



2011 Minerals Yearbook

ZIMBABWE

THE MINERAL INDUSTRY OF ZIMBABWE

By Philip M. Mobbs

As estimated by the International Monetary Fund, Zimbabwe's real gross domestic product (GDP) increased by an estimated 9.4% in 2011 compared with that of 2010. The nominal GDP was estimated to be \$9.5 billion, of which the mining sector accounted for about 12%. Zimbabwe's diverse mineral output included about 7% of the world's diamond production (by volume), 5% of the world's platinum production, and about 4% of the world's palladium output (International Monetary Fund, 2012, p. 29, 42; Kimberley Process Certification Scheme, 2012; Loferski, 2012).

The Ministry of Mines and Mining Development manages the mineral sector in accordance with the Mines and Minerals Act (chapter 21:05); the Mining (General) Regulations, 1977; and their amendments. Mining operations also are regulated by sections of the Environmental Management Act of 2002 (chapter 20:27) and its 2007 amendment, the Explosive Act, the Forest Act, the Parks and Wildlife Act, the Public Health Act, and the Suppression of Money Laundering Act.

The Indigenisation and Economic Empowerment Act (Chapter 14:33) of 2007 requires that 51% ownership of businesses in Zimbabwe with a net asset value greater than \$500,000 be acquired by eligible Zimbabweans, who are defined as "any person who, before the 18th April, 1980, was disadvantaged by unfair discrimination on the grounds of his or her race, and any descendant of such person, and includes any company, association, syndicate or partnership of which indigenous Zimbabweans form the majority of the members or hold the controlling interest." The Indigenisation and Economic Empowerment (General) Regulations (statutory instrument 21 of 2010) became effective in early 2010. In March, the Ministry of Youth Development, Indigenisation and Empowerment published General Notice 114 of 2011—Indigenisation and Economic Empowerment (General) Regulations, 2011—which announced that businesses in the mining sector that had net assets valued at more than \$1.00¹ and that were less than 51% controlled by nonindigenous Zimbabweans had 45 days to submit indigenisation implementation plans to the Ministry for approval. General Notice 114 also required that every nonindigenous majority-owned mining business would achieve the minimum indigenization and empowerment quota (51% interest controlled by approved indigenous entities) by the divestment of shares or interest to designated entities by no later than September 25, 2011. Designated entities were defined as the National Indigenisation and Economic Empowerment Fund (NIEEF); the Zimbabwe Mining Development Corp. (ZMDC); any company or entity incorporated by NIEEF or ZMDC to accept nonindigenous company interest or shares; any statutory sovereign wealth fund that may be created; or

any employee share ownership scheme or trust (or community share ownership scheme or trust) that appropriately complies with the regulations. At yearend, the Government continued negotiations with a number of mining companies concerning their indigenization plans (Ministry of Youth Development, Indigenisation and Empowerment, 2011; Verma, 2011; Government of Zimbabwe, undated).

Minerals in the National Economy

Of the approximately 30 minerals and mineral-based commodities produced in Zimbabwe, diamond, gold, and platinum-group metals (PGMs) were the most economically significant. The value of Zimbabwe's total exports was estimated to be about \$4.5 billion in 2011, of which the value of PGMs accounted for 19%. Exports of gold accounted for about 13% of the value of exports; diamond accounted for 9%; and other minerals, about 4% (International Monetary Fund, 2012, p. 30, 42).

In accordance with the Minerals Marketing Corp. of Zimbabwe Act [as modified by the Minerals Marketing Corp. (Exemption) Regulations, 1983, and the Precious Stones Trade Act, 1978], state-owned Minerals Marketing Corp. of Zimbabwe (MMCZ) officially marketed much of the mineral production of Zimbabwe. Notable official exceptions were gold and PGMs. The Reserve Bank of Zimbabwe's monetary policy statement of February 2, 2009, authorizes organizations that hold appropriate permits to export gold. Mining companies, which produced PGM concentrates and smelter matte in Zimbabwe, directly shipped the PGM concentrates and matte to processing facilities in South Africa.

As part of the budget process, the Government proposed to increase mineral royalties. Effective in January 2012, the royalty on gold was to increase to 7% from 4.5%, and on platinum, to 10% from 5% (Commodity Online India Ltd., 2011; Nkala, 2012).

Production

In 2011, production of cement, chromite, clays, cobalt, coke, copper ore, gold, nickel ore, PGMs, and silver was estimated to have increased compared with that of 2010. Production volumes of ammonia, coal, and granite were estimated to have decreased compared with those of 2010. Few companies, however, were operating at full capacity owing in part to the continuing high credit costs and the ongoing uncertainty concerning the pace of the indigenization process in the mining sector (table 1; International Monetary Fund, 2012, p. 20).

Structure of the Mineral Industry

Domestic and international investment companies, domestic and international mining companies, Government-owned companies, mining cooperatives, multinational cement

¹In April 2009, Zimbabwe moved to a multicurrency monetary regime. Currency in use in Zimbabwe includes the Botswana pula, the European Union euro, the South African rand, the pound sterling of the United Kingdom, the United States dollar, and the Zambian kwacha.

companies, and small-scale miners managed mineral operations in Zimbabwe. State-owned companies involved in the mineral sector included MMCZ, ZMDC, and subsidiaries of state-owned Industrial Development Corp. of Zimbabwe Ltd., which produced industrial minerals and mineral-based commodities.

Commodity Review

Metals

Copper and Nickel.—RioZim Ltd. reported production of about 8,100 metric tons (t) of copper and nickel from the Empress refinery in 2011 compared with about 8,600 t in 2010. A prolonged suspension of smelter operations at BCL Ltd. of Botswana (where a planned 30-day maintenance period unexpectedly was extended from June until September) resulted in a reduced volume of imported copper-nickel matte that RioZim toll refined for Centametal AG of Switzerland. The lack of copper-nickel matte input culminated in the suspension of refining operations at the Empress refinery from August 28 until October 26, although the cobalt circuit continued to operate. RioZim also reported difficulties with its pressure swing adsorption plant in 2011, which caused the company to import oxygen gas from South Africa for refinery operations (McCammon, Pickering, and Bausinger, 2012, p. 4; RioZim Ltd., 2012, p. 9, 13, 68).

Bindura Nickel Corporation Ltd.'s nickel mines, smelter, and refinery remained on care-and-maintenance status in 2011. Bindura Nickel, which was a subsidiary of Mwana Africa PLC, continued to plan for the restart of mining operations at the Trojan Mine in the town of Bindura. Work continued on securing funding for the mining operation and on settling labor issues that remained from the suspension of mining operations in 2008. In February, Glencore International plc of Switzerland signed an agreement to purchase Bindura's nickel concentrate production, which was slated to reach about 7,000 t of nickel in concentrate in 2013 when the mine was expected to resume commercial operations. In 2011, about 4,400 t of ore and 1,300 t of waste were hoisted from the mine as part of the care-and-maintenance program (Mugowo, 2011a; Mwana Africa PLC, 2012, p. 8–9).

Iron and Steel and Iron Ore.—In October 2010, Essar Africa Holdings Ltd. of Mauritius, which was a subsidiary of Essar Group of India, was selected by the Government to be the new majority owner of Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco). In March, Essar Africa Holdings agreed to invest \$750 million in the project, which would include guaranteeing the repayment of the debt of Zisco (including domestic trade liabilities, foreign debt, and unpaid employee salaries and associated benefits) and to provide working capital for the steel operations. Essar Africa Holdings also agreed to restore the steel plant to a 500,000-t/yr production capacity initially and, within 3 years, to restore the steel plant's capacity to 1.2 Mt/yr. NewZim Steel Private Ltd. subsequently was established as a joint venture of Essar Africa Holdings (60% equity interest) and the Government (40% interest) to acquire and rehabilitate Zisco's steel facilities. NewZim Minerals Private Ltd. was established as a joint venture of Essar Africa Holdings (80% equity interest) and the Government

(20% interest) to acquire Buchwa Iron Mining Co. (BIMCO) from Zisco. The NewZim companies reportedly were exempt from the Government's indigenization program, which resulted in an ownership structure for NewZim Steel that was reported to be Essar Africa Holdings, 53.4% interest; Government, 35.6%; Louth Mineral South Africa, 3%; Tonexon Investments, 2.79%; Lancashire Steel (Private) Ltd. of Zimbabwe, 1.76%; Stewards & Lloyds, 1.76%; Franconian Investments 0.81%; Amzim Iron and Steel Ltd., 0.75%, and Zambia Copperbelt Investment, 0.13% (Essar Group, 2011a, b; Huni, 2011; Mugowo, 2011b).

Essar Africa Holdings' acquisition of Zisco and of BIMCO's resources remained controversial. BIMCO, which operated the Ripple Creek iron ore mine and a limestone mine, also held the undeveloped Mwanesi iron ore deposit. NewZim Minerals proposed to update the appraisal of the Mwanesi iron ore deposit, which had been estimated to have resources of 30 billion metric tons of jaspilite (taconite) ore with an average grade of 43% iron, and to evaluate beneficiation methods appropriate for the ore. Essar Africa Holdings proposed to finance the Government's 20% stake in NewZim Minerals. Also in 2011, Tagil Resources (Private) Ltd. of Zimbabwe and a subsidiary of ZimRNG Plc of the United Kingdom agreed to form a joint venture to explore the Mulungwane and Ntaba Ye Nyoka iron ore prospects in the Bulawayo area (Bartholomew, 1990, p. 66; Essar Group., 2011a; Makombe and Nyakezeyya, 2011).

Platinum-Group Metals.—The Ngezi Mine, which was operated by Zimplats Holdings Ltd. of Guernsey, produced about 4.5 million metric tons (Mt) of ore in 2011, which was an increase of 14% compared with the amount of ore produced in 2010. The increase was attributed to production from the Bimha Mine (also known as Portal 4). In 2011, the metal content of the smelter matte was 3,624 t of nickel, 2,653 t of copper, about 5.7 t of platinum, about 4.6 t of palladium, about 660 kilograms (kg) of gold, and about 520 kg of rhodium (Zimplats Holdings Ltd., 2011, 2012a, p. 21; 2012b).

The Bimha Mine reached design production capacity in May, which essentially completed the Ngezi phase I expansion program. In 2011, the Ngezi phase II expansion program was initiated. The phase II expansion program included the development of the 2-million-metric-ton-per-year (Mt/yr)-capacity Mupfuti (Portal 3) underground mine, which was projected to reach design capacity in March 2015; a new 2-Mt/yr-capacity concentrator, which was expected to be commissioned in 2013; and additional employee housing. As part of the ongoing exploration program, Zimplats had drilling programs underway at Portals 5E, 5W, 7, 8, 9, and 10. Additional development drilling was ongoing at the Bimha Mine (Zimplats Holdings Ltd., 2012a, p. 13).

The Mimosa Mine, which was operated by Mimosa Investments Ltd. of Mauritius, produced about 2.4 Mt of ore in 2011. Exported concentrated ore contained 3,058 t of nickel, 2,436 t of copper, 86 t of cobalt, about 3.3 t of platinum, about 2.6 t of palladium, about 450 kg of gold, and about 265 kg of rhodium (Aquarius Platinum Ltd., 2011, p. 13; 2012, p. 14).

In 2011, Unki Mines (Private) Ltd., which was a subsidiary of Anglo American Platinum Ltd. of South Africa, produced 1.28 Mt of ore and the mine's

120,000-metric-ton-per-month-capacity concentrator reached nameplate capacity. Concentrate was trucked about 500 kilometers (km) to the Polokwane smelter in South Africa. About 900 t of copper, 800 t of nickel, 1.6 t of platinum, about 1 t of palladium, 150 kg of gold, and 90 kg of rhodium were recovered from the concentrate (Anglo American Platinum Ltd., 2012, p. 94–95, 140).

In 2011, Unki's reserves were reported to be 38.7 Mt of ore that contained about 150 t of gold, palladium, platinum, and rhodium. Anglo projected that production operations at the Unki Mine would continue until 2038 at a rate of about 5 t/yr of precious metals (gold, palladium, platinum, and rhodium). A new resource estimate for the Helvetia, Paarl, and Unki South projects, which were located north and south of the Unki Mine, was expected to be released in 2012 (Anglo American Platinum Ltd., 2012, p. 96, 162, 189).

Industrial Minerals

Diamond.—Recovery of diamond from the Marange deposit in the Chiadzwa area of eastern Zimbabwe remained an international issue. In 2011, the Kimberley Process Certification Scheme's ban on exports of diamond from the Marange diamondfields was lifted. The ban had been imposed in 2009 because of concerns that included illicit trade of diamond, involvement of the military in mining and trading activities, and reported human rights abuses. Companies operating in the Marange diamondfields included Anjin Investments (Private) Ltd., which was a joint venture of Anhui Foreign Economic Construction Group of China and Matt Bronze (Private) Ltd.; Diamond Mining Corporation (Private) Ltd., which was a joint venture of Pure Diam of the United Arab Emirates and ZMDC; Marange Resources (Private) Ltd., which was a subsidiary of ZMDC; Mbada Mining (Private) Ltd., which was a subsidiary of the joint venture of Grandwell Holdings Ltd. of Mauritius (which was a subsidiary of New Reclamation Group Ltd. of South Africa), Marange Resources, and Transfrontier Mining Company Ltd. of Hong Kong; and Sino Zimbabwe Development (Private) Ltd. African Consolidated Resources plc of the United Kingdom continued discussions with the Government concerning the 2006 revocation of diamond exploration and mining rights for the Marange license by the Ministry of Mines and Mining Development (Australia's Paydirt, 2011; BBC News, 2011; African Consolidated Resources plc, 2012; Global Witness, 2012a, p. 4–5, 11–13; 2012b, p. 14).

In 2011, Murowa Diamonds (Private) Ltd., which was a subsidiary of Rio Tinto plc and RioZim Ltd., transitioned to a 24-hour-per-day mining operation from a 12-hour-per-day shift at the open pit Murowa Mine, which was located about 60 km from Zvishavane. Mined output increased to 2.278 Mt of material in 2011 from 1.646 Mt in 2010. In 2011, 473,000 t of ore was processed to recover 367,000 carats of diamond compared with 384,000 t of ore processed in 2010 from which 178,000 carats was recovered [Murowa Diamonds (Private) Ltd., 2012, p. 39–40].

Outlook

Zimbabwe has abundant mineral resources and a well-developed (but deteriorated) transportation system. Mineral sector activity is expected to continue to be limited by the ongoing political uncertainty; by the divestment of equity interest that is required by the Indigenization and Economic Empowerment Act, which is expected to constrain foreign investment in the Zimbabwe mining industry; and by the limited availability of domestically sourced funding. Shortages of electrical power, fuel, and skilled employees also are expected to continue to affect mineral sector operations adversely in the near term (Frost & Sullivan Ltd., 2011; International Monetary Fund, 2012, p. 20).

The potential exists for significant increases in diamond, gold, and PGM production, subject to the above constraints. Increased output of (or the resumption of the production of) other mineral commodities in Zimbabwe, such as chromite, ferrochrome, graphite, lithium, nickel ore, phosphate rock, and vermiculite, may take place with increased domestic and international demand. Decreases of international mineral commodity prices, however, pose a notable downside risk for the country's economy (International Monetary Fund, 2012, p. 4).

References Cited

- African Consolidated Resources plc, 2012, African Consolidated Resources plc—Preliminary results: African Consolidated Resources plc, August 29. (Accessed March 12, 2013, at <http://www.londonstockexchange.com/exchange/news/market-news/market-news-detail.html?announcementid=11312371>.)
- Anglo American Platinum Ltd., 2012, 2011 integrated annual report: Johannesburg, South Africa, Anglo American Platinum Ltd., 320 p. (Accessed October 11, 2012, at http://angloplatinum.investoreports.com/angloplatinum_iar_2011/downloads/angloplatinum_iar_2011.pdf.)
- Aquarius Platinum Ltd., 2011, Aquarius Platinum Limited—Production results to 30 June 2011: Hamilton, Bermuda, Aquarius Platinum Ltd., 19 p. (Accessed May 2, 2012, at http://aquariusplatinum.com/sites/aquariusplatinum.com/files/2012_01_31_AQP_Quarterly_Q2_2012_to_31_December_2011_updated.pdf.)
- Aquarius Platinum Ltd., 2012, Aquarius Platinum Limited—Production results to 31 December 2011: Hamilton, Bermuda, Aquarius Platinum Ltd., 20 p. (Accessed March 5, 2012, at http://aquariusplatinum.com/sites/aquariusplatinum.com/files/2012_01_31_AQP_Quarterly_Q2_2012_to_31_December_2011_updated.pdf.)
- Australia's Paydirt, 2011, US and EU clear Kimberley certified Zim diamonds: Australia's Paydirt, v. 1, issue 190, December 2011–January 2012, p. 78.
- Bartholomew, D.S., 1990, Base metal and industrial mineral deposits of Zimbabwe: Harare, Zimbabwe, Zimbabwe Geological Survey mineral resource series no. 22, 154 p.
- BBC News, 2011, Kimberley Process—Zimbabwe diamond exports approved: BBC News, November 2. (Accessed March 12, 2013, at <http://www.bbc.co.uk/news/world-afroca-15554609>.)
- Commodity Online India Ltd., 2011, Zimbabwe gold royalty now stands at 7%, platinum at 10%: BullionStreet, November 25. (Accessed October 18, 2012, at <http://www.bullionstreet.com/news/zimbabwe-gold-royalty-now-stands-at-7platinum-at-10/467>.)
- Essar Group, 2011a, Government of Zimbabwe and Essar Africa Holdings announce new steel and mining entity: Essar Group, August 3. (Accessed October 16, 2012 at http://www.essar.com/article.aspx?cont_id=LtvDtOSucc8=.)
- Essar Group, 2011b, Govt of Zimbabwe confirms agreement with Essar for revival of Zisco: Essar Group, December 16. (Accessed October 16, 2012, at http://www.essar.com/article.aspx?cont_id=544/BMc8P8Y=.)
- Frost & Sullivan Ltd., 2011, Trying times ahead for Zimbabwe's mining industry: Frost & Sullivan Ltd., April 11. (Accessed August 12, 2011, at <http://www.frost.com/prod/servlet/press-release.pag?Src=RSS&docid=229919403>.)

- Global Witness, 2012a, Diamonds—A good deal for Zimbabwe?: London, United Kingdom, Global Witness, February, 22 p.
- Global Witness, 2012b, Financing a parallel government?: London, United Kingdom, Global Witness, June, 33 p.
- Government of Zimbabwe, [undated], Chapter 14:33—Indigenisation and Economic Empowerment Act—Act 14/2007: National Association of Youth Organizations, 30 p. (Accessed October 19, 2012, at [http://www.nayoyouth.org/docs/Zimbabwe's Indigenisation and Empowerment-Act.pdf](http://www.nayoyouth.org/docs/Zimbabwe's%20Indigenisation%20and%20Empowerment-Act.pdf).)
- Huni, Munyaradzi, 2011, Storm brews over Zisco deal: The Herald [Harare, Zimbabwe], August 1. (Accessed October 16, 2012, at <http://allafrica.com/stories/201108011240.html>.)
- International Monetary Fund, 2012, Zimbabwe—2012 article IV consultation—Staff report: Washington DC, International Monetary Fund country report no. 12/279, September, 53 p.
- Kimberley Process Certification Scheme, 2012, Annual global summary—2011 production, imports, exports and KPC counts: Kimberley Process Certification Scheme, July 18, 1 p. (Accessed August 7, 2012, at https://kimberleyprocessstatistics.org/static/pdfs/public_statistics/2011/2011GlobalSummary.pdf.)
- Loferski, P.J., 2012, Platinum-group metals: U.S. Geological Survey Mineral Commodity Summaries 2012, p. 120–121.
- Makombe, Leonard, and Nyakezeyya, Paul, 2011, Zisco-Essar deal controversy deepens: The Zimbabwe Independent [Harare, Zimbabwe], January 13. (Accessed January 18, 2011, at <http://www.theindependent.co.zw/business/29495-zisco-essar-deal-controversy-deepens.html>.)
- McCammon, Rupert, Pickering, Dawn, and Bausinger, Mirabel, 2012, Botswana resource sector overview 2012/13: Capital Resources (Proprietary) Ltd., 45 p. (Accessed October 16, 2012, at http://www.capital.bw/resources/presentation2012/botswana_resource_sector_overview.pdf.)
- Ministry of Youth Development, Indigenisation and Empowerment, 2011, General Notice 114 of 2011—Indigenisation and Economic Empowerment (General) Regulations, 2011: Ministry of Youth Development, Indigenisation and Empowerment, March 25, 2011, 2 p. (Accessed October 18, 2012, at http://www.kubatana.net/docs/legisl/indig_econ_empowerment_gn11411_110325.pdf.)
- Mugowo, Munyaradzi, 2011a, Mwana Africa, BNC in dirty conspiracy: Financial Gazette [Harare, Zimbabwe], June 15. (Accessed May 16, 2012, at <http://www.financialgazette.co.zw/companies-a-markets/8663-mwana-africa-bnc-in-dirty-conspiracy.html>.)
- Mugowo, Munyaradzi, 2011b, New Zisco board to be named: The Herald [Harare, Zimbabwe], April 11. (Accessed October 16, 2012, at <http://allafrica.com/stories/2011040290240.html>.)
- Murowa Diamonds (Private) Ltd., 2012, Murowa—More than diamonds: Harare, Zimbabwe, Murowa Diamonds (Private) Ltd. sustainable development report 2011, 50 p.
- Mwana Africa PLC, 2012, Annual report 2012: London, United Kingdom, Mwana Africa PLC, 76 p.
- Nkala, Oscar, 2012, Accounting firm warns exorbitant taxes drive mining companies out: Zimbabwe Mail [Harare, Zimbabwe], May 31. (Accessed October 18, 2012, at <http://www.thezimbabwemail.com/business/12005-accounting-firm-warns-exorbitant-taxes-drive-mining-companies-ou.html>.)
- RioZim Ltd., 2012, Annual report 2011: Harare, Zimbabwe, RioZim Ltd., 72 p.
- Verma, Sid, 2011, Zimbabwe indigenisation law imperils global platinum/palladium supply: FT Tilt, March 28. (Accessed October 19, 2012, at <http://tilt.ft.com/#!/posts/2011-03/16686/zimbabwe-indigenisation-law-imperils-global-platinum-palladium-supply-2>.)
- Zimplats Holdings Ltd., 2011, Report for the quarter ended 30 June 2011: Guernsey, Channel Islands [United Kingdom], Zimplats Holdings Ltd., 4 p. (Accessed October 31, 2011, at <http://www.zimplats.com/pdf/QtrJun11.pdf>.)
- Zimplats Holdings Ltd., 2012a, Integrated report 2012: Guernsey, Channel Islands [United Kingdom], Zimplats Holdings Ltd., 132 p. (Accessed October 11, 2012, at <http://www.zimplats.com/pdf/1147253.pdf>.)
- Zimplats Holdings Ltd., 2012b, Report for the quarter ended 31 December 2011: Guernsey, Channel Islands [United Kingdom], Zimplats Holdings Ltd., 4 p. (Accessed May 2, 2012, at <http://www.zimplats.com/pdf/QtrDec11.pdf>.)

TABLE 1
ZIMBABWE: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2007	2008	2009	2010	2011
METALS					
Chromite, gross weight	614,559 ⁴	442,584 ⁴	193,673 ⁴	510,000	599,079 ⁴
Cobalt, metal content ⁵	101 ^r	85 ^r	74 ^r	79 ^r	86
Copper:					
Mine output, concentrate, Cu content	2,681 ⁴	2,827 ⁴	3,572 ⁴	4,700	6,000
Metal, refinery output, refined/cathode, primary	6,798 ⁴	3,072 ⁴	4,000	4,545 ⁴	4,355 ⁴
Gold kilograms	6,750 ⁴	3,579 ⁴	4,965 ⁴	9,100	12,824 ⁴
Iron and steel:					
Mine output, iron ore:					
Gross weight thousand metric tons	79 ⁴	3 ⁴	--	--	--
Fe content do.	55	1 ⁴	--	--	--
Metal:					
Steel, crude do.	23	10	14	14	15
Ferroalloys:					
Ferrochromium	187,327 ⁴	145,430 ⁴	72,223 ⁴	146,000	150,000
Ferrosilicon chromium	3,100	1,600	600	1,000	1,000
Nickel:					
Mine output, concentrate, Ni content	8,582 ⁴	6,354 ⁴	4,858 ⁴	6,200	7,992 ⁴
Refinery output, refined metal:					
Refined from domestic materials	4,500	3,400	--	--	--
Toll refined from imported materials ⁶	9,500	10,300	5,000	4,039 ³	3,715 ⁴
Total	14,000	13,700	5,000	4,039 ³	3,715 ⁴

See footnotes at end of table.

TABLE 1—Continued
ZIMBABWE: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2007	2008	2009	2010	2011
Platinum-group metals:					
Iridium kilograms	149 ⁴	151 ⁴	209 ⁴	220 ^r	220
Palladium do.	4,180 ⁴	4,386 ⁴	5,680	7,000	8,241 ⁴
Platinum do.	5,306 ⁴	5,642 ⁴	6,849 ⁴	8,800	10,826 ⁴
Rhodium do.	810	860	900 ^r	900 ^r	900
Ruthenium do.	600	630	650 ^r	700 ^r	700
Total do.	11,000 ⁴	11,700 ⁴	14,300 ^r	17,600 ^r	20,900
Silver do.	250	150	200	400	550
INDUSTRIAL MINERALS					
Asbestos	84,520 ⁴	11,489 ⁴	4,971 ⁴	2,400	--
Cement, hydraulic thousand metric tons	400	400	700	800	1,000
Clays	600	600	600	600	700
Diamond:					
Gem carats	600,000	700,000	900,000	NA	NA
Industrial do.	100,000	100,000	100,000	NA	NA
Total ⁴ do.	695,015	797,198	963,502	8,435,244	8,502,648
Graphite	5,418 ⁴	5,134 ⁴	2,463 ⁴	5,000	5,000
Lithium minerals, gross weight	50,000	50,000	50,000	47,000 ^{r,4}	48,000 ⁴
Magnesite	1,814 ⁴	2,549 ⁴	449 ⁴	--	--
Mica	200,000	150,000	1,000	1,000	1,000
Nitrogen, N content of ammonia	37,000	20,000	14,000	29,000	26,000
Perlite	3,000	3,000	3,000	1,000	1,000
Phosphate rock, marketable concentrate	46,106 ⁴	21,051 ⁴	20,000	63,000	60,000
Stone, sand and gravel:					
Granite, black	1,000	1,000	500	700	500
Limestone thousand metric tons	50	50	40	50	50
Sulfur:					
Pyrite:					
Gross weight	19,812 ⁴	30,308 ⁴	-- ⁴	-- ⁴	--
S content (32.6%)	6,500 ⁴	9,900 ⁴	--	--	--
Byproduct acid, metallurgical and coal process gas, S content	1,000	1,000	1,000	1,000	1,000
Total	7,500	10,900	1,000	1,000	1,000
Talc	200	200	200	--	--
Vermiculite	17,395 ⁴	16,123 ⁴	3,211 ⁴	--	--
MINERAL FUELS AND RELATED MATERIALS					
Coal, bituminous thousand metric tons	2,080 ⁴	1,947 ⁴	1,750	2,660 ^{r,4}	2,560 ⁴
Coke, including metallurgical do.	400	112 ⁴	43 ⁴	180 ^r	240

^rRevised. do. Ditto. NA Not available. -- Zero.

¹Estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Table includes data available through October 12, 2012.

³In addition to the commodities listed, secondary aluminum; corundum; feldspar; such gemstones as amethyst, aquamarine, emerald, iolite, and tourmaline; kaolin; kyanite; secondary lead; and ores of antimony, tantalum, tin, and tungsten may be produced, but information is inadequate to estimate output.

⁴Reported figure.

⁵Metal includes metal content of compounds and salts and may include cobalt recovered by BSR Ltd. from nickel-copper matte imported for toll refining. Does not include cobalt compounds recovered from the Ngezi Mine or cobalt sulfate recovered from the Unki Mines.

⁶Toll-refined data include part of the output from the Bindura refinery and all the production from the Empress refinery, which processes imported nickel matte from Botswana.

TABLE 2
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Asbestos	African Associated Mines (Private) Ltd.	Shabanie Mine, Zvishavane	2,400,000 ¹
Do.	do.	Gaths Mine, Mashava	1,400,000 ¹
Cement:			
Clinker	Portland Holdings Ltd. [Pretoria Portland Cement Company Ltd. (PPC)]	Colleen Bawn, about 115 kilometers southeast of Bulawayo	1,000,000
Portland	Lafarge Cement Zimbabwe Ltd. (Lafarge, S.A.)	Harare	450,000
Do.	Portland Holdings Ltd. [Pretoria Portland Cement Company Ltd. (PPC)]	Bulawayo	800,000
Do.	Sino-Zimbabwe Cement Company Ltd. (China Building Material Industrial Corporation for Foreign Econo-Technical Cooperation and Zimbabwe Industrial Development Corp.)	Gweru	300,000
Chromite	Local cooperatives	Mines on the southern Great Dyke	340,000
Do.	do.	Mines on the northern Great Dyke	230,000
Do.	Zimbabwe Alloys Ltd. (Zim Alloys)	Inyala Mine	60,000
Do.	Zimbabwe Mining and Smelting Co. (Private) Ltd. (Zimasco) [Zimasco Consolidated Enterprises Ltd. (ZCE)]	Peak Mine, Railway Block Mine, and Ironton Mine near Shurugwi; Rhodesdale Mine at Lalapanzi	120,000
Coal	Hwange Colliery Company Ltd. [Government, 37.07%; Messina Investments Ltd., 15.08%; Mittal Steel African Investments, 9.76%; London Register, 6.87%; National Social Security Authority, 6.16%]	3 Main underground mine, the Chaba open pit mine, and the JKL open pit mine, Hwange	5,000,000
Do.	Sengwa Colliery (Private) Ltd. (RioZim Ltd.)	Sengwa Colliery, about 200 kilometers northeast of Kadoma	5,000,000 ¹
Do.	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Chiredzi, about 130 kilometers southeast of Masvingo	1,200,000
Do.	Tulicoal (Private) Ltd. [Senzile Mining (Private) Ltd.]	do.	1,200,000
Cobalt:			
Ore, cobalt content	Bindura Nickel Corporation Ltd. (Mwana Africa PLC)	Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	800 ¹
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., Impala Platinum Holdings Ltd., Zvishavane Community Share Ownership)	Mimosa Mine, east of Zvishavane	86
Do.	Unki Mines (Private) Ltd. (Anglo Platinum Ltd.)	Unki Mine, southeast of Shurugwi	NA
Do.	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)	Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	NA
Hydroxide	BSR Ltd. (Bindura Nickel Corporation Ltd., 100%)	Bindura	700 ¹
Coke	Hwange Coal Gasification Co.	Hwange	144,000
Do.	Hwange Colliery Company Ltd. [Government, 37.07%; Messina Investments Ltd., 15.08%; Mittal Steel African Investments, 9.76%; London Register, 6.87%; National Social Security Authority, 6.16%]	Hwange	100,000

See footnotes at end of table.

TABLE 2—Continued
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
Copper:				
Ore, copper content	Bindura Nickel Corporation Ltd. (Mwana Africa PLC)		Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	1,600 ¹
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., Impala Platinum Holdings Ltd., Zvishavane Community Share Ownership)		Mimosa Mine, east of Zvishavane	3,000
Do.	Unki Mines (Private) Ltd. (Anglo Platinum Ltd.)		Unki Mine, southeast of Shurugwi	1,000
Do.	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)		Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	3,000
Refined	Empress Nickel Refinery (RioZim Ltd.)		Eiffle Flats, near Kadoma	6,000
Diamond	carats	Anjin Investments (Private) Ltd. [joint venture of Anhui Foreign Economic Construction Group and Matt Bronze (Private) Ltd.]	Marange deposit in the Chiadzwe area	NA ^{2,3}
Do.	do.	Diamond Mining Corporation (Private) Ltd. [joint venture of Pure Diam and Zimbabwe Mining Development Corp. (ZMDC)]	do.	NA ^{2,3}
Do.	do.	Marange Resources (Private) Ltd. [Zimbabwe Mining Development Corp. (ZMDC)]	do.	NA ^{2,3}
Do.	do.	Mbada Mining (Private) Ltd. [Grandwell Holdings Ltd., Marange Resources (Private) Ltd., and Transfrontier Mining Company Ltd.]	do.	NA ^{2,3}
Do.	do.	Murowa Diamonds (Private) Ltd. (Rio Tinto plc and RioZim Ltd.)	Murowa Mine, near Zvishavane	367,000
Do.	do.	River Ranch Ltd.	River Ranch Mine, near Beitbridge	NA ²
Do.	do.	Sino Zimbabwe Development (Private) Ltd.	Marange deposit in the Chiadzwe area	NA ^{2,3}
Gold	kilograms	DTZ-OZGEO (Private) Ltd. (Joint venture of Development Trust of Zimbabwe and JSC Zarubezhgeologia)	Placer mining operations at Penhalonga, about 15 kilometres northwest of Mutare	NA
Do.	do.	Duration Gold Ltd. (Clarity Capital Group)	Vubachikwe Mine, near Gwanda	NA
Do.	do.	do.	Athens Mine, Mvuma	NA
Do.	do.	do.	Gaika Mine, Kwe Kwe	NA
Do.	do.	do.	Sunace Mine, about 31 kilometers north of Bulawayo	NA
Do.	do.	Falcon Gold Zimbabwe Ltd. (New Dawn Mining Corp.)	Golden Quarry Mine, about 7 kilometers north of Shurugwi	NA
Do.	do.	do.	Dalny Complex, about 33 kilometers northwest of Chegutu	NA
Do.	do.	Homestake Mining and Technical Services (Private) Ltd. (Biometallurgical Corp.)	Bell Riverlea Mine (reprocessing tailings), about 9 kilometers west of Kwe Kwe	NA
Do.	do.	do.	Chaka Mine, Kwe Kwe	NA
Do.	do.	do.	Monti Christo Mine, about 9 kilometers northwest of Kwe Kwe	NA
Do.	do.	do.	Primrose Mine, Kwe Kwe	NA
Do.	do.	Metallon Gold (Metallion Corp.)	How Mine, about 24 kilometers southeast of Bulawayo	NA
Do.	do.	do.	Shamva Mine, Shamva	NA
Do.	do.	Mwana Africa PLC	Freda Rebecca Mine, Bindura	2,000
Do.	do.	New Dawn Mining Corp.	Turk-Angelus Mine, 56 kilometers northeast of Bulawayo	500
Do.	do.	do.	Old Nic Mine, Bulawayo	100
Do.	do.	RioZim Ltd.	Renco Mine, 75 kilometers south-southeast of Masvingo	1,000

See footnotes at end of table.

TABLE 2—Continued
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel:			
Ferroalloys, ferrochromium	CINA	Smelter at Gweru	5,000 ^e
Do.	Jin An Corp. and Xin Yu Mining Corp.	do.	5,000 ^e
Do.	Maranatha Ferrochrome (Private) Ltd.	Smelter at Eiffel Flats	30,000
Do.	MonaChrome	Smelter at Chegutu	5,000 ^e
Do.	Olliken Ferro Alloys (Private) Ltd.	Smelter at Kwekwe	25,000
Do.	Wel Mining	Smelter at Gweru	5,000 ^e
Do.	Zimbabwe Alloys Ltd. (Zim Alloys)	do.	45,000
Do.	Zimbabwe Mining and Smelting Co. (Private) Ltd. (Zimasco) [Zimasco Consolidated Enterprises Ltd. (ZCE)]	Smelter at Kwekwe	180,000
Iron:			
Iron ore, gross weight	NewZim Minerals Private Ltd. (Essar Africa Holdings Ltd., 80%, and Government, 20%)	Ripple Creek Mine, near Redcliff	600,000
Sponge iron	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Masvingo	54,000
Steel:			
Crude steel	NewZim Steel Private Ltd. (Essar Africa Holdings Ltd., 53.4%, and Government, 35.6%)	Blast furnace at Redcliff, near Gweru	72,000 ^{1,4}
Do.	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Electric arc furnace at Redcliff	15,000
Rolled steel	Lancashire Steel (Private) Ltd. [Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco)]	Wire rod mill at Kwekwe	120,000
Do.	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Rolling mill at Redcliff	36,000
Lithium	Bikita Minerals (Private) Ltd.	Bikita Mine, 60 kilometers east of Masvingo	33,000
Nickel:			
Ore	Bindura Nickel Corporation Ltd. (Mwana Africa PLC)	Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	80,000 ¹
Ore, Ni content	Mimosa Investments Ltd. (Aquarius Platinum Ltd., Impala Platinum Holdings Ltd., Zvishavane Community Share Ownership)	Mimosa Mine, east of Zvishavane	3,000
Do.	Unki Mines (Private) Ltd. (Anglo Platinum Ltd.)	Unki Mine, southeast of Shurugwi	1,000
Do.	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)	Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	4,000
Refined metal	BSR Ltd. (Bindura Nickel Corporation Ltd., 100%)	Bindura	15,600 ¹
Do.	Empress Nickel Refinery (RioZim Ltd.)	Eiffle Flats, near Kadoma	9,000
Nitrogen (ammonium nitrate)	Sable Chemical Industries Ltd. [TA Holdings Ltd., Chemplex Corporation Ltd., Yara Zimbabwe (Private) Ltd.]	Electrolysis plant north of Kwekwe	240,000
Phosphate	Dorowa Minerals (Private) Ltd. (Chemplex Corporation Ltd.)	Dorowa Mine, 90 kilometers west of Mutare	155,000
Platinum-group metals:			
Ore	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)	Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	2,200,000
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., Impala Platinum Holdings Ltd., Zvishavane Community Share Ownership)	Mimosa Mine, east of Zvishavane	1,800,000
Do.	Unki Mines (Private) Ltd. (Anglo American Platinum Ltd.)	Unki Mine, southeast of Shurugwi	1,440,000
Concentrate	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)	Selous concentrator	2,180,000
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., and Impala Platinum Holdings Ltd.)	Mimosa concentrator, east of Zvishavane	1,900,000
Smelter matte	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd.)	Selous smelter	72,000

See footnotes at end of table.

TABLE 2—Continued
 ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Pyrite	Iron Duke Pyrites (Chemplex Corporation Ltd.)	Iron Duke Mine	NA
Vermiculite	Shawa Vermiculite (Private) Ltd.	Shawa Mine, near Dorowa	39,000
Do.	Dinidza Vermiculite Mining Co. (Private) Ltd.	Dinidza Mine, near Dorowa	10,000

⁶Estimated. Do., do. Ditto. NA Not available.

¹Operations suspended.

²Ownership disputed.

³Under development or redevelopment.

⁴Nominal capacity 1,000,000 metric tons per year. Blast furnaces awaiting refurbishment.