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MALAWI

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The Mineral Industry of Malawi

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Malawi was a producer of brick clay, cement, coal, crushed stone, lime, limestone, and sulfuric acid for domestic consumption. In 2014, Malawi's consumption of minerals and mineral fuels was not globally or regionally significant. The country also mined and exported uranium; such gemstones as amethyst, aquamarine, garnet, ruby, sapphire, and tourmaline; and such ornamental stones as agate and rose quartz (tables 1 and 2).

In 2014, the manufacturing sector accounted for a projected 9.5% of the gross domestic product (GDP), and the mining and quarrying sector, 0.9%. The value of output in the mining and quarrying sector was projected to decrease by 7.8% in real terms in 2014 compared with a revised increase of 7.6% in 2013. The decline in the mining and quarrying sector was likely to be attributable to the closure of the Kayelekera uranium mine (Ministry of Development, Planning and Cooperation, 2014, p. 9).

Malawi's mining and quarrying sector was governed by the Mines and Minerals Act 1981 and the Mines and Minerals (Mineral Rights) Regulations 1981. The petroleum sector was governed by the Petroleum (Exploration and Production) Act 1983.

Production

In 2014, cement production increased by an estimated 41% compared with 2013; coal, by an estimated 22%; and lime, by an estimated 10%. Between 2010 and 2014, cement and lime production increased by an estimated 140% each; coal, by an estimated 85%; limestone, by an estimated 66%; gemstones, by an estimated 63%; ornamental stone, by an estimated 47%; and brick clay, by an estimated 46%. Sulfuric acid and uranium output decreased by 67% each in 2014 compared with 2013 (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 coal mines, the Kayelekera uranium mine, and the Nyala ruby and sapphire mine. Malawi's mineral industry also included numerous artisanal and small-scale mining operations that produced aggregates, brick clay, gemstones, and lime. Partial data on capacity, location, and ownership were available for artisanal and small-scale gemstone and lime operations (table 2).

In 2014, employment in the mineral industry amounted to 11,951 workers. The aggregate subsector employed 8,144 Malawians; lime, 1,593; coal, 606; uranium, 300; and other industrial minerals, excluding cement, gemstones, ornamental stone, and terrazzo, 839 (Ministry of Development, Planning and Cooperation, 2014, p. 51).

Commodity Review

Metals

Gold.—South East African Mining Ltd. of the United Kingdom and its joint-venture partner Mota-Engil Minerals & Mining Investments BV of Portugal engaged in exploration at the Dwangwa project. Mota-Engil also explored for gold at Kasungu and planned to start a drilling program at Malingunde in May 2015 (Mining Review, 2015).

Niobium (Columbium) and Tantalum.—In 2014, Globe Metals & Mining Ltd. of Australia (East China Mineral Exploration and Development Bureau, 51%) completed a feasibility optimization study on a new mine at the Kanyika pyrochlore deposit. Globe applied for a mining license and started negotiations with the Government over a development agreement in December. Resources were estimated to be 68.3 million metric tons (Mt) at grades of 0.28% niobium pentoxide (Nb_2O_5), 0.014% tantalum pentoxide (Ta_2O_5), and 0.008% uranium oxide (U_3O_8) (Jockel, 2013, p. 10–11; Globe Metals & Mining Ltd., 2015, p. 3–4).

Depending on the receipt of the mining license and the negotiation of the development and offtake agreements for its production, Globe planned to produce 5,000 metric tons per year (t/yr) of Nb_2O_5 and 200 t/yr of Ta_2O_5 at Kanyika. Uranium and zircon concentrate would be stockpiled for future sale. Production could start in 2016 (Jockel, 2013, p. 11; Ministry of Development, Planning and Cooperation, 2014, p. 55; Globe Metals & Mining Ltd., 2015, p. 3–4).

Titanium and Zirconium.—Tengani Titanium Minerals Ltd. (TTM), which was a consortium of Malawian and South African investors, held a mining license for the Tengani ilmenite, rutile, and zircon deposit. In 2014, TTM was engaged in metallurgical test work at Tengani. Mota-Engil was engaged in a scoping study at the Lake Chilwa Heavy Mineral Sands project; resources at Lake Chilwa could be as much as 300 Mt at a grade of 3.5% ilmenite (Mining Review, 2014a; 2015).

Industrial Minerals

Cement.—Malawi had three cement plants with a total production capacity of more than 730,000 t/yr. In 2014, national cement production increased to about 450,000 metric tons (t) from 320,000 t in 2013. Portland Cement Company Ltd. (Lafarge S.A., 100%) operated a plant with a capacity of 200,000 t/yr that produced cement from imported clinker. Shayona Cement Corp.'s plant had a capacity of 73,000 t/yr; the company was engaged in an expansion of its capacity to about 240,000 t/yr in the first phase and to about 460,000 t/yr in the second phase by 2016. Shayona estimated that its market share would be 80% after the expansion (Mining Review, 2014b).

Gemstones.—Mzimba Gemstone Mining Cooperative Society Ltd. mined amethyst and other quartz, aquamarine, carnelian, garnet, sodalite, and tourmaline from pegmatites in northern Malawi; the majority of production took place in the Mzimba District. In late 2014, tourmaline was mined from a new location in northern Malawi. Silver Hill Gems of South Africa mined aquamarine and Nyala Mines Ltd. operated the Nyala ruby and sapphire mine.

Graphite.—In October 2014, Sovereign Metals Ltd. of Australia estimated that resources at its Duwi project near Lilongwe were 85.9 Mt at a grade of 7.1% graphite. Sovereign planned to complete a scoping study on a new mine at Duwi by early 2015; the company planned to study production scenarios with 30,000 t/yr and 65,000 t/yr of flake graphite. Globe engaged in rock-chip sampling and trenching at Chiziro in the fourth quarter of 2014 (Sovereign Metals Ltd., 2014, p. 1, 10; Globe Metals and Mining Ltd., 2015, p. 5).

Phosphate Rock.—Optichem Ltd. was developing the Tundulu phosphate rock deposits for use in its fertilizer plant. Resources at Tundulu were estimated to be 2 Mt at a grade of 17% phosphorous pentoxide (P_2O_5). Mota-Engil engaged in a drilling program for phosphate at Tundulu in 2014 (Ministry of Development, Planning and Cooperation, 2014, p. 50; Mining Review, 2015).

Rare-Earth Elements.—In September 2014, Mkango Resources Ltd. of Canada completed its prefeasibility study on a new mine at the Songwe Hill rare-earth project with successful results. Depending on the results of a feasibility study, Mkango could start mining at Songwe Hill in 2017 and produce 2,840 t/yr of rare-earth oxides over the estimated 18-year life of the mine. The company's planned production of lanthanum oxide was nearly 1,080 t/yr; neodymium oxide, 756 t/yr; cerium oxide, 341 t/yr; praseodymium oxide, 227 t/yr; yttrium oxide, 165 t/yr; samarium oxide, 114 t/yr; and gadolinium oxide, 62 t/yr. Reserves at Songwe were estimated to be 8.5 Mt at a grade of 1.6% rare-earth oxides (Mkango Resources Ltd., 2014).

In the third quarter of 2014, Globe engaged in soil sampling at the Machinga project near Kasupe, which was prospective for niobium, tantalum, and rare-earth minerals that include heavy rare earths. Globe also engaged in rock-chip sampling at the Salimbidwe project in the fourth quarter of 2014. Spring Stone Ltd. (Japan Oil, Gas, and Metals National Corp., 67%, and Gold Canyon Resources Inc. of Canada, 33%) explored at its Thyolo project. By the end of November, Spring Stone decided to discontinue exploration after determining that deposits at Thyolo were subeconomic because of their small size (Globe Metals and Mining Ltd., 2015, p. 13–15; Gold Canyon Resources Inc., 2015, p. 5).

Lynas Corp. Ltd. of Australia was engaged in a dispute with Rift Valley Resource Development of South Africa concerning the ownership of the Kangankunde deposit, which is located southwest of Balaka. As of November 2014, the project was on hold pending resolution of the ownership dispute (Chimwala, 2014b).

Mineral Fuels and Related Materials

Coal.—Bituminous coal was mined by several small producers; output increased in 2014 because of the opening of the Nkhachira Mine. Intra Energy Corp. (IEC) of Australia started operations at Nkhachira in early 2014; sales in the second half of 2014 were 9,015 t. The company increased capacity at Nkhachira to between 70,000 and 80,000 t/yr by yearend (Intra Energy Corp., 2015, p. 4).

At the end of 2013 (the latest year for which data were available), Malawi's power stations had a combined capacity of 351 megawatts (MW), all of which was hydropower. By 2020, growth in the manufacturing and mining and quarrying sectors could result in peak national demand of as much as 798 MW. In 2014, the Government applied to the Export-Import Bank of China to fund a new coal-fired power station at Kamwamba with a capacity of 300 MW. China Gezhouba Group Corp's. plans to build the plant depended on financing. In December, IEC was engaged in discussions with the Government regarding a new coal-fired power station with a capacity of 120 MW (Chimwala, 2014a; Ministry of Development, Planning and Cooperation, 2014, p. 56–57; Intra Energy Corp., 2015, p. 5).

Uranium.—Paladin Energy Ltd. of Australia opened Malawi's first uranium mine at Kayelekera in the northern part of the country in January 2009. In 2014, production was 435 t of U_3O_8, compared with 1,335 t in 2013. Paladin announced plans to place the mine on care-and-maintenance status in February and subsequently shut down production in early May because of low uranium prices on worldwide markets. The company estimated that prices would have to increase to $75 per pound of U_3O_8 for Kayelekera to reopen (Paladin Energy Ltd., 2014a, b).

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TABLE 1
MALAWI: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2010	2011	2012	2013[e]	2014[e]
INDUSTRIAL MINERALS						
Bentonite		2,100	2,450	--	--	--
Brick clay		960,405	1,015,200	1,400,000 [e]	1,500,000	1,400,000
Cement, hydraulic		187,500	203,200	172,000	320,000	450,000
Gemstones	kilograms	190,340	215,000	285,000	300,000 [r]	310,000
Lime		45,851	93,549	95,543	100,000 [r]	110,000
Ornamental stone		5,300	4,434	7,200	7,800	7,800
Stone:						
Crushed for aggregate		965,600	1,039,237	1,338,600	1,400,000 [r]	1,300,000
Dimension:						
Crude and partly worked		201	277	--	--	--
Worked		116	167	--	--	--
Limestone, for cement		27,122	33,701	41,150	45,000 [r]	45,000
Sulfuric acid[e]		37,000	56,000	73,000	75,000	25,000
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous		65,006	72,300	91,910	98,000	120,000
Uranium, U_3O_8 content		790	998	1,298	1,335 [3]	435 [3]

[e]Estimated; estimated data are rounded to no more than three significant digits. [r]Revised. -- Zero.
[1]Table includes data available through May 20, 2015.
[2]Malawi reportedly produced modest quantities of fertilizer, gypsum, and salt, but information is inadequate to make reliable estimates of output.
[3]Reported figure.

TABLE 2
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aggregates	Various companies and artisanal miners	At least 20 operations at various sites in Malawi	1,500,000.[e]
Cement	Cement Products Ltd.	Plant at Njereza	460,000.
Do.	Portland Cement Company Ltd. (Lafarge S.A., 100%)	Plant at Blantyre	200,000.
Do.	Shayona Cement Corp.	Plant at Livwezi	73,000.
Coal, bituminous	Mchenga Coal Mines Ltd. (subsidiary of Coal Products Ltd.)	Mchenga Mine in Rumphi District	90,000.
Do.	Malcoal Mining Ltd. [Intra Energy Corp. (IEC), 90%]	Nkhachira Mine near Kayelekera	75,000.
Do.	Eland Coal Mining Co. (subsidiary of Allied Procurement Agency)	Mine at Lufira coalfield	72,000.[e]
Do.	Kaziwiziwi Mining Co.	Mine at Kaziwiziwi in Rumphi District	5,000.[e]
Dimension stone	Ilomba Granite Company Ltd.	Mine at Ilomba Hill in Chitipa District[1]	NA.
Do.	Granite Ltd.	Mine in Mzimba District[1]	NA.
Fertilizer	Malawi Fertilizer Co. (subsidiary of Meridian Group)	Plant at Liwonde	150,000.
Do.	Optichem Ltd.	Plant at Blantyre	120,000.
Gemstones:			
Amethyst, aquamarine, garnet, and tourmaline	Mzimba Gemstone Mining Cooperative Society Ltd.	Mines in Mzimba District	NA.
Aquamarine kilograms	Silver Hills Gems	NA	10,000[e]
Quartz, rose do.	Artisanal miners	Mine near Mzimba	56,000.[e]
Ruby and sapphire do.	Nyala Mines Ltd. (subsidiary of Columbia Gem House Inc.)	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby.[e]

See footnotes at end of table.

TABLE 2—Continued
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Lime	Various producers, including the following:	Various sites, including the following:	42,000.
	Zalewa Agricultural Lime Co.	Blantyre	
	LimeCo	NA	
	Balaka Limeworks Supply Co. Ltd.	Balaka	
Do.	Lirangwe Lime Makers Assoc.	Lirangwe	NA.
Do.	Balaka Lime Makers Assoc.	Balaka	NA.
Limestone	Shayona Cement Corp.	Mine at Wimbe	100,000.[e]
Do.	Cement Products Ltd.	Mine at Njereza	45,000.
Do.	Artisanal miners	do.	NA.
Sulfuric acid	Paladin Energy Ltd.	Plant near Kayelekera[1]	84,000.
Uranium, U_3O_8	do.	Mine near Kayelekera[1]	1,500.

[e]Estimated. Do., do. Ditto. NA Not available.
[1]Not in operation at the end of 2014.