

2009 Minerals Yearbook

MALAWI

THE MINERAL INDUSTRY OF MALAWI

By Thomas R. Yager

Malawi was a producer of cement, coal, crushed stone, dolomite, kaolin, lime, limestone, and sulfuric acid for domestic consumption. The country also mined and exported ornamental stone, uranium, and such gemstones as amethyst, garnet, ruby, sapphire, and tourmaline. Malawi was not a globally significant producer or consumer of minerals.

Production

In 2009, sulfuric acid and uranium production started in Malawi; the production of most other minerals was estimated to have remained nearly unchanged. In 2008, limestone production for use in the cement industry increased by an estimated 76%, and cement, by an estimated 30% (table 1).

Structure of the Mineral Industry

Most of the mining and mineral processing operations in Malawi were privately owned, including the cement plants, the Mchenga coal mine, and the Nyala ruby and sapphire mine. Small-scale and artisanal miners produced aggregates, brick clay, gemstones, and lime (table 2).

Commodity Review

Metals

Copper and Nickel.—In 2009, Lisungwe plc of the United Kingdom completed its resource assessment of the Chimimbe Hill property in western Malawi. Resources amounted to nearly 8.6 million metric tons (Mt) of ore at grades of 0.52% nickel and 0.03% cobalt. Development of the project depended on adequate supplies of sulfuric acid (Lisungwe plc, 2009a).

Niobium (Columbium), Tantalum, and Zirconium.—In April, Globe Metals & Mining Ltd. of Australia estimated that resources at the Kanyika pyrochlore deposit were 55.3 Mt of ore at grades of 0.3% niobium pentoxide (Nb_2O_5), 0.014% tantalum pentoxide (Ta_2O_5), and 0.008% uranium oxide (U_3O_8); the deposit also contained zircon. Pyrochlore mineralization is found in a nepheline syenite intrusive into biotitic gneiss host rock. The ratios of Nb_2O_5 , Ta_2O_5 , and U_3O_8 were reported to be fairly consistent throughout the deposit; the ratios of zircon to other minerals were much less consistent (Globe Metals & Mining Ltd., 2009a).

Globe formed a joint venture with Thuthuka Group of South Africa in August 2009; the companies planned to complete a feasibility study on developing a new mine at Kanyika in 2011. Depending on favorable results of the study, Globe planned to produce 3,000 metric tons per year (t/yr) of niobium contained in ferroniobium, 194 t/yr Ta_2O_5 , and 117 t/yr of of U_3O_8 starting in 2013. Globe was also considering the production of zircon. The life of the mine was estimated to be more than 20 years (Globe Metals & Mining Ltd., 2009a). The production of ferroniobium at Kanyika depended on adequate supplies of power, skilled labor, and hydrofluoric or sulfuric acid. In 2008, the Electricity Supply Corp. of Malawi had hydroelectric plants with a rated capacity of 300 megawatts (MW); however, 40 MW of capacity was unavailable because of equipment failures, and between 30 and 36 MW was unavailable because of reduced water flow and siltation in the Shire River. National demand amounted to about 250 MW of capacity. Globe would require 20 MW of capacity to produce ferroniobium; the company planned to produce Nb₂O₅ in concentrate if power supplies are not available (Jere, 2008, p. 58-59).

Industrial Minerals

Cement.—Portland Cement Company Ltd. (a subsidiary of LaFarge S.A. of France) produced cement from imported clinker and gypsum. Shayona Cement Corp. had a plant with a capacity of 60,000 t/yr; the company was producing at 80% to 90% of capacity in 2009. Bwanje Cement Co. Ltd. was engaged in a joint venture with a Chinese company to build a new cement plant at Bwanje. Depending on favorable results of an environmental impact assessment planned to be completed in 2010, production could start in 2011.

Gemstones.—In 2009, Nyala Mines Ltd.* increased capacity at the Nyala Mine to 36 kilograms per year (kg/yr) of gemquality ruby and sapphire from 3.6 kg/yr. Between 5% and 10% of the mine's output was gem quality. Plans to increase production were on hold because of the difficulties in obtaining credit during the global economic downturn (Ministry of Energy and Mines of Malawi, 2009).

Phosphate Rock.—In mid-2008, Optichem Ltd. started trial mining at the Tundulu phosphate deposit in the Phalombe District. Optichem estimated that the use of locally mined phosphate rock could lower the price of fertilizers by at least 33%. Resources at Tundulu were estimated to be 1.5 Mt at a grade of 17.5% phosphorous pentoxide (P_2O_5) (Chimwala, 2009a).

Rare-Earth Elements.—Lynas Corp. Ltd. of Australia planned to produce 5,000 t/yr of rare-earth minerals at the Kangankunde deposit southwest of Balaka. The company planned to purchase Kangankunde from Rare Earths Co., which was awarded the license to the deposit in 2003. At the end of 2009, development at Kangankunde was on hold pending the resolution of a legal dispute between Rare Earths Co. and Rift Valley Resources of South Africa, which previously held the license to the deposit (Curtis, 2009, p. 15).

In November 2009, Globe formed a joint venture with Resource Star Ltd. of Australia to explore at the Machinga property near Kasupe, which is prospective for niobium, tantalum, and rare-earth minerals that include heavy rare earths. Mineralization is located at the boundary of a syenite intrusive

 $^{^{*}\}mbox{Corrected}$ posted on February 26, 2025. Erroneously reported to be Columbia Gem House Inc.

into pluton host rock. Globe and Resource Star planned drilling programs for 2010. In accordance with the joint-venture agreement, a feasibility study was planned to be completed within 8 years (Globe Metals and Mining Ltd., 2009b).

Sulfur.—Paladin Energy Ltd. of Australia produced sulfuric acid from imported sulfur for use in its Kayelekera uranium mine. The company's plant had a capacity of 84,000 t/yr. At full capacity, the mine is likely to consume 73,000 t/yr of sulfuric acid.

In early 2009, Lisungwe was awarded an exclusive prospecting license for the Malingunde Hill pyrite deposit near Lilongwe. The company was considering the production of about 360,000 t/yr of sulfuric acid from pyrite for use at the Chimimbe Hill nickel project. Development depended on the startup of a new mine at Chimimbe Hill and the expansion of resources at Malingunde Hill. In 1978, resources were estimated to be 10 Mt at a grade of 10% sulfur; Lisungwe hoped to increase the deposit's resources to at least 18 Mt at a grade of 10% sulfur (Lisungwe plc, 2009b).

Mineral Fuels and Related Materials

Coal.—Bituminous coal was produced in the Rumphi District by Mchenga Coal Mines Ltd. and Kaziwiziwi Mining Co. In 2009, Mchenga produced at the rate of about 36,000 t/yr, and Kaziwiziwi, 25,000 t/yr. During a visit in early 2010, the author learned that Mchenga planned to increase annual output to about 45,000 metric tons (t) in 2010 and to between 50,000 and 60,000 t in 2011. The company's production was limited by a lack of capital. Malawi's coal production was used in local boilers.

Uranium.—In January 2009, Paladin opened Malawi's first uranium mine at Kayelekera in the northern part of the country. Production amounted to 122 t of U_3O_8 in 2009. Paladin planned to increase production to the mine's full capacity of 1,500 t/yr of U_3O_8 in 2010. The company planned to produce at full capacity for 9 years; mining of low-grade ore was likely to continue for an additional 3 to 4 years. Reserves were estimated to be 12.6 Mt at a grade of 0.11% U_3O_8 at the end of 2009; Paladin expected to complete an updated resource assessment in early 2010 (Paladin Energy Ltd., 2010).

By the end of the second quarter of 2009, Mantra Resources Ltd. of Australia withdrew from all its properties in Malawi because of disappointing exploration results. African Energy Resources Ltd. of the United Kingdom decided not to renew its licenses for the Majete and the Rumphi properties after their expiration in September. Lisungwe was also involved in exploration for uranium in central Malawi. In early 2009, Ilomba Granite Co. Ltd. was engaged in a dispute with Block and Rock Italia srl of Italy regarding control of the granite deposit at Ilomba Hill, which was prospective for niobium and uranium (Africa Mining Intelligence, 2009; African Energy Resources Ltd., 2009, p. 14; Chimwala, 2009b; Mantra Resources Ltd., 2009).

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TABLE 1 MALAWI: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²		2005	2006	2007	2008 ^e	2009 ^e
Cement, hydraulic		166,000	187,600	185,300	240,000	240,000
Coal, bituminous		51,870	60,408	58,550	61,000 ^r	61,000
Dolomite ^e		5,400	5,400	5,400	5,400	5,400
Gemstones	kilograms	1,994	2,171	3,710	3,700	3,700
Kaolin ^e		790	920	1,000	1,000	1,000
Lime		22,733	21,147	18,965	19,000	19,000
Ornamental stone		72	126	179	180	180
Stone:						
Crushed for aggregate		171,284	191,968	226,351	230,000	230,000
Limestone, for cement		28,755	34,226	42,088	74,000	69,000
Sulfuric acid					3	5,900
Uranium, U ₃ O ₈ content					3	122 ³

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. -- Zero.

¹Table includes data available through June 11, 2010.

²In addition to commodities listed, modest quantities of brick clay, dimension stone, gypsum, phosphate rock, and salt were reportedly produced, but information is inadequate to make reliable estimates of output.

³Reported figure.

TABLE 2

MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

(Metric tons unless otherwise specified)

		Major operating companies		
Commodit	у	and major equity owners	Location of main facilities	Annual capacity
Cement		Portland Cement Company Ltd. (LaFarge S.A.,	Plant at Blantyre	200,000.
		75.17%)		
Do. Shayona Cement Corp.		Shayona Cement Corp.	Plant at Livwezi	60,000.
Coal, bituminous		Mchenga Coal Mines Ltd. (subsidiary of Coal	nga Coal Mines Ltd. (subsidiary of Coal Mchenga Mine in Rumphi District	
		Products Ltd.)		
Do.		Kaziwiziwi Mining Co.	Mine at Kaziwiziwi	25,000. ^e
Dimension stone		Ilomba Granite Company Ltd.	Mine at Ilomba Hill in Chitipa District	NA.
Do.		Granite Ltd.	Mine in Mzimba District	NA.
Fertilizer		Optichem Ltd.	Plant at Blantyre	40,000.
Limestone		Shayona Cement Corp.	Mine at Livwezi	80,000. ^e
Phosphate rock		Optichem Ltd.	Mine at Tundulu	NA.
Ruby and sapphire	kilograms	Nyala Mines Ltd.*	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby. ^{1*, e}
Sulfuric acid		Paladin Energy Ltd.	Plant near Kayelekera	84,000.
Uranium		do.	Mine near Kayelekera	1,500 U ₃ O ₈ .

^eEstimated. Do., do. Ditto. NA Not available.

¹Includes all qualities of ruby and sapphire. Gem-quality was estimated to be less than 10%.

*Correction posted on 2/26/2025. Nyala Mines Ltd. was erroneously reported to be a subsidiary of Columbia Gem House Inc., and a footnote was added.