [Nairobi, Kenya], March 31, 2 p.

Dana Petroleum plc, 2004, Dana agrees international exploration deal with Woodside: Aberdeen, United Kingdom, Dana Petroleum plc press release, September 28, 4 p.

International Finance Corporation, 2003, Proposed investment in Magadi Soda Ash Limited Company: Washington, DC, International Finance Corporation, October 7, 18 p.

International Iron and Steel Institute, 2004, Steel statistical yearbook 2004: Brussels, Belgium, International Iron and Steel Institute, 111 p.

International Monetary Fund, 2005, World economic outlook—Globalization and external imbalances: Washington, DC, International Monetary Fund, April, 289 p.

Metal Bulletin, 2004, [Untitled]: Metal Bulletin, no. 8837, April 12, p. 20.

Mining Journal, 2004, Kenya, *in* Mining annual review 2004: London, United Kingdom, Mining Communications Ltd., CD-ROM.

Mkawale, Steve, 2004, Elders to negotiate mining of red rubies: East African Standard [Nairobi, Kenya], December 29, 1 p.

Oywa, John, and Amadala, Benson, 2004, Gold rush stirs sleepy village: Daily Nation [Nairobi, Kenya], December 20, 4 p.

Tiomin Resources Inc., 2004a, Technical report on Kwale: Toronto, Ontario, Canada, Tiomin Resources Inc. press release, August 24, 2 p.
Tiomin Resources Inc., 2004b, Third quarter report for the nine months ended September 30, 2004: Toronto, Ontario, Canada, Tiomin Resources Inc, 12 p.
Wahome, Muna, 2005, ARM to borrow funds: Daily Nation [Nairobi, Kenya], March 30, 2 p.

Internet Reference Cited

International Monetary Fund, 2005 (April), Kenya, World Economic Outlook Database, accessed September 19, 2005, via URL http://www.imf.org/external/pubs/ft/weo/2005/01/index.htm.

TABLE 1
KENYA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2000	2001	2002[e]	2003[e]	2004[e]
Aluminum, secondary[e]		2,400	2,400	2,400	2,400	2,400
Carbon dioxide gas, natural		7,744	5,645	5,662 [3]	5,800 [r]	6,000
Cement, hydraulic	thousand metric tons	1,367	1,319	1,463 [3]	1,658 [r, 3]	1,789 [3]
Clays:						
Bentonite		64	50	50	50	50
Kaolin		793	700	710	730	750
Kyanite		(4)	--	--	--	--
Other		18,000	18,000 [r, e]	18,000	19,000 [r]	19,000
Diatomite		448	441	1,333 [3]	353 [r, 3]	360
Feldspar		82	73	75	75	80
Fluorspar, acid grade[5]		100,102	118,850	85,015 [3]	95,278 [3]	108,000 [3]
Gemstones, precious and semiprecious:						
Amethyst[5]	kilograms	1,107	1,100 [e]	550 [r]	410 [r]	420
Aquamarine[5]	do.	132	130 [e]	70 [r]	50 [r]	50
Cordierite, iolite[5]	do.	280	280 [e]	140 [r]	110 [r]	110
Green garnet	do.	20	25	20 [3]	3 [r, 3]	3
Rhodolite garnet	do.	3,409 [5]	3,400 [e]	1,700 [r]	1,300 [r]	1,300
Ruby	do.	5,896	5,862	3,043 [3]	2,310 [r, 3]	2,400
Sapphire[5]	do.	10,686	10,000 [e]	5,000 [r]	3,800 [r]	3,900
Tourmaline	do.	18,844 [5]	18,000 [e]	9,000 [r]	7,400 [r]	7,600
Gold, mine output, Au content[5]	do.	1,243	1,545	1,477 [3]	1,543 [r, 3]	1,600
Gypsum and anhydrite		8,416	8,200	8,300 [r]	8,600 [r]	8,800
Iron ore		790	920	1,000	1,000	1,000
Lead, refined secondary		1,000	1,000	1,000 [3]	1,000 [3]	1,000 [3]
Lime		1,282	1,300 [e]	1,300	1,400 [r]	1,400
Petroleum refinery products:						
Gasoline	thousand 42-gallon barrels	2,828	2,329	2,158 [r, 3]	2,200 [r]	2,500
Kerosene and jet fuel	do.	3,175	2,518 [r]	2,148 [r, 3]	2,100 [r]	2,400
Distillate fuel oil	do.	4,531	3,253 [r]	3,021 [r, 3]	3,000 [r]	3,500
Residual fuel oil	do.	3,402	3,563 [r]	3,550 [r, 3]	3,600 [r]	4,200
Liquefied petroleum gas	do.	395	325 [r]	278 [r, 3]	280 [r]	330
Other	do.	134	110 [r, e]	100 [r]	100 [r]	120
Total	do.	14,465	12,100 [r, e]	11,300 [r]	11,300 [r]	13,100
Salt, crude		16,359	5,664	18,848 [3]	21,199 [r, 3]	22,000
Soda ash		238,190	297,780	304,110 [3]	352,560 [3]	355,380 [3]
Stone, sand and gravel:						
Granite for dimension stone		182	180 [r, e]	180 [r]	190 [r]	190
Limestone for cement	thousand metric tons	660 [r, e]	640 [e]	710	800 [r]	860
Limestone for dimension stone	do.	32,000	32,000	32,000 [3]	33,000 [r]	34,000
Marble for dimension stone		116	120 [e]	120	130 [r]	130
Sand, silica[e]		12,000	12,000	12,000 [r]	13,000	13,000
Shale[e]		185,000	190,000	190,000	200,000 [r]	200,000
Sulfuric acid		20,000	20,000	20,000 [3]	20,000 [3]	20,000
Vermiculite		124 [5]	--	-- [3]	--	--

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.
[1]Includes data available through September 19, 2005.
[2]In addition to the commodities listed, a variety of minerals and construction materials [brick clays, coal, gravel, meerschaum, mica, murram (laterite), crushed rock, and construction sand] may be produced, but quantities are not reported, and information is inadequate to make estimates of output.
[3]Reported figure.
[4]Less than 1/2 unit.
[5]Exports.

TABLE 2
KENYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Carbon dioxide gas, natural		Carbacid Ltd.	Mine at Kereita	10,000.[e]
Cement		Bamburi Cement Ltd.	Plant at Mombasa	1,100,000.
Do.		do.	Plant at Nairobi	1,000,000.
Do.		East African Portland Cement Co. Ltd.	Plant at Athi River	550,000.
Do.		Athi River Mining Ltd.	Plant at Kaloleni	120,000.
Diatomite		African Diatomite Industries Ltd.	Kariandusi and Soysambu	4,000.
Fluorspar		Kenya Fluorspar Ltd.	Mine at Kerio Valley	132,000.
Glass		Central Glass Industries Ltd.	Plant at Nairobi	51,100.
Do.		Impala Glass Industries Ltd.	do.	NA.
Gold[1]	kilograms	International Gold Exploration AB	Mines at Akala, Lolgorien, and Kisii	155.
Do.	do.	Muungano Gold Prospecting Group	Mines at Lirhembe	NA.
Lead, refined secondary		Associated Battery Manufacturers Co. Ltd.	Plant at Athi River	3,000.
Lime		Athi River Mining Ltd.	Plant at Kaloleni	24,000.
Do.		Homa Lime Company Ltd	Plant at Koru	30,000.
Petroleum, refined	thousand 42 -gallon barrels	Kenya Petroleum Refineries Ltd. [Government, 50%; British Petroleum plc, Caltex Oil (Kenya) Ltd., and Royal Dutch/Shell Group, 50%]	Refinery at Mombasa	32,850.
Ruby	kilograms	Rockland Kenya Ltd.	Mine at Kasigau	1,500.[e]
Salt		Magadi Soda Ash Ltd. (Brunner Mond Group Ltd., 100%)	Mine at Magadi	40,000.
Do.		Krystalline Salt Ltd.	Mine at Nairobi	NA.
Do.		Mombasa Salt Works Ltd.	Mine at Mombasa	NA.
Do.		Salt Manufacturers Kenya Ltd.	do.	NA.
Soda ash		Magadi Soda Ash Ltd.	Mine at Magadi	350,000.
Sodium silicate		Athi River Mining Ltd.	Plants at Athi River and Kaloleni	20,000.
Steel:[2]				
Crude[3]		Kenya United Steel Co. Ltd. (E.A. Wire Industries Ltd., 81%)	Plant at Mombasa	20,000.
Rolled		Mabati Rolling Mills Ltd.	do.	120,000.
Do.		Standard Rolling Mills Ltd.	do.	40,000.
Do.		Kenya United Steel Co. Ltd.	do.	30,000.
Do.		Steelmakers Ltd.	do.	30,000.
Sulfuric acid		East African Heavy Chemicals	Plant at Webuye	NA.
Do.		Kel Chemicals Ltd.	Plant at Thika	NA.
Vermiculite[4]		Kenmag Investments Ltd.	Mine at Lodosoit	2,000.

NA Not available.
[1]Not operational in 2004.
[2]In addition to its crude and rolled steel facilities, Kenya has three galvanized steel plants with a capacity of 210,000 metric tons per year (t/yr).
[3]Has not operated since 1998.
[4]Has not operated since 2000.