



2019 Minerals Yearbook

UNITED ARAB EMIRATES [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF THE UNITED ARAB EMIRATES

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In 2019, the United Arab Emirates (UAE)¹ was the world's fifth-ranked producer of aluminum and accounted for 4.2% of the world's aluminum smelter output. In addition, the UAE was the world's sixth-ranked producer of crude petroleum and condensate, accounting for 4.2% of the world's production; and the world's seventh-ranked (tied with India and Japan) producer of sulfur, accounting for 4.3% (estimated) of the world's production. According to BP p.l.c. of the United Kingdom, the UAE's proven crude petroleum reserves were estimated to be 97.8 billion barrels (5.6% of the world's total crude petroleum reserves) and the country's proven natural gas reserves were estimated to be 5.9 trillion cubic meters (3.0% of the world's proven natural gas reserves). The UAE was a major regional producer of industrial minerals, metals, and downstream metal products, including cement, iron and steel, direct-reduced iron (DRI), nitrogen fertilizers, and sulfur. Other fuel and industrial minerals produced included gypsum, lime, and refined petroleum. The UAE was a member of the Organization of the Petroleum Exporting Countries (OPEC) and the Cooperation Council for the Arab States of the Gulf (also known as the Gulf Cooperation Council, or GCC) (table 1; Apodaca, 2020; BP p.l.c., 2020, p. 14, 16, 32; Bray, 2020).

In 2019, the UAE's real gross domestic product (GDP) was estimated to have increased by 1.7%. Foreign direct investment (FDI) increased by \$3.4 billion (33%) to \$13.8 billion in 2019 owing primarily to inflows to the energy sector. One significant investment transaction involved Abu Dhabi National Oil Co. (ADNOC), which sold 35% of its subsidiary petroleum refining company, the Abu Dhabi Oil Refining Co. (TAKREER) for \$5.8; Eni SpA of Italy invested \$3.3 billion for a 20% share in TAKREER and OMV invested \$2.5 billion for a 15% share. A second significant transaction involved BlackRock Inc. of the United States, which acquired a 40% interest in the pipeline assets of ADNOC for \$4 billion and formed ADNOC Oil Pipelines Co. ADNOC received an additional \$600 million for its pipeline assets from Singapore's sovereign wealth fund, GIC (6% share), and \$300 million from Abu Dhabi Retirement Pensions and Benefits Fund (3% share) (Gnana, 2019; Mack, 2019; Rahman, 2019; United Arab Emirates Federal Competitiveness and Statistics Authority, 2020b, p. 4; United Nations Conference on Trade and Development, 2020, p. 44, 240).

Minerals in the National Economy

The value of the mining and energy sector in 2019 decreased to \$105 billion,² a decrease of 3.9% compared with \$110 billion in 2018. The mining and energy sector remained the largest contributor to the country's GDP, accounting for 25.0% of the total, but that was lower than the 26.0% that the sector accounted for in 2018, and a decrease from 39.1% in 2012. Other leading sectors in the economy were wholesale and retail trade, which accounted for 12.5% of the GDP; financial and insurance activities, 8.7%; manufacturing, 8.7%; and construction, 8.4% (United Arab Emirates Ministry of Economy, 2020, table 14).

In 2019, Government revenue (preliminary) from hydrocarbon activity was estimated to have increased by 0.1% to \$53.7 billion from \$53.6 billion in 2018; the Government's total revenues were estimated to be about \$130 billion. In 2019, revenue from hydrocarbons accounted for about 41.2% of total Government revenue, which was about the same as in 2018 but down from a recent high of 69.1% in 2011 (United Arab Emirates Ministry of Economy, 2020, table 47).

In 2019, the value of the UAE's exports decreased by 1.0% to \$389 billion from \$393 billion in 2018. The decrease was attributed to a 14% decrease in the total value of crude petroleum exports, which decreased to \$49.6 billion from \$57.9 billion in 2018. The average price of the UAE's exports of Murban crude, the country's export blend, decreased to \$64.72 per barrel in 2019 from \$72.20 per barrel in 2018. The value of the country's exports of mineral products increased by 100% to about \$5.9 billion. The export value of base metals and articles of base metals decreased by 1.7% to \$13.2 billion. Major exports of metals, in terms of tonnage, included 3.40 million metric tons (Mt) of crude steel, 2.78 Mt of aluminum and articles thereof, 1.27 Mt of iron and steel articles, and about 391,000 metric tons (t) of copper and copper articles (Organization of the Petroleum Exporting Countries, 2020, p. 17–18, 68; United Arab Emirates Federal Competitiveness and Statistics Authority, 2020a, tables 8, 10).

The value of the UAE's imports of goods increased by 1.8% in 2019 to \$249 billion. Imports of gemstones, pearls, precious metals, and their products, which accounted for about 24% of the country's imports, increased in value by 8.2% to about \$59 billion. The UAE's leading import sources of gemstones, pearls, precious metals, and their products were India, \$12.0 billion; Mali, \$3.2 billion; Hong Kong [China], \$2.6 billion; Guinea, \$2.2 billion; and South Africa, \$1.9 billion. The value of mineral fuels, mineral oils and products of their distillation, and bituminous substances imports increased by 6.8% to \$16.5 billion; leading import countries included India, \$3.6 billion; Bahrain, \$3.0 billion; Saudi Arabia, \$1.9 billion; Kuwait, \$1.8 billion; and

¹The United Arab Emirates is a federation of seven Emirates: Abu Dhabi, Ajman, Dubai (Dubayy), Fujairah (Al Fujayrah), Ras Al Khaimah, Sharjah (Ash Shariqah), and Umm al-Quwain (Umm Al Qaywayn).

²Where necessary, values have been converted from United Arab Emirates dirham (AED) to U.S. dollars (US\$) at an annual average exchange rate of AED3.673=US\$1.00 for 2019 and AED3.673=US\$1.00 for 2018.

Iraq, \$0.9 billion (International Trade Centre, 2020a, b; United Arab Emirates Federal Competitiveness and Statistics Authority, 2020a, table 7).

Although the UAE did not produce mined diamond in 2019, the country was a major global trade center of both rough and polished diamond. The country's imports of rough diamond increased by 1.1% to 76.521 million carats in 2019 from 75.723 million carats in 2018; exports of rough diamond increased by 4.9% to 79.174 million carats in 2019 from 75.458 million carats in 2018. The UAE's diamond trading partners included diamond-producing countries in Africa; diamond-processing centers in Asia; and diamond-consuming markets in China, Europe, and the United States. In September 2019, the Dubai Multi Commodities Centre (DMCC) unveiled the redesigned and upgraded Dubai Diamond Exchange (DDE) auction facility. The Government aimed for Dubai's DMCC to become the world's biggest international diamond trading hub by 2023; in 2019 diamond transactions by the DDE were valued at nearly \$330 million, a significant increase from nearly zero in the late 1990s and \$3 million in 2003 (Dubai Multi Commodities Centre, 2019; 2020; Kimberley Process Certification Scheme, 2019, 2020).

The UAE did not have a specific, comprehensive Federal law covering the mineral industry. Article 23 of the UAE Federal Constitution granted each Emirate ownership of, as well as the ability to manage and mine, its mineral resources. The Abu Dhabi Emirate, which is the largest of the UAE's seven Emirates in terms of land area, controlled 94% of the UAE's national petroleum reserves; the Dubai Emirate controlled 4% of the country's petroleum reserves, and the other five Emirates (combined) controlled the remaining 2%. The Abu Dhabi Emirate also controlled 94% of the UAE's natural gas reserves; the Dubai Emirate controlled 1.5% of the country's natural gas reserves, and the other five Emirates (combined) controlled the remaining 4.5%. Each Emirate regulated the extraction of petroleum and natural gas and set the governing policies for the mining of petroleum and natural gas. In Abu Dhabi, the Supreme Petroleum Council regulated and set related policies for petroleum and gas extraction. In the Dubai Emirate and the Sharjah Emirate, the Dubai Supreme Council of Energy and the Sharjah Petroleum Council, respectively, were responsible for regulating and developing the petroleum and natural gas industries (PricewaterhouseCoopers, 2015, p. 55; Sherman and Sterling LLP, 2019; Legal Advice, 2020).

Production

In 2019, production of natural gas increased significantly, by 15.7% to 55.1 billion cubic meters. Production of chromite ore decreased by 16.4% to 159,000 t. Data on mineral production are in table 1.

Structure of the Mineral Industry

The Abu Dhabi Emirate controlled and managed its petroleum and natural gas resources through the wholly state-owned company ADNOC. ADNOC operations were run through subsidiaries that carried out most of the exploration, production, transportation, and marketing operations for crude petroleum, liquefied natural gas (LNG), liquefied

petroleum gas, petrochemicals, and other petroleum industries in the UAE. ADNOC operated eight major onshore fields (Abu Al Bukhoosh, Arzanah, Asab, Bab, Bu Hasa, Jarn Yaphour, Sahil, and Shah) as ADNOC Onshore, which was previously named The Abu Dhabi Company for Onshore Oil Operations (ADCO). ADNOC Onshore was a consortium of ADNOC (60%), BP p.l.c. of the United Kingdom (10%), Total S.A. of France (10%), China National Petroleum Corp. (8%), Inpex Corp. of Japan (5%), CEFC China Energy (4%), and GS Energy Co. of South Korea (3%). ADNOC also operated three offshore fields (the Nasr, the Umm Sharif and the Zakum) as ADNOC Offshore, which was previously named the Abu Dhabi Marine Operating Co. (ADMA-OPCO). ADNOC Offshore was a consortium of ADNOC (60%), BP (14.67%), Total (13.33%), and Japan Oil Development Co. (JODCO) of Japan (12%). The Zakum Development Co. (ZADCO), which was a consortium of ADNOC (60%), ExxonMobil Oil Co. of the United States (28%), and JODCO (12%), operated three offshore fields (the Satah, the Umm Al-Dalkh, and the Upper Zakum Fields) (table 2; Gulfnews.com, 2017; U.S. Energy Information Administration, 2017, p. 2–3).

Abu Dhabi Gas Industries Ltd. Co. (GASCO) operated three plants (Asab, Bu Hasa, and Habshan/Bab) for natural gas processing and natural gas liquids (NGL) extraction as well as the NGL fractionation plant at Ruwais. The company also operated a pipeline distribution network to route natural gas to domestic industrial companies, including Emirates Aluminium Co. Ltd. (EMAL) and the local power stations. TAKREER operated the Ruwais and Umm Al Nar refineries. Abu Dhabi Gas Liquefaction Co. Ltd. (ADGAS) operated an LNG plant and carried out natural gas processing on Das Island. Chemical and petrochemical manufacturing companies included Abu Dhabi Polymers Co. Ltd. (BOROUGE) and Ruwais Fertilizer Industries (FERTIL). Support services were provided for exploration and production through the National Drilling Co. (NDC), which conducted onshore and offshore drilling; Abu Dhabi Petroleum Ports Operating Co. (IRSHAD), which undertook marine operations of the Abu Dhabi petroleum ports; and the Mussafah Offshore Supply Base (ESNAAD), which provided facilities, services, and supplies (table 2; U.S. Energy Information Administration, 2017, p. 2–4).

Emirates Global Aluminium (EGA) was a 50-50 joint venture between the Investment Corp. of Dubai and Mubadala Investment Co. of Abu Dhabi, which were both wholly owned by the Government. The company conducted operations through subsidiaries Dubai Aluminium Co. (DUBAL), which operated a 1.0-million-metric-ton-per-year (Mt/yr) aluminum smelter at Jebel Ali, and EMAL, which operated a 1.32 Mt/yr aluminum smelter at Al Taweelah in Abu Dhabi. Other EGA subsidiaries included Guinea Alumina Corp., which operated a newly opened bauxite mine in the Republic of Guinea, and Al Taweelah Alumina, which operated a newly opened refinery in the Khalifa Industrial Zone, adjacent to the smelter. The bauxite mine in the Republic of Guinea and the alumina refinery at Taweelah vertically integrate the company's supply chain. Emirates Steel Industries P.J.S.C. (ESI), which was a subsidiary of Abu Dhabi-based and government-owned SENAAT General Holding Corp. (SENAAT), was the leading steel producer in the UAE.

ESI conducted operations at the integrated steel plant in the industrial city of Abu Dhabi (SENAAT General Holding Corp., 2016b, c; Emirates Global Aluminium, 2020a; 2020c, p. 14–15). Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Aluminum.—In 2019, EGA produced 2.57 Mt of aluminum, which was a decrease of 2.7% below the 2.64 Mt produced in 2018. By yearend 2019, EGA employed 7,236 people in the UAE. During the year, EGA began operating the Al Taweelah alumina refinery [a 2-Mt/yr alumina refinery in the Khalifa Industrial Zone (KIZAD) in Abu Dhabi], adjacent to EGA's 1.32-Mt/yr aluminum smelter. The alumina refinery was commissioned in early 2019 and produced 1.1 Mt of alumina in 2019. The alumina refinery used imported bauxite from EGA's wholly-owned subsidiary in Guinea which started production at a 12-million-ton-per-year bauxite mine in August 2019 (tables 1, 2; Bloxsome, 2020; Emirates Global Aluminium, 2020a; 2020b; 2020c, p. 15, 36, 109).

Taweelah Aluminium Extrusion Company LLC (TALEX), which was initially set up as a joint venture between Gulf Extrusions Co. LLC of Dubai (50%) and SENAAAT (50%) also produced aluminum products in 2019. The company started operations in 2016 in the KIZAD to produce 50,000 metric tons per year (t/yr) of aluminum profiles and 45,000 t/yr of aluminum billets for regional and international markets. In November 2019, SENAAAT transferred to Gulf Extrusions its 50% share in TALEX, which subsequently would be wholly owned and operated by Gulf Extrusions (Lightmetalage.com, 2016; SENAAAT General Holding Corp., 2016c, 2019).

Ducab Aluminium Co., which was a joint venture between Dubai Cable Co. Ltd. of Dubai (60%) and SENAAAT (40%), completed construction of a \$60 million aluminum mill in 2018. The new mill, located in KIZAD, was inaugurated in early 2018 and was expected to have a production capacity of 50,000 t/yr of aluminum rods and overhead conductors (SENAAT General Holding Corp., 2016a; Aluminium Insider, 2018; Lightmetalage.com, 2018).

Iron and Steel.—In 2019, raw steel production increased by 2.5% to a 5-year high of 3.3 Mt; high domestic demand for steel continued to be driven by the construction sector and the continued development of infrastructure projects. ESI was the leading steel producer in the UAE, with a raw steel capacity of 3.5 Mt/yr. During 2019, ESI was reported to have supplied 60%, or about 160,000 t, of the rebar requirements in the construction of the Barakah nuclear energy powerplant. ESI had been a partner of the Emirates Nuclear Energy Corp. (ENEC) from the outset of the Barakah project since 2010. ESI also noted that the nuclear power plant, which was located in the Al Dhafra region of Abu Dhabi Emirate, was the UAEs' first nuclear energy site, the first nuclear energy plant in the Arabian Peninsula, and the first commercial nuclear energy plant in the Arab World. When fully operational, the powerplant was expected to have four units with a combined capacity of 5,600 megawatts (MW), or 1,400 MW for each unit (Bhatia, 2018; Phys.org, 2018; Emirates Steel, 2020a; 2020b).

Industrial Minerals

Cement.—There were over 20 cement operations in the country with a total installed capacity of about 45 Mt/yr of cement. In 2019, capacity utilization was less than 50%, as only about 16.4 Mt of cement was produced and about 8.7 Mt (estimated) of cement exported. The leading cement-producing companies included Arkan Building Materials Co. PJSC, Lafarge Emirates Cement L.L.C., National Cement Co., Sharjah Cement and Industrial Development Co., and Union Cement Co.; most of the cement plants were located in areas north of Abu Dhabi (table 2; International Cement Review, 2020, p. 346–348).

Mineral Fuels and Other Sources of Energy

Natural Gas.—Both the production and exports of natural gas in the UAE increased in 2019; production increased to 55.1 billion cubic meters (an increase of 15.7%), whereas exports with the 7.1 billion cubic meters exported in 2018. The country's imports of natural gas decreased by 13.6% in 2019 to 22.5 billion cubic meters from 26.1 billion cubic meters in 2018. The UAE ranked fourth in natural gas production in the Middle East, behind Iran, Qatar, and Saudi Arabia. The UAE's domestic primary energy consumption increased by 0.6% to 4.83 exajoules in 2019 from 4.80 exajoules in 2018; natural gas and oil accounted for 57% and 40%, respectively, of the UAE's primary energy consumption; coal and renewables accounted for 2% and about 1%, respectively (table 1; BP p.l.c., 2020, p. 9; Organization of the Petroleum Exporting Countries, 2020, p. 79–81).

ADNOC announced in February that it had awarded a \$1.36 billion contract to the UAE's National Marine Dredging Co. (NMDC) for dredging, land reclamation, and marine construction to build multiple artificial islands in the first phase of development of the Ghasha Concession. The Ghasha Concession consists of the Dalma, Ghasha, Hail, Mubarraz, and Nasr offshore sour gas fields. NMDC was to construct 10 new artificial islands and two causeways, as well as expand an existing island, Al Ghaf. The project was expected to take 38 months to complete and would provide the infrastructure required to further develop, drill, and produce gas from the sour gas fields in the Ghasha Concession. ADNOC had awarded stakes in the Ghasha Concession to Italy's Eni (25%), Germany's Wintershall Dea (10%), Austria's OMV (5%), and Lukoil of Russia (5%). The project was expected to produce more than 1.5 billion cubic feet (about 42 million cubic meters) of gas per day and more than 120,000 barrels per day of crude petroleum and condensates when its development is completed by 2025 (Lukoil Oil Co. PJSC, 2019; World Oil, 2019).

Petroleum.—The UAE's production of crude petroleum and condensates increased by 2.2% to 1,459 million barrels (Mbbbl), or about 4.0 million barrels per day (Mbbbl/d), in 2019. In 2019, the UAE ranked third in crude petroleum production in the Middle East, behind Iraq and Saudi Arabia. ADNOC planned to increase crude petroleum production to 5 Mbbbl/d, by 2030. Exports of crude petroleum were about 881 Mbbbl, which was an increase of 5.1% compared with about 838 Mbbbl in 2018 (table 1; Thomson Reuters, 2018; BP p.l.c., 2020, p. 16; Organization of the Petroleum Exporting Countries, 2020, p. 48).

Outlook

The UAE's GDP is expected to decrease by 3.5% in 2020 owing to a global downturn in energy prices as a result of the global coronavirus disease 2019 (COVID-19) pandemic, according to the IMF; however, the UAE's economy could increase by 3.3% in 2021 as the effects of the pandemic abate. The country's production of aluminum, cement, and iron and steel is expected to increase during the next few years owing to increased demand resulting from Government investment in EXPO 2020 [the first World Expo to be held in the Middle East, Africa, and South Asia (MEASA) region] and due to other construction projects. Infrastructure spending related to the multi-year development of the Ghasha Concession should also stimulate the economy and provide further demand for mineral commodities produced within the UAE through 2025 (International Monetary Fund, 2020, p. 17, 23).

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TABLE 1
UNITED ARAB EMIRATES: PRODUCTION OF MINERAL COMMODITIES¹

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

Commodity ²	2015	2016	2017	2018	2019
METALS					
Aluminum:					
Alumina	--	--	--	--	1,100
Metal, primary	2,464	2,525 [†]	2,611 [†]	2,640	2,570
Chromium, mine, chromite ore	3,869	17,863	57,800	190,146	159,000
Iron and steel:					
Direct-reduced iron	3,190	3,479	3,608	3,784 [†]	3,667
Steel:					
Raw steel	3,006	3,149	3,309	3,247	3,327
Products:					
Concrete-reinforcing bars	1,988	2,068	2,179	2,070 [†]	2,100
Hot-rolled, long	2,959	3,126	3,246	3,167 [†]	3,200
INDUSTRIAL MINERALS					
Cement, hydraulic [‡]	20,500	16,900 [†]	17,400 [†]	16,300 [†]	16,400
Gypsum [‡]	700	700	700	700	700
Lime [‡]	460	470	480	470	470
Nitrogen, N content:[‡]					
Ammonia	900 [†]	900 [†]	900 [†]	1,000 [†]	1,000
Urea	900 [†]	900 [†]	900 [†]	1,000	1,000
Sulfur, byproduct, natural gas and petroleum, S content [‡]	3,300	3,300	3,300	3,300	3,400
MINERAL FUELS AND RELATED MATERIALS					
Natural gas, marketable	60,181	61,862	54,086	47,624	55,097
Petroleum:					
Crude, including condensate	1,423,000	1,478,000	1,427,000	1,427,880 [†]	1,459,270
Refinery:					
Distillate fuel oil	72,635	80,520	83,585 [†]	83,585 [†]	82,855
Gasoline	41,975	48,312	35,770 [†]	35,770 [†]	35,040
Kerosene, including jet fuel	105,485	124,806	104,775 [†]	105,485 [†]	103,295
Residual fuel oil	10,585	12,078	17,885 [†]	17,155 [†]	16,425
Other	112,055	132,858	138,335 [†]	132,860 [†]	129,210
Total	343,000	399,000	380,000 [†]	375,000 [†]	367,000

[‡]Estimated. [†]Revised. do. Ditto. -- Zero.

¹Table includes data available through October 5, 2020. 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, common clays, copper metal, crushed stone, diabase, gravel, limestone, marble, sand, salt, and shale may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
UNITED ARAB EMIRATES: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Emirates Global Aluminium (EGA) [Investment Corp. of Dubai (Government of Dubai, 100%), 50%, and Mubadala Investment Co. of Abu Dhabi (Government of Abu Dhabi, 100%), 50%]	Refinery at Taweelah, Khalifa Industrial Zone (Kizad), Abu Dhabi	2,000
Aluminum	Emirates Global Aluminium (EGA) [Investment Corp. of Dubai (Government of Dubai, 100%), 50%, and Mubadala Investment Co. of Abu Dhabi (Government of Abu Dhabi, 100%), 50%]	Smelter at Jebel Ali in Dubai	1,000
Do.	do.	Smelter at Al Taweelah, Khalifa Industrial Zone (KIZAD), Abu Dhabi	1,320
Aluminum products	Taweelah Aluminum Extrusion Company LLC (TALEX) (Gulf Extrusions Co. LLC, 100%)	Plant at Al Taweelah, Khalifa Industrial Zone (KIZAD), Abu Dhabi	100
Do.	Ducab Aluminum Co. (Dubai Cable Co. Ltd. of Dubai, 60%, and SENAAT General Holding Corp., 40%)	do.	50
Cement:			
Portland	Aditya Birla Star Cement (Aditya Birla, 80%, and private investors, 20%)	Grinding plant at Abu Dhabi	1,200
Do.	do.	Grinding plant at Ajman	900
Do.	do.	Cement plant at Ras Al Khaimah	2,400
Do.	Arabian Gulf Cement Co. LLC	Cement plant at Ajman	1,100
Do.	Arkan Building Materials Co. PJSC (Arcan) (SENAAT General Holding Corp., 51%, and private investors, 49%)	Cement plant at Al-Ain	4,500
Do.	Bin Hamel Nael Cement Co.	Grinding plant at Al-Ain	500
Do.	Cemex Falcon LLC	Grinding plant at Dubai	1,600
Do.	Emirates Cement Factory (SENAAT General Holding Corp.)	Plant at Abu Dhabi	2,300
Do.	Fujairah Cement Industries P.S.C.	Plant at Dibba, Fujairah	2,400
Do.	Gulf Cement Co. (National Investment Co., 35.75%; Ras Al Khaimah Government, 7.67%; individual investors, 56.58%)	Plant at Khor Khuwair near Ras Al Khaimah	2,700
Do.	Hamriyah Cement Co. FZC (Bin Kamil Investment Group)	Grinding plant at Sharjah	1,000
Do.	Jebel Ali Cement Co. (Sharaf Industries, 100%)	Cement plant at Jebel Ali, Dubai	840
Do.	KCC Co. LLC	Grinding plant at Sharjah	500
Do.	Lafarge Emirates Cement Co. L.L.C. (Government of Fujairah, 50%, and LafargeHolcim S.A., 50%)	Plant at Fujairah	3,200
Do.	Nael Cement Co.	Grinding plant at Al-Ain	700
Do.	National Cement Co. P.S.C.	Plant at Dubai	1,500
Do.	National Cement Factory Co. [Ittihad International Investment Co. (III), 100%]	Grinding plant in Abu Dhabi	3,000
Do.	Pioneer Cement Industries LLC (Raysut)	Plant at Ras Al Khaimah	1,500
Do.	Ras Al Khaimah Cement Co. P.S.C.	Plant at Khor Khuwair near Ras Al Khaimah	1,000
Do.	Sharjah Cement and Industrial Development Co. (private investors, 70%, and Government of Sharjah, 30%)	Plant at Sharjah	4,300
Do.	Star Super Cement Industries LLC (UltraTech Cement Ltd., 100%)	Grinding plant at Jabal Ali	2,400
Do.	Teba Cement Co.	Grinding plant at Abu Dhabi	1,200
Do.	Umm al-Qaywayn Cement Industries Co. P.S.C.	Plant at Umm al-Quwain	1,600
Do.	Union Cement Co. P.S.C. (Shree Cement Ltd., 97.61%),	Plant at Khor Khuwair near Ras Al Khaimah	4,800
White	JK Cement Ltd.	Plant at Fujairah	600
Do.	Ras Al Khaimah Co. for White Cement and Construction Materials (RAKWCCM)	Plant at Ras Al Khaimah	900
Copper, metal	Fujairah Gold FZC (Vedanta Ltd., 100%)	Copper rod plant at Furairah Free Zone	99
Gold, refined	metric tons Al Etihad Gold Refinery DMCC	Refinery at Dubai	200
Do.	do. Dijillah Gold Refinery FZC	Refinery at Sharjah	NA
Do.	do. Emirates Gold (private investors, 100%)	Refinery at Dubai	200
Do.	do. Fujairah Gold FZC (Vedanta Ltd., 100%)	Refinery at Fujairah Free Zone 2	20
Do.	do. Gulf Gold Refinery Services (TLI Global FZE, 100%)	Refinery at Dubai	NA

See footnotes at end of table.

TABLE 2—Continued
 UNITED ARAB EMIRATES: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold, refined— Continued	metric tons	International Precious Metal Refiners LLC (IPMR)	Refinery at Sharjah	100
Do.	do.	Kaloti Precious Metals	do.	450
Iron and steel:				
Iron, direct-reduced		Emirates Steel Industries P.J.S.C. (ESI) (SENAAT General Holding Corp., 100%)	Direct-reduced iron plant at Abu Dhabi Industrial City	4,000
Do.		Al Nasser Industrial Enterprises LLC	do.	250
Steel:				
Billet		Emirates Steel Industries P.J.S.C. (ESI) (SENAAT General Holding Corp., 100%)	Plant at Abu Dhabi Industrial City	3,500
Do.		Al Nasser Industrial Enterprises LLC	do.	450
Rebar		Alam Steel Ltd.	Rolling mill at Jebel Ali Free Zone, Dubai	500
Do.		Al Ghurair Iron and Steel Co.	Rolling mill at Abu Dhabi Industrial City	350
Do.		Al Nasser Industrial Enterprises LLC	do.	90
Do.		Conares Metal Supply Ltd.	Rolling mill at Dubai	1,000
Do.		Emirates Steel Industries P.J.S.C. (ESI) (SENAAT General Holding Corp., 100%)	Rolling mill at Abu Dhabi Industrial City	1,800
Do.		Essar Steel Middle East PZE	Rolling mill at Hamriyah Free Zone, Sharjah	1,000
Do.		Hamriyah Steel FZC (Metalloinvest, 80%, and Sheikh Sultan Bin Khalifa Al Nahyan, 20%)	do.	1,000
Do.		Star Steel International LLC	do.	360
Do.		Union Iron & Steel Co. LLC	Rolling mill at Abu Dhabi Industrial City	500
Wire rod		Emirates Steel Industries P.J.S.C. (ESI) (SENAAT General Holding Corp., 100%)	Plant at Abu Dhabi Industrial City	550
Lime		Emirates Lime factory (Al Jazeera Industrial Group)	do.	350
Do.		Ras Al Khaimah Lime Co. (Ras Al Khaimah Co. for White Cement and Construction Materials PSC)	Plant at Ras Al Khaimah	365
Natural gas:				
Liquefied natural gas (LNG)		Abu Dhabi Gas Liquefaction Co. Ltd. (ADGAS) [Abu Dhabi National Oil Co. (ADNOC), 70%; Mitsui and Co. Ltd., 15%; BP p.l.c., 10%; Total S.A., 5%]	Plant at Das Island, 160 kilometers west of Abu Dhabi	8,000
Natural gas, marketab	million cubic meters	Abu Dhabi Gas Development Co. Ltd. (Al Hosn Gas) [Abu Dhabi National Oil Co. (ADNOC), 60%, and Occidental Petroleum Corp., 40%]	Shah sour gas field, 180 kilometers southwest of Abu Dhabi	5,100
Nitrogen:				
Ammonia		Ruwais Fertilizer Industries (FERTIL) [Abu Dhabi National Oil Co. (ADNOC), 66.67%, and Total S.A., 33.33%]	Plants at Ruwais, Abu Dhabi	1,200
Urea		do.	do.	2,100
Petroleum:				
Crude	thousand 42-gallon barrels per day	Abu Dhabi National Oil Co. (ADNOC) Onshore [Abu Dhabi National Oil Co. (ADNOC), 60%; BP p.l.c., 10%; Total S.A., 10%; China National Petroleum Corp., 8%; Inpex Corp., 5%; CEFC China Energy, 4%; GS Energy, 3%]	Onshore Abu Dhabi oilfields, including the Abu Al Bukhoosh, the Arzanah, the Asab, the Bab, the Bu Hasa, the Jarn Yaphour, the Sahil, and the Shah fields	1,800
Do.	do.	Abu Dhabi National Oil Co. (ADNOC) Offshore [Abu Dhabi National Oil Co. (ADNOC), 60%; BP p.l.c., 14.67%; Total S.A., 13.33%; Japan Oil Development Corp., 12%]	Offshore Abu Dhabi oilfields, including the Lower Zakum, the Nasr, the Umm Lulu, and the Umm Shaif fields	650
Do.	do.	BP p.l.c. and Crescent Petroleum Company Inc.	Sharjah oilfields, including the Kahaif, the Saja, the Moveyid, and the Mubarek fields	50

See footnotes at end of table.

TABLE 2—Continued
UNITED ARAB EMIRATES: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(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 per day	Dubai Petroleum Establishment (Government of Dubai, 100%)	Dubai oilfields, including the Margham, the Falah, the Fateh, the Rashid, and the S.W. Fateh fields	100
Do.	do.	Zakum Development Co. (ZADCO) [Abu Dhabi National Oil Co. (ADNOC), 60%; ExxonMobil Abu Dhabi Offshore Petroleum Company Ltd., 28%; Japan Oil Development Co., (JODCO) 12%]	Offshore Abu Dhabi oilfields, including the Satah, the Umm Al-Dalkh, and the Upper Zakum fields	750
Natural gas liquids (NGL)		Abu Dhabi Gas Industries Ltd. Co. (GASCO) [Abu Dhabi National Oil Co. (ADNOC), 68%; Royal Dutch Shell Group, 15%; Total S.A., 15%; Partex Oil and Gas Group, 2%]	Plants at Asab, Bu Hasa, and Habshan-Bab	10,220
Do.		Abu Dhabi Gas Development Co. Ltd. (Al Hosn Gas) [Abu Dhabi National Oil Co. (ADNOC), 60%, and Occidental Petroleum Corp., 40%]	Al Hosn sour gas plant, 180 kilometers southwest of Abu Dhabi	1,606
Refinery products	do.	Abu Dhabi Oil Refining Co. (TAKREER) [Abu Dhabi National Oil Co. (ADNOC), 65%; Eni S.p.A., 20%; and OMV Aktiengesellschaft, 15%]	Refinery at Ruwais, Abu Dhabi	817
Do.	do.	do.	Refinery at Umm Al Nar, Abu Dhabi	85
Do.	do.	ENOC Processing Co. LLC (EPCL) [Investment Corp. of Dubai (Government of Dubai, 100%) 100%]	Refinery at Jebel Ali, Dubai	140
Do.	do.	Vitol SA	Refinery at Fujairah	82
Salt		Alghaith Industries (Al Ghaith Holding PJSC)	Plant at Abu Dhabi Industrial City	110
Do.		Wasit Group	NA	NA
Sand		Fujairah Natural Resources Corp. (FNRC)	Quarry at Fujairah	20,000
Silica, glass		Emirates Float Glass LLC (Dubai Investment PJSC, 100%)	Plants at Abu Dhabi Industrial City	440
Do.		Guardian Zoujaj International Float Glass Co. LLC (Guardian RAK)	Plant at Ras Al Khaimah	255
Silver, refined	metric tons	Emirates Gold (private investors, 100%)	Refinery at Dubai	100
Do.	do.	Fujairah Gold FZC (Vedanta Ltd., 100%)	Refinery at Fujairah Free Zone 2	105
Do.	do.	International Precious Metal Refiners LLC	Refinery at Sharjah	1,000
Do.	do.	Kaloti Precious Metals	do.	450
Stone, limestone		Stevin Rock LLC (Government of Ras Al Khaimah, 100%)	Khor Khuwair Quarry, Saqr Port	80,000
Do.		Ras Al Khaimah Rock Co. LLC (RAK) (Government of Ras Al Khaimah, 100%)	Quarry at Ghalilah, Ras Al Khaimah	22,000
Do.		Al A'ali Crushers	Quarries in Fujairah	10,000
Do.		National Quarries L.L.C. [Al-Jazeera investment Group (Dubai)]	do.	9,000
Do.		Oryx Crushers	do.	4,000
Sulfur		Abu Dhabi Gas Development Co. Ltd. (Al Hosn Gas) [Abu Dhabi National Oil Co. (ADNOC), 60%, and Occidental Petroleum Corp., 40%]	Al Hosn sour gas plant, 180 kilometers southwest of Abu Dhabi	3,275
Do.		Abu Dhabi Gas Industries Ltd. Co. (GASCO) [Abu Dhabi National Oil Co. (ADNOC), 68%; Royal Dutch Shell Group, 15%; Total S.A., 15%; Partex Oil and Gas Group, 2%]	Plants at Asab, Bu Hasa, and Habshan-Bab	2,370
Do.		Abu Dhabi National Oil Co. (ADNOC)	Plant at Abu Dhabi	2,000

Do., do. Ditto. NA Not available.