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# 2013 Minerals Yearbook

## MOZAMBIQUE

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# The Mineral Industry of Mozambique

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In 2013, Mozambique's share of world ilmenite production was about 6%; zircon, 3%; and aluminum, 1%. The country also played an important role in the world's production of beryl and tantalum. Other domestically important mineral processing operations included cement, coal, and natural gas. Mozambique was not a globally important consumer of minerals or mineral fuels in 2013 (Bedinger, 2015a, b; Bray, 2015; Jaskula, 2015; Papp, 2015).

## Minerals in the National Economy

The manufacturing sector accounted for 12% of the gross domestic product in 2012 (the latest year for which data were available), and the mining and quarrying sector, 1.7%. The value of output in the mining and quarrying sector increased by 40.7% in 2012 compared with that in 2011. Employment in the large-scale mining sector was about 15,000 workers in 2012, which included 10,000 in the coal mining subsector. It was estimated that 150,000 workers were employed in artisanal mining operations (Bank of Mozambique, 2013, p. 74, 105–106; World Bank Group, 2013, p. 3–4).

In 2013, national exports were valued at $4.15 billion, of which aluminum accounted for 25.6%; coal, 12.1%; natural gas, 5.5%; and ilmenite, rutile, and zircon, a combined total of 3.7%. By comparison, in 2009, aluminum accounted for 40.4% of the value of national exports; no coal exports were reported (table 1; Bank of Mozambique, 2014, p. 53).

## Production

In 2013, the production of limestone increased by 116% compared with that of 2012; gravel and crushed rock, by 102%; lead, by 91%; garnet, by 66%; sand, by 51%; natural gas, by 31%; coal and rutile concentrate, by 28% each; diatomite and ilmenite, by 25% each; beryl, by 23%; and gold, by 11%. The production of dumortierite decreased by 52% in 2013; niobium (columbium), and tantalum, by an estimated 48% each; processed bentonite, by 34%; zircon concentrate, by 33%; bauxite, by 19%; and crude bentonite, by 12% (Eduardo Alexandre, National Director of Mines, Mozambique National Directorate of Mines, written commun., January 23, 2015).

## Structure of the Mineral Industry

Most of Mozambique's mining and mineral processing operations were privately owned, including the cement plants, the coal mines, the Marropino and the Muiane tantalum mines, the mineral sands mine, and the aluminum smelter. The Government held a 30% share in the Temane gas project through Empresa Nacional de Hidrocarbonetos E.P. The mineral industry also consisted of a number of small-scale and artisanal operations that produced construction materials, gemstones, gold, niobium (columbium), and tantalum. Capacity, location, ownership, and production information were not readily available for many of these operations (table 2).

## Commodity Review

### *Metals*

**Aluminum.**—Mozambique was Africa's second-ranked producer of aluminum after South Africa in 2013. The Mozal aluminum smelter, which used alumina imported from Western Australia as raw material, produced 562,000 metric tons (t) in 2013 compared with 564,000 t in 2012 (BHP Billiton Ltd., 2013, p. 6; 2014, p. 24).

**Gold.**—In January 2013, Auroch Minerals NL of Australia acquired the Manica project from Pan African Resources plc of the United Kingdom. Auroch was engaged in a feasibility study on a new mine at Manica. Depending on favorable results of the study, mining could start in 2015. Production was likely to be about 1,200 kilograms per year (kg/yr) of gold. Contained gold resources at Manica were estimated to be about 93,000 kilograms (kg). Republic Gold Ltd. of Australia engaged in drilling at its Mucurumadzi project in the fourth quarter of 2013 (Pick, The, 2013; African Mining, 2014a).

**Iron Ore and Vanadium.**—In March 2013, Baobab Resources plc of the United Kingdom completed a prefeasibility study with successful results on a new mine located north of Tete. Titaniferous and vanadiferous magnetite from the mine was expected to be smelted into pig iron and ferrovanadium. For the estimated 37-year life of the mine, planned production was 1 million metric tons per year (Mt/yr) of pig iron and 3,200 metric tons per year (t/yr) of ferrovanadium. Baobab planned to complete a feasibility study for the project in 2014. Depending on the results of the study, production was expected to start in 2016. The company was also considering the construction of a new steel plant. Resources at the Tenge-Ruoni deposit at Tete were more than 550 million metric tons (Mt) at a grade of 36% iron (Bain, 2013; Mining Journal, 2013).

**Lead.**—Gravita Mozambique Lda. (a subsidiary of Gravita India Ltd.) operated a secondary lead refinery in Maputo with a capacity of 3,800 t/yr. In fiscal year 2013 (April 1, 2012, to March 31, 2013), the company's production increased to 1,704 t from 892 t in fiscal year 2012 (Gravita India Ltd., 2013, p. 23).

**Niobium (Columbium) and Tantalum.**—In August 2013, Noventa Ltd. of the United Kingdom shut down production at the Marropino niobium (columbium) and tantalum mine. Mining operations were subeconomic because of the lack of roads to transport the mine's output and port facilities through which to process radioactive uranium and thorium contained in concentrate, power supply interruptions, and the depletion of high-grade ore near the surface. Ore at greater depths was of lower grade than near the surface and required higher processing costs (Mining Review Africa, 2013).

On February 29, 2012, Pacific Wildcat Resources Corp. (PAW) of Canada announced the commissioning of its secondary processing plant, which upgraded concentrates produced in the primary plant, at the Muiane Mine. PAW planned to produce between 16,000 and 34,000 kg/yr of tantalum pentoxide ($Ta_2O_5$) in concentrate after obtaining funds to construct its planned spiral circuit. Indicated resources at Muaine were 1.4 Mt at a grade of 250 grams per metric ton $Ta_2O_5$ (Pacific Wildcat Resources Corp., 2013, p. 25).

**Titanium and Zirconium.**—Kenmare Resources plc of Ireland produced ilmenite, rutile, and zircon at the Moma Mine. In 2013, ilmenite concentrate production increased to 720,100 t from 574,400 t in 2012 because of the expansion of Moma's capacity by 50%. Rutile concentrate production increased to 5,100 t from 4,000 t. Zircon concentrate production decreased to 31,400 t in 2013 from 46,900 t in 2012 because of an unexpectedly long shutdown during the capacity expansion process. Kenmare also faced power supply disruptions in the second half of 2013 because of electrical storms and increased power demand by other consumers. The company planned to produce about 900,000 t/yr of ilmenite during the remaining life of the mine. Reserves at Moma were estimated to be 820 Mt at grades of 3% ilmenite, 0.19% zircon, and 0.059% rutile (Kenmare Resources plc, 2014, p. 4, 9, 14, 29, 105).

In May 2011, Pathfinder Minerals plc of the United Kingdom released the results of a scoping study on the Moebase/Naburi project. Pathfinder was considering the development of a new mine that could produce 1.24 Mt/yr of ilmenite, 65,000 t/yr of zircon concentrate, and 24,000 t/yr of rutile concentrate. Capital costs of the project were estimated to be $533 million. In late 2013, the company was engaged in a dispute with JV Consultores Internacionais regarding the rights to the Moebase/Naburi project (Mining Journal, 2011; Pathfinder Minerals plc, 2013).

### *Industrial Minerals*

**Beryllium.**—African Rare Gemwood mined industrial-grade beryl in northern Mozambique. In 2013, reported national beryl production increased to 654,600 kg from a revised 532,000 kg in 2012. Beryl ores from Mozambique may be exported to the United States for processing.

**Cement.**—Cimentos de Portugal, SGPS, SA (Cimpor) produced cement at four plants in Dondo, Matola, and Nacala at the start of 2013. The company increased the capacity at its Dondo plant by about 500,000 t/yr from 240,000 t/yr and started a new plant with a capacity of about 100,000 t/yr by yearend (Global Cement Magazine, 2013; Cimentos de Portugal, SGPS, SA, 2014, p. 34).

In 2013, Consolidated General Minerals plc (CGM) of the United Kingdom was building a new cement plant at Beira with a capacity of 800,000 t/yr. CGM planned to start operations at the plant in April 2014 and to ramp up production gradually to about 600,000 t/yr. The company planned to sell its output for domestic consumption and for export to landlocked countries, including Malawi, Zambia, and Zimbabwe (Consolidated General Minerals plc, undated).

National cement consumption was estimated to be 1.8 Mt in 2013, which was an increase of about 10% from 2012. Cimpor's share of the Mozambican market was about 72% in 2013 (Cimentos de Portugal, SGPS, SA, 2014, p. 11, 26).

**Fluorspar and Rare Earths.**—In late November 2013, Globe Metals & Mining Ltd. of Australia withdrew from exploration at the Mount Muambe fluorite and rare-earths deposit. Globe indicated that Mount Muambe was subeconomic because of the low fluorspar and rare-earth grades, the complex mineralogy of the deposit, and the predominance of low-value rare earths (Globe Metals & Mining Ltd., 2013).

**Gemstones.**—Gem-quality ruby was found in eluvial and primary deposits in Niassa Province and at Montepuez in Cabo Delgado Province. The Government shut down artisanal mining operations in Niassa in 2009; artisanal miners continued to produce every year during the rainy season when enforcement was much more difficult (Pardieu and Chauvire, 2012).

The Montepuez deposit was discovered in May 2009; Mwiriti Lda. was granted the license for Montepuez shortly after the discovery. In 2011, Mwiriti and Gemfields plc of the United Kingdom formed the joint-venture company Montepuez Ruby Mining (MRM) to mine ruby at Montepuez. MRM's bulk sampling operations started in August 2012; ruby and corundum production amounted to more than 1,000 kg in 2013. The majority of the production was corundum; reported national ruby production was 236 kg in 2013. Gemfields and Mwiriti planned to mine 2,500 kg of ruby and corundum at Montpuez in 2014 (African Mining, 2014b; Eduardo Alexandre, National Director of Mines, Mozambique National Directorate of Mines, written commun., January 23, 2015).

Aquamarine production increased to 645 kg in 2013 from 588 kg in 2012 and 60 kg in 2011. Increased output could be attributable to discoveries of aquamarine by Mozambique Gems Ltd. at Mavuco in northern Mozambique. Rhodolite garnet was mined in Niassa Province; elbaite, in Nampula Province; and rubellite tourmaline, in Zambezia Province (Eduardo Alexandre, National Director of Mines, Mozambique National Directorate of Mines, written commun., January 23, 2015).

**Graphite.**—The Ancuabe graphite mine in Cabo Delgado Province, which operated from 1994 to 1999, shut down because of high power costs and decreasing graphite prices. At the end of 2013, AMG Advanced Metallurgical Group N.V. of the Netherlands was engaged in a feasibility study on reopening Ancuabe. Depending on the results of the study, AMG could produce 6,000 t/yr of graphite (AMG Advanced Metallurgical Group N.V., 2012; 2014, p. 26).

In the fourth quarter of 2013, Syrah Resources Ltd. of Australia completed a feasibility study on a new mine at the Balama project in northern Mozambique. Depending on financing, Syrah planned to start construction at Balama in the second quarter of 2014 and to start production in the second quarter of 2015. The company planned to produce 220,000 t/yr of concentrates with a content of between 96% and 98% graphite. Total resources at Balama were estimated to be 1.15 billion metric tons at grades of 10.2% graphite and 0.23% vanadium pentoxide (Syrah Resources Ltd., 2013, p. 4–7).

Triton Minerals Ltd. of Australia explored at the Ancuabe and the Balama North projects in 2013. At Balama North, which is located near Syrah's Balama project, Triton engaged in drilling at the Nicanda Hill prospect and rock chip sampling at the

Cobra Plains prospect. The company also engaged in rock chip sampling at Ancuabe, which is located near the Ancuabe Mine. Triton planned to complete a resource estimate at Cobra Plains in 2014 (Triton Minerals Ltd., 2013).

### *Mineral Fuels and Related Materials*

**Coal.**—In 2013, Vale S.A. of Brazil planned to reach the full capacity of 8.5 Mt/yr of coking coal and 2.5 Mt/yr of thermal coal at the Moatize Mine in Tete Province. The company's actual production was 3.82 Mt of salable coal in 2013 compared with 3.77 Mt in 2012. Vale also had planned to increase capacity to 22 Mt/yr of salable coal in 2014, of which 17 Mt/yr would be coking coal and 5 Mt/yr would be thermal coal. Expansion plans were delayed by port and rail capacity constraints; the second stage at Moatize was postponed until the second half of 2015. Production was also limited by heavy rains in February (Tex Report, The, 2013d, 2014b).

The Sena Railway was Mozambique's only railway for the export of coal. Sena's capacity was planned to increase to 12 Mt/yr by 2016; a subsequent expansion to 20 Mt/yr was expected to begin in 2017. Vale and Caminhos de Ferro de Mocambique planned to complete a new railway from Tete to the Port of Nacala with an initial hauling capacity of 18 Mt/yr by the end of 2014. The capacity of the Nacala Railway was likely to be increased subsequently to 40 Mt/yr. Vale also planned to complete a new coal-handling terminal at Nacala with an initial capacity of 18 Mt/yr; the capacity was expected to be increased subsequently to 30 Mt/yr (Tex Report, The, 2013d; Beacon Hill Resources plc, 2014, p. 3).

In early 2012, Rio Tinto plc of the United Kingdom and its joint-venture partner Tata Steel Ltd. of India started production at the new Benga Mine, which is adjacent to the Moatize Mine. Rio Tinto and Tata produced 1.62 Mt of salable coal in 2013 compared with 708,000 t in 2012. The companies had planned to mine at the full first-stage capacity of 1.6 Mt/yr of salable coking coal and 800,000 t/yr of salable thermal coal by the end of 2013. Rio Tinto and Tata planned to increase production to 12 Mt/yr in the second stage of mining, of which 6 Mt/yr would be salable coking coal for export, 4 Mt/yr would be salable thermal coal for export, and 2 Mt/yr would be consumed in a new coal-fired power station located near Tete. The second stage of mining was expected to start by 2015. Expansion plans were delayed by port and rail capacity constraints. Rio Tinto planned for the power station to have an initial capacity of between 500 and 600 megawatts (MW) and would eventually increase the capacity to 2,000 MW (African Mining, 2011; Tex Report, The, 2013a, 2014a).

Rio Tinto also planned to develop the Zambeze coal project, which was adjacent to the Benga project. The Government awarded Rio Tinto a mining license for Zambeze in the third quarter of 2013. The company planned to start production at Zambeze between 2023 and 2025. Rio Tinto planned to produce 7 Mt/yr of salable coking coal and 5 Mt/yr of salable thermal coal. The estimated capital cost of the project was $3.3 billion (African Mining, 2013).

Beacon Hill Resources plc (BHR) of the United Kingdom produced 40,923 t of coal at the Minas Moatize Mine in 2013 compared with 54,432 t in 2012. In mid-November, BHR suspended mining because of decreased prices for coking coal. The company increased the capacity at Minas Moatize by 300% in 2013; an additional increase of 56% was planned by the second quarter of 2015. BHR planned to restart production by the third quarter of 2015; the company's quota for exporting coal on the Sena Railway was 500,000 t, or 7.7% of capacity, whichever was greater (Beacon Hill Resources plc, 2014, p. 7, 10, 18).

Jindal Steel & Power Ltd. of India started mining coal at its Chirodzi project in western Tete Province in November 2012. The company planned to produce 3 Mt/yr of coal in the first phase of the project; output could increase to 10 Mt/yr in a subsequent phase. Coking coal from Chirodzi was expected to be consumed in Jindal's steel plants in India, and thermal coal, at a new coal-fired power station in Mozambique, which would have a capacity of 2,640 MW. Jindal planned to export 1 Mt of coal in 2013; the company hoped to obtain a shipping quota on the Sena railway because of the difficulty and expense of transporting coal to Beira by truck (Tex Report, The, 2013b).

In the fourth quarter of 2013, Ncondezi Coal Company Ltd. of the United Kingdom completed its revised feasibility study on a new mine and coal-fired power station with favorable results. Ncondezi Coal planned to start construction of the mine and the 300-MW-capacity power station in 2015; commissioning for the mine and power station was planned for the second half of 2017. The power station was expected to consume about 1.5 Mt/yr of thermal coal. Ncondezi Coal planned to increase the capacity of the power station in increments of 300 MW until it reaches the final capacity of 1,800 MW. Thermal coal production would increase to 9 Mt/yr for consumption in the power station. The estimated life of the mine was more than 25 years (Ncondezi Coal Company Ltd., 2014, p. 2, 4).

Midwest Africa Ltd. (MAL) of India planned to start production at a new mine in the Moatize District in Tete Province by 2019. At full capacity, production was likely to be 6 Mt/yr of thermal coal and 1 Mt/yr of coking coal. MAL estimated that reserves were 480 Mt of coal. The estimated capital cost of the project was $3.3 billion. The Government granted a mining license to MAL in 2013 (African Mining, 2013).

In April 2013, Nippon Steel & Sumitomo Metal Corp. (NSSMC) of Japan received a mining license for the Revuboe project, which is adjacent to the Moatize Mine. By 2016, NSSMC and the POSCO Group of the Republic of Korea planned to start mining at Revuboe. Planned production was 5 Mt/yr of coking coal, which would be exported, including to Japan and the Republic of Korea. Anglo American plc of the United Kingdom canceled plans to purchase a 58.9% share in Revuboe in late March. NSSMC and POSCO were seeking a new joint-venture partner in mid-2013 (Tex Report, The, 2013c).

**Natural Gas.**—Production of natural gas from the Pande and the Temane gasfields increased to nearly 5.01 billion cubic meters in 2013 from a revised 3.84 billion cubic meters in 2012. Sasol Ltd. of South Africa, which operated the project, exported most of its output through a pipeline to supply its South African chemical plants. Natural gas was also supplied to the power station at Ressano Garcia. The capacity at the processing plant

for Pande and Temane was 4.78 billion cubic meters per year. At the end of June, reserves were estimated to be about 43 billion cubic meters (Sasol Ltd., 2013, p. 50–51, 109).

In 2013, Aggreko plc of the United Kingdom and its joint-venture partner Shanduka Group of South Africa increased the capacity at Ressano Garcia to 232 MW from 110 MW. The original 110 MW of capacity supplied power to Eskom of South Africa and Electricidade de Mocambique (EDM). Aggreko signed an agreement to allocate 90 MW of the new capacity to supply NamPower of Namibia and 32 MW to supply EDM for at least 2 years (Cameron, 2013).

Anadarko Petroleum Corp. of the United States and its joint-venture partners held the exploration rights for Offshore Area 1, which is located in the Rovuma Basin. As of mid-2013, natural gas in place in Offshore Area 1 was estimated to be 2.83 trillion cubic meters, of which between 990 billion cubic meters and 1.84 trillion cubic meters was reserves. Eni S.p.A. of Italy and its joint-venture partners held the exploration rights for Offshore Area 4; estimated natural gas in place in Offshore Area 4 was 2.27 trillion cubic meters as of mid-2013 (Brower, 2013; Quinlan, 2013).

Anadarko and Eni were considering the development of a liquefied natural gas (LNG) plant at Palma in Cabo Delgado Province that would use natural gas from Offshore Areas 1 and 4. The initial capacity of the plant could be 5 Mt/yr (6.9 billion cubic meters per year of natural gas) or 10 Mt/yr; capacity was likely to be increased to 20 Mt/yr. The companies were expected to start production in 2018 or 2019 and to increase output to 20 Mt/yr by the early 2020s. Anadarko could make an investment decision by the end of 2014 (Brower, 2013).

In 2013, Petronas Carigali Overseas Sdn Bhd of Malaysia and Total S.A. of France explored for natural gas in Offshore Areas 3 and 6. Statoil ASA of Norway explored in Offshore Areas 2 and 5 (Brower, 2013).

## Outlook

The mineral sector of Mozambique is likely to have substantial growth in the near future. Growth is expected to be broadly based, with increased production of ilmenite, rutile, and zircon planned for 2014; cement, for 2014 through 2016; coal, for 2014 through 2025; gold, for 2015 through 2017; and natural gas, for 2019 through 2025. A new iron ore and vanadium mine could open in 2016. Graphite production could also restart. Niobium and tantalum production is expected to decrease in 2014 because of the closure of the Marropino Mine.

The outlook for coal, gemstones, ilmenite, natural gas, rutile, and zircon will likely depend heavily upon conditions in the world economy. Increases in coal production also will depend on the expansion of the port handling capacities and the rail network. The development of new mines and related infrastructure could lead to increased consumption and production of local construction materials.

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TABLE 1
MOZAMBIQUE: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

| Commodity[2] | | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| Aluminum: | | | | | | |
| Bauxite | | 3,612 | 8,556 | 10,352 | 8,352 | 6,761 |
| Metal, refined | | 545,000 | 557,000 | 562,000 | 564,000 | 562,000 |
| Beryl | kilograms | 45,100 | 56,700 | 57,800 | 532,000 r | 654,600 |
| Cement, hydraulic[3] | thousand metric tons | 777 | 884 | 976 | 1,184 | 1,299 |
| Clays: | | | | | | |
| Bentonite: | | | | | | |
| Crude | | 92,098 | 11,417 | 423 | 24,000 | 21,135 |
| Processed | | 577 | 459 | 493 | 1,459 | 968 |
| Brick | | 15,661 | 43,143 | 99,561 | 100,000 e | 100,000 e |
| Coal, bituminous | | 25,924 | 38,260 | 648,220 | 4,954,000 r | 6,343,400 |
| Diatomite | | 213 | 123 | 48 | 541 | 675 |
| Gemstones: | | | | | | |
| Aquamarine | kilograms | 592 | 1,579 | 60 | 588 | 645 |
| Dumortierite | | 63 | 27 | 58 | 58 | 28 |
| Garnet | kilograms | 2,648 | 16,355 | 174,928 r | 170,980 r | 283,175 |
| Morganite[e] | do. | 2,600 | -- | -- | -- | -- |
| Ruby | do. | NA | NA | NA | NA | 236 |
| Tourmaline | do. | 6,078 | 14,669 | 26,279 | 513,654 r | 520,000 e |
| Gold[4] | do. | 511 | 106 | 111 | 178 | 198 |
| Lead, secondary refined[e, 5] | | 400 | 600 | 800 | 892 [6] | 1,704 [6] |
| Natural gas | million cubic meters | 2,833 | 3,261 | 3,438 | 3,837 r | 5,008 |
| Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate: | | | | | | |
| Gross weight | kilograms | 404,668 | 55,054 | 139,145 | 407,734 r | 210,746 |
| Nb content[e] | do. | 29,000 | 3,900 | 10,000 | 29,000 r | 15,000 |
| Ta content[e] | do. | 113,000 | 15,000 | 39,000 | 110,000 r | 57,000 |
| Quartz | do. | 140,600 | 707,411 | 838,684 | 51,750 r | 56,599 |
| Salt, marine[e] | | 110,000 | 120,000 | 120,000 | 130,000 | 130,000 |
| Sand | | 1,260,492 | 1,150,052 | 1,678,736 | 2,137,613 r | 3,237,285 |
| Steel, semimanufactured | | 20,000 e | -- | -- | -- | -- |
| Stone: | | | | | | |
| Granite[e] | cubic meters | 350 | -- | -- | -- | -- |
| Gravel and crushed rock | do. | 2,942,830 | 824,316 | 951,069 | 1,007,802 r | 2,032,191 |
| Limestone | | 234,135 | 263,908 | 415,883 | 1,322,424 r | 2,856,999 |
| Marble: | | | | | | |
| Block | cubic meters | -- | -- | 225,144 | 230,000 e | 230,000 e |
| Slab | square meters | 250 | -- | -- e | -- e | -- e |
| Titanium: | | | | | | |
| Ilmenite concentrate | | 471,500 | 678,400 | 636,800 | 574,400 r | 720,100 |
| Rutile concentrate | | 1,800 | 4,700 | 6,455 | 4,000 r | 5,100 |
| Zircon concentrate | | 21,100 | 37,100 | 43,600 | 46,900 | 31,400 |

[e]Estimated; estimated data are rounded to no more than three significant digits. [r]Revised. do. Ditto. NA Not available. -- Zero.

[1]Table includes data available through February 27, 2015.

[2]Other gemstones were produced, but available information is insufficient to estimate production.

[3]Reported cement sales by Cimentos de Moçambique SARL only.

[4]Does not include unreported production; total output of gold was estimated to be roughly 600 to 900 kilograms per year.

[5]Fiscal year ending on March 31 of calendar year.

[6]Reported figure.

TABLE 2
MOZAMBIQUE: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Metric tons unless otherwise specified)

| Commodity | | Major operating companies and major equity owners | Location of main facilities | Annual capacity[1] |
|---|---|---|---|---|
| Aluminum | | Mozambique Aluminum SARL (BHP Billiton Ltd., 47.1%; Mitsubishi Corp., 25%; Industrial Development Corp. of South Africa Ltd., 24%) | Mozal smelter at Beluluane | 563,000. |
| Bauxite | | Mina Alumina Lda. | Vila de Manica | 12,000.[e] |
| Bentonite | | Minerais Industriais de Moçambique Lda. | Mine at Mufiane | 30,000. |
| Beryl | | African Rare Gemwood | Mine in Zambezia Province | NA. |
| Cement | | Cimentos de Moçambique SARL [Cimentos de Portugal, SGPS, SA (Cimpor), 82.46%] | Plant at Matola | 1,520,000. |
| Do. | | do. | Plant at Dondo | 740,000. |
| Do. | | do. | Plant at Nacala | 200,000.[e] |
| Do. | | do. | Plant at Maputo | 100,000. |
| Do. | | Cimentos de Nacala S.A. [Cimentos de Portugal, SGPS, SA (Cimpor), 100%] | Plant at Nacala | 350,000. |
| Coal, bituminous | | Vale S.A. | Moatize Mine near Tete | 11,000,000. |
| Do. | | Jindal Steel & Power Ltd. | Chirodzi Mine in Tete Province | 3,000,000. |
| Do. | | Rio Tinto plc, 65%, and Tata Steel Ltd., 35% | Benga Mine near Tete | 2,400,000. |
| Do. | | Beacon Hill Resources plc (BHR) | Minas Moatize Mine near Tete[2] | 880,000. |
| Diatomite | | Diatomites de Moçambique Lda | Diana quarry near Manica | 4,800. |
| Gemstones: | | | | |
| Aquamarine | kilograms | Mozambique Gems Ltd. | Mine near Mavuco | 3,600.[e] |
| Garnet | do. | Sociedade Vision 2000 Lda | Cuamba Mine | 8,000.[3] |
| Morganite | do. | Noventa Ltd. | Mine at Marropino[2] | 5,000.[e] |
| Ruby | do. | Montepuez Ruby Mining (MRM) (Gemfields plc, 75%, and Mwiriti Lda., 25%) | Montepuez Mine in Cabo Delgado Province | 1,000.[e] |
| Do. | do. | Artisanal miners | Nacaca Mine in Cabo Delgado Province | NA. |
| Do. | do. | do. | M'sawize Mine in Niassa Province | NA. |
| Tourmaline | do. | do. | 13 kilometers northeast of Mavuco[2] | 2,600.[e] |
| Do. | do. | do. | 3 kilometers northeast of Mavuco[2] | NA. |
| Do. | do. | Mozambique Gems Ltd. | Mine near Mavuco | 1,200.[e] |
| Do. | do. | Miranda Gems Hong Kong Ltd. | do. | NA. |
| Gold | do. | Artisanal miners | Manica District | 600. |
| Lead, refined | | Gravita Moçambique Lda. (Gravita India Ltd., 100%) | Plant at Maputo | 3,800. |
| Marble, block | cubic meters | Marmonte Mozambique | Quarry at Pemba[2] | 1,500. |
| Natural gas | million cubic meters | Sasol Ltd., 70%, and Empresa Nacional de Hidrocarbonetos, E.P., 30% | Temane and Pande | 4,780. |
| Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate | | Noventa Ltd. | Mine at Marropino[2] | 270 $Ta_2O_5$. |
| Do. | | Pacific Wildcat Resources Ltd. | Mine at Muiane | 34 $Ta_2O_5$. |
| Steel, semimanufactured | | ArcelorMittal South Africa Ltd. | Trem de Varao plant at Maputo[2] | 35,000. |
| Titanium | | Kenmare Resources plc | Moma Mine in Nampula Province | 1,200,000 ilmenite; 21,000 rutile concentrate. |
| Zirconium | | do. | do. | 75,000 zircon concentrate. |

[e]Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.
[1]Abbreviations used in this table for commodities include the following: $Ta_2O_5$—tantalum pentoxide.
[2]Not operating at the end of 2013.
[3]Gem-quality only.