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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, and limestone for domestic consumption. In 2015, Malawi's consumption of minerals and mineral fuels was not globally or regionally significant. The country also mined and exported such gemstones as amethyst, aquamarine, garnet, ruby, sapphire, and tourmaline; and such ornamental stone as agate and rose quartz (tables 1, 2).

In 2015, the manufacturing sector accounted for a projected 9.6% of the real gross domestic product (GDP), and the mining and quarrying sector, 0.9%. Employment in the mineral sector amounted to 13,131 workers in 2015 compared with 11,951 workers in 2014. The aggregate subsector employed 9,016 Malawians in 2015; lime, 1,781; coal, 706; uranium, 288; and other industrial minerals, excluding cement, gemstones, ornamental stone, and terrazzo, 723 (Ministry of Finance, Economic Planning, and Development, 2015, p. 8, 54).

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. In November 2014, all petroleum exploration was suspended by the Government pending a review of the licenses. The suspension remained in effect at the end of 2015 (Chimwala, 2016b).

Production

In 2015, limestone production increased by an estimated 78% compared with 2014 and cement, by an estimated 22%. Between 2011 and 2015, limestone production increased by an estimated 290%; cement, by an estimated 171%; and ornamental stone, by an estimated 80%. Coal production decreased by an estimated 17% in 2015. Sulfuric acid and uranium production shut down in 2015 (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).

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. At yearend, it was unclear whether the drilling program had started (Mining Review, 2015a).

Niobium (Columbium) and Tantalum.—In December 2014, Globe Metals & Mining Ltd. of Australia (Apollo Metals Investment Holdings Ltd. of Hong Kong, 52.4%) applied for a mining license at the Kanyika pyrochlore deposit and started negotiations with the Government regarding a development agreement in a new mine. Globe received its mining license in 2015; negotiations regarding the development agreement were continuing as of November (Globe Metals & Mining Ltd., 2015, p. 3–4; Mining & Trade Review, 2015b).

Depending on financing and the negotiation of the development agreement and offtake agreements for its production, Globe planned to produce 5,000 metric tons per year (t/yr) of niobium pentoxide (Nb_2O_5) and 200 t/yr of tantalum pentoxide (Ta_2O_5) at Kanyika. Uranium and zircon concentrate would be stockpiled for future sale. Resources were estimated to be 68.3 million metric tons (Mt) at grades of 0.28% Nb_2O_5 and 0.014% Ta_2O_5 (Jockel, 2013, p. 11; Mining & Trade Review, 2015b).

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 2015, 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. At yearend, it was unclear when the study would be completed (Mining & Trade Review, 2015b; Mining Review, 2015a).

Industrial Minerals

Cement.—Malawi had three cement plants with a total production capacity of about 860,000 t/yr. In 2015, national cement production increased to about 550,000 metric tons (t) from 450,000 t in 2014. 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. completed the first phase of its expansion in 2015, with capacity increasing to nearly 200,000 t/yr. In the second phase, the company planned to increase capacity to about 360,000 t/yr by 2016. Shayona was producing at more than 60% of capacity in July 2015 (Mining Review, 2014, 2015b).

Gemstones.—Mzimba Gemstone Mining Cooperative Society Ltd. and other companies mined amethyst and other quartz, apatite, aquamarine, epidote, garnet, and tourmaline from pegmatites in the Mzimba District using labor-intensive methods. Production was limited by the lack of modern mining equipment and access to marketing channels that would allow miners to receive world market prices for their gemstones (Manda, 2015).

Graphite.—In September 2015, Sovereign Metals Ltd. of Australia completed a scoping study of a new mine at its Duwi project near Lilongwe. Depending on the negotiation of offtake agreements, financing, community approval, environmental impact assessments, and the results of prefeasibility and feasibility studies, Sovereign could produce about 110,000 t/yr of graphite concentrates at a grade of at least 95% graphite. The life of the mine was estimated to be 20 years. The Duwi Main and the Duwi Bend deposits had total resources of 77.3 Mt at a grade of 7.2% graphite. Globe engaged in rock-chip sampling at its Chiziro project in the third quarter of 2015 (Mining & Trade Review, 2015a; Globe Metals & Mining Ltd., 2016).

Phosphate Rock.—Optichem Ltd. was developing the Tundulu phosphate rock deposits for use in its fertilizer plant in 2015. 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; the company was awaiting results in April 2015 (Mining Review, 2015a; Ministry of Finance, Economic Planning, and Development, 2015, p. 53–54).

Rare-Earths.—In November 2015, Mkango Resources Ltd. of Canada updated its prefeasibility study on a new mine at the Songwe Hill rare-earth project. Depending on the results of a feasibility study, Mkango could start mining at Songwe Hill in 2018 and produce 2,840 t/yr of rare-earth oxides during 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; gadolinium oxide, 62 t/yr; and dysprosium oxide, 35 t/yr. Reserves at Songwe were estimated to be 8.5 Mt at a grade of 1.6% rare-earth oxides (Mkango Resources Ltd., 2015).

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 yearend, the development of Kangankunde was on hold pending resolution of the ownership dispute (Chimwala, 2016a).

Mineral Fuels and Related Materials

Coal.—Bituminous coal was mined by several small producers. Output decreased in 2015 because of the closure of the Mabulabo and the Nkhachira Mines, which were operated by Eland Coal Mining Co. and Intra Energy Corp. (IEC) of Australia, respectively. Exports decreased because of import restrictions enacted by the Government of Tanzania. Imports increased because Mozambican coal mines were closer to coal-consuming industries in Blantyre than domestic coal mines (Mhango, 2016).

At the end of 2015, Malawi's power stations had a combined capacity of 351 megawatts (MW), of which 99% was hydropower. Demand was estimated to be 450 MW of capacity. In October 2015, the Governments of China and Malawi signed an agreement to build a new coal-fired power station at Kamwamba with a capacity of 300 MW. China Gezhouba Group Corp. planned to complete the plant by late 2018 at a cost of nearly $670 million. IEC planned to build a new coal-fired power station with a capacity of 120 MW at Chipoka (Jere, 2015; Khunga, 2015; Mhango, 2016).

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, the company produced 435 t of U_3O_8 before placing the mine on care-and-maintenance status because of low uranium prices on worldwide markets. At the end of 2015, Kayelekera remained on care-and-maintenance status. Paladin estimated that prices would have to increase to $75 per pound of U_3O_8 for Kayelekera to reopen (Paladin Energy Ltd., 2014; Jere, 2015).

In August 2015, Paladin suspended uranium exploration activities near Kayelekera because its applications for new exploration licenses were unlikely to be granted before the first quarter of 2016. The company was engaged in a feasibility study of reopening Kayelekera. Depending on the results of the study, Paladin could reopen the mine and produce more than 1,100 t/yr of U_3O_8 during an estimated remaining mine life of at least 6 years (Chimwala, 2015).

References Cited

Chimwala, Marcel, 2015, Paladin suspends uranium exploration work in Malawi: Mining & Trade Review, no. 28, August, p. 12. (Accessed August 8, 2016, at https://mininginmalawi.files.wordpress.com/2015/08/mining-review-august-2015-electronic-copy.pdf.)

Chimwala, Marcel, 2016a, Billion dollar mine scandal: Mining & Trade Review, no. 33, January, p. 1, 3. (Accessed August 10, 2016, at https://mininginmalawi.files.wordpress.com/2016/01/mining-review-january-2016-electronic-copy.pdf.)

Chimwala, Marcel, 2016b, Govt. must come out clearly on oil exploration: Mining & Trade Review, no. 34, February, p. 5. (Accessed August 10, 2016, at https://mininginmalawi.files.wordpress.com/2016/02/mining-trade-review-february-2016-electronic-copy.pdf.)

Globe Metals & Mining Ltd., 2015, December quarter 2014 activities report: Globe Metals & Mining Ltd., 27 p. (Accessed August 9, 2016, at http://www.globemm.com/getattachment/af244042-965d-48a7-afc5-f9ca384c12ca/December-2014-Quarterly-Activities-Report.aspx.)

Globe Metals & Mining Ltd., 2016, December quarter 2015 review of operations: Globe Metals & Mining Ltd., 14 p. (Accessed August 9, 2016, at http://www.globemm.com/getattachment/225f62d2-8e0f-4a6b-bd51-009571ba4834/Quarterly-Activities-Report.aspx.)

Jere, Chiku, 2015, Power blackouts—Crisis hits industry hard: Mining & Trade Review, no. 32, December, p. 12. (Accessed August 11, 2016, at https://mininginmalawi.files.wordpress.com/2015/12/mining-review-december-2015-electronic-copy.pdf.)

Jockel, Fergus, 2013, Investor update: Mines & Money Hong Kong 2013, Hong Kong, China, March 18–22, 2013, Presentation, 15 p.

Khunga, Suzgo, 2015, China approves K855bn Malawi projects: The Nation [Blantyre, Malawi], October 22. (Accessed August 11, 2016, at http://mwnation.com/china-approves-k855bn-malawi-projects/.)

Manda, Deborah, 2015, Mzimba gemstone miners seek to acquire advanced machinery: Mining Review, no. 27, July, p. 4. (Accessed August 9, 2016, at https://mininginmalawi.files.wordpress.com/2015/07/mining-review-july-2015-edition-electronic-copy.pdf.)

Mhango, M.C., 2016, Malcoal suspends Nkhachira mining operations: Mining & Trade Review, no. 35, March, p. 12. (Accessed August 10, 2016, at https://mininginmalawi.files.wordpress.com/2016/03/mining-trade-review-march-2016-edition-electronic-copy.pdf.)

Mining & Trade Review, 2015a, Malawi hosts world's sixth largest graphite deposit: Mining & Trade Review, no. 30, October, p. 6–7. (Accessed August 11, 2016, at https://mininginmalawi.files.wordpress.com/2015/10/mining-review-october-2015-edition-electronic-copy.pdf.)

Mining & Trade Review, 2015b, Malawi's top minerals sector projects of 2015: Mining & Trade Review, no. 31, November, p. 6–7. (Accessed August 8, 2016, at https://mininginmalawi.files.wordpress.com/2015/11/mining-review-november-2015-electronic-copy.pdf.)

Mining Review, 2014, Shayona Cement embarks on massive expansion project: Mining Review, no. 16, September, p. 4–5.
Mining Review, 2015a, Buoyant gold mining prospects for Malawi: Mining Review, no. 24, April, p. 1, 3. (Accessed August 8, 2016, at https://mininginmalawi.files.wordpress.com/2015/04/mining-review-april-2015-edition-electronic-copy.pdf.)
Mining Review, 2015b, Engineers appreciate expansion works at Shayona factory: Mining Review, no. 27, July, p. 8. (Accessed August 9, 2016, at https://mininginmalawi.files.wordpress.com/2015/07/mining-review-july-2015-edition-electronic-copy.pdf.)
Ministry of Finance, Economic Planning, and Development, 2015, Annual economic report 2015: Lilongwe, Malawi, Ministry of Finance, Economic Planning, and Development. (Accessed August 10, 2016, at https://mininginmalawi.files.wordpress.com/2015/07/2015-annual-economic-report-chapter-6-mining-and-quarrying.pdf.)
Mkango Resources Ltd., 2015, Mkango Resources announces results of updated pre-feasibility study for the Songwe Hill rare earth project in Malawi: Mkango Resources Ltd., November 9, 7 p. (Accessed August 10, 2016, at http://www.marketwired.com/press-release/mkango-resources-announces-results-updated-pre-feasibility-study-songwe-hill-rare-earth-tsx-venture-mka-2071640.htm.)
Paladin Energy Ltd., 2014, Quarterly activities report for period ending 30 June 2014: Paladin Energy Ltd., 7 p. (Accessed August 9, 2016, at http://www.paladinenergy.com.au/sites/default/files/financial_report_file/quarterly-report-june-2014.pdf.)

TABLE 1

MALAWI: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2011	2012	2013[e]	2014[e]	2015[e]
INDUSTRIAL MINERALS						
Bentonite		2,450	--	--	--	--
Clay, brick[e]		1,015,200 [3]	1,400,000	1,500,000	1,400,000	1,400,000
Cement, hydraulic		203,200	172,000	320,000	450,000	550,000
Gemstones	kilograms	215,000	285,000	300,000	310,000	310,000
Lime		93,549	95,543	100,000	110,000	110,000
Ornamental stone		4,434	7,200	7,800	7,800	8,000
Stone:						
Crushed for aggregate		1,039,237	1,338,600	1,400,000	1,300,000	1,300,000
Dimension:						
Crude and partly worked		277	--	--	--	--
Worked		167	--	--	--	--
Limestone, for cement		33,701	41,150	45,000	73,000 [r]	130,000
Sulfur, sulfuric acid[e]		56,000	73,000	75,000	25,000	--
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous		72,300	91,910	98,000	120,000	100,000
Uranium, U_3O_8 content		998	1,298	1,335 [3]	435 [3]	--

[e]Estimated; estimated data are rounded to no more than three significant digits. -- Zero.

[1]Table includes data available through August 11, 2016.

[2]Malawi reportedly produced modest quantities of fertilizer, gypsum, and salt, but available information was inadequate to make reliable estimates of output.

[3]Reported figure.

TABLE 2
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(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	200,000.
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[1]	75,000.
Do.		Eland Coal Mining Co. (subsidiary of Allied Procurement Agency)	Mine at Lufira coalfield[1]	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.*	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby.[2*, e]
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 2015.
[2]Includes 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 footnote was added.