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2020–2021 Minerals Yearbook

LIBYA [ADVANCE RELEASE]

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The Mineral Industry of Libya

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Note: In this chapter, information for 2020 is followed by information for 2021.

In 2020, Libya produced and exported ammonia, iron and steel products, methanol, natural gas, crude petroleum, refined petroleum products, salt, sulfur, and urea. Libya had 48.4 billion barrels of crude petroleum reserves, ranking it 10th in the world; its crude petroleum reserves accounted for 5.0% of the proven reserves in the Middle East and North Africa region (MENA) and 2.8% of the world's total proven reserves. By the end of 2020, Libya held 1.4 trillion cubic meters of natural gas reserves, which accounted for 1.6% of the reserves in the MENA region and 0.8% of the world's total. Libya was the MENA region's 11th-ranked producer of crude petroleum and natural gas. Other mineral commodities produced in Libya included cement, gypsum, and lime. Data on mineral production are in table 1 (BP p.l.c., 2021, p. 14, 16, 34).

Minerals in the National Economy

In 2020, the real gross domestic product (GDP) of Libya decreased by 59.7% compared with an increase of 13.2% in 2019. The country's nominal GDP was estimated to be $21.8 billion in 2020 compared with $39.8 billion in 2019. These large fluctuations in the country's GDP were mainly attributed to two factors. The first factor was the interruptions in crude petroleum and natural gas production and exports , which was attributed to the armed conflict between the United Nations-recognized Government of National Accord (GNA) in Tripoli and the Libyan National Army (LNA) in Benghazi. The second factor was the decrease in the price of crude petroleum on the world market (International Monetary Fund, 2021; World Bank Group, 2021, p. ix).

The economy of Libya continued to be heavily dependent on the production and export of hydrocarbons in 2020. Hydrocarbon exports accounted for about 83% of the country's total exports by value. The revenue generated by the petroleum sector decreased to $3.8 billion in 2020 from $22.5 billion in 2019; it accounted for 23% of total Government revenue in 2020 compared with 55% in 2019. The contribution of nonfuel mining and quarrying activities, which mainly involved industrial mineral production, accounted for less than 1% of the GDP (Central Bank of Libya, 2021, p. 52, 60, 64; Organization of the Petroleum Exporting Countries, 2021, p. 10).

Total exports decreased to $6.9 billion in 2020 from $25.7 billion in 2019. The value of the country's hydrocarbon exports, which included natural gas, crude petroleum, and other petroleum products, decreased to $5.7 billion in 2020 from $24.2 billion in 2019. The volume of crude petroleum exports decreased to 347,200 barrels per day (bbl/d) in 2020 from 1.0 million barrels per day (Mbbl/d) in 2019. In 2020, the Organization of the Petroleum Exporting Countries (OPEC) reference basket spot price for Es Sider crude was $40.06 per barrel compared with $63.81 per barrel in 2019. Crude petroleum exported from Libya went to Europe (71%), Asia and the Pacific region (28%), and North America (1%). In 2020, the volume of natural gas exports decreased by 25% to 4.3 billion cubic meters from 5.7 billion cubic meters in 2019. Natural gas exports went to Italy by way of the Greenstream pipeline; the 540-kilometer (km)-long pipeline transported natural gas from the Mellitah gas and oil terminal on the Mediterranean Sea to Gela on the Island of Sicily in Italy and had the capacity to discharge 11 billion cubic meters per year (Organization of the Petroleum Exporting Countries, 2021, p. 10, 17, 47, 66, 80).

In 2020, exports to the United States from Libya decreased to $215 million from $1.5 billion in 2019. Crude petroleum exports decreased to $212 million in 2020 from $1.4 billion in 2019, and fuel oil exports decreased to $230,000 from $93 million. Imports to Libya from the United States decreased to $290 million in 2020 from $412 million in 2019. Mineral-related import categories included drilling oilfield equipment ($8 million), chemicals ($4 million), and petroleum products ($2.0 million) (U.S. Census Bureau, 2022a–c).

Government Policies and Programs

Law No. 2 of 1971 and its amendments are the legal framework for the mining and quarrying activities in Libya. Law No. 5 of 1997 regulates foreign investment in the nonoil minerals sectors and assigns the National Mining Corp. (NMC) as the authority to grant mining licenses, enter into investment contracts with companies, and collect revenue generated by mines and quarries. Law No. 9 of 2010 on Investment Promotion permits a 100% foreign equity ownership of companies licensed under the law. Decree No. 207 of 2012 (Decree 207) and Decree No. 22 of 2013 are related to the establishment of joint ventures in the country and the ability of foreign shareholders and investors to invest with Libyan partners in new companies (Treasure, 2014, p. 629; International Energy Agency, 2020b; Zaptia, 2021b).

The NMC was created by Resolution No. 161 of 2007 to invest in the country's natural resources and minerals to ensure that national demand for minerals can be met by domestic industries where possible, and to attract foreign investment to the mining sector. The shareholders in the NMC included state-owned producers of cement and iron and steel as well as local banks and investment agencies. In 2020, the NMC was seeking to establish joint ventures with other companies to develop the country's mineral resources, namely, clays (common bentonite and kaolin), gold, granite, gypsum, iron ore, marble, and silica sand, but the armed conflict in the country kept many investors from committing to such projects (National Mining Corp., 2021; Zaptia, 2021c).

The Geologic Research and Mining Department (GRMD) of the Industrial Research Center (IRC) was the Government agency, under the Ministry of Industry and Mineral Resources, responsible for carrying out chemical, geologic, and physical analyses; exploration and prospecting studies; geologic mapping; field and geographic information systems; and remote sensing services. The IRC was established by decree No. 25 of 1970 to advance the country's industrial development. The GRMD had been active in identifying Libya's nonfuel mineral resources, conducting mineral exploration studies, and proposing potential mining methods (Industrial Research Center, 2021).

State-owned National Oil Corp. (NOC) was responsible for exploration and production of hydrocarbons in Libya through its wholly owned and affiliate companies and partners. Decree 207 allowed foreign investors to own as much as 49% interest in new joint ventures with the NOC. This law replaced law No. 103 of 2012, which allowed foreign investors to own as much as 65% of new joint ventures (Nield, 2008; Zaptia, 2012; International Energy Agency, 2020a).

Production

Salt production was estimated to have increased by 100% in 2020 compared with that in 2019 owing to full year of operations at Reefal W.L.L. Co. Production of distillate and residual fuel oil increased by 10% each in 2020 compared with that in 2019 (table 1; Reefal W. L.L. Co., 2021).

Ammonia and urea production was estimated to have decreased by 72% and 33%, respectively, in 2020 owing to the halt of production at Libyan Norwegian Fertilizer Co. (LIFECO) in the first half of 2019 because of a dispute between LIFECO and the NOC over the natural gas supply as well as the military conflict in the country. Production of crude petroleum (including condensate) and natural gas liquids decreased by 66% and 44%, respectively, in 2020 compared with that in 2019. The decrease was attributed to the blockade imposed on petroleum exports for most of 2020 because of the military and political conflict in the country. Gross and dry natural gas production decreased by 22% and 10%, respectively, in 2020 compared with that in 2019. Raw steel production decreased by 18% in 2020 compared with that in 2019 and continued to be much less than the Libyan Iron and Steel Co.'s combined capacity of 1.75 million metric tons per year (Mt/yr). Cement production was estimated to have decreased by 14% and direct-reduced iron (DRI) output decreased by 10% (tables 1, 2; Libyan Norwegian Fertilizer Co., 2020; Zaptia, 2021d).

Structure of the Mineral Industry

The Government was the sole owner of the hydrocarbon and steel sector companies, and a partial owner of all chemical and fertilizer facilities and some cement plants. The NOC comprised 10 petroleum and petroleum-related services subsidiaries. The NOC was also a partner in nine joint-venture companies operating in Libya. In 2020, nine international oil companies were working in Libya under exploration and production-sharing agreements (ESPA) that they had signed with the NOC. Libyan Iron and Steel Co. was state-owned, whereas the ownership of the country's cement plants was mixed (table 2; National Oil Corp., 2021).

Commodity Review

Metals

Iron and Steel.—Libyan Iron and Steel Co. was the sole steelmaker in Libya and one of the leading steelmaking companies in North Africa. The company produced DRI, raw steel, and finished and semifinished steel products at its plants in Misuratah (Misrata), which is located on the Mediterranean coast in northwestern Libya. In 2020, the company's DRI output decreased to 796,000 metric tons (t) from 880,000 t in 2019, and raw steel production decreased by 18% to 495,000 t in 2020 from 606,000 t in 2019. Libyan Iron and Steel Co. exported 336,000 t of iron and steel products in 2020 compared with 392,000 t in 2019. The decreases in the output of DRI, raw steel, and steel products were attributed to the negative effect of the coronavirus disease (COVID-19) pandemic on steel consumption and production. In 2013, the company began an expansion project to increase the production capacity for finished steel products to 2.4 Mt/yr from 1.5 Mt/yr. The project, which was originally expected to be completed in April 2015, was put on hold because of the armed conflict and electricity shortages (tables 1, 2; Libyan Iron and Steel Co., 2021; World Steel Association, 2022, p. 19).

Industrial Minerals

Cement and Gypsum.—Cement production in Libya was estimated to have decreased to 3.1 million metric tons (Mt) in 2020 from 3.6 Mt in 2019, which was much less than the country's production capacity of 9.3 Mt/yr. This was attributed to the military and political conflict in the country during 2019 and 2020. Libya imported 2.2 Mt of cement in 2020, mainly from Egypt and Tunisia, to meet the domestic demand, which was estimated to be 5.3 Mt in 2020. The main cement producers in Libya included Al-Ahlia Cement Co. (ACC) (also known as National Cement Co.), Arab Union Contracting Co., and Libyan Cement Co. (LCC) (tables 1, 2; International Cement Review, 2021, p. 197; Al-Ahlia Cement Co., 2021).

At its quarries in the Souq al Khamis District, ACC had the capacity to produce 1 Mt/yr of gypsum at its quarries in Ghadames had 9,000 metric tons per year (t/yr). The Arab Union Contracting Co. operated the Al Burj cement plant in Zliten, El Margueb District, which is located 150 km east of Tripoli. The 1.4-Mt/yr-capacity cement plant had access to gypsum, limestone, and high-grade limestone quarries that covers an area of 84 hectares. The leading cement producer in eastern Libya in terms of capacity, LCC, had six production lines in three plants, two of which are located in Benghazi and the third one is located in Derna, with a combined capacity of 2.4 Mt/yr of cement. The company planned to produce 1.7 Mt of cement in 2020 by operating four of its six production lines and to increase its capacity to 3.0 Mt/yr in 5 years (table 2; Arab Union Contracting Co., 2021; Libyan Cement Co., 2021).

Nitrogen.—LIFECO was the sole producer of ammonia and urea in Libya in 2020. The company resumed partial production in 2019 following a 6-month shutdown owing to the stoppage of natural gas supply by the NOC because of a dispute concerning debt payment. LIFECO had the capacity to produce 700,000 t/yr of ammonia and 900,000 t/yr of urea from its two plants at Marsa al Brega. At the end of 2020, Yara International ASA of Norway sold its 50% interest in LIFECO to the Libyan Investment Authority (LIA) and the NOC, which increased the NOC's interest to 75% from 50% (the LIA held the remaining 25%) (table 2; Zaptia, 2019; Libyan Fertilizer Co., 2021; Yara International ASA, 2021).

Salt.—Reefal W.L.L. Co. started operations in 2018 in Misuratah to extract and process sea salt using solar energy. The company had the capacity to produce 2.5 Mt/yr of salt and its own shipping terminal with a loading capacity of 7,000 metric tons per day (t/d). The other major producer of salt in Libya was the state-owned General Company for Chemical Industries, which had a plant at Abu Kammash with a capacity of 120,000 t/yr of salt and brines at Sabkhet Twelat Ghazala on the border with Tunisia with a capacity of 200,000 t/yr (table 2; Reefal W.L.L. Co., 2021).

Mineral Fuels

Natural Gas, Petroleum, and Petroleum Products.—In 2020, crude petroleum output decreased to 150 million barrels (Mbbl) from 438 Mbbl in 2019; natural gas liquids decreased to 5.5 Mbbl from 9.9 Mbbl; total refined petroleum products output increased to 29.3 Mbbl from 27.7 Mbbl; and dry natural gas production decreased to 12.1 billion cubic meters from 13.5 billion cubic meters. The decrease in petroleum and natural gas production was attributed to the blockade on petroleum export terminals that was imposed by the LNA owing to the dispute with the GNA concerning revenue distribution. The blockade started in January 2020 and continued to September 2020; it was estimated to have cost $11 billion in lost revenue and caused acute shortages of electricity and fuel oil in the country (table 1; World Bank Group, 2021, p. ix).

The number of wells completed in Libya, including development and exploration wells, decreased to 75 in 2020 from 115 in 2019, and the number of active oil rigs decreased to 11 in 2020 compared with 16 rigs in 2019 (BP p.l.c. 2021, p. 18; Central Bank of Libya, 2021, p. 82; Organization of the Petroleum Exporting Countries, 2021, p. 23–26).

In 2019, the NOC and Total S.A. of France signed an agreement with the Government to invest $650 million for the development of hydrocarbon resources at the Waha concessions in the Sirte Basin, which is located in north-central Libya. The Waha concessions included the NC–98 and Northern Gialo fields, and production at these fields was exected to increase by 180,000 bbl/d of oil equivalent. In 2018, Total acquired MOL Group of Hungary's share (16.33%) in six of the 13 Waha concessions, which had the capacity to produce 350,000 bbl/d of oil equivalent (Total S.A., 2019).

Wintershall Dea AG's affiliate Wintershall Aktiengesellschaft (WIAG) was the only international oil company that held its own concessions in Libya since 2008. In 2019, the NOC and Wintershall converted Concessions 96 and 97 in the Eastern Sirte Basin to ESPAs. In October, Wintershall handed over operatorship of contract for areas 91 and 107 to Sarir Oil Operations, which was a joint venture of the NOC and WIAG (Wintershall Dea AG, 2021).

Libya had several petroleum exporting ports, including Marsa al Hariga in the east; Es Sider (Sidra), Marsa al Brega, and Ras Lanuf in the central east; and Farwah (Al-urf), Mellitah, and Zawiya in the west. The petroleum refineries were located at Az Zawiya, Marsa al Brega, Mellitah, Ras Lanuf, Sarir, Tobruk, and Zueitina. Their combined capacities were 634,000 bbl/d. The refinery throughput of Libya in 2020 was 80,000 bbl/d, which was slightly higher than the throughput of 76,000 bbl/d in 2019 (tables 1, 2; Organization of the Petroleum Exporting Countries, 2021, p. 33, 35).

MINERAL INDUSTRY HIGHLIGHTS IN 2021

In early 2021, the United Nations facilitated a political dialogue forum in Libya that selected a new prime minister for an interim government, the Government of National Unity, and a new presidential council to prepare for presidential and parliamentary elections in December 2021 and to unite the country's Governmental agencies that were separated in the preceding decade. In March 2021, the House of Representatives approved the Government of National Unity and its cabinet, which was the first unified government in Libya since 2014. The Ministry of Industry and Mineral Resources (MIMR) became the unified Government agency responsible for implementing the country's policies on industry and mineral resources. Industrial Research Center, Libyan Iron and Steel Co., NMC, and the Public Company for Chemical Industry are among the MIMR-affiliated entities that were related to the mineral sector (Government of National Unity, 2022; U.S. Central Intelligence Agency, 2022).

The real GDP of Libya increased by 177.3% in 2021 compared with a decrease of 59.7% in 2020. This growth was attributed to the United Nations-sponsored ceasefire signed in October 2020, which ended military operations in the country and made it possible to resume petroleum production and exports (International Monetary Fund, 2022; U.S. Central Intelligence Agency, 2022).

In 2021, crude petroleum (including condensate) and natural gas liquids production increased by 199% and 166%, respectively, compared with that of 2020. Gross natural gas production increased by 23%. The output of total refined petroleum products increased by 56% in 2021, of which gasoline output increased by 100%; kerosene and jet fuel, by 75%; distillate fuel oil, by 72%; residual fuel oil, by 63%; and other petroleum products, by 47%. Raw steel production increased by 34% in 2021 compared with that in 2020. Notable increases in industrial mineral commodity production in 2021 included urea, which was estimated to have increased by 150%; cement, by 32%; gypsum, by 25%; and lime, by 10% (table 1; Organization of the Petroleum Exporting Countries, 2022, p. 37; World Steel Association, 2022, p. 19).

In June 2021, LIFECO changed its official name from Libyan Norwegian Fertilizer Co. to Libyan Fertilizer Co. The company increased its production of ammonia from one of the two ammonia plants at the Marsa al Brega complex and was working on rehabilitating its second ammonia plant, which was expected to be completed in 2022. LIFECO expected to operate at a 2,500-t/d production capacity of ammonia and 2,500 t/d of urea in 2022. The company employed 1,200 people in 2021 (Zaptia, 2021a; Libyan Fertilizer Co., 2022).

In September 2021, the Ministry of Commerce and Trade issued the first permit for gold exploration in Libya to Blue Castle Mining Co. of the United States. No specific information about the permit (such as location) was available. Gold mineralization had been identified previously at the Jabal Arkanue in Kufra District of southeastern Libya and at Adrar in Yahia area in southwestern Libya (Zaptia, 2021b). Artisanal mining for gold and other precious metals notably increased in southeastern Libya near the borders with Egypt and Sudan and in the southwest along the borders with Algeria, Chad, and Niger. Gaps in border control during the military and political conflict in the country in the past decade led some migrant artisanal miners from counties neighboring Libya to extend their search for gold and other precious metals into Libya (Arabic Post, 2021).

The NMC and Abraj Al-Ghad Co. signed contracts in November 2021 with three European companies to build a five-factory complex for building materials and cement production in Bani Walid District in Western Libya. The three companies were Austroplan Austrian Engineering GmbH of Austria, FLSmidth of Denmark, and Grenzebach Group of Germany. The complex, which was planned to occupy 16,300 hectares between the towns of Bani Walid, Mizdah, Nasma, and Al-Arban, would include a greenfield cement plant and was expected to create 4,000 jobs (Alghariani, 2020; Shaltami and others, 2020; Global Cement, 2021; Zaptia, 2021c).

Outlook

The International Monetary Fund projected that the real GDP of Libya would increase by 3.5% in 2022. Several mineral development and exploration projects in the country, including petroleum exploration at the Ghadames Basin and the Gulf of Sirte, and Libyan Iron and Steel Co.'s raw steel plant expansion, are expected to resume operations in 2022. Industrial mineral development projects, including new cement plants and mining projects for diatomite, gold, gypsum, kaolin, marble, and silica sand, which previously had been identified in several parts of the country, were also expected to begin in the near future. Production of ammonia, cement, crude petroleum, DRI, gypsum, iron and steel, natural gas, refined petroleum products, salt, and urea is likely to increase in the coming years with the continued progress in the country's political and security environment (International Monetary Fund, 2022; Zaptia, 2021c).

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TABLE 1
LIBYA: PRODUCTION OF MINERAL COMMODITIES[1]

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

Commodity[2]		2017	2018	2019	2020	2021
METALS						
Iron and steel:						
Direct-reduced iron		562	612	880	796	861
Raw steel		485	396	606	495	662
INDUSTRIAL MINERALS						
Cement, hydraulic		4,500	4,500	3,600 r	3,100 e	4,100 e
Gypsum, mine[e]		225	225	210	200	250
Lime[e, 3]		240	220	330	300	330
Nitrogen, N content:						
Ammonia		205	177	90 r	25	25 e
Urea		118	120	30 r, e	20 e	50 e
Salt[e]		40	50	100	200	200
Sulfur, byproduct, natural gas and petroleum, S content		133	130 r, e	100 r, e	100 e	100 e
MINERAL FUELS AND RELATED MATERIALS						
Methanol		130	30 r, e	100 r, e	100 e	100 e
Natural gas:						
Gross	million cubic meters	24,513	24,167	18,600 r	14,600	17,900
Dry basis	do.	13,600 r	13,200 r	13,500 r	12,100	12,400
Petroleum:						
Crude	thousand 42-gallon barrels	332,000 r	418,000 r	438,000 r	150,000	449,000
Natural gas liquids	do.	7,300	7,665	9,855	5,490	14,600
Refinery:						
Distillate fuel oil	do.	6,935 r	5,110 r	3,650 r	4,026	6,935
Gasoline	do.	2,920 r	1,825 r	1,095 r	1,095	2,190
Kerosene, including jet fuel	do.	3,285 r	2,190 r	1,460 r	1,464	2,555
Residual fuel oil	do.	8,030 r	5,475 r	3,650 r	4,026	6,570
Other	do.	12,775 r	19,710 r	17,885 r	18,666	27,375
Total	do.	33,900 r	34,300 r	27,700 r	29,300	45,600

[e]Estimated. [r]Revised. do. Ditto.

[1]Table includes data available through July 28, 2022. 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.

[2]In addition to the commodities listed, asphalt, clay, dolomite, gold, iron oxides, limestone, rolled steel, sand, crushed construction stone, and natron (soda ash) may have been produced, but available information was inadequate to make reliable estimates of output.

[3]May include dolomite.

TABLE 2
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2021

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Asphalt		Azzawiya Oil Refining Co. [National Oil Corp. (NOC), 100%]	Plants at Az Zawiya and Benghazi	200
Cement		Al-Ahlia Cement Co. (ACC) (National Investment Co., 65.39%; Economic and Social Development Fund, 24.12%; limited income families, 8.58%; others, 1.91%)	Plant at Lubda, Suq al Khamis District	1,500
Do.		do.	Plant at Zliten, El Margueb District	1,000
Do.		do.	Plant at Al Khums, El Margueb District	1,500
Do.		do.	Plant at Leptis, El Margueb District	330
Do.		Arab Union Contracting Co.	Al Burj cement plant, Zliten, El Margueb District	2,800
Do.		Libyan Cement Co. Inc. (LCC) (Libya Holdings Group Ltd., 90%, and plant employees, 10%)	Two plants at Benghazi	1,200
Do.		do.	Plant at El Fataih, Derna District	1,000
Gold		Artisanal miners	Mining sites in Southern libya near the borders with Algeria, Chad, Egypt, and Sudan	NA
Gypsum		Al Ahlia Cement Co. (ACC) (National Investment Co., 65.39%; Economic and Social Development Fund, 24.12%; limited income families, 8.58%; others, 1.91%)	Quarries at Ghadames	1,000
Do.		do.	Quarries in Suq al Khamis District	9
Do.		Arab Union Contracting Co.	Plant and quarry at Zliten	35
Iron and steel:				
Iron:				
Direct-reduced (sponge iron)		Libyan Iron and Steel Co. (Government, 100%)	Plant at Misuratah (Mistrata)	1,100
Hot-briquetted iron		do.	do.	650
Steel:				
Raw		do.	do.	1,750
Rolled:				
Bar and rod		do.	do.	800
Cold-rolled strip		do.	do.	140
Hot-rolled strip		do.	do.	580
Galvanized coils		do.	do.	80
Painted coils		do.	do.	40
Lime, hydraulic		do.	Plant in Suq al Khamis District	200
Do.		do.	Sedada Quarry, east of Misuratah	88
Methanol		Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Plant at Marsa al Brega	680
Natural gas, dry	million cubic meters	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Fields include the Beda, the Brega (Naffoura-Augila complex), and the Hamada	1,137
Do.	do.	Mellitah Oil and Gas B.V. [National Oil Corp. (NOC), 50%, and Eni S.p.A., 50%]	Plant at Mellitah for Sabartha Platform, offshore	10,195
Do.	do	Sirte Oil Co. [National Oil Corp. (NOC), 100%]	The Al Hatibh, the Al Iradal, the Al Istiklal, the Al Muqbel, the Asurah, and the Shimal Al Rashad oilfields	1,300
Do.	do.	Waha Oil Co. [National Oil Corp. (NOC), 59.2%, and ConocoPhillips Co., Marathon Oil Corp., and Hess Corp., 40.8%]	Oilfields include the Dahra, the Gialo, the Samah, and the Waha	NA
Do.	do.	Zueitina Oil Co. [National Oil Corp. (NOC), 88%, and OMV A.G., 12%]	Oilfields include the Al Fedaa, the Al Hakeem, the Al Sabah, the Intisar Complex, the Magrid, NC–74, the Sarir, and the Zella	181

See footnotes at end of table.

TABLE 2—Continued
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2021

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Nitrogen:				
Ammonia		Libyan Fertilizer Co. (LIFECO) [National Oil Corp. (NOC), 75%, and Libyan Investment Authority, 25%]	2 plants at Marsa al Brega	700
Urea		do.	Plant at Mersa El Brega	900
Petroleum:				
Crude	thousand 42-gallon barrels	Akakus Oil Operations [National Oil Corp. (NOC), 88%, and OMV A.G., Repsol YPF S.A., and Total S.A., 12%]	El Sharara (NC–115 and NC–186 oilfields), and the Zawiya oilfields	75,200
Do.	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Beida, the Brega (Naffoura-Augila complex), the Hamada, the Magid, the Messla, the Sarir, and the Sinoun	138,000
Do.	do.	Harouge Oil Operations Co. [National Oil Corp. (NOC), 88%, and Petro-Canada, 12%]	Oilfields include the Amal, the En Naga, the Farigh (Area 107), the Ghani, the Jorfra, and the Tibisti	12,200
Do.	do.	Joint venture of National Oil Corp. (NOC), 51%, and Wintershall Holding GmbH, 49%	Oilfields include the As-Sarah, the Hamid, the Jakhira b (C96), and the Nakhla (C97)	11,600
Do.	do.	Mabruk Oil Operations [National Oil Corp. (NOC), 73%; Total S.A., 20.25%; Wintershall Holding GmbH, 6.75%]	Al-Jurf (offshore) and Mabruk oilfields	11,100
Do.	do.	Mellitah Oil Co. [National Oil Corp. (NOC), 85%, and Eni S.p.A., 15%]	Oilfields include the Bhar Essalam, the Bouri (offshore), the Abu Attifel, the El Feel, the NC–118, the Rimal, and the Wafa	44,500
Do.	do.	Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Al Laheeb, the Al Raguba, the Al Ralh, the Al Rashed, the Al Wadi, the Mellitah, and the Zliten	31,400
Do.	do.	Waha Oil Co. [National Oil Corp. (NOC), 59.2%, Conoco Phillips Co., 16.3%; Marathon Oil Corp., 16.3%; Ameralxa Hess Corp., 8.2%]	Oilfields include the Dahra, the Gialo, the Samah, and the Waha	52,000
Do.	do.	Zueitina Oil Co. [National Oil Corp. (NOC), 88%, and OMV A.G., 12%]	Oilfields include the Al Fidaa/Hakeem, the Intisar (103A, 103D), the 29C, the Sabha, and the Zella	4,400
Refined	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Refinery at Tobruk	7,300
Do.	do.	do.	Refinery at Sarir	3,650
Do.	do.	Azzawiya Oil Refining Co. [National Oil Corp. (NOC), 100%)]	Refinery at Az Zawiya	43,800
Do.	do.	Ras Lanuf Oil and Gas Processing Co. [National Oil Corp. (NOC), 100%]	Refinery at Ras Lanuf	80,300
Do.	do.	Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Refinery at Marsa al Brega	2,920
Salt		General Company for Chemical Industries (Government, 100%)	Plant at Abu Kammash, An Nuqat Al Khams District	120
Do.		do.	Brines at Sabkhet Twelat Ghazala	200
Do.		Libya Star Co.	Brine at Washkah in Misuratah	50
Do.		Reefal W.L.L. Co.	Brines at Misuratah	2,500
Do.		Small-scale private miners	Brines at Sabkhet Karkourah in Bengazi	NA
Sulfur		Mellitah Oil and Gas B.V. [National Oil Corp. (NOC), 60%, and Eni S.p.A., 40%]	Mellita Oil and Gas Complex, Sabratha	450

Do., do. Ditto. NA Not available.