



# 2015 Minerals Yearbook

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**ANGOLA AND NAMIBIA [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRIES OF ANGOLA AND NAMIBIA

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## ANGOLA

Angola's mineral sector, in particular the diamond and petroleum industries, remained a significant contributor to the country's economy in 2015. Angola was Africa's second-ranked petroleum producer after Nigeria, accounting for about 22% of Africa's total petroleum output in 2015 and 2% of total world petroleum output. In 2015, the country's petroleum reserves were estimated to be 12.7 billion barrels, which represented 9.8% of Africa's total proven petroleum reserves. The country also accounted for 7% of the world's total rough diamond output and about 9% of the world's total diamond production, by value. Diamond mining in the country was both from primary (kimberlite) and secondary (alluvial) deposits located in the Provinces of Lunda Norte and Lunda Sul. Other mineral commodities produced in the country included cement, granite, gravel, gypsum, fuller's earth, lime, limestone, marble, quartz, salt, sand, and crushed stone. Clinker and liquefied petroleum gas were also produced, and gold may have been produced at an artisanal or small-scale level, but available information was inadequate to make reliable estimates of output (tables 1, 2; BP p.l.c., 2016, p. 6, 8; Kimberley Process Rough Diamond Statistics, 2016).

### Minerals in the National Economy

Angola's economy depends heavily on crude petroleum production. Production of crude petroleum in 2015 increased by about 7%; however, lower international oil prices resulted in a decrease of the country's oil revenues and exports. The International Monetary Fund (IMF) reported that the country's real gross domestic product (GDP) increased by 3% in 2015 compared with an increase of 4.8% in 2014. Preliminary data reported by the IMF indicated that, in 2015, Government revenues decreased by about 24% compared with those of 2014; petroleum accounted for about 90% of these revenues. The nonfuel mineral sector is regulated by Mining Law No. 31/11 of September 23, 2011, and the mineral fuels sector by law No. 11/2004 of November 12, 2004 (table 1; International Monetary Fund, 2017, p. 28, 29).

### Production

In 2015, production of most mineral commodities, with the exception of diamond, granite, and petroleum, was estimated. Salt output increased by an estimated 25% to 50,000 metric tons (t) and cement output increased by an estimated 10% to 5.5 million metric tons (Mt). Gold was reportedly mined by artisanal miners in Cabinda Province; however, available information was inadequate to make reliable estimates of output. Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Government, through Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), held a majority interest in most diamond-mining operations in the country. The Government's interest in other nonfuel and fuel mineral mining ventures varied from one operation to another. Table 2 is a list of major mineral industry facilities.

### Mineral Trade

According to IMF preliminary data, in 2015, the total value of Angola's exports was \$33.2 billion compared with \$59.2 billion in 2014, of which the petroleum sector accounted for about 95%, and the diamond sector, about 3%. Angola's exports to the United States were valued at \$2.8 billion in 2015 compared with \$5.7 billion in 2014. About 97% of these exports were crude petroleum and fuel oil, which were valued at \$2.5 billion and \$219 million, respectively. Other exports to the United States included gem-quality diamond valued at \$66 million and petroleum products valued at \$3.1 million. Imports from the United States were valued at \$1.2 billion; these included nearly \$268 million in drilling and oilfield equipment, about \$33 million in iron and steel products, about \$10 million in excavating machinery, nearly \$3 million in iron and steel mill products, and about \$1 million in petroleum products (U.S. Census Bureau, 2016a, b; International Monetary Fund, 2017, p. 33).

### Commodity Review

#### *Industrial Minerals*

**Diamond.**—Rough diamond production as reported by the Kimberley Process Certification Scheme (KPCS) increased by nearly 3% to 9.0 million carats in 2015 from 8.8 million carats in 2014, and the value of Angola's diamond decreased by 13% to nearly \$131 per carat from about \$150 per carat in 2014. Sociedade Mineira Do Lulo, which was owned by Lucapa Diamond Co. Ltd. of Australia (40% share) in joint venture with ENDIAMA (32%) and Rosas e Petalas S.A. (28%), began alluvial mining operations at the Lulo diamond project in January. The project is located 150 kilometers (km) east of Luanda, Lunda Norte Province, and about 150 km from the Catoca Mine, which was Angola's leading diamond-producing mine. During the year, Lulo produced 8,394 carats. The joint venture expected to ramp up production in 2016 and to provide an updated Joint Ore Reserves Committee (JORC)-compliant estimate of inferred diamond resources for Lulo in 2017. The joint venture also planned to continue with its Lulo kimberlite exploration program in 2016 (table 2; Kimberley Process Rough Diamond Statistics, 2015, 2016; Lucapa Diamond Co. Ltd., 2016, p. 3–6; 2017a, p. 6; 2017b, p. 7).

South Africa-based Trans Hex Group Ltd. was the operator and held 33% interest in the Somilwana Mine,

which is located about 1,000 km northeast of Luanda in Lunda Norte Province. For the fiscal year from April 1, 2014, to March 31, 2015, diamond production at Somiluana increased by 31% to 94,483 carats compared with 72,041 carats during the fiscal year from April 1, 2013, to March 31, 2014. The company attributed the increase in production to a 17% increase in the average grade and about a 12% increase in the amount of gravel treated. During the year, the company commissioned its third washing plant and continued with geologic studies to assess the expansion of operations into more distant areas of the concession. The Somiluana Mine was a joint venture among ENDIAMA, which owned 39% interest, Trans Hex, 33%, and domestic private investors, 28% (Trans Hex Group Ltd., 2016, p. 7, 22–23, 29, 73).

In October, ENDIAMA, in joint venture with ALROSA S.A. of Russia, announced the discovery of the Luaxe kimberlite deposit, which is located in Lunda Sul Province. The joint-venture partners planned to invest about \$1.5 billion to develop a mine. Once in full operation, the mine was expected to create more than 2,000 jobs. The joint venture also announced that an exploration program at Luaxe was expected to be completed between late 2017 and early 2018. The Luaxe Mine would have the capacity to produce more than 8 million carats per year (Empresa Nacional de Diamantes de Angola E.P., 2015).

**Phosphate Rock.**—Minbos Resources Ltd. of Australia (50%) in joint venture with Angola-based Petrill Phosphates Ltd. (50%) continued with plans to develop the Cabinda phosphate project, which included the Cacata development project and five advanced exploration projects (the Cambota, the Chibueté, the Chivovo, the Mongo Tando, and the Ueca deposits). In 2015, Minbos Resources reported that the Ministry of Mines and Geology had issued two new licenses for the project (one for the Cacata deposit and one for the Cambota, the Chibueté, the Chivovo, the Mongo Tando, and the Ueca deposits). Both licenses were issued for a period of 5 years and were renewable for an additional 2 years. As of December 31, total measured, indicated, and inferred mineral resources at the Cacata, the Chibueté, the Chivovo, and the Mongo Tando deposits were reported to be 391.3 Mt at an average grade of 9.2%  $P_2O_5$ . The first of the deposits to be developed would be Cacata, which had measured mineral resources of 5 Mt at an average grade of 23%  $P_2O_5$ , indicated resources of 10.2 Mt at an average grade of 25.3%  $P_2O_5$ , and inferred resources of 11.8 Mt at an average grade of 8.8%  $P_2O_5$ . The joint venture planned to proceed with a bankable feasibility study on the Cabinda project in 2016 (Minbos Resources Ltd., 2016, p. 4–6).

### **Mineral Fuels**

**Natural Gas and Petroleum.**—Chevron Corp. of the United States held 36.4% interest in Angola LNG Ltd., which processed and liquefied natural gas. Angola LNG operated the 5.2-million-metric-ton-per-year (Mt/yr) liquefied natural gas plant located in the coastal city of Soyo. Chevron reported that the plant would be the world's first liquefied natural gas (LNG) plant supplied with associated gas (that is, natural gas produced as a byproduct of crude petroleum production). The plant would have the capacity to process 31 million cubic meters per day of natural gas with expected average total daily sales of 19 million

cubic meters of natural gas and up to 63,000 barrels of natural gas liquids. The company expected to complete modifications and capacity and reliability enhancements at the plant in early 2016 and its first LNG cargo in the second quarter of 2016.

Chevron also held 38.1% interest in the Congo River Canyon Crossing Pipeline, which was a 140-km-long offshore pipeline to be routed beneath a submarine canyon formed by the Congo River and designed to transport up to 250 million cubic feet per day of natural gas from Block 0 and 14 to the ALNG plant. Block 0 (Chevron, 39.2%) was adjacent to the Cabinda coastline and Block 14 (Chevron, 31%) was located west of Block 0. During the year, the two blocks produced an average of 110,000 barrels per day (bbl/d) of natural gas liquids and about 1.6 million cubic meters of natural gas. Chevron completed the drilling of the well intersection and the installation of the pipeline in mid-2015 and planned the startup of the pipeline in 2016 (Chevron Corp., 2016, p. 12, 20).

In November, Chevron began oil and gas operations at the Lianzi Unitization Zone (Lianzi field), located in an area shared equally by Angola and the Republic of Congo [Congo (Brazzaville)]. Chevron was the operator and held 31% interest in the Lianzi field. The Lianzi field, which included four producing wells and three water-injection wells, would transport crude petroleum from the field to the Benguela-Belize and Lobito-Tomboco platforms at Block 14 and was expected to produce an average of 40,000 bbl/d of crude petroleum. The Lianzi field was jointly owned by a consortium of companies that included Total S.A. of France, 26.75%; Angola Block 14 B.V., 10%; Eni S.p.A. of Italy, 10%; Sociedade Nacional de Combustíveis de Angola, E.P. (Sonangol), 10%; Société Nationale des Pétroles du Congo (SNPC) of Congo (Brazzaville), 7.5%; and Galp Energia, SGPS, S.A. of Portugal, 4.5% (Chevron Corp., 2015, 2017).

Chevron also continued with the development of the Mafumeira Sul project, which included a central processing facility, two wellhead platforms, about 121 km of subsea pipelines, 34 producing wells, and 16 water injection wells. The project was located about 24 km offshore Cabinda Province in 60 meters (m) of water. The Mafumeira Sul would have the capacity to produce about 150,000 bbl/d of crude petroleum and 10,000 bbl/d of natural gas. The project was expected to be commissioned in 2016 and to ramp up to full production by 2018. Total recoverable oil-equivalent resources were reported to be 300 million barrels. Cabinda Gulf Oil Co. (a subsidiary of Chevron), would be the operator and hold a 39.2% interest in the project in partnership with Sonangol, 41%; Total, 10%; and Eni, 9.8% (Chevron Corp., 2013; 2016, p. 11–12, 20).

### **Outlook**

Angola's economy will continue to be largely dependent on revenues from the petroleum industry. According to the IMF, the country's economy is not expected to grow in 2016, mostly as a result of the low international petroleum prices. Oil production is expected to increase slightly in 2016, and exports are expected to decrease by 18%. Angola has the potential to offset or partially counterbalance any future loss of revenue caused by a decrease in petroleum prices by investing in the development of its nonfuel minerals sector. To attract foreign direct investment

to develop copper, iron ore, lead, manganese, nickel, phosphate rock, tungsten, uranium, vanadium, and zinc resources, the country is likely to continue to invest in improving its electrical capacity and its aging roads (International Monetary Fund, 2017, p. 3, 28, 33).

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## NAMIBIA

In 2015, the diamond sector continued to be a significant contributor to Namibia's economy. The country ranked second after Lesotho in terms of the average value of diamond production in dollars per carat (\$591), fifth after South Africa in terms of the total value of rough diamond production (\$1.2 billion), and ninth in terms of rough diamond production by weight (carats). Total diamond exports were valued at about \$1.1 billion (about 2.0 million carats of diamond) in 2015 (Kimberley Process Rough Diamond Statistics, 2016).

According to the World Nuclear Association, the country had two significant uranium mines capable of providing 10% of the world's mining output of uranium, and the Langer Heinrich Mine was one of the largest producing uranium mines in the world in terms of output. Metals produced in the country included arsenic, copper, gold, lead, manganese, silver, and zinc. In addition to diamond, industrial minerals produced included cement, fluorspar, and salt (table 1; World Nuclear Association, 2017).

## Minerals in the National Economy

Mining in Namibia is regulated by the Minerals (Prospecting and Mining) Act 33 of 1992. In 2015, the country's GDP decreased by 5.3% compared with an increase of 6.5% in 2014. Mining and quarrying accounted for 9% of the country's GDP; about 60% of this amount was from diamond mining and about 12% was from uranium mining. During the year, mining and quarrying decreased by 0.3% in real value added compared with a decrease of 6.2% in 2014, which was mostly attributed to a 18.1% decrease in the real value added for uranium; a 13.4% decrease in the real value added for all other mining and quarrying (excluding diamond, metals, and uranium); and a 3.4% decrease in the real value added for diamond. The value added of the metals sector increased by 60% in 2015 compared with 0.6% in 2014. The increase was attributed to the increase in gold and copper production during the year (Namibia Statistics Agency, 2016a, p. 14, 21–22).

According to the Namibia Statistics Agency, the decrease in the value added of the uranium industry was attributed to the weak international demand for nuclear power and the decrease in the value added of the diamond industry was attributed to the low quantity produced in 2015. During the year, the country's cutting and polishing industry was affected by the decrease in diamond prices and production costs. Only 4 of 13 cutting and polishing companies were in operation in the country in 2015. In 2015, cut and polished diamond exports (at constant prices) decreased by 47% compared with those of 2014 and by 56% compared with those of 2013. The Namibian Diamond Trading Co., which was a joint venture between the Government and De Beers Group (50% each), sorted and valued all Namdeb Holdings' production and made diamonds available for the domestic cutting and polishing industry in Namibia (Kaira, 2015b; Namibia Statistics Agency, 2016a, p. 14, 31).

The total number of people employed in the mineral sector in 2015, including temporary employees and full-time contractors, was 19,000 compared with 17,770 in 2014. About 21% of the 8,259 people permanently employed in the sector worked for Namdeb Diamond Corp. (Pty) Ltd. (Namdeb), about 12% for

Rössing Uranium Ltd., 10% for Skorpion Mining Co. (Pty.) Ltd. and Namzinc (Pty.) Ltd., and 9% for De Beers Marine Namibia (Pty) Ltd. (Debmarine) (Chamber of Mines of Namibia, 2016, p. 15, 112–113).

## Production

In 2015, gold production increased by 213% to 6,069 kilograms (kg) from 1,938 kg in 2014, which was attributed to the commissioning and rampup of production at the Otjikoto Mine. Copper (Cu content of mine production) increased to 10,659 t in 2015 from 5,249 t in 2014, or by 103%, owing to the rampup at the Otjikoto and the Tschudi Mines. In 2015, zinc production decreased by 28%, and that of refined zinc, by 38%; the decrease was attributed to the processing of lower grade zinc ore from the Skorpion Mine. Silver output decreased by an estimated 18% to 900 kg from 1,100 kg. Lead production decreased by 17% owing to the mining of low ore grades at the Rosh Pinah Mine. Production of manganese decreased by 59%; however, information about the reasons for the decrease was not available (table 1; Chamber of Mines of Namibia, 2016, p. 13).

## Structure of the Mineral Industry

The majority of the mining operations in Namibia were privately owned. Diamond in Namibia was produced onshore and offshore by Namdeb and offshore by Debmarine. Namdeb and Debmarine were subsidiaries of Namdeb Holdings, which was 50% owned by De Beers Group and 50% by the Government of Namibia. Up until 2009, diamond had also been produced offshore by Sakawe Mining Corp. (Samicor), but operations were put on hold in 2009 following the global financial crisis. Samicor was expecting to resume its mining operations in 2016. During the year, uranium was produced at the Langer Heinrich and the Rössing Mines, which are located about 80 km east of Walvis Bay and 65 km northeast of Swakopmund, respectively. The Langer Heinrich Mine was operated by Langer Heinrich Uranium (Pty) Ltd., which was a joint venture of Paladin Energy Ltd. of Australia (75%) and CNNC Overseas Uranium Holdings Ltd. of China (25%). The Rössing Mine was operated by Rössing Uranium, which was majority owned by Rio Tinto Group (69%), Iranian Foreign Investment Company (15%), Industrial Development Corp. of South Africa (10%), the Government of Namibia (3%), and 13 minority shareholders (3%). Manganese in Namibia was produced at the Otjozondju Mine by privately owned Purity Manganese (Pty) Ltd. The Otjozondju Mine was located about 145 km east of Okahandja near Hochfeld in the Otjozondjupa region. Table 2 is a list of major mineral industry facilities (Chamber of Mines of Namibia, 2016, p. 62; World Nuclear Association, 2017).

## Mineral Trade

In 2015, copper, diamond, and zinc were Namibia's leading mineral commodity exports. The Namibia Statistics Agency reported that diamond shipments were destined mainly for Botswana and South Africa and copper shipments went to Switzerland. Diamond continued to dominate Namibia's exports and accounted for 33% of the country's total exports in 2015

(Kimberley Process Rough Diamond Statistics, 2016; Namibia Statistics Agency, 2016b, p. 9, 22–23).

Namibia's exports to the United States were valued at \$85 million in 2015 compared with \$256 million in 2014. Diamond accounted for 48% (\$41 million in 2015 compared with \$102 million in 2014) of these exports, and nuclear fuel materials, for 46% (\$39 million in 2015 compared with \$144 million in 2014). Imports from the United States were valued at \$128 million compared with \$343 million in 2014; they included \$7.9 million in diamond, \$5.2 million in nonmetallic minerals, \$5.0 million in drilling and oilfield equipment, and \$3.7 million in excavating machinery (U.S. Census Bureau, 2016a, b).

## Commodity Review

### Metals

**Copper.**—In September, Weatherly International plc announced the suspension of mining at the Matchless and the Otjihase underground mines owing to the continued decline in the price of copper. The two mines were placed on care-and-maintenance status. Weatherly also owned the Tschudi open pit mine, which achieved nameplate production capacity of 17,000 metric tons per year (t/yr) of copper cathodes in December. Tschudi was located about 20 km west of Tsumeb in northern Namibia. Copper ore from the mine would be processed using heap leaching and solvent extraction-electrowinning (SX-EW) technology to produce pure refined copper metal on site. As of June 30, 2015, a JORC-compliant estimate for the Tschudi Mine yielded reserves of 25.3 Mt of ore at an average grade of 0.85% copper (Chamber of Mines of Namibia, 2016, p. 15, 76; Weatherly International plc, 2016, p. 2–3, 13).

Dundee Precious Metals Tsumeb (Proprietary) Ltd., which was a subsidiary of Dundee Precious Metals Inc. of Canada, owned and operated the Tsumeb smelter, which produced blister copper from imported copper concentrates. In 2015, the smelter processed about 196,100 t of copper concentrate. In the third quarter of 2015, the company commissioned its new sulfuric acid plant at Tsumeb, which began commercial production in the fourth quarter of 2015. Dundee reported that the new plant was expected to produce between 230,000 and 280,000 t/yr of sulfuric acid. The plant would supply sulfuric acid to the Rössing and the Tschudi Mines through offtake agreements. The construction of the new copper converters to accelerate the processing of copper concentrates at Tsumeb continued in 2015. The company expected to put the new copper converters into operation in the first quarter of 2016 (Chamber of Mines of Namibia, 2016, p. 10, 33; Dundee Precious Metals Inc., 2016, p. 3, 25, 46).

Australia-based International Base Metals Ltd., through its subsidiary Craton Mining & Exploration (Pty) Ltd. (Craton), held a mining license for the development of the Omitiomire copper project. The mining license was granted by the Ministry of Mines and Energy in the second quarter of 2014. Also in the second quarter of 2014, the Namibian Ministry of Environment and Tourism issued an environmental clearance certificate (ECC) for the project. In 2015, claims were made that the mining license for the project was granted before the ECC

was issued; the High Court of Namibia reviewed the decision to grant the mining license to Craton and declared the mining license null and void. As a result, the development of the project was delayed and the workforce was reduced. International Base Metals reported that the company continued to be committed to the development of the project once the legal challenges have been resolved. As of August 2014, total measured, indicated, and inferred mineral resources at Omitiomire were reported to be 136.9 Mt at an average grade of 0.54% copper with a cutoff grade of 0.25% copper (International Base Metals Ltd., 2016, p. 6–8, 20; 2017, p. 5).

**Gold.**—In February, B2Gold Corp. of Canada (B2Gold) began commercial production at the Otjikoto Mine, which was located about 300 km north of Windhoek between Otjiwarongo and Otavi. B2Gold held a 90% interest in the mine, and EVI Mining (Pty) Ltd. of Namibia held a 10% interest. At yearend, the mine produced about 4,532 kg of gold, which included about 585 kg of precommercial production. In September, the company completed the expansion of the Otjikoto mill to 3.0 Mt/yr from 2.5 Mt/yr. The expansion of the mill would allow for the processing of about 3.3 Mt of ore at an average grade of 1.59 grams per metric ton gold. Gold recoveries were expected to average 97%, and most of the ore would be mined from the existing Otjikoto pit. The company also completed 14,181 m of infill drilling at the Wolfshag zone, which would be used to update the mineral resource and reserve estimates for Otjikoto. The Wolfshag pit was scheduled to begin production in the fourth quarter of 2016 (B2Gold Corp., 2016, p. 9, 10; Chamber of Mines of Namibia, 2016, p. 13, 25–26).

United Kingdom-based QKR Corp. Ltd. held a 92.5% interest in the Navachab Mine in joint venture with Namibia's state-owned mining company Epangelo Mining Company (Pty) Ltd. (7.5% interest). QKR acquired the open pit mine from AngloGold Ashanti Ltd. (AngloGold) of South Africa in 2014. In 2015, gold production from Navachab was 1,878 kg compared with 1,938 kg in 2014. The decrease in production was mainly attributed to intermittent operational problems at the processing plant (Chamber of Mines of Namibia, 2015, p. 8, 10; 2016, p. 51).

**Lead and Zinc.**—Skorpion Zinc (Pty) Ltd. (Skorpion Zinc) operated the Skorpion open pit mine and the Namzinc refinery through its subsidiaries Skorpion Mining and Namzinc. The company produced high-grade zinc from its mine, which was then refined into metal at Namzinc. In October, Skorpion Zinc completed its first refinery maintenance shutdown since operations began in 2002. In 2015, this integrated mining and refinery operation produced a total of 82,029 t of zinc metal compared with 102,188 t in 2014. The decrease in production was attributed to the processing of lower grade zinc ore from the mine and the temporary maintenance shutdown of the refinery (from September to October). Skorpion Zinc was 100% owned by Vedanta Resources plc of the United Kingdom. Switzerland-based Glencore plc through its subsidiary Rosh Pinah Zinc Corp. (Pty) Ltd. operated the Rosh Pinah Mine, which in 2015 produced a total of 99,665 t of zinc concentrate compared with 104,046 t in 2014 and 18,521 t of lead concentrate compared with 22,317 t in 2014. The decrease in zinc production was attributed to recovery losses in the first quarter of 2015 and zinc mill feed grades that were below target, and the decrease

in lead production was attributed mainly to lower ore grades (table 2; Vedanta Resources plc, 2015, p. 4; Chamber of Mines of Namibia, 2016, p. 13, 54, 71–72).

### *Industrial Minerals*

**Cement.**—During the year, Ohorongo Cement (Pty) Ltd. (Ohorongo), which was Namibia's only cement producer, continued with the development of its new composite cement plant. The new plant was expected to be completed in 2016 and to increase the Ohorongo's production capacity to 1 Mt/yr from about 800,000 t/yr. The company was majority owned by Schwenk Zement KG of Germany (60%). Other stakeholders included the Industrial Development Corp. (IDC), 20%; the Development Bank of Namibia, which increased its share in Ohorongo to 11.72% from 10% in July; and the Development Bank of South Africa, 7.3% (table 2; Aggregate Business, 2015; Kaira, 2015a; Ohorongo Cement (Pty) Ltd., 2015a, b; Chamber of Mines of Namibia, 2016, p. 13).

**Diamond.**—According to the Kimberley Process Certification Scheme, production of diamond increased by 7% to about 2,053,000 carats in 2015. In 2014, Namdeb Holdings' operations produced a total of 1,764,000 carats of diamond compared with 1,885,000 carats in 2014; the decrease in production was attributed mainly to a slow startup in January and a seawall breach in July. In May, Debmarine announced its plans to build a new deepwater diamond exploration and sampling vessel (*SS Nujoma*). The *SS Nujoma* was expected to be launched in 2017 and to remain on exploration operations for 3 years before returning to port for maintenance (De Beers UK Ltd., 2015; Chamber of Mines of Namibia, 2016, p. 8, 10, 13; Kimberley Process Rough Diamond Statistics, 2016).

### *Mineral Fuels and Related Materials*

**Uranium.**—Swakop Uranium (Pty) Ltd. (Swakop) continued with the construction of the Husab uranium mine, which was located in the Erongo region of west-central Namibia about 60 km from Swakopmund. Swakop was 90% owned by Hong Kong-based Taurus Minerals Ltd. and Epangelo Mining (10%). Taurus Minerals was 60% owned by CGN-Uranium Resources Co. (a subsidiary of China General Nuclear Power Co.) and 40% by China-Africa Development Fund. Husab was expected to begin production by the third quarter of 2016, and once in full production, the mine would produce up to 5,700 t/yr of uranium (Swakop Uranium (Pty) Ltd., 2015a, b; Chamber of Mines of Namibia, 2016, p. 10, 79; World Nuclear Association, 2017).

### **Outlook**

According to the Bank of Namibia, Namibia's economy is expected to grow by 4.4% in 2016 and by 5.4% in 2017 owing mainly to the mining and electricity and water sectors. In 2016 and 2017, diamond mining is expected to continue to be one of the major contributors to economic growth in the country with an estimated average GDP contribution of 10%. Diamond mining is projected to decrease in 2016 owing mainly to lower grade diamond from the Namdeb Mine and the scheduled service of the De Beers Marine Mining vessel; however, mining is expected to increase in 2017 as Namdeb ramps up production

to meet nameplate capacity. Growth in the metals sector is expected to slow but will remain robust as new gold and copper mines continue to increase production. The Chamber of Mines of Namibia expected that the mineral industry would continue to grow in the medium term and forecasted a GDP contribution of 17% by 2018 owing to Swakop Uranium's Husab Mine. Also, in the medium term, the country's mining industry is expected to grow owing to the increase in output from existing mines and new mines (Bank of Namibia, 2016, p. 8, 10, 11; Chamber of Mines of Namibia, 2016, p. 108).

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TABLE 1  
ANGOLA AND NAMIBIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Country and commodity	2011	2012	2013	2014	2015
ANGOLA <sup>2</sup>					
<b>Industrial minerals:</b>					
Cement, hydraulic <sup>e</sup>	thousand metric tons	2,000 <sup>r</sup>	3,000 <sup>r</sup>	4,000 <sup>r</sup>	5,000 <sup>r</sup>
Clay and shale, fuller's earth		--	35,492	98,084	98,000 <sup>e</sup>
Diamond <sup>3,4</sup>	thousand carats	8,329	8,331	8,602	8,791
Gravel	thousand metric tons	-- <sup>e</sup>	533	938	900 <sup>e</sup>
Gypsum		200,000 <sup>e</sup>	121,981	189,242	190,000 <sup>e</sup>
Lime		-- <sup>e</sup>	-- <sup>e</sup>	882,100	880,000 <sup>e</sup>
Quartz		-- <sup>e</sup>	12,400	9,500	9,500 <sup>e</sup>
Salt <sup>c</sup>		40,000	40,000	40,000	50,000

See footnotes at end of table.

TABLE 1—Continued  
ANGOLA AND NAMIBIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Country and commodity		2011	2012	2013	2014	2015
ANGOLA <sup>2</sup> —Continued						
Industrial minerals—Continued:						
Sand:						
For construction industry	thousand metric tons	-- <sup>e</sup>	743	881	900 <sup>e</sup>	900 <sup>e</sup>
Silica sand, for glass manufacturing		-- <sup>e</sup>	-- <sup>e</sup>	50,100	50,100 <sup>e</sup>	50,100 <sup>e</sup>
Stone, crushed:						
Granite		125,765	51,267	123,427	133,305	143,965
Limestone	thousand metric tons	-- <sup>e</sup>	1,100	1,442	1,400 <sup>e</sup>	1,400 <sup>e</sup>
Marble		-- <sup>e</sup>	13,900	1,800	1,800 <sup>e</sup>	1,800 <sup>e</sup>
Unspecified	thousand metric tons	-- <sup>e</sup>	1,770	4,266	4,300 <sup>e</sup>	4,300 <sup>e</sup>
Mineral fuels and related materials:						
Petroleum:						
Crude <sup>5</sup>	thousand 42-gallon barrels	629,990	651,160	656,635 <sup>r</sup>	624,880	666,490
Refinery products <sup>6,7</sup>	do.	14,000 <sup>r</sup>	14,000 <sup>r</sup>	17,000 <sup>r</sup>	16,000 <sup>r</sup>	16,000
NAMIBIA <sup>8</sup>						
Metals:						
Copper:						
Mine output, concentrate (26% to 30% Cu):						
Gross weight		13,553	23,032	20,646	21,720	21,839
Cu content		3,365	5,304	4,896	5,249	10,659
Metal, blister, from domestic and imported concentrates <sup>e</sup>		43,800	39,800	38,100	49,600	49,000
Gold, mine, Au content <sup>9</sup>	kilograms	2,053	2,302	1,960	1,938 <sup>10</sup>	6,069
Lead, mine, concentrate:						
Gross weight		15,776	17,557	20,551	22,317	18,521
Pb content of Pb and Pb-Zn concentrates		9,139	10,000 <sup>e</sup>	11,000 <sup>e</sup>	11,200 <sup>e</sup>	9,300 <sup>e</sup>
Manganese, mine output, concentrate (44% Mn):						
Gross weight		109,900	176,200	174,400	116,500	47,400
Mn content <sup>e</sup>		48,400	77,500	76,100	51,300	20,800
Silver, mine, Ag content of concentrate <sup>e</sup>	kilograms	--	1,000	1,400	1,100	900
Zinc:						
Zn content of ore and concentrate		192,173	194,380	184,109	172,783 <sup>r</sup>	123,672
Metal, refined, primary		145,639	144,508	124,924	117,783 <sup>r</sup>	71,961
Industrial minerals:						
Arsenic trioxide <sup>e</sup>		1,750	1,590	1,520	1,980	1,960
Cement, hydraulic	thousand metric tons	390	501	662	731	796
Diamond	thousand carats	1,256	1,629	1,689	1,918	2,053
Fluorspar, acid grade (97% CaF <sub>2</sub> ) <sup>11,12</sup>		84,484	68,966	60,774	65,485	--
Salt		738,000	810,000	826,985	797,405	732,980
Mineral fuels and related materials:						
Uranium oxide, U content		4,058 <sup>r</sup>	4,495	4,323	3,255	2,993

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through February 22, 2017.

<sup>2</sup>In addition to the commodities listed, Angola produced clinker and liquefied petroleum gas, and may have produced gold, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Production was approximately 90% gem quality and 10% industrial grade.

<sup>4</sup>Source: Kimberley Process Certification Scheme.

<sup>5</sup>Source: BP p.l.c.

<sup>6</sup>Includes asphalt and bitumen.

<sup>7</sup>Source: Organization of the Petroleum Exporting Countries.

<sup>8</sup>In addition to the commodities listed, Namibia produced agate, aquamarine, amethyst, basalt, blue chalcedony, dolomite, granite, lead dusts, marble, picture stone, pietersite, rose quartz, sand and gravel, sepiolite, smoky quartz, topaz, tourmaline, and wollastonite, but information was inadequate to make reliable estimates of output.

<sup>9</sup>Does not include gold recovered as a byproduct of copper mining.

<sup>10</sup>Excludes 202 kilograms of precommercial gold produced at the Otjikoto Mine.

<sup>11</sup>Production data prior to 2011 was acid grade. Beginning in 2011, data also include an unspecified amount of metallurgical-grade fluorspar.

<sup>12</sup>Data are in dry metric tons.



TABLE 2  
ANGOLA AND NAMIBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>e</sup>
ANGOLA				
Cement		Companhia de Cimento do Lobito S.A. (TecnoSecil Investimentos e Participações SARL, 51%, and Government, 49%)	Lobito, Benguela Province	250,000.
Do.		Nova Cimangola S.A. (Government, 89%, and private investors, 11%)	Luanda	1,200,000; 540,000 clinker.
Do.		Cimenfort Industrial Lda	Catumbela, central Benguela Province	700,000.
Do.		China International Fund Luanda Cement Ltd.	Municipality of Bengo, 60 kilometers southeast of Luanda	4,000,000; 3,600,000 clinker.
Do.		Fabrica de Cimento do Kwanza Sul	Sumbe, Kwanza-Sul Province	1,400,000; 1,300,000 clinker.
Diamond	thousand carats	Associação em Participação Chitotolo [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 45%; ITM Mining Ltd., 40%; LUMANHE Lda., 15%]	Chitotolo alluvial mine, 95 kilometers southeast of Dundo, Lunda Norte Province	28.
Do.	do.	Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%; New Millenium Resources Ltd., 34%; Mombo Lda., 15%	Rio Lapi Mine, 45 kilometers northeast of Saurimo, Lunda Sul Province	240.
Do.	do.	Luó-Sociedade Mineira do Camatchia-Camagico [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA) and Espirito Santo Group]	Lunda Norte Province	18.
Do.	do.	Sociedade de Desenvolvimento Mineiro de Angola S.A.R.L. (SDM) [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 50%, and Odebrecht Mining Services Inc., 50%]	Luzamba alluvial mine, Cuango Valley, Lunda Norte Province	70.
Do.	do.	Sociedade Mineira de Catoca Lda. [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 32.8%; ALROSA S.A., 32.8%; Daumonty Financing Co. B.V., 18%; Odebrecht Mining Services Inc., 16.4%]	Catoca kimberlite mine, 36 kilometers south of Saurimo, Lunda Sul Province	6,500.
Do.	do.	Sociedade Mineira do Cuango [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 41%; ITM Mining Ltd., 38%; LUMANHE Lda., 21%]	Cuango alluvial mine, Cuango Valley, Lunda Norte Province	31.
Do.	do.	Sociedade Mineira do Lucapa Ltd. [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%, and Sociedade Portuguesa de Empreendimentos, 49%]	Mufuto Norte alluvial mine	25.
Do.	do.	Sociedade Mineira do Lucapa Ltd. (SME) [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%, and Sociedade Portuguesa de Empreendimentos, 49%]; LUMANHE Lda.; ITM Mining Ltd.	Calonda alluvial mine, Lucapa, Lunda Norte Province	27.
Do.	do.	Sociedade Mineira Do Lulo (SML) [Lucapa Diamond Co. Ltd., 40%, Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 32%; Rosas e Petalas S.A., 28%]	Loulo alluvial mine, 150 kilometers east of Luanda, Lunda Norte Province	10.
Do.	do.	Trans Hex Group Ltd., 32%, and Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 40%	Fucauma Mine, <sup>1</sup> northeastern Angola	120.
Do.	do.	Trans Hex Group Ltd., 35%, and Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 40%	Luarica Mine, <sup>1</sup> northeastern Angola	90.
Do.	do.	Sociedade Mineira, S.A.—Angola (Kwanza) [Trans Hex Group Ltd., 33%; Empresa Nacional de de Diamantes de Angola E.P. (ENDIAMA), 39%; and 28%, domestic private investors]	Somiluana Mine, Lunda Norte Province	95.
Do.	do.	Artisanal miners	Lunda Norte, Lunda Sul, Moxico, Bie, and Malanje Provinces	NA.
Gypsum	thousand carats metric tons	Fábrica de Gesso do Sumbe	Gypsum plant, city of Sumbe, Cuanza Sul Province	200.

See footnotes at end of table.

TABLE 2—Continued  
ANGOLA AND NAMIBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>
ANGOLA—Continued				
Petroleum	thousand 42-gallon barrels per day	AP Moller-Maersk A/S, 50%; Occidental Petroleum Corp., 30%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Block 8, offshore	NA.
Do.		AP Moller-Maersk A/S, 50%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Devon Energy Corp., 15%; Odebrecht S.A., 15%	Block 16, offshore	NA.
Do.		AP Moller-Maersk A/S, 50%; Occidental Petroleum Corp., 30%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Block 23, offshore	NA.
Do.	thousand 42-gallon barrels per day	BP p.l.c., 50%, and Sonangol-Sinopec International, 50%	Block 18, offshore	240.
Do.	do.	BP p.l.c., 26.67%; Exxon Mobil Corp., 25%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Statoil ASA, 13.33%; Marathon Oil Corp., 10%; Total S.A., 5%	Block 31, offshore	150.
Do.		Canadian Natural Resources, 100%	Block 4, Kiame field, offshore	NA.
Do.	thousand 42-gallon barrels per day	Chevron Corp., 31%; Eni S.p.A., 20%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Total S.A., 20%; Galp Energia, SGPS, S.A., 9%	Block 14, offshore	100.
Do.		China Petroleum and Chemical Corp., 40%; Petróleo Brasileiro S.A., 30%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Falcon Oil Holding Angola S.A., 5%; Gema Group Angola, 5%	Block 18/06, offshore	NA.
Do.		Eni S.p.A., 35%; Sonangol-Sinopec International, 20%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 15%; Total S.A., 15%; Falcon Oil Holding Angola S.A., 5%; Petróleo Brasileiro S.A., 5%; Statoil ASA, 5%	Block 15/06, offshore	NA.
Do.		Eni S.p.A., 50%; Total S.A., 25%; Galp Energia, SGPS, S.A., 10%; Ina-Industrija Nafta, 7.5%	Block 1, offshore	NA.
Do.		Exxon Mobil Corp., 45%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Total S.A., 15%; Falcon Oil Holding Angola S.A., 10%; Galp Energia, SGPS, S.A., 5%; Naphtha-Israel Petroleum Corp. Ltd., 5%	Block 33, offshore	NA.
Do.	thousand 42-gallon barrels per day	Exxon Mobil Corp., 40%; BP p.l.c., 26.67%; Eni S.p.A., 20%; Statoil ASA, 13.33%	Block 15, offshore	700.
Do.		Petróleo Brasileiro S.A., 80%, and Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Block 26, offshore	NA.
Do.		Petróleos Brasileiros S.A., 40%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; InterOil Exploration & Production ASA, 20%; Falcon Oil Holding Angola S.A., 10%; Initial Oil, 10%	Block 6, offshore	NA.
Do.		Roc Oil Co. Ltd., 60%; Force Petroleum Group Ltd., 20%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Cabinda South, onshore	NA.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 100%	Area A (Kwanza), onshore	NA.
Do.		do.	Block 3, Canuka field, offshore	NA.
Do.		do.	Block 4, Kiabo field, offshore	NA.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 83.6%, and Chevron Corp., 16.4%	Area B (Soyo), onshore	NA.

See footnotes at end of table.

TABLE 2—Continued  
ANGOLA AND NAMIBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>
ANGOLA—Continued				
Petroleum— Continued	thousand 42-gallon barrels per day	Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 41%; Chevron Corp., 39.2%; Total S.A., 10%; Eni S.p.A., 9.8%	Block 0, offshore Cabinda	340.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 52.5%; Petróleo Brasileiro S.A., 27.5%; Chevron Corp., 20%	Block 2/85, offshore	NA.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 70%, and Sociedade Petrolifera Angolana, 30%	Block 2/05, offshore	NA.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 90%, and Sociedade Petrolifera Angolana, 15%	Block 3/05, Bufalo, Impala, Impala SE Pacassa, and Palanca fields, offshore	NA.
Do.		Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 51%; Soco Cabinda Lda., 17%; Teikoku Oil Co., 17%; Angola Consulting Resources, 15%	Cabinda North, onshore	NA.
Do.	thousand 42-gallon barrels per day	Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 50%; Statoil ASA, 20%; Angola Consulting Resources, 15%; Sociedade Petrolifera Angolana, 15%	Block 4/05, Gimboa field, offshore	60.
Do.		Statoil ASA, 50%; Petróleo Brasileiro S.A., 30%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Block 34, offshore	NA.
Do.		Total S.A., 50%; Eni S.p.A., 15%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 6.25%	Block 3/91, Oombo field, offshore	NA.
Do.		Total S.A., 50%; Eni S.p.A., 15%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 6.25%; Ajoco Exploration Company Ltd., 12.5%; Ina-Industrija Nafta, 5%	Block 3/85, Cobo and Pambe fields, offshore	NA.
Do.		Total S.A., 30%; Marathon Oil Corp., 30%; Sociedade de Combustíveis de Angola (Sonangol), 20%; Exxon Mobil Corp., 15%; Galp Energia, SGPS, S.A., 5%	Block 32, offshore	NA.
Do.		Total S.A., 30%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol) 30%; Sonangol-Sinopec International, 27.5%; Angola Consulting Resources, 5%; Falcon Oil Holding Angola, S.A., 5%; Partex (Angola) Corp., 2.5%	Block 17/06, offshore	NA.
Do.	thousand 42-gallon barrels per day	Total S.A., 40%; Statoil ASA, 23.33%; Exxon Mobil Corp., 20%; BP p.l.c., 16.67%	Block 17, offshore	700.
Do.		Tullow Oil plc, 50%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%; Prodoil SARL, 20%; Force Petroleum Group Ltd., 10%	Block 1/06, offshore	NA.
Do.		Vaalco Energy Inc., 40%; InterOil Exploration & Production ASA, 40%; Sociedade Nacional de Combustíveis de Angola E.P. (Sonangol), 20%	Block 5, offshore	NA.
Petroleum refinery products	thousand 42-gallon barrels per day	Luanda refinery	Petroleum refinery, Luanda	23,700.
Steel		Chung Fong Holding Co., 51%, and Government, 49%	Relaunching of steel plant (under development)	36,500.
Do.		Grupo Ferpinta	Two pipe mills at Viana, 30 kilometers east of Luanda	6,000.
Stone, granite	cubic meters	Angostone	Lubango, Huila Province	14,000.
Do.	do.	Coreangol	Nzeto municipality, Zaire Province	35,000.
Do.	do.	Emanha	Lubango, Huila Province	80,000.
Do.	do.	Rodang	do.	6,300.
Do.	do.	Metarochas	do.	2,200.

See footnotes at end of table.

TABLE 2—Continued  
ANGOLA AND NAMIBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity <sup>e</sup>
<b>NAMIBIA</b>				
Cement	Ohorongo Cement (Pty) Ltd. (Ohorongo) (Schwenk Zement KG, 60%; Industrial Development Corp., 20%; Development Bank of Namibia, 11.72%; and Development Bank of South Africa, 7.3%)		Otjozondjupa region, near Otavi	800,000.
<b>Copper:</b>				
Copper concentrates	Ongopolo Mining Ltd. (Weatherly Mining Namibia Ltd., 97.5% and Labour Investment Holdings, 2.5%)		Central operations, includes the Otjihase Mine <sup>1</sup> and concentrator, about 18 kilometers northeast of Windhoek; and the Matchless Mine, 30 kilometers southwest of the Otjihase Mine	7,000,000.
Do.	do.		Northern operations, includes the Tschudi and the Tsumeb West Mines, and the Tsumeb concentrator	17,000.
Do.	do.		Kombat operations, includes Kombat Mine and concentrator, 440 kilometers north of Windhoek	400,000.
Metal, blister copper	Dundee Precious Metals Tsumeb (Proprietary) Ltd. (Dundee Precious Metals Inc., 100%)		Smelter at Tsumeb, 430 kilometers north of Windhoek	60,000.
Diamond	carats	De Beers Marine Namibia (Pty) Ltd. (Debmarine) [Namdeb Holdings, 100% (De Beers Group, 50% and Government, 50%)]	Atlantic 1, mining license area 47, offshore Sperrgebiet	1,300,000.
Do.	do.	Namdeb Diamond Corp. (Pty) Ltd. (Namdeb) [Namdeb Holdings, 100% (De Beers Group, 50%, and Government, 50%)]	Orange River Mines, mining license area 42, onshore, from mouth of Orange River east to Sendelingsdrif; includes the Auchas and the Daberas Mines	120,000.
Do.	do.	do.	Mining Area 1, mining license area 43, Orange River at Oranjemund to 145 kilometers north of Oranjemund	1,000,000.
Do.	do.	do.	Elizabeth Bay Mine, mining license area 45, onshore and offshore Sperrgebiet 24 kilometers south of Luderitz	210,000.
Do.	do.	do.	Shallow marine and coastal area contractors	68,000.
Do.	do.	do.	Sendelingsdrif Mine, 80 kilometers from Oranjemund and 20 kilometers south of the town of Rosh Pinah	45,000.
Do.	do.	do.	Red Area Complex diamond sorting plant 2, Oranjemund	NA.
Do.	do.	Sakawe Mining Corp. (Samikor) <sup>2</sup> [Leviev Group, 76%, Longlife Mining Corp., 10%; Government, 8%; Namibia Youth Service, 2%; and Sakawe Mining Corp. employees, 4%]	Offshore mining licenses, near Luderitz Bay	260,000.
Fluorspar, acid grade	Okorusu Fluorspar (Pty.) Ltd. (Solvay SA, 100%)		Okorusu Mine and processing plant at Otjiwarongo	120,000.
<b>Gold:</b>				
Mine, Au content	kilograms	Guinea Fowl Investments Twenty Six Ltd. (QKR Corp. Ltd.) 92.5% and Epangelo Mining Company (Pty) Ltd., 7.5%)	Navachab Mine, 170 kilometers northwest of Windhoek	2,700.
Do.	do.	B2Gold Corp., 90%, and EVI Mining (Pty) Ltd., 10%	Otjikoto Mine, 300 kilometers north of Windhoek	4,400.
Metal	do.	Namibia Custom Smelters (Pty.) Ltd. (Dundee Precious Metals Inc., 100%)	Coproduct contained in blister copper produced at the Tsumeb smelter	400.
Lead, Pb content of concentrate	Rosh Pinah Zinc Corporation (Pty.) Ltd. (Glencore plc, 80.1%)		Rosh Pinah Mine, 800 kilometers south of Windhoek	20,000.
Manganese	Purity Manganese (Pty) Ltd.		Otjozundu Mine about 145 kilometers east of Okahandja near Hochfeld in the Otjozondjupa region	80,000.

See footnotes at end of table.

TABLE 2—Continued  
ANGOLA AND NAMIBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>
NAMIBIA—Continued			
Pyrite, concentrate	Weatherly Mining Namibia Ltd. (Weatherly International plc, 100%)	Otjihase Mine and concentrator, near Tsumeb	32,000.
Salt:	Cape Cross Salt (Pty.) Ltd.	North of Henties Bay	40,000.
Do.	Salt & Chemicals (Pty.) Ltd. [Walvis Bay Salt Holdings (Pty.) Ltd., 100%]	Salt pan at Walvis Bay	690,000.
Do.	Salt Company (Pty.) Ltd.	Swakopmund	120,000.
Do.	Walvis Bay Salt Refiners (Pty.) Ltd. [Walvis Bay Salt Holdings (Pty.) Ltd., 100%]	Salt refinery at Walvis Bay	650,000.
Silver:			
Concentrate, Ag content	Rosh Pinah Zinc Corporation (Pty.) Ltd. (Glencore plc, 80.1%)	Rosh Pinah Mine, 800 east kilometers south of Windhoek	25.
Metal	Namibia Custom Smelters (Pty.) Ltd. (Dundee Precious Metals Inc., 100%)	Coproduct contained in blister copper produced at the Tsumeb smelter	25.
Sulfuric acid	Dundee Precious Metals Tsumeb (Proprietary) Ltd. <sup>3</sup> (Dundee Precious Metals Inc., 100%)	Tsumeb, 430 kilometers north of Windhoek	280,000.
Uranium, uranium oxide	Langer Heinrich Uranium (Pty.) Ltd. (Paladin Energy Ltd., 75%, and CNNC Overseas Uranium Holdings Ltd., 25%)	Langer Heinrich Mine, Namib Desert, 80 kilometers east of Walvis Bay	1,500.
Do.	Rössing Uranium Ltd. (Rio Tinto Group, 69%; Iranian Foreign Investment Company, 15%; Industrial Development Corp. of South Africa Ltd., 10%; Government of Namibia, 3%; other minority shareholders, 3%)	Rössing Mine, 65 kilometers northeast of Swakopmund	4,800.
Wollastonite	Namibia Mineral Development Co. (Pty.) Ltd.	Usakos Mine, Karibib District, Erongo region	800.
Zinc:			
Mine:			
Concentrate, Zn content	Rosh Pinah Zinc Corporation (Pty.) Ltd. (Glencore plc, 80.1%)	Rosh Pinah Mine, 800 kilometers south of Windhoek	110,000.
Ore	Skorpion Zinc (Pty) Ltd. [Skorpion Mining Co. (Pty.) Ltd. (Vedanta Resources plc, 100%)]	Skorpion Mine, 25 kilometers north of Rosh Pinah	1,500,000.
Metal	Skorpion Zinc (Pty) Ltd. [Namzinc (Pty.) Ltd. (Vedanta Resources plc, 100%)]	Namzinc solvent extraction facilities and electrowinning refinery, 25 kilometers north of Rosh Pinah	150,000.

<sup>c</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>On care-and-maintenance status.

<sup>2</sup>Sakawe Mining Corp.'s (Samicor's) diamond mining operations remained halted in 2015.

<sup>3</sup>Commissioned in the third quarter of 2015.