



2017–2018 Minerals Yearbook

MAURITANIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF MAURITANIA

By Mowafa Taib

Note: In this chapter, information for 2017 is followed by information for 2018.

Mauritania was Africa's 2d-ranked and the world's 15th-ranked exporter of iron ore in 2017. In addition to iron ore, Mauritania exported copper, crude petroleum, gold, and gypsum. The country also produced modest quantities of cement, raw steel, granite, marble, quartz, and salt. According to the Ministère du Pétrole, de l'Énergie et des Mines [Ministry of Petroleum, Energy, and Mines], Mauritania's mineral reserves include 2 billion metric tons (Gt) of iron ore, 780 metric tons (t) (reported as 25 million ounces) of gold, 20 million metric tons (Mt) of copper ore, 1,500 t (reported as 50 million ounces) of uranium, 10 Gt of gypsum, and 160 Mt of phosphate rock (table 1; Banque Centrale de Mauritanie, 2018, p. 91, 94; Ministère du Pétrole, de l'Énergie et des Mines, 2018; Workman, 2018).

Minerals in the National Economy

The mineral sector was a major contributor to Mauritania's economy, accounting for about 12% of the country's gross domestic product (GDP). Mauritania's economy continued to be adversely affected by the decline of crude petroleum and metals prices, especially that of iron ore, in the past 5 years. The real GDP increased at a rate of 3.5% in 2017 compared with a rate of 1.8% in 2016, and the country's nominal GDP in 2017 amounted to \$4.9 billion. In 2017, the mineral sector, which included crude petroleum and nonfuel mineral production, accounted for 11.7% of the GDP compared with 12.3% in 2016 and a peak of 26.9% in 2013. The value of the mineral sector activity decreased in real terms by 7.0% in 2017 compared with a revised increase of 0.5% in 2016. The value of petroleum sector activity, which contributed 1.4% to the GDP in 2017 compared with 1.7% of the GDP in 2016, decreased in real terms by 29.8% in 2017 compared with a decrease of 7.2% in 2016. The contribution of iron ore mining to the country's GDP decreased to 4.2% in 2017 from 4.9% in 2016 and 19.0% in 2013. Copper and gold production contributed 4.8% to the GDP in 2017 compared with 3.9% (revised) in 2016 (Banque Centrale de Mauritanie, 2018, p. 92, 94, 97).

Artisanal or small-scale gold mining became legal in Mauritania following the 2016 Government decree that granted small-scale mining permits to miners using metal detectors in a 1,791-square-kilometer (km²) zone in the Inchiri Region. The zone is located next to the gold mining and exploration licenses held by Kinross Gold Corp. and Algold Resources Ltd. (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, 2018, p. 31–32).

The flow of foreign direct investment (FDI) to Mauritania increased in 2017, but at a much-reduced level compared with the value in 2012. The estimated value of FDI to Mauritania in 2017 increased to \$330 million from \$271 million in 2016, which was 76% less than the nearly \$1.4 billion received in 2012. The decrease in FDI flow into Mauritania from 2013

through 2016 was attributed to low mineral prices in the international market and to a 71% decrease in cross-border mergers and acquisitions in the mining, quarrying, and petroleum sectors worldwide in 2017. The number of greenfield FDI investment projects in Mauritania was two in 2017 and two in 2016, compared with zero in 2015 (United Nations Conference on Trade and Development, 2018, p. 8, 185).

Government Policies and Programs

The Ministère du Pétrole, de l'Énergie et des Mines is responsible for overseeing activity in the fuel and nonfuel mineral sectors. The Government approved several amendments to its Hydrocarbon Code and Mining Code in 2011. The Direction des Mines et de la Géologie [Department of Mines and Geology] implements the Government's policies to enhance foreign investment in the mining sector of Mauritania. The Code Minier [Mining Law] awards exploration permits on a "first come-first served" basis for a 3-year period that can be renewed twice for up to 3 years each time. Mining licenses are awarded for a 30-year period and are renewable for up to 10 additional years. The law exempts mining companies from customs duties for equipment during exploration and the first 5 years of production and permanently on fuel and spare parts. The tax code includes a 25% corporate income tax rate after a tax exemption for the first 3 years of production, a tax withholding rate of 14% on repatriated earnings, and a 16% value-added tax (Ministère du Pétrole, de l'Énergie et des Mines, 2012).

The revisions to the Mining Code in 2012 changed the method by which royalties are calculated and the area of land that is assigned for exploration permits. Mining royalties range from 1.5% to 6.5% of the international price of the final processed mineral product. The royalty for Group 1 minerals, which includes chromium, iron ore, manganese, titanium, and vanadium, is assessed at 2.5% of the international commodity price. The royalty increases to 3% for iron ore sold at The Steel Index (TSI) price of between \$100 and \$150 per metric ton and to 3.5% for iron ore sold at TSI price of between \$150 and \$200 per metric ton. The royalty for Group 2 minerals, which includes precious and nonferrous metals, is 3% of the price on the London Metal Exchange (LME), except for copper (which ranges between 3% and 5%, depending on the LME price), gold (which ranges between 4% and 6.5%, depending on the LME price), and platinum-group elements (4%). The royalty for the remaining groups is based on sales prices: Group 3 minerals (coal and fuel minerals), at 1.5%; Group 4 minerals (uranium and other radioactive materials), 3.5%; Group 5 minerals (industrial minerals and construction materials), 2.5%; Group 6 minerals (gemstones), 5%; and Group 7 minerals (diamond), 6%, respectively. Revisions to the mining law added a 10% tax on all mining transactions (such as transferring license from one

company to another) and made international commodity prices the basis for the royalty calculation. The area of land allocated for each exploration permit was reduced to 500 km² from 1,000 km² for all minerals except for the areas allocated for diamond concessions, which remain at 5,000 km² (Ministère du Pétrole, de l'Énergie et des Mines, 2012).

Mineral Trade

The value of Mauritania's exports increased to \$1.7 billion in 2017 from \$1.4 billion in 2016. Mineral commodity exports, which included copper, crude petroleum, gold, and iron ore, represented 61% of Mauritania's total exports in 2017 compared with 66% in 2016. Mauritania's iron ore exports, which decreased to nearly 11.6 Mt in 2017 from a revised 13.2 Mt in 2016, increased in value by 20% to \$496 million from \$418 million in 2016. The increase in the value of iron ore exports in 2017, which took place despite the decrease in tonnage, was attributed to higher prices on the world market and higher iron ore content compared with that of 2016. Sixty-seven percent of Mauritania's iron ore exports went to China; 12%, to Germany; 10%, to Italy; 8%, to France; and 3%, to other countries. The value of gold exports increased to \$370 million in 2017 from \$289 million in 2016. Copper exports increased slightly to \$140 million in 2017 from \$139 million in 2016. Crude petroleum exports, however, decreased to \$66 million in 2017 from \$87 million in 2016; the decrease was attributed to technical issues that caused stoppage of crude petroleum production during the year (Banque Centrale de Mauritanie, 2018, p. 32, 100; World Steel Association, 2018, p. 102).

In 2017, Mauritania's exports to the United States, which were valued at \$61.5 million, consisted mainly of crude petroleum (\$54.8 million) and inorganic fertilizers (\$1.7 million). Mauritania's imports from the United States were valued at \$127.8 million. Minerals and mineral-related imports included drilling and oilfield equipment valued at \$12.6 million, excavating machinery (\$6.6 million), inorganic chemicals (\$5.5 million), railway transportation equipment (\$1.9 million), and iron and steel products (\$1.8 million) (U.S. Census Bureau, 2018a, b).

Production

Mauritania's mineral production in 2017 increased most notably for gypsum, by an estimated 186%, and gold, by 28%. The increase in gypsum output was attributed to the increased demand by countries in West Africa. Notable decreases in mineral production in 2017 compared with that of 2016 included that of crude petroleum, which decreased by 31%, and copper and iron ore, by 12% each. Data on mineral production are in table 1.

Structure of the Mineral Industry

Almost all the 70-plus local and international companies that were involved in mineral exploration and production in Mauritania were privately owned. Together, these companies held more than 139 mineral exploration permits and 24 mining licenses. Mauritanian Copper Mines S.A. (MCM) (a wholly owned subsidiary of First Quantum Minerals Ltd. of Australia)

and Tasiast Mauritanie Ltd. S.A. (a wholly owned subsidiary of Kinross Gold Corp. of Canada) produced gold in 2017. MCM was the sole producer of copper in 2017. PETRONAS International Corp. Ltd. (a wholly owned subsidiary of Petroliaam Nasional Berhad of Malaysia) was the only producer of crude petroleum. Four companies produced cement—BSA Ciment S.A., Ciment de Mauritanie S.A., Mauritano-Française des Ciments S.A., and Société des Ciments du Nord. Société Arabe des Industries Métallurgiques S.A. (SAMIA) was the sole producer of gypsum, Mauritania Minerals Co. S.A. (MMC) and Quartz Inc. Mauritania S.A. produced quartz, and Société Mauritanienne des Industries du Sel (SOMISEL) mined salt (table 2; Ministère du Pétrole et de l'Énergie et des Mines, 2019).

Société Nationale Industrielle et Minière (SNIM) was a majority state-owned mining company (78.35% interest); it operated iron ore mines at Guelb el Rhein, Kedia d'Idjill, M'Haoudat, and Zouerate in the Tiris Zemmour region in northern Mauritania. SNIM also owned and operated a 700-kilometer (km) heavy-haul railway and a shipping terminal at Nouadhibou Port on the Atlantic coast. SNIM subsidiaries included Granites et Marbres de Mauritanie (GMM), SAMIA, and Société Arabe du Fer et de l'Acier S.A. (SAFA) (table 2; Société Nationale Industrielle et Minière, 2018b, e).

Société Mauritanienne des Hydrocarbures et de Patrimoine Minier (SMHPM), which was Mauritania's national petroleum company, held a 10% carried interest in all offshore and onshore petroleum exploration projects (Société Mauritanienne des Hydrocarbures et de Patrimoine Minier, 2018). Table 2 is a list of major mineral production facilities.

Commodity Review

Metals

Cobalt.—Although no cobalt has been produced in Mauritania, Aura Energy Ltd. of Australia found several high cobalt occurrences during the review of its past drilling at the Tasiast South project tenements. The drilling intercepts included 1 meter (m) at 0.58% cobalt, 4 m at 0.48% cobalt, and 1 m at 0.46% cobalt. The cobalt resources at the Guelb Moghrein iron-oxide-copper-gold deposit (the site of copper and gold mining by MCM) were estimated by Hitzman and others of the U.S. Geological Survey to be 24 Mt at a grade of 0.14% cobalt (Aura Energy Ltd., 2017a; Hitzman and others, 2017, p. 30).

Copper.—The Guelb Moghrein Mine produced 28,791 t of copper in 2017 compared with 32,818 t in 2016. MCM milled 3.4 Mt of sulfide ore in 2017 compared with 3.9 Mt in 2016. The percentage of copper in sulfide ore processed was 0.9% in 2017. The total probable and proven reserves at the Guelb Moghrein Mine, which include high- and low-grade stockpiled materials, were estimated to be 22.5 Mt of ore grading 0.65% copper and 0.63 gram per metric ton gold. The company, which estimated the life of the mine to be 6 years in 2017, planned to produce 30,000 t of copper in 2018 (First Quantum Minerals Ltd., 2018a, p. 19, 26).

OreCorp Mauritania S.A.R.L. (OreCorp), a subsidiary of OreCorp Ltd. of Australia, held two licenses (No. 1415 and No. 1416) at Akjoujt South to explore for cobalt, copper, and

nickel in a 596-km² area. The Akjoujt South project is located in the Proterozoic Mauritanide Belt and is located 60 km south of the Guelb Moghrein Mine. OreCorp held a 90% interest in the project, and the Government held the remaining 10% interest (OreCorp Ltd., 2017, p. 30; 2018).

Gold.—Mauritania's gold output increased to 9,096 kilograms (kg) in 2017 from 7,127 kg in 2016. Two mines produced gold in Mauritania in 2017—the Guelb Moghrein copper-gold mine and the Tasiast gold mine. The Guelb Moghrein Mine produced 1,531 kg of gold in 2017, which was about 10% less than the 1,678 kg of gold produced in 2016. The Tasiast gold mine produced 7,565 kg in 2017 compared with 5,449 kg in 2016, which was a 39% increase. As of yearend 2017, the estimate of proven and probable mineral reserves at the Tasiast deposit was 244,500 kg (reported as 7.861 million troy ounces). The Tasiast open pit mine, which used heap leach and milling for ore processing, had an expected mine life of 12 years. During the year, Kinross was in the process of carrying out phase 1 of its mill expansion plan for the mine. Once completed, the expansion would increase the mill's throughput capacity to 12,000 metric tons per day (t/d) from its current (2017) capacity of 8,000 t/d by mid-2018. Annual gold production at the Tasiast Mine between 2018 and 2029 was expected to be 12,700 kg per year (kg/yr). Kinross also completed the phase two expansion study for the Tasiast Mine, which would increase milling capacity at the mine to 30,000 t/d and nearly double the average annual gold production to 25,000 kg/yr during the period from 2020 to 2029 (table 1; Kinross Gold Corp., 2017, 2018; First Quantum Minerals Ltd., 2018a, p. 26, 40).

In 2017, Algold Resources Ltd. of Canada was the sole owner of the Tijirit gold exploration license in northwestern Mauritania. The Tijirit deposit lies within the Archean Reguibat shield in northwestern Mauritania; it is located 25 km southeast of the Tasiast Mine in Mauritania's gold-mining district. The Tijirit gold project encompassed two distinct connecting exploration licenses (44B2 and 1117B2), covering an area of about 1,460 km². In 2017, Algold released the NI 43–101 technical report for the Tijirit property, which included an update of the resource estimate. The report identified five prospects: the Eleonore, the Eleonore East, the Lily, the Salma, and the Sophie. The company estimated that the total measured and indicated resources from the Eleonore, the Lily, and the Sophie prospects were 5,270 kg of gold (Algold Resources Ltd., 2018, p. 6, 13, 19, 31, 132).

Artisanal gold mining was reported in the Inchiri Region in western Mauritania by the Federal Institute for Geosciences and Natural Resources of Germany. In 2017, there were more than 10,000 artisanal gold miners in Mauritania. The Government was considering ways to support such mining activity in the Inchiri District and to build two gold-processing centers for artisanal mining (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, 2017; 2018, p. 30; Ministère du Pétrole et de l'Énergie et des Mines, 2018).

Iron Ore.—Mauritania's iron ore production decreased to 11.7 Mt in 2017 from 13.3 Mt in 2016 owing to fluctuations in iron ore prices on the world market. The Guelb el Rhein deposit contained several hundred million metric tons of magnetite ore grading 37% iron. Production from the Guelb el Rhein deposit was concentrated at the Guelb el Rhein plants by dry magnetic

separation to increase the iron content by up to 66%. Hematite iron ore deposits are located at the Kedia d'Idjill and M'Haoudat areas and accounted for 60% of SNIM's iron ore production. SNIM planned to increase its capacity to 40 million metric tons per year (Mt/yr) of iron ore by 2025 (tables 1, 2; Société Nationale Industrielle et Minière, 2018b, c, f; World Steel Association, 2018, p. 100).

By yearend 2017, Mauritania had the capacity to process, transport, and export more than 16 Mt/yr of iron ore following the completion of construction of a second loading dock at the Port of Nouadhibou on the Atlantic coast. During the year, SNIM was involved in upgrading the Guelb el Rhein 1 (Guelb 1) plant following the commissioning of the Guelb 2 plant in 2015. Guelb 2 was a new iron ore mining complex located in Zouerate; the commissioning of the plant added 4 Mt/yr of production capacity of high-grade concentrated iron ore (up to 68.5% iron). The company planned to increase the storage capacity at the Nouadhibou minerals export terminal in order to receive larger vessels capable of carrying up to 250,000 t of iron ore exports, up from the 150,000-t limit in 2017 (table 2; Société Nationale Industrielle et Minière, 2018a, c, d; Yahoo Finance, 2019).

In 2017, Glencore plc of Switzerland and the United Kingdom held interests in three iron ore deposits in Mauritania through three of its subsidiaries (El Aouj Mining Co. S.A., Sphere Lebtheinia S.A., and Sphere Mauritania S.A.). El Aouj completed the El Aouj East feasibility study and the ore reserves update at the El Aouj East and Askaf North properties. El Aouj was a 50–50 joint venture of SNIM and Glencore. El Aouj's measured and indicated mineral resources were 1,905 Mt grading 36% iron. Measured and indicated mineral resources held by Sphere Lebtheinia were estimated to be 2,180 Mt grading 32% iron. Sphere Mauritania held 405 Mt of measured and indicated resources grading 36% iron (Glencore plc, 2018, p. 194, 217).

Industrial Minerals

Gypsum.—Gypsum production was carried out by SAMIA, which was a 50–50 joint venture of the Industrial Bank of Kuwait and SNIM. SAMIA produced 200,000 t of gypsum in 2017, 85% of which was used for domestic cement production and foreign cement plants in Ghana, Guinea, Mali, and Senegal. Consumption by SAMIA's plaster plant accounted for the remaining 15% of SAMIA's output (table 2; Ould Eleya, 2018).

Phosphate Rock.—The Msposphate Co. (MSP), a joint venture of private investors (80%) and the Government (20%), was created to develop the Bofal and the Loubboira phosphate rock deposits. In June, the Government awarded MSP a license to explore for phosphate rock in the Bofal and Loubboira regions. Mauritania's probable reserves of phosphate rock were estimated to be 160 Mt, including 70 Mt grading 21% phosphorus pentoxide at the Bofal deposit and 29 Mt grading 19% phosphorus pentoxide at the Loubboira deposit. Both deposits occur in the outcrops of phosphatic sedimentary rocks of Eocene age along the northern bank of the Senegal River in southern Mauritania and are located 300 km east of the Atlantic coast (Taylor and others, 2012, p. 14–15; Ministère du Pétrole et de l'Énergie et des Mines, 2018; Ibrahima, 2018).

Quartz.—Information on quartz production in Mauritania was not available in 2017. In 2016, Quartz Inc. Mauritania S.A.

started production of quartz blocks, grits, lumps, slabs, and other products at its mines, which cover a 40-km² area in Chami Province. The mines and the processing plant are located about 350 km northeast of Nouakchott and 150 km east of the port city of Nouadhibou. The mineral resources at the mines were estimated to be 725 Gt of quartz. The company expected that most of its production would be exported to China, Europe, and the United States (Quartz Inc. Mauritania S.A., 2018).

Mineral Fuels and Related Materials

Uranium.—Aura Energy continued its Tiris definitive feasibility study (DFS) in 2017 at the Tiris site to explore for and update its uranium mineral resources. The study was expected to be completed in 2018. Aura Energy hoped that the results of the DFS would warrant the construction of a uranium mine and leach-processing plant capable of producing 454 metric tons per year of triuranium octoxide (U₃O₈) over 15 years. In addition to uranium, Aura Energy began an exploration program aimed at producing lithium and soda ash from nearby salt lakes, also known as sabkhas. Soda ash would be used for uranium leaching of the ore produced at the Tiris site (Aura Energy Ltd., 2017b, p. 11, 16–17).

MINERAL INDUSTRY HIGHLIGHTS IN 2018

The mining sector accounted for 9.5% of the GDP in 2018 compared with 11.7% in 2017. Iron ore mining accounted for 3.5% of the GDP in 2018 compared with 4.2% in 2017. Copper and gold mining contributed to 4.8% of the GDP in 2018 and 2017. With the closing of the country's only offshore Chinguetti oilfield in 2018, the petroleum sector made no contribution to the GDP in 2018 compared with 3.9% in 2014 (Banque Centrale de Mauritanie, 2019, p. 94).

Mauritania's gold production increased to 9,235 kg in 2018 from 9,096 kg in 2017. Production came mainly from the Tasiast Mine (7,805 kg) and the Guelb Moghrein Mine (1,430 kg). Kinross employed about 3,800 workers, and 90% of them were Mauritanian. MCM employed about 1,470 people in 2018. In 2018, Kinross completed phase 1 of its mill expansion for the Tasiast Mine, which increased the mill's throughput capacity to 12,000 t/d from 8,000 t/d in 2017 (table 1; Kinross Gold Corp., 2018; First Quantum Minerals Ltd., 2019, p. 30).

Mauritania's iron ore production, which was carried out by SNIM and MCM in 2018, decreased by 9% to 10.7 Mt from 11.7 Mt in 2017, and by 19% compared with the 13.3 Mt produced in 2016. Iron ore exports also decreased by about 1.1 Mt in 2018 to 11.4 Mt from that of 2017. The decrease in iron ore output and exports was attributed to lower than expected production from the Guelb 2 plant and the rehabilitation of Guelb 1, and to low iron ore prices during most of 2018. China continued to be the major importer of iron ore from Mauritania; it accounted for 55% of the total, followed by Germany (15%), Italy and Japan (12% each), France (3%), and other countries (3%). MCM produced 425,389 t of magnetite concentrate at its Guelb Moghrein Mine. The company exported 86% of its concentrate output to Brazil and Mexico. MCM expected to produce 570,000 t of magnetite concentrates in 2019 (table 1; First Quantum Minerals Ltd., 2018b, p. 30–31; Banque Centrale de Mauritanie, 2019, p. 27–30).

In 2018, SNIM received loans totaling \$109 million from the African Development Bank and the European Investment Bank for the deepening and widening of the company's minerals port in Nouadhibou. The port is expected to be able to accommodate vessels that can ship up to 250,000 t—up from the current 150,000-t limit—by 2020 (Société Nationale Industrielle et Minière, 2018a).

PETRONAS International Corp. Ltd. ceased crude petroleum production at the Chinguetti oilfield in 2018 owing to reserves exhaustion. The company exported the last crude petroleum shipment of 197,000 barrels in the first quarter of 2018. Kosmos Energy Ltd. of the United States carried out deepwater exploration for natural gas on Blocks C6, C8, C12, and C13 of the Atlantic coast of Mauritania and Senegal. The Greater-Tortue Ahmeyim natural gas project was estimated to contain about 425 billion cubic meters of recoverable gas. The total acreage at 33,000 km² could contain an additional 1.4 trillion cubic meters, which is equivalent to 7 years of Africa's current natural gas production. The project is owned by BP p.l.c. (BP) of the United Kingdom (62%; BP is also the operator), Kosmos (28%), and SMHPM (10%). BP planned to construct the Tortue floating liquefied natural gas facility (FLNG) in 2019, which would produce 2.5 Mt/yr of liquefied natural gas (LNG) in 2022 (Bouso, 2018; Banque Centrale de Mauritanie, 2019, p. 27–30; Kosmos Energy Ltd., 2019; Tullow Oil plc, 2019; Yahoo Finance, 2019).

Outlook

The Government has been particularly focused on developing the country's mining sector and iron ore production by supporting its national mining company, SNIM, and expanding mineral export ports at Nouadhibou as well as the railway that connects iron ore mines with the export ports. SNIM planned to increase its iron ore production capacity to 40 Mt/yr by 2025. Gold production by Kinross at the Tasiast gold mine is expected to more than double to 25,000 kg/yr between 2020 and 2029 following the completion of the phase 2 expansion project. Aura Energy expects to start uranium production in Mauritania for the first time at the Tiris uranium mine in 2020. Mauritania could become a producer and exporter of LNG by 2022 following the commissioning of the FLNG facility at the Greater-Tortue Ahmeyim offshore gasfield. Mauritania could become a cobalt producer if positive developments in the exploration of the Tasiast South cobalt project and the Bofal and Loubboira phosphate rock projects are realized.

References Cited

- Algold Resources Ltd., 2018, Tijirit property NI 43-101 technical report with resource estimate update Tijirit—Mauritania: Montreal, Quebec, Canada, Algold Resources Ltd., August 4, 195 p. (Accessed February 5, 2019, at http://algold.com/wp-content/uploads/2018/04/April10_18-Tijirit_TechReport_final.pdf.)
- Aura Energy Ltd., 2017a, Aura's base metal review highlights high cobalt value: Montreal, Quebec, Canada, Aura Energy Ltd., March 31, 41 p. (Accessed October 29, 2019, at <http://www.auraenergy.com.au/investor/ASX%20Announcements/2017/Base%20Metal%20Review%20Highlights%20High%20Cobalt%20Values.pdf>.)
- Aura Energy Ltd., 2017b, Corporate presentation: Montreal, Quebec, Canada, Aura Energy Ltd., March, 41 p. (Accessed February 26, 2018, at <http://www.auraenergy.com.au/investor/ASX%20Announcements/2017/Aura%20Energy%2012%20Conference%20%20March%202017.pdf>.)

- Banque Centrale de Mauritanie, 2018, Annual report June 2018: Nouakchott, Mauritania, Banque Centrale de Mauritanie, 99 p. (Accessed February 4, 2018, at https://www.bcm.mr/IMG/pdf/rapport_annuel_2017_version_arabe.pdf.) [In Arabic.]
- Banque Centrale de Mauritanie, 2019, Annual report June 2019: Nouakchott, Mauritania, Banque Centrale de Mauritanie, 109 p. (Accessed November 4, 2019, at https://www.bcm.mr/IMG/pdf/rapport_annuel_2018_ar.pdf.) [In Arabic.]
- Bouso, Ron, 2018, BP green-lights Africa's deepest offshore LNG project: Thomson Reuters, December 21. (Accessed November 4, 2019, at <https://www.reuters.com/article/bp-tortue/bp-green-lights-africas-deepest-offshore-lng-project-idUSL8N1YQ315>.)
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, 2017, Support for good governance in the natural resources: Bonn, Germany, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, September 29. (Accessed March 7, 2018, at <https://www.giz.de/en/worldwide/62532.html>.)
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, 2018, Human rights risks in mining—BGR/GIZ country study Mauritania: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, January, 55 p. (Accessed October 1, 2018, at <https://www.bmz.de/rue/includes/downloads/2017bgr-en-mauritania-human-rights-mining-low-res.pdf>.)
- First Quantum Minerals Ltd., 2018a, Annual report 2017—Building: Vancouver, British Columbia, Canada, First Quantum Minerals Ltd., 100 p. (Accessed February 5, 2019, at https://www.annualreports.com/HostedData/AnnualReportArchive/f/TSX_FM_2017.pdf.)
- First Quantum Minerals Ltd., 2018b, Guelb Moghrein: Vancouver, British Columbia, Canada, First Quantum Minerals Ltd. (Accessed May 21, 2018, at <https://www.first-quantum.com/Our-Business/operating-mines/Guelb-Moghrein/default.aspx>.)
- First Quantum Minerals Ltd., 2019, 2018 annual report: Vancouver, British Columbia, Canada, First Quantum Minerals Ltd. (Accessed April 9, 2020, at https://s24.q4cdn.com/617706469/files/doc_financial/annual/FQM_2018_AR_aoda.pdf.)
- Glencore plc, 2018, Annual report 2017: Baar, Switzerland, Glencore plc, February 8, 220 p. (Accessed March 8, 2018, at <http://www.glencore.com/dam/jcr:62bed41c-1627-4bf5-bc43-cf5518ba1193/glen-2017-annual-report.pdf>.)
- Hitzman, M.W., Bookstrom, A.A., Slack, J.F., and Zientek, M.L., 2017, Cobalt—Styles of deposits and the search for primary deposits: U.S. Geological Survey Open-File Report 2017–1155, 47 p. (Accessed October 29, 2019, at <https://pubs.er.usgs.gov/publication/ofr20171155>.)
- Ibrahima, D.E.H., 2018, Mauritania will soon export phosphate to the Asian market: Nouakchott, Mauritania, Financial Afrik, December 13. (Accessed May 26, 2021, at <https://www.financialafrik.com/2018/12/13/la-mauritanie-va-bientot-exporter-du-phosphate-sur-le-marche-asiatique/>.) [In French.]
- Kinross Gold Corp., 2017, Kinross to proceed with Tasiast Phase Two and Round Mountain Phase W expansion projects: Toronto, Ontario, Canada, Kinross Gold Corp. news release, September 18, 9 p. (Accessed October 29, 2019, at https://s24.q4cdn.com/496390694/files/doc_news/2017/09/KGC-NewsRelease-Phase-Two-and-Phase-W-news-release_Final-Sept-18.p df.)
- Kinross Gold Corp., 2018, Tasiast, Mauritania: Toronto, Ontario, Canada, Kinross Gold Corp. (Accessed February 7, 2019, at <http://www.kinross.com/operations/default.aspx#africa-tasiast>.)
- Kosmos Energy Ltd., 2019, Mauritania: Dallas, Texas, Kosmos Energy Ltd. (Accessed October 30, 2019, at <https://www.kosmosenergy.com/mauritania>.)
- Ministère du Pétrole et de l'Énergie, des Mines, 2012, Code minier [Mining law]: Nouakchott, Mauritania, Ministère du Pétrole, de l'Énergie et des Mines, 22 p. (Accessed December 4, 2018, at http://www.petrole.gov.mr/IMG/pdf/convention_2012_fr.pdf.) [In French.]
- Ministère du Pétrole, de l'Énergie et des Mines, 2018, Le secteur minier—Un pilier de l'économie mauritanienne [The mining sector—A pillar of the Mauritanian economy]: Nouakchott, Mauritania, Ministère du Pétrole, de l'Énergie et des Mines, 3 p. (Accessed February 4, 2019, at http://www.petrole.gov.mr/IMG/pdf/secteur_minier_fr.pdf.) [In French.]
- Ministère du Pétrole, de l'Énergie et des Mines, 2019, Mining operators: Nouakchott, Mauritania, Ministère du Pétrole et de l'Énergie et des Mines. (Accessed April 4, 2020, at <http://www.petrole.gov.mr/spip.php?article52>.)
- OreCorp Ltd., 2017, AGM presentation—November 2017: Subiaco, Western Australia, Australia, OreCorp Ltd., November, 32 p. (Accessed March 7, 2018, at http://www.orecorp.com.au/upload/documents/InvestorRelations/Presentations/171127CompanyAGMPresentation_November2017.pdf.)
- OreCorp Ltd., 2018, Akjoujt South project: Subiaco, Western Australia, Australia, OreCorp Ltd. (Accessed April 10, 2020, at <https://www.orecorp.com.au/projects/mauritania/akjoujt-south-project>.)
- Ould Eleya, M.E.M., 2018, Gypsum supply opportunities from Mauritania: Pro Global Media Ltd., July 1. (Accessed February 7, 2019, at <http://www.globalgypsum.com/magazine/articles/760-gypsum-supply-opportunities-from-mauritania>.)
- Quartz Inc. Mauritania S.A., 2018, About us: Nouakchott, Mauritania, Quartz Inc. Mauritania S.A. (Accessed February 8, 2019, at https://www.quartzinc.com/about_us.php.)
- Société Mauritanienne des Hydrocarbures et de Patrimoine Minier, 2018, General presentation: Nouakchott, Mauritania, Société Mauritanienne des Hydrocarbures et de Patrimoine Minier. (Accessed February 8, 2019, via <http://smhpm.mr/fr2/index.php/entreprise/historique>.) [In French.]
- Société Nationale Industrielle et Minière, 2018a, La BEI et la BAD soutiennent le projet de dragage du port minéralier [EIB and AfDB support the ore port dredging project]: Nouakchott, Mauritania, Société Nationale Industrielle et Minière press release, July 10. (Accessed February 8, 2019, at <http://www.snim.com/index.php/news-a-media/news/162-communique-de-presse-mauritanie-la-bei-et-la-bad-soutiennent-le-developpement-des-installations-p.html>.) [In French.]
- Société Nationale Industrielle et Minière, 2018b, Implantation [Implementation]: Nouakchott, Mauritania, Société Nationale Industrielle et Minière. (Accessed February 26, 2018, at <http://www.snim.com/index.php/societe/implantation.html>.)
- Société Nationale Industrielle et Minière, 2018c, Mines: Nouakchott, Mauritania, Société Nationale Industrielle et Minière. (Accessed February 7, 2019, at <http://www.snim.com/e/index.php/operations/mines.html>.)
- Société Nationale Industrielle et Minière, 2018d, Strategic program: Nouakchott, Mauritania, Société Nationale Industrielle et Minière. (Accessed February 7, 2019, at <http://www.snim.fr/e/index.php/strategy/strategie-program.html>.)
- Société Nationale Industrielle et Minière, 2018e, Subsidiaries [Subsidiaries]: Nouakchott, Mauritania, Société Nationale Industrielle et Minière. (Accessed February 7, 2019, at <http://www.snim.fr/e/index.php/societe/subsidiaries.html>.)
- Société Nationale Industrielle et Minière, 2018f, Vision: Nouakchott, Mauritania, Société Nationale Industrielle et Minière. (Accessed February 8, 2019, at <http://www.snim.com/index.php/societe/implantation.html>.)
- Taylor, C.D., Anderson, E.D., Bradley, D.C., Beaudoin, G., Cosca, M.A., Eppinger, R.G., Fernet, G.L., Finn, C.A., Friedel, M.J., Giles, S.A., Goldfarb, R.J., Horton, J.D., Lee, G.K., Marsh, E.E., Mauk, J.L., Motts, H.A., Ould El Joud, M.Y., Ould Soueidatt, S., Ould Taleb Mohamed, A.M., and Rockwell, B.W., 2012, Mauritania—A greenfield exploration opportunity in northwestern Africa: SEG Newsletter, no. 91, October, p. 1, 10–17.
- Tullow Oil plc, 2019, New ventures—Mauritania: London, United Kingdom, Tullow Oil plc. (Accessed November 4, 2019, at <https://www.tulloil.com/operations/new-ventures/mauritania>.)
- United Nations Conference on Trade and Development, 2018, World investment report 2018: Geneva, Switzerland, United Nations Conference on Trade and Development, 193 p. (Accessed February 5, 2019, at http://unctad.org/en/PublicationsLibrary/wir2018_en.pdf.)
- U.S. Census Bureau, 2018a, U.S. exports to Mauritania by 5-digit end-use code 2008–2017: U.S. Census Bureau. (Accessed February 4, 2019, at <https://www.census.gov/foreign-trade/statistics/product/enduse/exports/c7410.html>.)
- U.S. Census Bureau, 2018b, U.S. imports from Mauritania by 5-digit end-use code 2008–2017: U.S. Census Bureau. (Accessed February 4, 2019, at <https://www.census.gov/foreign-trade/statistics/product/enduse/imports/c7410.html>.)
- Workman, Daniel, 2018, Iron ore exports by country: Worldstopexports.com, September 13. (Accessed March 8, 2018, at <http://www.worldstopexports.com/iron-ore-exports-country>.)
- World Steel Association, 2018, Steel statistical yearbook 2018: Brussel, Belgium, World Steel Association, 121 p. (Accessed December 19, 2018, at https://www.worldsteel.org/en/dam/jcr:e5a8eda5-4b46-4892-856b-00908b5ab492/SSY_2018.pdf.)
- Yahoo Finance, 2019, BP awards pre-FEED deal for Greater Tortue Ahmeyim project: Yahoo Finance, April 10. (Accessed April 7, 2020, <https://finance.yahoo.com/news/bp-awards-pre-feed-deal-123012934.html>.)

TABLE 1
MAURITANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2014	2015	2016	2017	2018
METALS					
Copper, mine, concentrate, Cu content	33,079	45,001	32,818	28,791	28,137
Gold, mine, Au content kilograms	9,625	8,804 ^r	7,127	9,096	9,235
Iron ore, mine, concentrate:					
Gross weight thousand metric tons	13,306	11,607	13,268	11,714	10,711
Fe content do.	8,320 ^r	7,250 ^r	8,290 ^r	7,320	6,694
INDUSTRIAL MINERALS					
Cement, hydraulic	870,000	860,000	630,000 ^r	640,000	670,000
Gypsum	60,000 ^e	70,000 ^e	70,000 ^e	200,000	200,000 ^e
Salt ^e	700	700	1,000	1,000	1,000
MINERAL FUELS AND RELATED MATERIALS					
Petroleum, crude thousand 42-gallon barrels	2,173 ^r	1,933	1,727	1,191	197

^eEstimated. ^rRevised. do. Ditto.

¹Table includes data available through July 22, 2019. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, crude construction materials (clays, sand and gravel, and stone), phosphate rock, quartz, and raw steel may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
MAURITANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		BSA Ciment S.A. (Vicat Group, 65%)	Plant at Nouakchott	450
Do.		Ciment de Mauritanie S.A.	do.	900
Do.		Mauritano-Française des Ciments S.A.	do.	450
Do.		Société des Ciments du Nord (Ciments du Maroc, 100%)	Plant at Nouadhibou	NA
Copper, mine, Cu content		Mauritanian Copper Mines S.A. (MCM) (First Quantum Minerals Ltd., 100%)	Guelb Moghrein Mine, Akjoujt, Inchiri District	45
Gold, mine, Au content	kilograms	do.	do.	1,500
Do.	do.	Tasiast Mauritanie Ltd. S.A. (Kinross Gold Corp., 100%)	Tasiast gold mine, 300 kilometers north of Nouakchott	8,000
Gypsum		Société Arabe des Industries Métallurgiques S.A. (SAMIA) [Industrial Bank of Kuwait, 50%, and Société Nationale Industrielle et Minière (SNIM), 50%]	Sebkha N'dramcha, Nouakchott	300
Iron ore:				
Crude ore		Société Nationale Industrielle et Minière (SNIM) (Government, 78.35%; Industrial Bank of Kuwait K.S.C, 7.17%; Arab Mining Co., 5.66%; Iraq Foreign Development Fund, 4.59%; Office National des Hydrocarbures et des Mines, 2.30%; Islamic Development Bank, 1.79%; private investors, 0.14%)	Guelb el Rhein, Kedia d'Idjill, M'Haoudat, and Zouerate Mines, Tiris Zemmour region	16,000
Do.		Mauritanian Copper Mines S.A. (MCM) (First Quantum Minerals Ltd., 100%)	Guelb Moghrein Mine, Akjoujt, Inchiri District	770
Concentrated		do.	Guelb el Rhein plants, Guelb 1 and 2, Tiris Zemmour region	9,000
Do.		do.	Guelb Moghrein Mine, Akjoujt, Inchiri District	500
Iron and steel, raw steel	metric tons	Société Arabe du Fer et de l'Acier S.A. (SAFA) [Société Nationale Industrielle et Minière (SNIM), 100%]	Plant at Nouadhibou	5,000
Petroleum, crude	thousand 42-gallon barrels	PETRONAS International Corp. Ltd. (Petroliaam Nasional Berhad, 100%)	Chinguetti oilfield, 80 kilometers offshore ¹	197
Quartz		Mauritania Minerals Co. S.A. (MMC), 90%, and Government, 10%	Oum Agueneina	300
Do.		Quartz Inc. Mauritania S.A. (Quartz Inc., 90%, and Government, 10%)	Mine in Chami Province	200
Salt	metric tons	Société Mauritanienne des Industries du Sel (SOMISEL)	Sebkha de N'Terert and Sebkhet ej Jill brine pits in the southwestern part of the country	1,000
Stone, dimension, granite		Granites et Marbres de Mauritanie (GMM), [Société Nationale Industrielle et Minière (SNIM), 62.80%]	Plant at Nouadhibou	10

Do., do. Ditto. NA Not available.

¹Production from the Chinguetti oilfield ceased in 2018.