



# 2010 Minerals Yearbook

---

MALAWI [ADVANCE RELEASE]

---

# 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 bentonite and uranium, such gemstones as amethyst, garnet, ruby, sapphire, and tourmaline, and such ornamental stones as agate and rose quartz. In 2010, Malawi accounted for about 1% of world uranium production (Mining Journal, 2011).

## Production

In 2010, uranium production increased by 587%; sulfuric acid, by an estimated 493%; ornamental stone, by 80%; coal, by 34%; lime, by 23%; and limestone for use in the cement industry, by 22%. Bentonite production decreased by 87% in 2010, and gemstones, by 33% (table 1; Ministry of Development, Planning and Cooperation, 2011, p. 39).

## 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. In 2010, the aggregate subsector employed 12,030 Malawians; lime, 1,640; terrazzo, 1,340; gemstones, 1,260; coal, 907; and uranium, 859 (Ministry of Development Planning and Cooperation, 2011, p. 41).

## 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. The company decided to dispose of the property in 2010 (Lisungwe plc, 2010).

**Niobium (Columbium), Tantalum, and Zirconium.**—In June, Globe Metals & Mining Ltd. of Australia estimated that resources at the Kanyika pyrochlore deposit were 60 million metric tons (Mt) at grades of 0.3% niobium pentoxide ( $\text{Nb}_2\text{O}_5$ ), 0.014% tantalum pentoxide ( $\text{Ta}_2\text{O}_5$ ), 0.009% uranium oxide ( $\text{U}_3\text{O}_8$ ), and 0.5% zircon ( $\text{ZrSiO}_4$ ). The ratios of  $\text{Nb}_2\text{O}_5$ ,  $\text{Ta}_2\text{O}_5$ , and  $\text{U}_3\text{O}_8$  were reported to be fairly consistent throughout the deposit; the ratios of zircon to other minerals were much less consistent (Mining Journal, 2010).

Globe and its joint-venture partner Thuthuka Group of South Africa 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

of  $\text{Ta}_2\text{O}_5$ , and 117 t/yr of  $\text{U}_3\text{O}_8$  starting in 2012. Globe was also considering the production of zircon. Ferroniobium was expected to account for about 80% of the mine's revenues;  $\text{Ta}_2\text{O}_5$ , 15%; and  $\text{U}_3\text{O}_8$ , 5%. The life of the mine was estimated to be more than 20 years. Thuthuka's withdrawal from the project in 2010 delayed the planned opening of the mine until 2013 (Globe Metals & Mining Ltd., 2009; Chimwala, 2010a).

### 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 planned to double its capacity. In 2010, Zagaf Cement Sales started construction on a new cement plant in Mangochi, which was expected to be completed in 2013. Bwanje Cement Co. Ltd. was engaged in a feasibility study to build a new plant at Golomoti (Ministry of Development, Planning and Cooperation, 2011, p. 40, 45-46).

**Rare-Earth Elements.**—Resources at the Kangankunde deposit southwest of Balaka were estimated to be 2.53 Mt at a grade of 4.24% rare-earth minerals. The development of Kangankunde was on hold because of a legal dispute between Rare Earths Co., which was awarded the license to the deposit in 2003, and Rift Valley Resources of South Africa, which previously held the license to the deposit. In December 2010, Lynas Corp. Ltd. of Australia received approval from the Government to purchase Kangankunde from Rare Earths Co. (Lynas Corp. Ltd., 2010; Thompson, 2010).

In September 2010, Globe and joint-venture partner Resource Star Ltd. of Australia completed 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 planned to explore at the Salimbidwe project to the southwest of Machinga (Thompson, 2010).

**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 2010, Lisungwe decided to dispose of its prospecting license at the Malingunde Hill pyrite deposit (Lisungwe plc, 2010).

### Mineral Fuels and Related Materials

**Coal.**—Malawi's coal production increased to 79,186 metric tons (t) in 2010 from 59,201 t in 2009 because of increased demand from the brewery, cement, and tobacco industries. About 140,000 t/yr was consumed by the brewery, cement, ethanol, sugar, tea, textile, and tobacco industries. The Government was considering the development of a new coal-fired power station with a capacity of 300 megawatts (MW). Peak demand for

electricity amounted to 344 MW of capacity; Malawi's available hydropower capacity was 283 MW (Chimwala, 2010b; Ministry of Development, Planning and Cooperation, 2011, p. 8).

**Uranium.**—In January 2009, Paladin opened Malawi's first uranium mine at Kayelekera in the northern part of the country. In 2010, production increased to 790 t of U<sub>3</sub>O<sub>8</sub> from 115 t in 2009. Production was constrained by power outages. The full capacity of the mine was 1,500 t/yr of U<sub>3</sub>O<sub>8</sub>; Paladin planned to complete a feasibility study on increasing the capacity to about 1,700 t/yr in mid-2011 (Paladin Energy Ltd., 2011).

Uranium accounted for nearly 10% of Malawi's exports, by value, in 2010. 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).

In July 2010, Resource Star completed a resource assessment at the Livingstonia deposit in northern Malawi. Resources were estimated to be 7.7 Mt at a grade of 0.027% uranium. Resource Star planned to complete additional drilling at Livingstonia by yearend. The company also started exploration at Ilomba Hill. Lisungwe decided to dispose of its uranium assets in central Malawi in 2010 (Lisungwe plc, 2010; Resource Star Ltd., 2010).

## References Cited

- Chimwala, Marcel, 2010a, Held back: Creamer Media's Mining Weekly, v. 16, no. 44, November 12-18, p. 14.
- Chimwala, Marcel, 2010b, Quality assessment: Creamer Media's Mining Weekly, v. 16, no. 40, October 15-21, p. 15.
- Globe Metals & Mining Ltd., 2009, About Globe Metals & Mining Ltd.: West Perth, Western Australia, Australia, Globe Metals & Mining Ltd., November 12, 4 p.
- Lisungwe plc, 2010, Interim report—Half year ended 30 September 2010: Maidstone, United Kingdom, Lisungwe plc, 4 p.
- Lynas Corp. Ltd., 2010, Lynas receives approval from the Government of Malawi to complete the acquisition of rare earths resource: Sydney, New South Wales, Australia, Lynas Corp. Ltd. press release, December 22, 5 p.
- Mining Journal, 2010, Globe gets boost from Malawi: Mining Journal, July 9, p. 7.
- Mining Journal, 2011, Kazakhstan—King of the producers, *in* Uranium—A supplement to Mining Journal: Mining Journal, April 1, p. 5.
- Ministry of Development, Planning and Cooperation, 2011, Annual economic report 2010: Lilongwe, Malawi, Ministry of Development, Planning and Cooperation, 152 p.
- Paladin Energy Ltd., 2011, Quarterly activities report for period ending 31 December 2010: Sydney, New South Wales, Australia, Paladin Energy Ltd., 7 p.
- Resource Star Ltd., 2010, Resource Star defines maiden inferred mineral resource of 4.6 Mlb at 270 ppm U<sub>3</sub>O<sub>8</sub> at Livingstonia uranium project: Melbourne, Victoria, Australia, Resource Star Ltd. press release, July 15, 5 p.
- Thompson, Richard, 2010, Rising star: Mining Journal, October 29, p. 19.

TABLE 1  
MALAWI: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2006	2007	2008	2009	2010	
Bentonite	--	2,080	7,023	8,050	1,020	
Cement, hydraulic <sup>c</sup>	187,600 <sup>3</sup>	185,300 <sup>3</sup>	240,000	240,000	250,000	
Coal, bituminous	60,408	58,550	57,477 <sup>r</sup>	59,201 <sup>r</sup>	79,186	
Dolomite	NA <sup>r</sup>	NA <sup>r</sup>	NA <sup>r</sup>	NA <sup>r</sup>	NA	
Gemstones	kilograms	2,171	3,710	11,946 <sup>r</sup>	306,700 <sup>r</sup>	206,900
Kaolin <sup>e</sup>	920	1,000	1,100 <sup>r</sup>	-- <sup>r</sup>	--	
Lime	21,147	20,965 <sup>r</sup>	23,495 <sup>r</sup>	25,900 <sup>r</sup>	31,790	
Ornamental stone	126	179	332 <sup>r</sup>	241 <sup>r</sup>	435	
Stone:						
Crushed for aggregate	191,968	226,351	522,120 <sup>r</sup>	970,550 <sup>r</sup>	989,750	
Limestone, for cement	34,226	42,088	45,980 <sup>r</sup>	47,150 <sup>r</sup>	57,296	
Sulfuric acid	--	--	--	5,900 <sup>e</sup>	35,000 <sup>e</sup>	
Uranium, U <sub>3</sub> O <sub>8</sub> content	--	--	--	115 <sup>r</sup>	790	

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. NA Not available. -- Zero.

<sup>1</sup>Table includes data available through June 29, 2011.

<sup>2</sup>In addition to the commodities listed, the production of other unspecified industrial minerals amounted to 2,299 metric tons (t) in 2006, 2,409 t in 2007, and 3,500 t in 2008. Malawi reportedly produced modest quantities of brick clay, dimension stone, gypsum, phosphate rock, and salt, but information is inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

TABLE 2  
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(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. <sup>c</sup>
Do.	Eland Coal Mining Co. (subsidiary of Allied Procurement Agency)	Mine at Lufira coal field	25,000. <sup>c</sup>
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.
Lime	Various producers, including the following: Zalewa Agricultural Lime Co. LimeCo Fluoride Cement Co.	Various sites, including the following: Blantyre NA Balaka	42,000.
Do.	Balaka Lime Makers Association	do.	NA.
Do.	Lirangwe Lime Makers Association	Lirangwe	NA.
Limestone	Shayona Cement Corp.	Mine at Livwezi	80,000. <sup>c</sup>
Phosphate rock	Optichem Ltd.	Mine at Tundulu <sup>1</sup>	NA.
Ruby and sapphire kilograms	Nyala Mines Ltd. (subsidiary of Columbia Gem House Inc.)	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby. <sup>c</sup>
Sulfuric acid	Paladin Energy Ltd.	Plant near Kayelekera	84,000.
Uranium	do.	Mine near Kayelekera	1,500 U <sub>3</sub> O <sub>8</sub> .

<sup>c</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>Not in operation in 2010.