



2017–2018 Minerals Yearbook

EGYPT [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF EGYPT

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

Egypt supplied the world with cement, crude petroleum, feldspar, ferroalloys, gold, iron and steel, manganese, nitrogen fertilizers, phosphate rock, primary and secondary aluminum, refined petroleum products, quartz, secondary copper, salt, talc, and vermiculite. In 2017, the country's production of natural gas was used mainly for domestic consumption. Egypt's mineral imports included coal, copper, crude petroleum and natural gas, iron and steel, and refined petroleum products. Egypt was the third-ranked producer of direct-reduced iron (DRI) in the Middle East and North Africa region after Iran and Saudi Arabia and accounted for 5.4% of the world's total output. Egypt's real gross domestic product (GDP) increased by 4.1% in 2017 compared with an increase of 4.3% in 2016 (table 1; International Monetary Fund, 2019; Midrex Technologies Inc., 2018, p. 9; United Nations Statistics Division, 2018, p. 130–131).

Minerals in the National Economy

In fiscal year 2017 (July 1, 2017, through June 30, 2018), the mining sector's share (including hydrocarbons) of the GDP, at constant prices, was 9.8% compared with 9.6% of the GDP in fiscal year 2016 (July 1, 2016, through June 30, 2017). The share of the manufacturing sector (which included aluminum, cement, fertilizers, iron and steel, and refined petroleum products), was about 16.7% of the GDP in fiscal years 2017 and 2016. The share of the construction sector was 6.0% of the GDP in fiscal year 2017 compared with 5.7% in fiscal year 2016. In real terms, mining sector activity increased by 7.7% in fiscal year 2017 compared with a decrease of 1.8% in fiscal year 2016. The value of the manufacturing sector increased by 4.8% in fiscal year 2017 compared with 2.1% in fiscal year 2016; and that of the construction sector, by 10.0% in fiscal year 2017 compared with 9.5% in fiscal year 2016 (Central Agency for Public Mobilization and Statistics, 2019, p. 13; Central Bank of Egypt, 2019, p. 110).

The flow of foreign direct investment (FDI) into Egypt was \$13.2 billion in fiscal year 2017 compared with \$13.4 billion in fiscal year 2016, and the outflow in fiscal year 2017 was \$5.4 billion. Net FDI flows to Egypt, which accounted for 3.1% of the GDP in fiscal year 2017, were \$7.7 billion. Sixty-seven percent of these inflows went to the hydrocarbons sector; 10%, to the manufacturing sector; and 4.5%, to the construction sector. No FDI inflows went to the nonfuel mineral sector (Central Bank of Egypt, 2019, p. 54, 59–60).

Government Policies and Programs

Law No. 198 of December 8, 2014, was Egypt's mining law in 2017. Under the law, which was implemented in 2016, an annual exploration and mining fee for each square kilometer (km²) of permit area of 5,000 Egyptian pounds (EP) (\$286)

replaced the 40 EP (\$2.3) per square kilometer, which was being collected under the old law. A 5% royalty on annual production to be paid to the Government and a 1% "corporate social responsibility" fee for local municipalities in which the mining company operates were introduced (Egyptian Mineral Resources Authority, 2018b, p. 6–7).

The Law for Gas Market Activities Regulation No. 196 of August 2017, Law No. 236 of 2001 concerning the Egyptian National Gas Holding Company, Law No. 217 of 1980 concerning natural gas, and Law No. 20 of 1976 concerning the Egyptian General Petroleum Corporation are the main crude petroleum and natural gas laws that govern the exploration, development, and distribution of hydrocarbons in Egypt. The Gas Regulatory Authority was established by Law No. 196 of 2017 as an independent agency to regulate the natural gas market in Egypt and is responsible for granting licenses and assessing tariffs on downstream natural gas activities, including supply and transportation to end users (Gas Regulatory Authority, 2017, p. 7, 11; Hakim, 2019).

In June, the Government issued a new investment law to attract more FDI into the country by reducing bureaucratic procedures and simplifying investment processes. Law No. 72 of 2017 repealed the Investment Guarantees and Incentives Law No. 8 of 1997 but kept benefits and guarantees to foreign investors under the previous law. Investment Law No. 8 of 1997 provided the legal framework for several mining companies that were established in the country in the early 2000s. Law No. 198 of 2015 protects investments in the country of both foreign and domestic companies against nationalization and provides incentives for investing in mining and in the manufacturing of fertilizers and petrochemicals in the country's free trade zones (EY, 2017; Egyptian Mineral Resources Authority, 2018b).

The Government has outlined the country's medium-term development strategy for international and local investors and provided an overview for potential investment opportunities in all sectors of the Egyptian economy. The focus was on maximizing the added value from mining operations through manufacturing and processing of mineral commodities rather than export of raw materials. Potential projects in the mining sector included bentonite mining and processing at the El Sebaaya Valley; countrywide bidding rounds for mineral exploration licensing; development of the Golden Triangle gold project, located between Safaga and El Quseir on the Red Sea; other mineral exploration projects in the areas of Qena, El Quseir, and Safaga; and the construction of a phosphate-based products plant at Abu Tartur phosphate mine (Sayed, 2016, p. 112, 118–119).

Production

Notable increases in the reported production of Egypt's mineral commodities in 2017 compared with those of 2016

included DRI, which increased by 78%; other refined products, by 70%; raw steel, by 36%; cement and wire rod, by 25% each; dry natural gas, by 21%; phosphoric acid, by 20%; gross natural gas, by 19%; coke, by 18%; sulfur (petroleum byproduct), by 16%; phosphate rock, by 12%; and iron ore, by 11%. Synthetic soda ash production decreased by 100% owing to the suspension of soda ash production by Salvoy S.A. of Belgium at its plant in Alexandria in 2016. Manganese production decreased by 67%; talc and related minerals, by 31%; and asphalt, by 12% (Salvoy S.A., 2016). Data on mineral production are in table 1.

Structure of the Mineral Industry

The mineral industry of Egypt included private, public, and state-owned companies. Some international companies formed joint ventures with local public and state-owned companies to explore for and develop mineral resources. The vast majority of these international companies were exploring for crude petroleum, natural gas, and gold. The Ministry of Petroleum and Mineral Resources (MPMR) managed the country's mining and hydrocarbon sectors. The MPMR had five independently managed entities—Egyptian General Petroleum Corp. (EGPC), Egyptian Natural Gas Holding Co. (EGAS), Egyptian Petrochemical Holdings Co., Egyptian Mineral Resources Authority (EMRA), and Ganoub El Wadi Petroleum Holding Co. (Ganope) (Ministry of Petroleum and Mineral Resources, 2018).

The EMRA was responsible for conducting geologic mapping and mineral exploration and for issuing mining permits. The EMRA held shares in three mining companies—Al Wadi Al Gadid Company for Mineral Resources and Oil Shale (Wadico), the Egyptian Company for Mineral Resources (ECMR), and Shalateen Mineral Resources Co. (Egyptian Mineral Resources Authority, 2018a; Ministry of Petroleum and Mineral Resources, 2018).

Wadico was formed in 2007 in Kharga City to develop oil shale and mineral resources in the New Valley in southwestern Egypt. The company's shareholders were Ganope (65%), Petrojet Co. (25%), Nile Petroleum Co. (5%), and EMRA (5%). Wadico had the capacity to produce unspecified quantities of ball clay, feldspar, iron oxides (hematite and limonite), kaolin, phosphate rock, quartz, and talc at the Kharga Oasis in the Western Desert. The company planned to produce calcium carbonate for soda ash, granite, limestone for cement, and marble (Al Wadi Al Gadid Company for Mineral Resources and Oil Shale, 2018).

The Ministry of Defense of Egypt owned and operated several companies that produced mineral commodities for civilian and military use. These companies included Abu Zaabal Fertilizer Co., El-Arish Cement Co., El Nasr Mining Co., El Nasr Company for Intermediate Chemicals, Helwan Company for Nonferrous Industries, and Helwan Iron Foundries. The increased involvement of the Ministry of Defense of Egypt in the industrial sector in recent years raised concerns by the private sector, including the exemption from paying value-added tax in 2016 on projects carried out by military factories and their exclusion from certain bidding process requirements required of other Government agencies and the public sector (Federation of American Scientists, 2018; Thomson Reuters, 2018b).

Mineral Trade

Egypt's merchandise exports increased to \$25.9 billion in 2017 from \$22.5 billion in 2016, of which \$4.5 billion was petroleum exports. Crude petroleum exports increased to \$2.1 billion from \$1.8 billion in 2016; refined petroleum products increased to \$2.4 billion from \$945 million; gold exports decreased to \$2.1 billion from \$2.6 billion; and nitrogen fertilizer exports increased to \$974 million from \$767 million. Exports of steel products increased to 1.3 million metric tons (Mt) from 595,000 metric tons (t) in 2016 (United Nations Statistics Division, 2018, p. 130; World Steel Association, 2018, p. 52).

Egypt's exports to the United States increased to \$1.6 billion in 2017 from \$1.5 billion in 2016. The main mineral-related exports were crude petroleum, which decreased to \$161 million from \$173 million; iron and steel mill products, which increased to \$100 million from \$5 million; fertilizers, which increased to about \$80 million from \$52 million; stone, sand, and cement, which increased to \$24 million from about \$13 million; advanced iron and steel products, which decreased to \$8 million from \$6 million; other precious metals, which decreased to \$2 million from \$3 million; and other nonferrous metals, which decreased to \$1 million from \$4 million (U.S. Census Bureau, 2018b).

The value of Egypt's merchandise imports increased to \$66.3 billion in 2017 from \$58.0 billion in 2016. The country's crude oil imports increased in value to \$1.8 billion in 2017 from \$1.4 billion in 2016; petroleum products imports, to \$5.6 billion from \$3.3 billion; and natural gas and other petroleum gases, to \$3.5 billion from \$3.2 billion. The value of steel imports increased to \$1.1 billion from \$1.0 billion in 2016. In terms of tonnage, Egypt imported about 5.5 Mt of semifinished and finished steel products in 2017 compared with 9.2 Mt in 2016. The country's iron and steel imports included 5.5 Mt iron ore, 2.8 Mt of ingots and semifinished products, 2.0 Mt of scrap, 1.8 Mt of flat products, 552,000 t of long products, 393,000 t of tubular steel products, 55,000 t of DRI, and 10,000 t of pig iron (United Nations Statistics Division, 2018, p. 131; World Steel Association, 2018, p. 55, 60, 65, 70, 75, 93, 97, 103, 108).

The value of Egypt's imports from the United States increased in 2017 to \$4.0 billion from \$3.5 billion in 2016. The major mineral commodities and mineral-related imports were other petroleum products (\$149 million), natural gas liquids (\$141 million), chemicals (\$129 million), steelmaking materials (\$118 million), other coal and fuels (\$113 million), metallurgical coal (\$69 million), drilling and oilfield equipment (\$63 million), fuel oil (\$46 million), excavation machinery and natural gas (\$44 million each), and iron and steel products (\$20 million) (U.S. Census Bureau, 2018a).

Commodity Review

Metals

Aluminum.—Aluminium Co. of Egypt (Egytalum) was the country's sole producer of primary aluminum. The company had the capacity to produce 320,000 metric tons per year (t/yr) of aluminum from 12 potlines, including billet (95,000 t/yr); rolled products (85,000 t/yr); ingots, slabs, and tee bar (35,000 t/yr); hot and cold rolling mills (75,000 t/yr); and foundry alloys

and extrusion profiles (15,000 t/yr each). The company also had the capacity to produce 140,000 t/yr of calcined coke and 172,000 t/yr of prebaked anode blocks. Egyptalum planned to expand its production capacity by 250,000 t/yr for a total of 570,000 t/yr by 2022 (Egyptian Aluminium Co., 2018a–c).

Arab Aluminum Co. S.A.E. produced a wide range of secondary aluminum products, including angles, bar, and tubes, and it had the capacity to produce 15,000 t/yr of aluminum products. The company claimed a 40% share of the domestic market and exported 15% of its output. Other secondary aluminum producers in Egypt included Canex Aluminum, which was a Canadian and Saudi company; Egyptian Aluminium Products Co. (Alumisr), which had plants in El-Obour city and in Helwan; Egyptian Copper Works Co., which produced aluminum sheets and wire; Egyptian International Co. for Aluminum Profiles S.A.E.; and Helwan Company for Nonferrous Industries (table 2; Arab Aluminum Co. S.A.E., 2018)

Gold.—The Sukari Mine, which was one of the top 10 gold mines in the world, continued to be the only gold mine in operation in Egypt. The mine, which was owned and operated by a 50–50 joint venture of Centamin plc of the United Kingdom and ECMR, processed 12.0 Mt of ore and produced 16,951 kilograms (kg) of gold in 2017. The company planned to produce 19,000 kg of gold (reported as 600,000 troy ounces) in 2018. The Sukari Mine began production as an open pit mine and was extended underground in 2011. As of June 30, 2017, the measured and indicated mineral resources at the mine (open pit and underground combined) were 364 t (11.7 million troy ounces) of gold at cutoff grade of 0.3 g/t. The estimated gold reserves at the mine were 250 t (8.0 million troy ounces), and the mine life could be extended to 20 years with additional exploration (Centamin plc, 2018; Egypt Today, 2018b).

Iron and Steel.—Egypt's production of raw steel increased by 36% to 6.9 Mt in 2017 from about 5.0 Mt in 2016. The recovery of the Egyptian raw steel industry was attributed to the increase in the natural gas supply to power steel plants, to the increased domestic demand for steel products, and to the removal of tariffs, which had been imposed on steel products exports. Production of hot-rolled steel increased to about 8.1 Mt, of which 85% was long products and 15% was flat steel products. Wire rod output increased to 920,000 t from 736,000 t (table 1; World Steel Association, 2018, p. 2, 32–35).

The main steel producers in Egypt were Al Ezz Steel Rebars S.A., which owned and operated Al Ezz El-Dekheila Steel Co. plant in Alexandria and had the capacity to produce 6 million metric tons per year (Mt/yr) of steel; Suez Steel Co. (Solb Misr), which had the capacity to produce 2 Mt/yr of steel at its plant in Ain Al-Sokhna; Beshay Steel Group, which had the capacity to produce 3.0 Mt/yr of steel at its plant in Sadat City; and the Egyptian Steel Group, which had the capacity to produce 830,000 t/yr of steel at its plant in Ain Al-Sokhna. Hadislob, which was one of the companies affiliated with the HCMI, produced mainly iron ore, raw steel, and finished steel products at its plant in Helwan, south of Cairo. The company had been producing at about 30% of its capacity in recent years owing to old machinery and a lack of investment to update its facilities. In 2017, HCMI negotiated with unnamed Chinese and Russian

steel companies for a possible joint venture with Hadislob (table 2; Egyptian Iron and Steel Co., 2018).

Egypt's DRI production increased to 4.7 Mt in 2017 from 2.6 Mt (revised) in 2016. The increase was attributed to improved natural gas supply to iron and steel plants and to increased demand by steel plants. DRI production was carried out by Al Ezz El-Dekheila Steel Co., which had a production capacity of 2.32 Mt/yr; Ezz Rollin Mills Co. S.A.E., 1.90 Mt/yr; Egyptian Sponge Iron and Steel Co. (ESISCO), 1.76-Mt/yr; and Solb Misr, 1.95 Mt/yr (table, 2; Midrex Technologies Inc., 2018, p. 9, 12–14).

Industrial Minerals

Cement.—In December 2016, the Industrial Development Authority of Egypt offered 14 cement production licenses throughout the country to local and foreign investors to meet the Government forecast of increased demand for cement as a result of large-scale construction projects being implemented in the country. The new cement licenses were expected to add an additional 28 Mt/yr of capacity (2 Mt/yr each). Three of the 14 licenses were sold to Egyptian Cement Co., El Sewedy Cement Co., and South Valley Cement Co. The remaining 11 licenses were not sold to cement investors. The Government planned to increase cement production to 84 Mt by 2020 from the current (2017) production of 69 Mt and for Egypt to resume cement exports, which had been halted in 2009 (Karam, 2017; Global Cement News, 2018).

Construction at the 13-Mt/yr-capacity cement plant at Beni Suef Governorate continued in 2017; the plant was being built by Sinoma International Engineering Co. Ltd. of China for the El-Arish Cement Co. (Ministry of Defense). When completed in 2018, the plant would have the largest capacity in Egypt and would produce 6,000 metric tons per day (t/d) from each of its six production lines for a total capacity of 36,000 t/d (Ismail, 2018).

Nitrogen.—Production of ammonia was estimated to have increased to 3.7 Mt in 2017 from 2.8 Mt in 2016, and that of urea was estimated to have increased to 3.0 Mt from 2.2 Mt (revised). The increase in production was attributed to the resumption of a steady supply of natural gas to the fertilizer and chemicals companies. Nitrogen fertilizer companies were able to import natural gas directly from the international market or to receive natural gas deliveries through the state-owned company EGAS (table 1).

OCI N.V. of the Netherlands produced ammonia, granulated urea, and other nitrate fertilizers at its plants in Egypt. OCI had a majority ownership in two nitrogen fertilizer companies in Egypt—Egypt Basic Industries Corp. (EBIC) and Egyptian Fertilizers Co. (EFC). The EBIC plant at Ain Al-Sokhna was 60% owned by OCI, and the remaining 40% was owned by EGPC and other minority investors. The EBIC plant had the capacity to produce 730,000 t/yr of anhydrous ammonia. The plant had a dedicated 8-kilometer (km) pipeline from the plant to a refrigerated bulk liquid export jetty on the Suez Canal. The EFC plant was wholly owned by OCI and had the capacity to produce 1.55 Mt/yr of urea and 325,000 t/yr of ammonium nitrate (OCI N.V., 2018, p. 24; 2019, p. 10).

El-Nasr Company for Intermediate Chemicals (a subsidiary of the National Services Products Organization of the Ministry

of Defense) was building the Ain Al-Sokhna Phosphatic Fertilizer Complex in Ain Al-Sokhna at the southern end of the Suez Canal. The complex was expected to produce 440,000 t/yr of ammonia, 380,000 t/yr of urea, and 300,000 t/yr of calcium ammonium nitrate. The new plant was expected to begin production in 2022 (Hassan Allam Holding Co., 2018).

Egyptian Chemical Industries (KIMA), which was affiliated with the Holding Company for Chemical Industries, was building a new nitrogen fertilizer plant at Aswan. The plant, KIMA 2, was expected to have the capacity to produce 438,000 t/yr of ammonia and 584,000 t/yr of urea. The plant was on track to begin production by yearend 2018. The project was financed by a group of unnamed domestic and regional banks (Egypt Today, 2018a; Holding Company for Chemical Industries, 2018).

Phosphate Rock.—Egypt's phosphate rock output increased to 4.8 Mt from 4.3 Mt in 2016. Phosphate Misr Co. S.A.E (PMC) was the leading producer of phosphate rock in the country; it produced about 1.8 Mt of phosphate rock compared with 2.4 Mt in 2015. PMC had the capacity to produce 5 Mt/yr of phosphate rock grading between 25% P₂O₅ and 31% P₂O₅. The company operated the Abu Tartur Mine, the New Valley Mine at El Sebaaya, and the Red Sea Mine. El Nasr Mining Co. was the second-ranked producer of phosphate rock in Egypt; it produced 1.8 Mt of phosphate rock from the East El Sebaaya Mine, the West El Sebaaya Mine, and the Red Sea Mine at El Quseir (Sayed, 2016, p. 123; Al Wadi Al Gadid Company for Mineral Resources and Oil Shale, 2018; El Nasr Mining Co., 2018; Phosphate Misr Co. S.A.E, 2018).

PMC was developing a phosphate fertilizer manufacturing complex at the Abu Tartur phosphate rock mine in the Al Wadi Al Gadid Governorate. The project was expected to include a phosphate ore treatment unit, a 500,000-t/yr capacity phosphoric acid production unit, and a sulfuric acid production unit. The \$900 million project would be funded by PMC (25%); Ahli Holding Co. (20%); Abu Qir Fertilizer & Chemical Industries Co., National Investment Bank, Orient Gas Co., Petrojet, and Inpi Co. (10% each); and EMRA (5%). The MOPNR was finalizing awarding a front-end engineering design for the Abu Tartur phosphate project to Fluor Corp. of the United States (Petroleum Future, 2017; Menachery, 2018).

El-Nasr Company for Intermediate Chemicals had been producing compound fertilizers, phosphate fertilizer, phosphoric acid, and other chemicals at Giza Industrial Zone. The company was building a phosphatic fertilizer complex in Ain Al-Sokhna at the southern end of the Suez Canal. The complex was expected to include two 693,500-t/yr-capacity sulfuric acid plants and have the capacity to produce about 1 Mt/yr of phosphate-based fertilizers, including 438,000 t/yr of diammonium phosphate and 273,750 t/yr of triple superphosphate. Construction of the complex is expected to be completed in 2018 (Intecsa Industrial, S.A., 2017; El-Nasr Company for Intermediate Chemicals, 2018; Hassan Allam Holding Co., 2018).

Mineral Fuels

Coal.—The Government, through the Ministry of Electricity, was evaluating bids from companies interested in building a 6,000-megawatt coal-fired powerplant near Hamrawein Port.

The independent private-public powerplant was expected to use imported coal to generate electricity to meet increasing demand. The Ministry of Electricity delayed the construction of the Oyoun Moussa coal-fired powerplant, which was expected to be completed by 2020, to the next economic development plan for 2022–27 (Farak, 2017).

Natural Gas.—Natural gas production rebounded in 2017 following the downward trend in the previous 5 years. The increase in natural gas production was attributed mainly to the beginning of production at the Zohr Gasfield and increased production from the Nooros field. Dry gas production increased by 21% to 50.7 billion cubic meters from 40.0 billion cubic meters in 2016. Egypt's natural gas consumption increased by 13% to 56.0 billion cubic meters from 49.4 billion cubic meters in 2016. The country's proved natural gas reserves at the end of 2017 were estimated to be about 1.8 trillion cubic meters and accounted for 0.9% of the world's total natural gas reserves. Egypt was responsible for 1.3% of the world's total natural gas production in 2017. Twelve natural gas discoveries were made in Egypt in 2017 compared with 18 discoveries in 2016. In fiscal year 2016-17, natural gas was produced from Al Wadi Al Gadid Governorate (33.0%), the Red Sea (24.6%), Dakahlia (22.2%), North Sinai (11.3%), Port Said (3.9%), Damietta (2.8%), Alexandria (2%), and Mersa Matruh (0.2%) (BP p.l.c., 2018, p. 26–29; Central Agency for Public Mobilization and Statistics, 2019, p. 81; Organization of Arab Petroleum Exporting Countries, 2019, p. 22).

Eni Group of Italy produced 8.9 billion cubic meters of natural gas in Egypt in 2017; it operated the Baltim, El Temsah, and Ras el Barr Gasfields in the Nile Delta and North Port Said concessions. Eni started production in the deep water Zohr Gasfield of the Shorouk offshore block, in which Eni originally owned 60% interest, along with NK Rosneft' PAO of Russia (30% interest) and BP p.l.c. of the United Kingdom (10% interest). The Zohr natural gas discovery in 2015 was the largest discovery in Egypt and the Mediterranean Sea; it had an estimated resource of 850 billion cubic meters of natural gas in place (Eni Group, 2015; 2016; 2018 p. 33, 40).

Petroleum.—The output of crude petroleum (including condensate) decreased in 2017 to 220 million barrels (Mbbl) from 230 (revised) Mbbl in 2016. Egypt accounted for 0.8% of the world's total output of crude oil. Consumption of crude petroleum by Egypt had been increasing in recent years; it averaged 298 Mbbl in 2017 compared with 312 Mbbl in 2016 and accounted for 0.8% of the world's total consumption. More than one-half of Egypt's crude petroleum production came from the Western Desert, and the remainder came from the Eastern Desert, the Mediterranean Sea, the Nile Delta, the Sinai Peninsula, the Suez Gulf, and Upper Egypt (southern Egypt). Crude petroleum discoveries increased to 30 in 2017 from 27 in 2016. The country held 3.3 billion barrels of proved oil reserves (BP p.l.c., 2018, p. 12–15; Organization of Arab Petroleum Exporting Countries, 2019, p. 20).

Egypt's combined refinery throughput at its eight refineries was 508,000 barrels per day (bbl/d) in 2017, which was significantly less than the installed refining capacity of 722,000 bbl/d. The Government planned to increase the country's petroleum refining capacity by an additional

600,000 bbl/d by building new refineries and expanding capacities at existing refineries to meet the increased demand in the local market. Egyptian Refinery Co., which was a joint venture of EGPC and Arab Refinery Co., was building a new refinery at Mosotrod near Cairo; it would have the capacity to produce 174,400 bbl/d of refined petroleum products. The \$4.1 billion refinery was expected to begin production in 2019 and would cut Egypt's imports of distilled gas fuel by 50%, and of gasoline, by 40% (BP p.l.c., 2018, p. 22, 23; Thomson Reuters, 2018a; U.S. Energy Information Administration, 2018, p. 5).

MINERAL INDUSTRY HIGHLIGHTS IN 2018

Egypt was an important consumer and producer of mineral commodities in 2018; it was the world's 5th-ranked producer of cement, 8th-ranked producer of phosphate rock, 9th-ranked producer of nitrogen (fixed)-ammonia, and 14th-ranked producer of natural gas, and it was ranked 16th in global natural gas reserves. The country was also the second-ranked producer of DRI and raw steel in the Middle East and North Africa region. Egypt imported alumina for aluminum smelting, coal, copper and other metals, crude petroleum and refined petroleum products, iron ore for DRI plants, liquefied natural gas (LNG), and semifinished and finished steel products (BP p.l.c., 2019, p. 30, 32, 39, 45; United Nations Statistics Division, 2019, p. 129–30; World Steel Association, 2019, p. 13 Apodaca, 2020; Curry, 2020; Jasinski, 2020;).

In 2018, the Government issued the Executive Regulations of the Law for Gas Market Activities No. 196 of August 1, 2017, which enabled investors to sign concession agreements with the Government to explore for and develop natural gas and crude petroleum in Egyptian onshore and offshore concession areas. The law gives the Government the right to assess license fees, depending on the type of activity and the volume of production. This Law for Gas Market Activities No.196 succeeded in attracting many international oil companies to invest in Egypt's hydrocarbon projects. This interest is in contrast to the interest aroused by the Mineral Resources Law No. 198 of 2014 and the Executive Regulation Law No. 1657 of 2015, which did not succeed in attracting any domestic or international investment in the mining sector. In fact, the Government had not signed a single mining agreement since 1999. Moreover, the Government canceled four gold exploration agreements in the past 10 years. The Mineral Resources Law No. 198 of 2014 and its Executive Regulations required the creation of 50–50 joint ventures between the Government and private mining companies to explore and develop mining projects, similar to the one that existed between Centamin and EMRC for the Sukari gold mine. In 2018, the Government worked with Wood Mackenzie Group of the United States to overhaul the current mining law so as to adopt a new mining law and executive regulations in 2019. The new law would not require production-sharing agreements with the Government and would abolish the 50–50 ownership requirement in joint-venture projects with the Government. However, the new law and regulations would set new royalty rates for the Government of between 5% and 20% on mineral production

(Enterprise, 2018; Gas Regulatory Authority, 2018; Daily News Egypt, 2019; Thomson Reuters, 2020).

Production

Reported production of Egypt's mineral commodities in 2018 compared with that of 2017 included notable increases in the production of sulfuric acid by an estimated 52%; DRI and dry natural gas, by 21% each; cement and hot-rolled steel products, by 19% each; sulfur by, 16%; raw steel, by 14%; phosphate rock (P_2O_5 content), by 12%; iron ore, by 11% and marble, by 10%. Notable production decreases included that of gold, by 13%, and iron ore, by 12% (table 1).

Commodity Review

Metals

Gold.—Gold production by Centamin decreased to 14,680 kg in 2018 from 16,951 kg in 2017. The 13% decrease was attributed to the lower ore grade mined at both the open pit and the underground workings of the Sukari Mine. The company planned to mine primarily sulfide ore from the open pit operation during the next 3 years and expected to produce between 15,860 and 16,800 kilograms per year for the remaining 10 years of the mine's life (Centamin plc, 2019, p. 10, 13; 2020, p. 9).

Iron and Steel.—Egypt's iron ore production decreased to 500,000 t in 2018 from 565,000 t in 2017. The decrease was attributed to continued financial difficulties at Hadislob, which was the country's sole producer of iron ore. DRI output, which was manufactured from imported iron ore, increased by 23% to 5.8 Mt from 4.7 Mt in 2017. Subsequently, production of raw steel increased by 14% to 7.8 Mt from 6.9 Mt in 2017, and that of hot-rolled products increased by 19% to 9.6 Mt from 8.1 Mt. Exports of semifinished and finished steel products were about 1.5 Mt in both 2017 and 2018, whereas imports of semifinished and finished steel products decreased sharply to 421,000 t in 2018 from 5.5 Mt in 2017. The decrease was attributed to the increase of domestic steel production and to the Government's decision to keep import tariffs on steel rebar—a measure that was imposed by the Egypt's Ministry of Trade and Industry (MTI) in June 2017. The MTI assessed a 17% tariff on steel imported from China, 10% to 19% on steel imported from Turkey, and 15% to 27% on steel imported from Ukraine (table 1; Egypt Today, 2018d; World Steel Association, 2019, p. 2, 8, 13, 29).

Industrial Minerals

Cement.—Egypt's cement output of 81.2 Mt in 2018, which was an increase of 19% from the 68.5 Mt produced in 2017, was a record production for the country. Privately owned cement plants produced 61.7 Mt and state-owned plants produced 19.5 Mt. The increase in cement production exceeded domestic demand of 53.8 Mt in 2017 and 51.0 Mt in 2018 and created a 14.7 Mt surplus in 2017 and a 30.1 Mt surplus in 2018. This cement production surplus coupled with weak exports potential (1 Mt in 2017) triggered some companies to suspend production at some lines. In one case—El Nada Cement Co. and Suez Cement—planned to completely halt production at the Torah

cement plant in 2019. The 10 leading cement producers in Egypt were National Cement Co. Beni Suef (Ministry of Defense) and Suez Cement Co. (HeidelbergCement Group), 13 Mt each; Egyptian Cement Co. (LafargeHolcim Ltd.), 10 Mt; El Arish Cement Co. (Ministry of Defense), 7.2 Mt; Assiut Cement Co. (Cemex Egypt), 6.5 Mt; Arabian Cement Co. (Cementos La Union S.A.), 5 Mt; Titan Cement Co., 4.5 Mt; Ameryah Cement Co. (Cimentos de Portugal, SGPS, S.A.), 4.8 Mt; Sinai Cement Co. (Vicat Group), 3.2 Mt; and Misr Beni Suef Cement Co., 3.0 Mt (table 2; Economyplusme.com, 2019; Hafez, 2019; Perilli, 2019).

Mineral Fuels

Natural Gas.—Egypt’s proven natural gas reserves at the end of 2018 increased to 2.1 trillion cubic meters from 2.1 trillion cubic meters (revised) in 2017 and accounted for 1.1% of the world’s total proven natural gas reserves. Dry natural gas production increased by 23% to 62.3 billion cubic meters in 2018 from 50.7 billion cubic meters in 2017. The increase in natural gas production was attributed mainly to a full year of production at the Zohr Gasfield and to increased production from the West Nile Delta projects. In 2018, Eni sold a 10% share in the Shorouk Block, which held the Zohr Gasfield, to Mubadala Petroleum of the United Arab Emirates. Egypt produced 1.5% of the world’s total natural gas in 2018. The number of natural gas discoveries in the country increased to 18 in 2018 from 12 in 2017. The country’s natural gas consumption increased by 6.6% to 59.6 billion cubic meters from 55.9 billion cubic meters in 2017 (Dean, 2018; BP p.l.c., 2019, p. 30, 32, 34; Organization of Arab Petroleum Exporting Countries, 2019, p. 22).

Outlook

Egypt’s natural gas production is expected to increase during the next 5 years following recent discoveries in the Nile Delta and offshore in the Mediterranean Sea. These new discoveries increased the country’s natural gas reserves, bringing the country closer to self-sufficiency in natural gas by yearend and reestablishing the exports of natural gas and LNG. Production of mineral commodities, such as aluminum, gold, gypsum, iron and steel, nitrogen and phosphate fertilizers, and phosphate rock is likely to increase, given the steady electricity supply and increased domestic demand. Domestic projects requiring these materials include the building of a new administrative capital to be located 45 km east of Cairo, and the construction of 1 million residential housing units. Cement production is expected to decrease in 2019 owing to overproduction in previous years and to the decline in domestic consumption. Private domestic and foreign mining companies, which are interested in exploring and developing the mineral resources of the Golden Triangle, including copper, gold, and phosphate rock, are waiting for the adoption of a new mining code in 2019 that does not limit their ownership to 50–50 joint ventures with state-owned mining companies (Egypt Today, 2018c).

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TABLE 1
EGYPT: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity ²	2014	2015	2016	2017	2018
METALS					
Aluminum, metal:					
Primary	300	300	296	314	300 ^e
Secondary	90 ^e	90 ^e	70 ^r	100 ^e	100 ^e
Copper, refinery, secondary	142 ^r	98 ^r	96 ^r	100 ^e	100 ^e
Ferrous alloys:					
Ferromanganese ³	12	12	12	12	13
Ferrosilicon ⁴	57 ^r	56 ^r	60 ^r	61 ^e	61 ^e
Gold, mine, Au content kilograms	11,733	13,653	17,139	16,951	14,680
Iron ore, mine:					
Gross weight	1,697	1,500	509 ^r	565	500
Fe content	1,050 ^r	938 ^r	318 ^r	353	312
Iron and steel:					
Direct-reduced iron	2,880 ^r	2,451 ^r	2,618 ^r	4,667	5,753
Pig iron	550	500	500	500 ^e	500 ^e
Steel:					
Raw steel	6,485	5,506	5,036	6,870	7,807
Products:					
Hot rolled	8,137	7,676	8,001	8,059	9,598
Wire rod	1,030	873	736	920	1,000 ^e
Manganese, mine: ³					
Gross weight	50	34	110 ^r	36	40
Mn content	17	11	36 ^r	12	13
Tin, mine, concentrate metric tons	85	--	--	--	--
INDUSTRIAL MINERALS					
Barite metric tons	3,379	7,540	7,500 ^{r,e}	7,500 ^e	7,500 ^e
Cement, hydraulic, all types	52,080	53,940	55,000	68,500	81,200
Clay:					
Bentonite metric tons	3,615	32,679 ^r	45,553 ^r	40,000 ^e	40,000 ^e
Kaolin	300 ^e	232	232 ^{r,e}	232 ^e	230 ^e
Feldspar, mine	400 ^e	421	400 ^e	400 ^e	400 ^e
Fluorspar metric tons	900 ^e	1,105	1,000	1,000 ^e	1,000 ^e
Gypsum ⁵	872	744 ^r	1,000 ^{r,e}	1,000 ^e	1,000 ^e
Lime ^e	750	720	700	770	800
Mica ^e	3	10	10	10	10
Nitrogen, N content:					
Ammonia	2,200	1,800 ^e	2,800 ^e	3,700 ^e	3,700 ^e
Urea	1,500	1,200 ^e	2,200 ^{r,e}	3,000 ^e	3,000 ^e
Phosphate, compounds, phosphoric acid, P ₂ O ₅ content ^e	72 ^r	30 ^r	50 ^r	60	60
Phosphate rock:					
Gross weight	5,378	4,100	4,300	4,800	5,000 ^e
P ₂ O ₅ content	1,620	1,230	1,290	1,344	1,500 ^e
Salt	1,543	1,669 ^r	1,700 ^{r,e}	1,750 ^e	1,700 ^e
Sand and gravel, industrial:					
Quartz	100	101	101 ^r	100 ^e	100 ^e
Unspecified	579	416 ^r	600 ^e	600 ^e	600 ^e
Soda ash, synthetic	130 ^e	130 ^e	40	--	--
Sodium, compounds, caustic soda	168	163 ^{r,e}	170	170 ^e	160 ^e
Stone, sand, and gravel, construction:					
Sand and gravel, gravel	1,948	1,750 ^r	580 ^r	1,500 ^e	1,500 ^e
Stone:					
Crushed:					
Basalt	2,450 ^r	--	--	--	--
Dolomite	44	24 ^r	14 ^r	20 ^e	20 ^e
Limestone	82	175 ^r	140 ^r	150 ^e	150 ^e
Sandstone	400 ^e	-- ^e	--	--	--

See footnotes at end of table.

TABLE 1—Continued
EGYPT: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity ²	2014	2015	2016	2017	2018
INDUSTRIAL MINERALS—Continued					
Stone, sand, and gravel, construction:—Continued					
Stone:—Continued					
Dimension:					
Granite	9 ^r	2 ^r	5 ^{r,e}	5 ^e	5 ^e
Marble, block ^e	100	100	100	100	110
Sulfur, S content:					
Compounds, sulfuric acid ^e	--	150	224	230	350
Byproduct, petroleum, elemental	--	48	74 ^r	86	86 ^e
Talc and related minerals, pyrophyllite, soapstone, talc metric tons	10,000	24,360 ^r	21,672 ^r	15,000 ^e	15,000 ^e
Vermiculite ^e do.	3,000	8,190	8,000	8,000	8,000
MINERAL FUELS AND RELATED MATERIALS					
Natural gas:					
Gross million cubic meters	54,057	49,338	46,830	55,765	66,918
Dry basis do.	48,972	44,257	42,007	50,671	62,271
Petroleum:					
Crude, including condensate thousand 42-gallon barrels	243,455 ^r	241,630 ^r	230,315 ^r	220,095	224,475
Natural gas liquids do.	17,155 ^r	23,360 ^r	21,900 ^r	20,805	20,075
Refinery:					
Asphalt do.	4,000 ^r	4,400 ^r	4,200 ^r	3,700	4,000 ^e
Coke do.	1,900 ^r	1,900 ^r	3,300 ^r	3,900	4,000 ^e
Distillate fuel oil do.	55,100 ^r	56,000 ^r	52,700 ^r	51,900	52,000 ^e
Gasoline, including naphtha do.	48,900 ^r	74,100 ^r	53,900 ^r	51,700	52,000 ^e
Kerosene, including jet fuel do.	15,400 ^r	15,500 ^r	17,200 ^r	16,500	16,500 ^e
Liquefied petroleum gas do.	5,600 ^r	5,900 ^r	5,900 ^r	5,800	6,000 ^e
Lubricants do.	3,100 ^r	3,000 ^r	2,300 ^r	2,140	2,200 ^e
Residual fuel oil do.	57,100 ^r	57,300 ^r	53,500 ^r	52,600	53,000 ^e
Other do.	3,000 ^r	1,300 ^r	2,000 ^r	3,400	3,500 ^e
Total do.	194,000 ^r	219,000 ^r	193,000	192,000	193,000

^eEstimated. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through December 9, 2019. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the commodities listed, coal, gemstones, iron oxide pigments, mica, secondary lead (from recycled material), zinc, and manufactured mineral

³Reported by the International Manganese Institute.

⁴Production is based on fiscal year, with a starting date of July 1 of the year shown.

⁵Includes anhydrite.

TABLE 2
EGYPT: 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
Aluminum, primary and secondary	Aluminium Co. of Egypt (Egyptalum) [Holding Company for Metallurgical Industries (HCMI), 90%, and private interests, 10%]	Smelter at Nag Hammadi, Qena Governorate	320
Aluminum, secondary	Al Qantara for Ferrous Metals Co,	Plant at Al Qantara, Suez	25
Do.	Arab Aluminium Co. S.A.E.	Plant at Ismaelia	15
Do.	Al Saad Aluminium Co.	Plant at Mostorod, Cairo	10
Do.	Canex Aluminum Egypt	Plant at CPC Industrial Zone, 6th of October City	NA
Do.	Egyptian Copper Works Co. [Holding Company for Metallurgical Industries (HCMI)]	Plant at Alexandria	50
Do.	Egyptian Aluminium Products Co. (Alumisir)	Plant at Helwan, Cairo Governorate	12
Do.	Egyptian International Co. for Aluminum Profiles S.A.E.	Plant at 3rd Industrial Zone, Giza Governorate	14
Do.	General Metals Co.	Plant at Helwan, Cairo Governorate	6
Do.	Helwan Company for NonFerrous Industries (Ministry of Defense)	do.	45
Do.	Rasheed Performance Minerals Group (RPM)	Plant at Borg El Arab Industrial Development Zone	100
Calcium carbonate	ASCOM Carbonate and Chemical Manufacturing (Qalaa Holding, 100%)	Mine at El Minya, Upper Egypt	500
Do.	Misr Quarries Development Co. S.A.E	Mine at Attaka Mounitain, Suez Governorate	NA
Carbon, black	Alexandria Carbon Black Co. S.A.E. (Egyptian Holding Co. for the Chemical Industry, 49%; Inco-Bharat, 36%; Grasim Industries 15%)	Plant at Amerya, Alexandria Governorate	20
Cement	Alexandria Portland Cement Co. (Government, 77%, and private interests, 23%)	Plant at El Mex, Alexandria Governorate	2,200
Do.	Ameryah Cement Co. [Cimentos de Portugal, SGPS, S.A. (Cimpor)]	Plant Burg Al Arab, Alexandria Governorate	4,800
Do.	Arab Swiss Engineering Co. (ASEC) (Suez Cement Co., 68.7%)	Plant at Helwan, Cairo Governorate	3,615
Do.	Arabian Cement Co. (Cementos La Union S.A.)	Plant at Ain Al-Sokhna, Suez Governorate	5,000
Do.	Assuit Cement Co. (Cemex Egypt)	Plant in Assiut Governorate	6,500
Do.	Egyptian Cement Co. (LafargeHolcim Ltd., 74%, and other interests, 26%)	Plant at Ain Al-Sokhna, Suez Governorate	10,000
Do.	El-Arish Cement Co. (Ministry of Defense, 100%)	Plant at El Arish, North Sinai Governorate	7,200
Do.	El Nahda Cement Co. (ASEC Cement, 27.55%; Misr Insurance Co., 10.85%; Egyptian Company for Investment Projects, 10.04%; Egyptian Kuwaiti Investment Co., 9.87%; Misr Company for Life Insurance, 9.37%; National Capital Holding Co., Egyptian Company for Financial Investment, 7.53%; National Investment Bank, 3.32%)	Plant in Qena Qvernorate	3,300
Do.	El Sewedy Cement Co.	Plant at Attaka, Suez Governorate	2,300
Do.	Medcom Cement Co.	Plant in Asawn Governorate	950
Do.	Misr Beni Suef Cement Co.	Plant in Beni Suef Governorate	3,000
Do.	Misr Qena Cement Co. (ASEC Cement Co.)	Plant at Nasr City, Cairo Governorate	2,000
Do.	National Cement Co. (Government, 77%, and private interests, 23%)	Plant at El Tabbin, Cairo Governorate	3,100
Do.	National Cement Co. Beni Suef (Ministry of Defense, 100%)	Plant in Beni Suef Governorate ¹	13,000
Do.	Royal El Minya Cement	Plant at Samallot, El Minya Governorate	2,690

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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—Continued	Sinai Cement Co. (Vicat Group)	Plant at El Arish, North Sinai Governorate	3,200
Do.	Sinai White Portland Cement Co. (Aalborg Portland A/S)	Plant in North Sinai Governorate	900
Do.	South Valley Cement Co.	Plant at Beni Suef Industrial Zone, Beni Suef Governorate	2,200
Do.	Suez Cement Co. (HeidelbergCement Group)	Plant at Helwan, Cairo Governorate	2,000
Do.	do.	Plant at Kattameya, Cairo Governorate	1,800
Do.	do.	Plant in Suez Governorate	3,800
Do.	do.	Plant at Torah, Cairo Governorate	4,900
Do.	Titan Cement Egypt (Titan Cement Co., 100%)	Plant in Beni Suef Governorate	4500
Clay:			
Bentonite	Rasheed Performance Minerals Group (RPM)	Plant at Borg El Arab Industrial Development Zone, Alexandria	225
Kaolin	El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCM I), 100%]	Mine in Aswan Governorate	NA
Do.	Sinai Manganese Co. [Holding Company for Chemical Industries (HCCI)]	Mine in South Sinai Governorate	100
Coking coal	El Nasr Coke and Chemicals Co. (Government, 100%)	Plant at Helwan, Cairo Governorate	1,400
Copper, refined	Egyptian Copper Works Co. [Holding Company for Metallurgical Industries (HCM I)]	Plant at Hagar El Nouatia, Alexandria Governorate	130
Do.	Egyptian Metal Works	Plant in Cairo Governorate	NA
Dolomite	Misir Quarries Development Co. S.A.E	Plant at Attaka Mountain, Suez Governorate	NA
Feldspar	Mining Engineering Company (Knouz)	Mine in Aswan Governorate	NA
Do.	Misir Quarries Development Co. S.A.E	Plant at Attaka Mountain, Suez Governorate	NA
Ferromanganese	Sinai Manganese Co. [Holding Company for Chemical Industries (HCCI)]	Abu Zenima Mine, South Sinai Governorate	36
Ferrosilicon	Egyptian Ferroalloys Co.	Plant at Idfo, Aswan Governorate	65
Fluorspar	metric tons Egyptian Company for Mineral Resources (ECMR)	Mine at Mueilha, Eastern Desert	4,500
Do.	do. El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCM I), 100%]	do.	5,000
Glass sand	ASCOM Geology and Mining (Qalaa Holding, 100%)	Plant at Minya Industrial zone, El Minya Governorate	180
Glasswool	ASCOM Carbonate and Chemical Manufacturing	Plant at Ain Al-Sokhna, Suez	200
Gold	kilograms Sukari Gold Mine Co. [Centamin plc, 50%, and Egyptian Company for Mineral Resources (ECMR), 50%]	Sukari Gold Mine, Estern Desert, Red Sea Governorate	18,000
Do.	do. Hamash Misr for Gold Mines (Cypriot Matz Holdings, 50% and Egyptian Company for Mineral Resources (ECMR), 50%)	Hamash Gold Mine, ² Eastern Red Sea Governorate	500
Gypsum	ASCOM Geology and Mining (Qalaa Holding, 100%)	Mine at Ras Sedr, South Sinai	216
Do.	El Nasr Mining Co. (Holding Company for Metallurgical Industries (HCM I), 100%)	Quarries at Edfo, Aswan Governorate	NA
Do.	Modern Suez Gypsum Company SAE	Mine at Wadi Gharandel, South Sinai Governorate	2,400
Do.	Sinai Manganese Co. [Holding Company for Chemical Industries (HCCI)]	Mine at Ras Mala'ab, South Sinai Governorate	400
Iron and steel:			
Direct-reduced	Al Ezz El-Dekheila Steel Co. (EZDK) (Al Ezz Steel Rebars S.A., 55%)	El-Dekheila I, II, III plants, El-Dekheila, Alexandria	2,320
Do.	Ezz Rolling Mills Co. SAE	Plant in Sadat City, Monufia Governorate	1,900

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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
Iron and steel:—Continued			
Direct-reduced—Continued	Egyptian Sponge Iron and Steel Co. (ESISCO) (Beshay Steel Group)	do.	2,000
Do.	Suez Steel Co. (Solb Misr)	Plant in Suez Governorate	1,950
Iron ore	Egyptian Iron and Steel Co. (Hadisolb) (Government, 100%)	Mine at El-Gedida, El Bahariya Oasis, Giza Governorate	1,200
Iron oxides	El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCMI), 100%]	Mines in Aswan and Sinai Governorates	150
Do.	TAS Flowrance Group	Mines ar Asawn, Sinai, Western Desert	120
Steel:			
Raw	Al Ezz El-Dekheila Steel Co. (EZDK) [Al Ezz Steel Rebars S.A. (Ezz Steel), 55%]	Plant in Alexandria Governorate	6,000
Do.	Egyptian Iron and Steel Co. (Hadisolb) [Holding Company for Metallurgical Industries (HCMI), 100%]	Plant in Helwan, Cairo Governorate	600
Do.	Egyptian American Steel Rolling Co. S.A.E (Beshay Steel Group)	Plant in Sadat City, Monufia Governorate	3,000
Do.	Egyptian Steel Group	Plant at Ain Al-Sokhna, Suez	830
Do.	IIC For Steel Plants Management Co. (Egyptian Steel Group)	Plant at Beni Suef Governorate	350
Do.	Suez Steel Co. (Solb Misr)	Plant at Suez Industrial Area, Suez Governorate	2,000
Flat	Al Ezz El-Dekheila Steel Co. (EZDK) [Al Ezz Steel Rebars S.A. (Ezz Steel), 55%]	Plant in Alexandria Governorate	1,100
Do.	Ezz Flat Steel Co. [Al Ezz Steel Rebar S.A. (Ezz Steel), 55%]	Plant in Suez Governorate	1,200
Do.	Egyptian Iron and Steel Co. (Hadisolb) [Holding Company for Metallurgical Industries (HCMI), 100%]	Plant at Helwan, Cairo Governorate	1,000
Rebar	Al Ezz Steel Rebars S.A. (Ezz Steel)	Plant at Sadat City, Gharbia Governorate	1,000
Do.	Delta Steel Mill Co.	Plant at Qalyubiyah Governorate	200
Do.	Egyptian American Steel Rolling Co. S.A.E (Beshay Steel Group, 100%)	Plant at Sadat City, Gharbia Governorate	1,200
Do.	Egyptian Steel Group	Plant at Ain Al-Sokhna, Suez	500
Do.	do.	Plant at Al Raswa Industrial Zone, Port Said Governorate	530
Do.	Ezz Rolling Mills S.A.	Plant at 10th of Ramadan City, Sharqia Governorate	500
Do.	Ezz Flat Steel Co. [Al Ezz Steel Rebar S.A. (Ezz Steel), 55%]	Plant in Suez Governorate	1,100
Do.	IIC For Steel Plants Management Co. (Egyptian Steel Group)	Plant at Alexandria	300
Do.	International Steel Rolling Mills Co. SAE (Beshay Steel Group, 100%)	Plant at Sadat City, Gharbia Governorate	700
Do.	Kandil Steel	do.	1,000
Do.	Kouta Steel Group	Plant at Port Said	360
Do.	do.	Plant at Alexandria	300
Do.	Misr National Steel Co.	Plant at Heliopolis, Cairo	360
Do.	National Port Said Steel (Egyptian Steel Group, 100%)	Plant at Port Said	350
Do.	Suez Steel Co. (Solb Misr)	Plant at Ain Al-Sokhna, Suez	2,500
Lime	do.	Plant in Suez Governorate	183
Do.	Egyptian Sponge Iron and Steel Co. (ESISCO) (Beshay Steel Group)	Plant at Sadat City, Gharbia Governorate	2,000
Do.	Solvay Alexandria Sodium Carbonate S.A.E. (Salvoy S.A.)	Plant at Alexandria	200
Manganese	Sinai Manganese Co. [Holding Company for Chemical Industries (HCCI), 100%]	Abu Zenima Mine, South Sinai Governorate	110
Methanol	Delta Fertilizers & Chemical Industries Co. [Holding Company for Chemical Industries (HCCI), 100%]	Plant at Talkha, Dakhliya Governorate	36

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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
Methanol—Continued		Egyptian Methanex Methanol Co. S.A.E ([Methanex Corp., 50%; Arab Petroleum Investments Corp. 17%; Egyptian Natural Gas Holding Co. (EGAS), 12%; Egyptian Petrochemical Holding Co., 12%; Egyptian National Gas Co. (GASCO), 9%])	Plant in Damietta Governorate	1,300
Natural gas	million cubic meters	Badr Petroleum Co. (Bapectco) (Government, 100%)	Allam El-Shawish, Amreya, Assil and Karam, Badr 3, Neag 1, Obaiyed fields	4,000
Do.	do.	Burullus Gas Co. (Egyptian General Petroleum Corp. (EGPC) 50%; Edison International, 25%; Royal Dutch Shell, 25%)	Burullus and Rosetta fields	3,000
Do.	do.	El Wastani Petroleum Co. (WASCO) (Dana Gas PJSC, 50%, and Eni Group, Egyptian Natural Gas Holding Co. (EGAS), 50%)	El Wastani Gas Plant, Nile Delta, Damietta	2,500
Do.	do.	Joint venture (Bp plc, 82.75%, and DEA Deutsche Erdoel AG, 17.25%)	West Nile Delta offshore fields, North of Alexandria	15,500
Do.	do.	Pharaonic Petroleum Co. SAE (BP p.l.c., 50%, and Eni Group, 50%)	Baltim, El Temsah, Ras el Barr, North Port Said fields	10,000
Do.	do.	Shorouk Petroleum Co. SAE (Eni Group, 40%; NK Rosneft' PAO, 30%; Belayim Petroleum Co. SAE, 10%; BP p.l.c., 10%; Mubadala Petroleum, 10%)	Zohr field, Shorouk Block, offshore	20,680
Do.	do.	Khalda Petroleum Co. SAE [Apache Oil Co., 50%, and Egyptian General Petroleum Corp. (EGPC), 50%]	Kahraman B-22 and Qasr fields, Western Desert	5,274
Do.	do.	Petrobel Co. (Egyptian General Petroleum Corp. (EGPC) 50%, and Eni Group, 50%)	Abu Madi, Baltim, Nidoco, Qar'a fields	12,000
Do.	do.	Rashid Petroleum Co. S.A.E [Egyptian General Petroleum Corp. (EGPC), 50%; .Royal Dutch Shell, 40%; Edison Gas Holding, 10%]	Rashid field, West Deep Marine Concession	3,300
Nitrogen:				
Ammonia		Abu Qir Fertilizer & Chemical Industries Co. [Private and public interests, 80.9%, and Egyptian General Petroleum Corp. (EGPC), 19.1%]	Abu Qir I plant at Al Tabia, Alexandria	420
Do.	do.	do.	Abu Qir II plant at Al Tabia, Alexandria	365
Do.		Alexandria Fertilizer Co. (Alexfert) (Private, 80%, and Abu Qir Fertilizer & Chemical Industries Co., 20%)	Plant at Alexandria	730
Do.		Egypt Basic Industries Corp. (EBIC) [OCI N.V., 60%, and Egyptian General Petroleum Corp. (EGPC), 40%]	Plant at Ain Al-Sokhna, Suez Governorate	730
Do.		Egyptian Chemical Industries (KIMA) (Chemical Industries Holding Co., 55.7%; public organizations, 39.2%; private investors, 5.5%)	Plant at Aswan	330
Do.		Delta Fertilizers and Chemicals Industries (ASMEDA) [Holding Company for Chemical Industries (HCCI)]	Plants at Talkha, Mansoura	725
Do.		El Nasr Fertilizers and Chemicals Co. (SEMADCO) [Holding Company for Chemical Industries (HCCI)]	Plant at Attaka Mountain, Suez Governorate	132
Do.		Helwan Fertilizers Co. (private)	Plant at Helwan Freezone, Cairo Governorate	400
Do.		Misr Fertilizer Production Co. S.A.E. (MOPCO) [Egyptian Petrochemical Holdings Co. (ECHEM), 30.75%; Ministry of Finance, 26%; National Investment Bank, 12.82%; Egyptian Natural Gas Holding Co. (EGAS), 7.62%; Egyptian Company for Natural Gas, 5.72%; others, 17.10%]	Plant at Damietta Freezone	876
Ammonium nitrate		Abu Qir Fertilizer & Chemical Industries Co. [Private and public interests, 80.9%, and Egyptian General Petroleum Corp. (EGPC), 19.1%]	Abu Qir II plant at Al Tabia, Alexandria	876
Do.		Delta Fertilizers and Chemicals Industries (ASMEDA) [Holding Company for Chemical Industries (HCCI)]	Plants at Talkha, Mansoura, Dakahlia Governorate	328

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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	
Nitrogen:—Continued				
Ammonium nitrate—Continued	Egyptian Chemical Industries (KIMA) (Chemical Industries Holding Co., 56%; public organizations, 39%; private investors, 5%)	Plant at Aswan	800	
Do.	Egyptian Fertilizers Co. (EFC) (OCI N.V., 100%)	Plant at Ain Al-Sokhna, Suez Governorate	325	
Do.	El Nasr Fertilizers and Chemicals Co. (SEMADCO) [Holding Company for Chemical Industries (HCCL)]	Plant at Attaka Mountain, Suez Governorate	200	
Nitric acid	Abu Qir Fertilizer & Chemical Industries Co. [Private and public interests, 80.9%, and Egyptian General Petroleum Corp. (EGPC), 19.1%]	Abu Qir II plant at Al Tabia, Alexandria Governorate	657	
Do.	Delta Fertilizers and Chemicals Industries (ASMEDA) [Holding Company for Chemical Industries (HCCL)]	Plants at Talkha, Mansoura, Dakahlia Governorate	328	
Do.	Egyptian Chemical Industries (KIMA) (Chemical Industries Holding Co., 56%; public organizations, 39%; private investors, 5%)	Plant at Aswan	600	
Do.	El Nasr Fertilizers and Chemicals Co. (SEMADCO) [Holding Company for Chemical Industries (HCCL)]	Plant at Attaka Mountain, Suez Governorate	193	
Urea	do.	Abu Qir I plant at Al Tabia, Alexandria Governorate	566	
Do.	do.	Abu Qir III plant at Al Tabia Alexandria Governorate	438	
Do.	Alexandria Fertilizer Co. (Alexfert) (Private, 80%, and Abu Qir Fertilizer & Chemical Industries Co., 20%)	Plant at Alexandria	720	
Do.	Egyptian Fertilizers Co. (EFC) (OCI N.V., 100%)	Plant at Ain Al-Sokhna	1,550	
Do.	Helwan Fertilizers Co.	Plant at Helwan Freezone, Cairo Governorate	700	
Do.	Misr Fertilizer Production Co. S.A.E. (MOPCO) [Egyptian Petrochemical Holdings Co. (ECHEM), 30.75%; Ministry of Finance, 26%; National Investment Bank, 12.82%; Egyptian Natural Gas Holding Co. (EGAS), 7.62%; Egyptian Company for Natural Gas, 5.72%; others, 17.10%]	Plant at Damietta Freezone, Damietta, Governorate	680	
Perlite	The Egyptian Co. for Perlite (Abu Kahalil Group)	Plant at Alexandria	10	
Petroleum:				
Crude	thousand 42-gallon barrels	Belayim Petroleum Co. [Egyptian General Petroleum Corp. (EGPC), 50%, and International Egyptian Oil Co., 50%]	Belayim field, Suez Gulf	65,000
Do.	do.	Gulf of Suez Oil Co. [Egyptian General Petroleum Corp. (EGPC), 50%, and BP p.l.c., 50%]	October field, Suez Gulf	45,000
Do.	do.	do.	El Morgan field, Suez Gulf	27,000
Do.	do.	Khalda Petroleum Co. [Apache Oil Co., 40%, and Egyptian General Petroleum Corp. (EGPC), 60%]	Kahraman B-22 and Qasr fields, Western Desert	51,500
Do.	do.	Suez Oil Co. [Egyptian General Petroleum Corp. (EGPC), 50%; Deminex SA, 25%; Repsol S.A., 25%]	Ras Budran field, Suez Gulf	15,000
Refined	do.	Alexandria Petroleum Co. (Government, 100%)	Refinery at El-Mex, in Alexandria Governorate	36,500
Do.	do.	Ameriya Petroleum Refining Co. (Government, 100%)	Refinery at Amreya Freezone, Alexandria Governorate	27,375
Do.	do.	Assiut Petroleum Refining Co. [Ganoub El Wadi Holding Co. (Ganope), 100%]	Refinery in Assiut Governorate	18,250
Do.	do.	Cairo Oil Refining Co. (CORC) (Government, 100%)	Refinery at Mostorod, Cairo Governorate	51,830
Do.	do.	do.	Refinery in Tanta, Gharbia Governorate	12,775
Do.	do.	El Nasr Petroleum Co. [Egyptian General Petroleum Co. (EGPC), 100%]	Refinery at Wadi Ferain, South Sinai Governorate	3,103
Do.	do.	do.	Refinery in Suez Governorate	52,195

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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	
Petroleum:—Continued				
Crude—Continued	thousand 42-gallon barrels	Middle East Oil Refinery [Egyptian General Petroleum Corp. (EGPC), 78%; Engineering for Petroleum and Processing Industry (ENPPI), 10%; Petroleum Projects and Technical Consultations Co. (Petrojet), 10%; Suez Canal Bank, 2%]	Refinery at Alexandria Amreya Freezone, Alexandria Governorate	36,500
Do.	do.	Suez Petroleum Processing Co. (Government, 100%)	Refinery in Suez Governorate	24,820
Phosphates:				
Phosphate rock		Al Wadi Al Gadid Company for Mineral Resources and Oil Shale (Wadico) [Ganope, (65%); Petrojet Co., 25%; Egyptian Mineral Resources Authority (EMRA), 5%; Nile Petroleum Co., 5%]	Mine at Al Wadi Al Gadid,	1,000
Do.		El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCMI), 100%]	Mines at El Sebaaya, El Quseir, and Red Sea	5,000
Do.		Phosphate Misr Co. S.A.E. (PMC) {[National Investment Bank, 50%; Egyptian Mineral Resources Co. (EMCR), 20%; Ganoub El Wadi Holding Co., 15%; Egyptian General Petroleum Corp., 15%]}	Abu Tartur Mine, New Valley Mine, Red Sea Mine	5,000
Do.		Egyptian Company for Mineral Resources (ECMR)	Mine at Aswan	500
Phosphoric acid		Abu Zaabal Fertilizers and Chemicals (private, 100%)	Plant at Qalyubiyah	95
Do.		El-Nasr Company for Intermediate Chemicals (Ministry of Defense, 100%)	Plant in Giza Governorate	NA
Phosphate fertilizer		do.	do.	NA
Do.		Abu Zaabal Fertilizers and Chemicals (private, 100%)	Plant in Qalyubiyah Governorate	1,530
Do.		Egyptian Financial and Industrial Co. (private, 100%)	Plant at Kafr El Zayat	900
Do.		do.	Plant at Assuit	750
Do.		Evergrow for Specialty Fertilizers Co. S.A.E.	Plants at Abou Rwash, Giza, Governorate and Sadat City, Gharbia Governorate	105
Do.		Polyserve for Fertilizers and Chemicals (private, 100%)	Plant in Cairo Governorate	320
Do.		Suez Company for Fertilizers Production (Egyptian Financial and Industrial Co., 99.8%)	Plant at Ain Al-Sokhna, Suez Governorate	600
Rockwool		ASCOM Carbonate and Chemical Manufacturing (Qulaa Holding, 100%)	Plant at Ain Al-Sokhna Governorate	30
Salt		El Mex Salines Co. [Holding Company for Chemical Industries (HCCI), 100%]	Brine at El Mex, Alexandria Governorate	1,400
Do.		do.	Brine in Port Said Governorate	350
Do.		El Nasr Salines Co. [Holding Company for Chemical Industries (HCCI), 100%]	Brine at Borg El Arab, Alexandria Governorate	300
Do.		do.	Mine at Sebika, North Sinai Governorate	2,000
Sand and gravel, industrial:				
Quartz		El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCMI), 100%]	Mine at Aswan	15
Do.		Egyptian Company for Mineral Resources (ECMR)	Mine at Branice near Marsa Alam	NA
Do.		International Group for Industrial & Agricultural Investment	Mine in Marsa Alam and South Aswan	NA
Do.		Mining Engineering Company (Knouz)	Mine at Aswan	NA
Do.		Misr Quarried Development Co.	Attaka Mountain	NA
Unspecified		Egypt for Mining S.A.E (Multi Min)	Quarries in Abu Heesh Valley, South Sinai Governorate	365
Do.		do.	Quarried in Homayer Valley, South Sinai Governorate	366
Do.		Misr Quarries Development Co. S.A.E	Mine at Attaka Mounitain	NA

See footnotes at end of table.

TABLE 2—Continued
EGYPT: 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
<u>Sand and gravel, industrial:—Continued</u>			
Unspecified—Continued	Sinai Manganese Co. [Holding Company for Chemical Industries (HCCI), 100%]	Mine in South Sinai Governorate	500
Do.	do.	Mine at Zaafarnah, Red Sea Governorate	120
Do.	TAS Flowrance Group	Mines at Zaafrana, Red Sea Governorate, Sinai North and Sinai South Governorates	300
Soda ash, synthetic	Salvoy Alexandria Sodium Carbonate S.A.E.	Plant at Alexandria ³	130
Sodium, compounds, caustic soda	Egyptian Petrochemical Co. [Egyptian General Petroleum Corp. (EGPC), 100%]	do.	120
Sulfuric acid	Abu Zaabal Fertilizers and Chemicals (Government, 100%)	Plant in Qalyubiyah Governorate	350
Do.	Egyptian Financial and Industrial Co. (private, 100%)	Plant at Kafr El Zayat, Gharbia Governorate	175
Do.	do.	Plant at Assuit	205
Do.	El Nasr Company for Intermediate Chemicals (NCIC) (Ministry of Defense, 100%)	Plant in Alexandria Governorate	165
Do.	do.	Plant at Ain Al-Sokhna	70
Do.	El-Nasr Co. for Fertilizer & Chemical Industries (SEMADCO)	Plant at Attaka	300
Do.	Evergrow for Specialty Fertilizers Co. S.A.E.	Plants at Abou Rwash, Giza, Governorate and Sadat City, Gharbia Governorate	80
Do.	Middle East Oil Refinery [Egyptian General Petroleum Corp. (EGPC), 78%; Engineering for Petroleum and Processing Industry (ENPPI), 10%; Petroleum Projects and Technical Consultations Co. (Petrojet), 10%; Suez Canal Bank, 2%]	Plant at Alexandria Amreya Freezone	20
Do.	Suez Company for Fertilizers Production (Egyptian Financial and Industrial Co., 99.8%, and private investors, 0.2%)	Plant at Ain Al-Sokhna	425
Talc	El Nasr Mining Co. [Holding Company for Metallurgical Industries (HCMI), 100%]	Plant at Aswan	50
Do.	Misr Quarries Development Co. S.A.E	Mine at Attaka Mounitain, Suez Governorate	5
Do.	TAS Flowrance Group	Mines ar Asawn, Sinai, Western Desert	10
Tin	metric tons Tantalum Egypt J.S.C. [Tantalum International Pty]	Mine at Abu Dabbab, Mersa Alam ⁴	120
Titanium, ilmenite	El Nasr Mining Co.	NA	NA

Do., do. Ditto. NA Not available.

¹Under construction.

²On care-and-maintanance status.

³Production stopped in 2016.

⁴Production stopped in 2014.