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2019 Minerals Yearbook

MALAWI [ADVANCE RELEASE]

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The Mineral Industry of Malawi

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Malawi was a producer of cement, coal, crushed stone, lime, and limestone for domestic consumption. In 2019, Malawi's consumption of minerals and mineral fuels was not globally or regionally significant. The country also mined and exported such gemstones as fluorite, garnet, ruby, and sapphire, and such ornamental stones as agate and quartz.

In 2019, the manufacturing sector accounted for a projected 9.1% of the real gross domestic product (GDP), and the mining and quarrying sector, 0.8%. Employment in the mineral sector amounted to about 17,200 workers in 2019 compared with 16,600 workers in 2018. The aggregates subsector employed about 9,700 Malawians in 2019; lime, 2,100; cement, 1,600; coal, 1,100; gemstones, ornamental stones, and mineral specimens, 600; uranium, 140; and terrazzo and other industrial minerals, excluding cement, gemstones, and ornamental stone, a total of 1,300. About 730 were estimated to be employed in exploration activities (Ministry of Finance, Economic Planning, and Development, 2019, p. 8, 60).

As of the end of 2019, Malawi's mining and quarrying sector was governed by the Mines and Minerals Act 2019, which replaced the Mines and Minerals Act 1981 and the Mines and Minerals (Mineral Rights) Regulations 1981. Under the new law, the Government had the right to a free carried interest of as much as 10% in mining projects that required a large-scale mining license. The new law also regulated trade in gold, silver, and gemstones (Chimwala, 2019). The petroleum sector was governed by the Petroleum (Exploration and Production) Act 1983.

Production

In 2019, garnet production increased by an estimated 29%; phosphate rock, by an estimated 13%; and crushed stone excluding limestone, by 10%. Between 2015 and 2019, quartz production increased by an estimated 214%; crushed stone other than limestone, by 154%; sapphire, by an estimated 79%; lime, by 59%; and cement, by 57%. Ruby production decreased by 95% in 2019; other gemstones, by 74%; sapphire, by 66%; quartz, by 55%; agate, by 38%; and coal, by 33%. Epidote production shut down in 2019. Between 2015 and 2019, phosphate rock production decreased by 85%; ruby, by 73%; limestone, by 45%; and coal, by 44% (Ministry of Finance, Economic Planning, and Development, 2019, p. 57; U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Increased production of crushed stone in 2019 could be attributable to roads and other infrastructure projects. Decreased coal production could be attributable to import competition. Data on mineral production are in 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, gold, and lime. Only partial data on capacity, location, and ownership were available for artisanal and small-scale gemstone and lime operations. Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Gold.—In early 2019, illegal artisanal mining resumed at Lundu, Makanjira, and Nathenje. In 2018, the Government shut down mining because of concerns about environmental degradation and unsafe working conditions. The Government planned to formalize gold mining by forming cooperatives of artisanal miners (Mbwana, 2019).

Iron and Steel, Titanium, and Zirconium.—Mawei Mining of China completed a feasibility study on a new mine at its Makanjira heavy-mineral-sands project in 2017. The company's planned production of ilmenite during the first 10 years of mining was about 216,000 metric tons per year (t/yr); magnetite, 64,000 t/yr; zircon, 8,300 t/yr; and rutile, 1,100 t/yr. The estimated life of the mine was between 23 and 24 years. Resources were estimated to be 354 million metric tons (Mt) at grades of 2.68% ilmenite, 0.466% magnetite, 0.101% zircon, and 0.0113% rutile (Mbwana, 2018).

Mawei planned to start mining in late 2019 or early 2020, depending on power supplies and transportation services across Lake Malawi. The mine's production would be shipped across Lake Malawi from Makanjira to Chipoka, which had a rail station. The power requirement for the first stage of mining was 3 megawatts. As of the end of 2019, production had not yet started (Mbwana, 2018; Ministry of Finance, Economic Planning, and Development, 2019, p. 64).

Industrial Minerals

Cement.—Malawi had three cement plants with a total production capacity of about 640,000 t/yr. In 2019, national cement production increased to 243,075 metric tons (t) from 231,550 t in 2018. Production was limited by import competition. In 2018, Shayona Cement Corp. completed the second phase of its expansion in 2018, with capacity increasing to nearly 360,000 t/yr. Shayona planned to increase capacity to about 900,000 t/yr by 2020 (table 2; Jere, 2018; U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Gemstones.—Mzimba Gemstone Mining Cooperative Society Ltd. and other cooperatives of miners produced quartz in Mzimba District using labor-intensive methods. In 2013, rose quartz production was estimated to be about 200 t; yellow quartz, 25 t; and crystal and smoky quartz, a total of 15 t. Total production of quartz was 471 t in 2019 compared with 1,054 t in 2018

(Manda, 2014; U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Garnet was produced by artisanal miners in Salima Distict. In 2019, garnet production increased to 508 kilograms (kg) from 393 kg in 2018 (U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Mwalawanga Mining Ltd. produced ruby and sapphire at the Nyala Mine at Chimwadzulu Hill. Ruby production decreased to 13 kg in 2019 from 255 kg in 2018, and sapphire production, to 129 kg from 384 kg (U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Graphite.—In September 2015, Sovereign Metals Ltd. of Australia completed a scoping study of a new mine at its Duwi project near Lilongwe. Planned production in the study was about 110,000 t/yr of graphite concentrates at a grade of at least 95% graphite. Sovereign also discovered the Malingunde graphite deposit in 2015. In 2016, the company shifted its focus from Duwi to Malingunde because Malingunde is a near-surface saprolite-hosted deposit containing high levels of large- and jumbo-flake graphite. The relative softness of the saprolite would allow for lower production costs because the drilling, blasting, and crushing needed for hard-rock deposits was unnecessary (Sovereign Metals Ltd., 2015, p. 1; 2018, p. 3, 28).

In November 2018, Sovereign completed a prefeasibility study of a new mine at Malingunde. Planned production in the study was 52,000 t/yr of concentrate at a grade of 97% graphite, of which jumbo-flake (flakes larger than 300 microns) would account for 24% and large-flake (flakes between 180 and 300 microns), 26%. The estimated life of the mine was 16 years. Reserves were estimated to be 9.5 Mt at a grade of 9.5% graphite. Depending on the results of a feasibility study, construction could start in 2020, and mining, in 2021 (Betha, 2018; Sovereign Metals Ltd., 2018, p. 1, 4, 28).

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. Planned production was more than 2,800 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 1,100 t/yr; neodymium oxide, 760 t/yr; cerium oxide, 340 t/yr; praseodymium oxide, 230 t/yr; yttrium oxide, 170 t/yr; samarium oxide, 110 t/yr; gadolinium oxide, 62 t/yr; dysprosium oxide, 35 t/yr; and other heavy rare-earth oxides, 39 t/yr. Cerium oxide would account for only 12% of production although it accounted for 46% of the rare-earth oxides in the deposit; Mkango planned to reject most cerium oxide during the production process because of world market conditions (Mkango Resources Ltd., 2018, p. 16–17, 33, 35).

As of May 2018, Mkango planned to complete a feasibility study by the end of 2019. Depending on the results of the study, mining could start by the end of 2021. As of June 2019, the completion of the feasibility study was delayed until 2020 (Mkango Resources Ltd., 2018, p. 26; Shares Spotlight, 2019).

Mineral Fuels and Related Materials

Coal.—Bituminous coal was mined by several small producers. Malawi's coal production decreased to 33,101 t in 2019 from 49,753 t in 2018; lower output may be attributable to competition from high-quality imports from Mozambique and Zimbabwe. Domestic producers were unable to export coal because of high transportation costs (Ministry of Finance, Economic Planning, and Development, 2019, p. 57; Malekezo, 2020; U.M. Yasidu, Malawi Department of Mines, written commun., July 22, 2020).

Uranium.—In 2014, the Kayelekera uranium mine was placed on care-and-maintenance status because of low uranium prices on worldwide markets. In June 2019, Paladin Energy Ltd. of Australia agreed to sell a 65% share in the Kayelekera Mine to a subsidiary of Lotus Resources Ltd. of Australia. Paladin also agreed to sell a 20% share in the mine to Kayelekera Resources Pty. Ltd. of South Africa. The Ministry of Natural Resources, Energy, and Mining approved the sale of Paladin's interests in December (Iannucci, 2019).

Lotus planned to review the mine's care-and-maintenance status in the first quarter of 2020. The company also planned to start a reengineering study in 2020. Resources at the Kayelekera Mine were estimated to be about 13,000 t of contained U_3O_8 (Iannucci, 2019).

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TABLE 1

MALAWI: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2015	2016	2017	2018	2019
INDUSTRIAL MINERALS						
Cement, hydraulic		154,800	150,700	210,500	231,550	243,075
Clay, brick		1,500,000 e	1,600,000 e	1,700,000 e	-- r	--
Gemstones:						
Agate	kilograms	NA	NA	14,739	110,288	68,855
Epidote	do.	NA	NA	--	6	--
Fluorite	do.	NA	NA	--	19	19
Garnet	do.	NA	NA	1,570	393	508
Quartz	do.	150,000 e	110,000 e	74,632	1,054,448	471,344
Ruby	do.	48 e	48 e	2	255	13
Sapphire	do.	72 e	72 e	1	384	129
Other	do.	NA	NA	44,283	31,209	7,982
Lime, agricultural and hydrated		33,158	38,278	43,650	48,461	52,817
Phosphate rock:						
Gross weight		12,400	2,500	1,000 r	1,594 r	1,800 e
P_2O_5 content[e]		3,700	750	300	480	540
Stone, crushed:						
Limestone, for cement		90,097	128,657	43,650	48,015	50,000 e
Other, unspecified		1,158,742	1,990,000	2,500,000	2,679,321	2,947,253
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous		58,774	43,338	45,230	49,753	33,101

[e]Estimated. [r]Revised. do. Ditto. NA Not available. -- Zero.

[1]Table includes data available through September 2, 2020. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

[2]In addition to the commodities listed, gold, gypsum, and salt may have been produced, but available information is inadequate to make reliable estimates of output.

TABLE 2
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Shayona Cement Corp.	Plant at Livwezi	360,000.
Do.		Portland Cement Company Ltd. (Lafarge S.A., 100%)	Plant at Blantyre	200,000.
Do.		Cement Products Ltd.	Plant at Njereza	80,000.
Coal, bituminous		Malcoal Mining Ltd. [Intra Energy Corp. (IEC), 90%]	Nkhachira Mine near Kayelekera[1]	75,000.
Do.		Eland Coal Mining Co. (Allied Procurement Agency)	Mine at Lufira coalfield[1]	72,000.[e]
Do.		Mchenga Coal Mines Ltd. (Coal Products Ltd.)	Mchenga Mine in Rumphi District	36,000.
Do.		Kaziwiziwi Mining Co.	Mine at Kaziwiziwi in Rumphi District	5,000.[e]
Gemstones:				
Agate	kilograms	Artisanal miners	Mines in Chikwawa District	NA.
Garnet	do.	do.	Mines at Salima District	NA.
Quartz:				
Rose	do.	Mzimba Gemstone Mining Cooperative Society Ltd.	Zumwanda Mine in Mzimba District	220,000.[e]
Smoky and crystal	do.	Artisanal miners	do.	17,000.[e]
Yellow	do.	do.	Mines in Mzimba District	17,000.[e]
Ruby and sapphire	do.	Mwalawanga Mining Ltd.	Nyala Mine at Chimwadzulu Hill	300 sapphire; 150 ruby.[e]
Gold		Artisanal miners	Lundu, Makanjira, and Nathenje	NA.
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.
Phosphate rock		Optichem (2000) Ltd.	Mine at Tundulu	13,000.[e]
Stone, crushed:				
Limestone		Shayona Cement Corp.	Mine at Wimbe	300,000.[e]
Other		Various companies and artisanal miners	More than 20 operations at various sites in Malawi	3,300,000.[e]
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 2019.