

2011 Minerals Yearbook

MALAWI

THE MINERAL INDUSTRY OF MALAWI

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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 bentonite, uranium, such gemstones as amethyst, garnet, ruby, sapphire, and tourmaline, and such ornamental stones as agate and rose quartz. In 2011, Malawi accounted for nearly 2% of world uranium mine production (Hatron, 2012, p. 7).

Production

In 2011, worked dimension stone production increased by 59%; sulfuric acid, by an estimated 53%; bentonite and crude and partly worked dimension stone, by 36% each; lime, by 31%; coal, by 28%; uranium, by 26%; ornamental stone, by 25%; limestone for use in cement, by 23%; and gemstones, by 14% (table 1; Cassius Chiwambo, Mining Engineer, Malawi Department of Mines, written commun., October 10, 2012).

Structure of the Mineral Industry

Most of the mining and mineral processing operations in Malawi were privately owned, including the cement plants, the Kayelekera uranium mine, 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). From 2009 to 2010, employment in the mineral industry increased to 21,022 workers from 11,565. Most of the increase was attributable to the aggregates subsector. In 2010, the aggregates subsector employed 12,030 Malawians; the lime subsector, 1,640; the terrazzo subsector, 1,340; the gemstones subsector, 1,260; the coal subsector, 907; and the uranium subsector, 859 (Ministry of Development, Planning and Cooperation, 2011, p. 41).

Commodity Review

Metals

Iron Ore.—Britannia Mining plc of the United Kingdom explored for iron ore at the Ntcheu and the Nthale licenses in 2011. Ntcheu and Nthale were located near Blantyre in southern Malawi (Thompson, 2011).

Niobium (Columbium), Tantalum, and Zirconium.—In April 2011, the state-owned East China Mineral Exploration and Development Bureau purchased a 51% share in Globe Metals & Mining Ltd. of Australia. Globe planned to complete a feasibility study on a new mine at the Kanyika pyrochlore deposit by September 2012. Resources at Kanyika were estimated to be 60 million metric tons (Mt) at grades of 0.3% niobium pentoxide (Nb_2O_5), 0.014% tantalum pentoxide (Ta_2O_5), and 0.009% uranium oxide (U_3O_8) (Mining Journal, 2010; Thompson, 2011).

Depending on favorable results of the study, Globe planned to start construction in 2013 and open a new mine

and ferroniobium plant in 2014. Production was expected to be 3,000 metric tons per year (t/yr) of niobium contained in ferroniobium, 194 t/yr of Ta_2O_5 , and 117 t/yr of U_3O_8 . Ferroniobium was expected to account for about 77% of the mine's revenues; Ta_2O_5 , 15%; and U_3O_8 , 8%. The mine's estimated life was about 20 years (Globe Metals & Mining Ltd., 2009; Thompson, 2011).

Industrial Minerals

Cement.—Malawi had two cement plants with a combined production capacity of 260,000 t/yr. In 2011, national cement production increased to 203,200 metric tons (t) from a revised 187,500 t in 2010 and sales decreased to 212,600 t from 240,900 t. Cement Products Ltd. planned to complete the construction of a new cement plant with a capacity of about 180,000 t/yr by the end of 2011 and a new clinker plant with a capacity of about 440,000 t/yr by the end of 2012 (Chimwala, 2011a; National Statistical Office, 2012, p. 15).

Gemstones.—Mzimba Gemstone Mining Cooperative Society Ltd. mined amethyst, aquamarine, garnet, and tourmaline in northern Malawi; the majority of production took place in Mzimba District. In 2010, the company established a cutting and polishing facility in Mzimba. In 2011, Nyala Mines Ltd. reopened the Nyala ruby and sapphire mine.

Rare Earths.—Resources at the Kangankunde deposit southwest of Balaka were estimated to be 2.53 Mt at a grade of 4.24% rare-earth minerals. In March 2011, Lynas Corp. Ltd. of Australia purchased Kangankunde from Rare Earths Co., which had held the license to the deposit since 2003. Lynas was engaged in a dispute concerning the ownership of Kangankunde in late 2011. In 2006 and 2010, the High Court of Blantyre ruled that Rift Valley Resource Development of South Africa, which had held the Kangankunde license between 2000 and 2003, was the rightful owner of the mining rights to the deposit. The High Court issued an injunction against the approval of mining rights for any other party (Lynas Corp. Ltd., 2011; West, 2011).

In the fourth quarter of 2011, Globe and joint-venture partner Resource Star Ltd. of Australia commenced a drilling program at the Machinga property near Kasupe, which is prospective for niobium, tantalum, and rare-earth minerals that include heavy rare earths. Globe also explored for rare earths at the Salimbidwe project to the southwest of Machinga in November; the company planned to start a drilling program in mid-2012. In April, Resource Star announced that soil sampling indicated that the Ilomba property was prospective for rare earths (Resource Star Ltd., 2011; Globe Metals & Mining Ltd., 2012, p. 9–10).

Mkango Resources Ltd. of Canada completed its initial drilling program at the Songwe Hill rare-earths project in southern Malawi; the company planned further drilling. Spring Stone Ltd. (Japan Oil, Gas, and Metals National Corp., 80%; and Gold Canyon Resources Inc. of Canada, 20%) explored for

rare earths in the Mulanje District in southern Malawi. In June 2011, Rare Earths and Metals plc formed a joint venture with Nyalihanga Enterprises to explore at the Chikawanga license, which is prospective for niobium, rare earths, tantalum, and uranium (Mkango Resources Ltd., 2011; Rare Earths and Metals plc, 2011; Thompson, 2011).

Mineral Fuels and Related Materials

Coal.—Malawi's coal production was consumed by the brewery, cement, ethanol, sugar, tea, textile, and tobacco industries. Coal was mined by Eland Coal Mining Co., Kaziwiziwi Mining Co., and Mchenga Coal Mines Ltd. Britannia Mining plc explored for coal at the Mphwanphwa and the Ngana licenses near Karonga (Thompson, 2011).

In May 2011, Benga Energy and Mining initiated a feasibility study on a new coal-fired power station in northern Malawi to alleviate power shortages. The cost of the plant was estimated to be \$400 million. Peak demand for electricity amounted to 344 megawatts (MW) of capacity; Malawi's available hydropower capacity was 283 MW (Chimwala, 2010, 2011b).

Uranium.—In January 2009, Paladin Energy Ltd. opened Malawi's first uranium mine at Kayelekera in the northern part of the country. In 2011, production increased to 998 t of U_3O_8 from a revised 790 t in 2010; the mine's capacity was 1,500 t/yr of U_3O_8 . Production was constrained by the extended rainy season, the increased proportion of mudstone in the ore mined that reduced recovery rates, the planned shutdown for upgrades, and the temporary closure of the acid plant in October. Paladin also engaged in exploration drilling at the Juma and the Mpata licenses, which are located south of the Kayelekera Mine, and planned to drill at the Chilumba license, which is located south of Karonga (Thompson, 2011; Paladin Energy Ltd., 2012).

Uranium accounted for nearly 9% of Malawi's exports by value in 2011. From 2009 to 2010, the share of the mining sector in the gross domestic product increased to 2% from 1%; most of the increase was attributable to increased uranium production (Ministry of Development, Planning and Cooperation, 2011, p. 10–11, 39; National Statistical Office, 2012, p. 6).

In June 2011, Resource Star completed a revised resource assessment at the Livingstonia deposit in northern Malawi.

Resources were estimated to be 8.3 Mt at a grade of 0.035% U_3O_8 . Resource Star also completed soil sampling at Ilomba Hill (Resource Star Ltd., 2011).

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TABLE 1
MALAWI: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2007	2008	2009	2010	2011
Bentonite	2,080	7,023	8,050	2,100 [†]	2,850
Brick clay	NA	NA	NA	960,405	1,010,000
Cement, hydraulic	185,300	237,100 [†]	232,000 [†]	187,500 [†]	203,200
Coal, bituminous	58,550	57,477	59,201	65,006 [†]	83,146
Gemstones kilograms	3,710	11,946	306,700	190,340 [†]	217,330
Kaolin ^e	1,000	1,100	--	--	--
Lime	20,965	23,495	25,900	45,851 [†]	60,161
Ornamental stone	179	332	241	5,300 [†]	6,651
Stone:					
Crushed for aggregate	226,351	522,120	970,550	965,600 [†]	1,039,237
Dimension:					
Crude and partly worked	NA	NA	NA	201	274
Worked	NA	NA	NA	116	184
Limestone, for cement	42,088	45,980	47,150	27,122 [†]	33,380
Sulfuric acid	--	--	5,900 ^e	32,000 ^{†,e}	49,000 ^e
Uranium, U ₃ O ₈ content	--	--	115	790 [†]	998

^eEstimated; estimated data are rounded to no more than three significant digits. [†]Revised. NA Not available. -- Zero.

¹Table includes data available through January 10, 2013.

²In addition to commodities listed, the production of other unspecified industrial minerals amounted to 2,409 metric tons (t) in 2007 and 3,500 t in 2008. Malawi reportedly produced modest quantities of gypsum and salt, but information is inadequate to make reliable estimates of output.

TABLE 2
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement	Portland Cement Company Ltd. (LaFarge S.A., 75.17%)	Plant at Blantyre	200,000.
Do.	Shayona Cement Corp.	Plant at Livwezi	60,000.
Coal, bituminous	Mchenga Coal Mines Ltd. (subsidiary of Coal Products Ltd.)	Mchenga Mine in Rumphi District	72,000.
Do.	Kaziwiziwi Mining Co.	Mine at Kaziwiziwi	25,000. ^e
Do.	Eland Coal Mining Co. (subsidiary of Allied Procurement Agency)	Mine at Lufira coalfield	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.
Gemstones:			
Amethyst, aquamarine, garnet, and tourmaline	Mzimba Gemstone Mining Cooperative Society Ltd.	Mines in Mzimba District	NA.
Ruby and sapphire kilograms	Nyala Mines Ltd.*	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby. ^{1†,e}
Lime	Various producers, including the following: Zalewa Agricultural Lime Co. LimeCo Flouride Cement Co.	Various sites, including the following: Blantyre NA Balaka	42,000.
Do.	Lirangwe Lime Makers Assoc.	Lirangwe	NA.
Do.	Balaka Lime Makers Assoc.	Balaka	NA.
Limestone	Shayona Cement Corp.	Mine at Livwezi	80,000. ^e
Phosphate rock	Optichem Ltd.	Mine at Tundulu ²	NA.
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%.

²Not in operation in 2011.

*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.