2014 Minerals Yearbook

LIBYA

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The Mineral Industry of Libya

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Libya was Africa's leading and the world's 10th-ranked country in terms of the volume of its crude oil reserves, which accounted for 37.5% of Africa's and 2.8% of the world's proven reserves. By the end of 2014, Libya held 1.5 trillion cubic meters of natural gas reserves, which accounted for 0.8% of the world's total. In 2014, Libya was Africa's fourth-ranked producer of natural gas after Algeria, Nigeria, and Egypt and the fifth-ranked producer of crude oil and condensate after Nigeria, Angola, Algeria, and Egypt. The country exported ammonia, crude oil, methanol, natural gas, refined petroleum products sulfur, and urea. Libya also produced cement, crude steel, direct-reduced iron (DRI), gypsum, lime, and salt for domestic consumption (table 1; BP p.l.c., 2015, p. 6, 8, 20, 22, 24).

The country's untapped nonfuel mineral resources include iron ore deposits at the Wadi As Shati in southwestern Libya. Iron ore resources at the Wadi As Shati were estimated to be more than 5 billion metric tons (GT) of all iron types, including 900 million metric tons (Mt) of proven reserves at the Tharot lens, 750 Mt and 500 Mt of probable reserves at the Arrwisa and Ashkeda lenses, respectively. The Wadi As Shati deposits include one of the world's largest oolitic iron ore deposits; it contains 1.52 Gt of iron ore grading 40% iron. Libya's industrial mineral resources included about 1 Gt of clay minerals (such as diatomite and kaolin), including 125 Mt and 875 Mt of proven and probable reserves, respectively, at 13 locations throughout the country; 30 Mt of diatomite at the Al Hishah formation, which covers about 45 square kilometers and is located in the Subkhat Ghuzayil depression in north-central Libya in the eastern Sirt Basin; and 8.4 Mt of gypsum with a thickness of up to 350 meters held in 18 locations that belonged to the Bir Algnam formation in the Al Jabal Al Gharbi, the Awbari Benghazi, and the Gulf of Sirte regions. Silica sand resources are located in the North Idri region in southeastern Libya, including 1.30 Mt of proven reserves and 1.22 Mt of probable reserves at the Shaybat site. The Mominyat site held 389,000 metric tons (t) of proven reserves and 411,000 t of probable reserves (Hernandez and others, 2012, p. 3; National Mining Corp. 2013; Eldernawi and others, 2014, p. 851).

Minerals in the National Economy

Libya's real gross domestic product (GDP) decreased at a rate of 24.0% in 2014 compared with a decrease of 13.6% in 2013 and an increase of 104.5% in 2012. The nominal GDP value was estimated to be \$44.4 billion in 2014 compared with \$66 billion in 2013 and \$81.9 billion in 2012. The sharp change in the rate of economic growth during the past 2 years was attributed to interruptions in crude oil and natural gas production and exports, which began in the second half of 2013 and continued throughout 2014 as a result of the armed conflict. Hydrocarbon revenues accounted for more than 93% of the Government's revenue in 2014 compared with more than 94% in 2013; they also contributed 67% of the country's GDP and about 97% of its exports. The contribution of nonfuel mining and quarrying sector activities to the country's GDP has been insignificant (less than 1% of the GDP) (Central Bank of Libya, 2015, p. 13; International Monetary Fund, 2015, p. 11).

Government Policies and Programs

State-owned National Oil Corp. (NOC) continued to play a dual role as a regulator and a production partner in the hydrocarbon sector. The Geologic Research and Mining Department (GRMD) of the Industrial Research Center (IRC) was a Government agency, under the Ministry of Industry, responsible for carrying out chemical, geologic, and physical analyses; exploration and prospecting studies; geologic mapping; and field, geographical information systems (GIS), and remote sensing services. The IRC was established by decree No. 25 of 1970 to advance the country's industrial development. The GRMD became more active in recent years in identifying Libya's nonfuel mineral resources, conducting mineral exploration studies, and proposing potential mining methods (Industrial Research Center, 2014; National Oil Corp., 2015).

The National Mining Corp. (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 was 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 2014, the NMC was seeking to establish joint ventures with other companies to exploit the country's mineral resources, namely, clays, 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., 2013).

Law No. 2 of 1971 and its amendments regulate mining and quarrying activities in Libya; law No. 5 of 1997 regulates foreign investment in the nonoil sectors and assigns the 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 permitted a 100% foreign equity ownership of companies licensed under the law. Decree No. 207 of 2012 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).

Petroleum law No. 25 of 1955, Petroleum Regulations Nos. 8 and 9, and the provisions of the regulations pertaining to production-sharing agreements between the Government and international oil companies govern the hydrocarbon sector operations in Libya. These agreements are known as "5-year Exploration and Production-Sharing Agreement IV." Additionally, law No. 443 of 2006 also applies to international companies, including hydrocarbon and mineral production commodity companies that intend to operate in Libya. This legislation requires foreign companies to have a local partner (either state owned or private) that holds a minimum of a 35% share in any joint venture. A new law that was adopted by the Government in 2013 (The New Companies Law) allows foreign investors to own up to a 49% interest in new joint ventures. This law replaced law No. 103 of 2012, which allowed foreign investors to own up to 65% of new joint ventures (Nield, 2008; African Development Bank, 2014, p. 6).

Production

Crude steel production by Government-owned Libyan Iron and Steel Co. (Lisco) increased by 35% in 2014 compared with an increase of 127% in 2013. Despite the significant increases, Lisco's DRI production was still below the production level of 1.27 Mt in 2010 and less than the company's combined capacity from its three modules (Lisco I, II, and III) of 1.75 million metric tons per year (Mt/yr). DRI output by Lisco increased by 5% in 2014 compared with an increase of 87% in 2013 from 2012. Crude steel output in 2014 was more than that in 2010, but less than the company's capacity. Ammonia production increased by 68% in 2014 compared with that of 2013 (1.24 Mt/yr) (tables 1 and 2; Midrex Technologies, Inc., 2015, p. 8).

Production of crude oil decreased by 50% in 2014 following a 35% decrease in 2013, and that of dry (marketed) natural gas decreased by 10% owing to the blockade of oil terminals in eastern Libya by the rebels and militia groups and the protests by security guards that were assigned to protect petroleum facilities from attacks by militant groups. Other decreases in mineral production output included urea (61%), total refined petroleum products (38%), sulfur (25%), gross natural gas (8%), and methanol (4%) (table 1).

Structure of the Mineral Industry

In 2014, the NOC owned 11 oil and oil-related services companies, including Arabian Gulf Oil Co., Brega Petroleum Marketing Co., Jwofe Oil Technology, National Oil Fields and Terminals Catering Co., National Oil Well Drilling and Workover Co., North Africa Geophysical Exploration Co., Petro Air Co., Ras Lanuf Oil and Gas Processing Co., Sirte Oil Co., Taknia Libya Engineering Co., and Zawia Oil Refining Co. The NOC was also a partner in seven joint-venture companies that were operating in Libya; they were Akakus Oil Operations A.G. with Repsol YPF S.A. of Spain; Harouge Oil Operations Co. with Petro-Canada (a subsidiary of Suncor Energy Inc. of Canada); Mabruk Oil Operations with Total E&P Libya (a subsidiary of Total S.A. of France); Mellitah Oil Co. with Eni S.p.A. of Italy; Nafousah Oil Operation Co. B.V. with Medco International Ventures Ltd. of Indonesia; Waha Oil Co. with Conoco Phillips Co., Hess Corp., and Marathon Oil Corp. of the United States; and Zuweitina Oil Co. with OMV A.G. of Austria (table 2; National Oil Corp., 2015).

In 2014, 23 international oil companies were working in Libya under exploration and production-sharing agreements that they had signed with the NOC. These companies included, in alphabetical order of their country of registration, Sonatrach S.p.A. of Algeria; Petróleo Brasileiro S.A. of Brazil; Petro Canada Libya Co. of Canada; Total E&P Libye (a subsidiary of Total S.A.) of France; RWE Dea North Africa/Middle East GmbH (a subsidiary of DWE A.G.) and Wintershall Holding GmbH of Germany; Oil India Ltd. and ONGC Videsh Ltd. of India; PT Medco Energi Internasional Tbk of Indonesia; Eni North Africa B.V. (a subsidiary of Eni SpA of Italy); OMV of Libya Ltd. (a subsidiary of OMV Aktiengesellschaft of Austria) and Statoil ASA of Norway; OAO Gazprom and OAO Tatneft of Russia; Repsol Murzuq Co. of Spain; Turkish Petroleum Overseas Co. (TPOC) of Turkey; BP Exploration Libya Ltd. Co. and Royal Dutch Shell p.l.c. of the United Kingdom; and Amerada Hess Libya Exploration Ltd., Chevron Corp., ExxonMobil Libya Ltd., Exxon Mobil Corp., and Occidental Petroleum Corp. of the United States (National Oil Corp., 2015).

Lisco was the country's main steelmaker and one of the top steelmaking companies in North Africa. Lisco produced crude steel, DRI, semifinished, and finished steel products at its plants in Misuratah (Misrata) on the Mediterranean coast in northwestern Libya (Libyan Iron and Steel Co., 2015).

Mineral Trade

Libya's total exports decreased in value by 67% to $15.2 billion in 2014 from $46.0 billion in 2013. Libya's hydrocarbon exports, which included crude oil, natural gas, and other petroleum products decreased in both value and volume compared with those of 2013. The value of hydrocarbon exports decreased by 66% to $14.9 billion in 2014 from $44.4 billion (revised) in 2013 compared with a decrease of 26% in 2013 from 2012. The volume of crude oil exports decreased by 93% to 41,000 barrels per day (bbl/d) from about 589,000 bbl/d in 2013; natural gas exports decreased by 10% to 4.96 billion cubic meters from 5.51 billion cubic meters in 2013; and petroleum products exports decreased by 80% to 15,000 bbl/d from 76,000 bbl/d in 2013. Most of Libya's crude oil production was exported to countries in Europe (90%), and Asia and the Pacific (10%). Libya exported natural gas to Italy by way of the Greensteam pipeline. The 595-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 a maximum capacity to discharge 11 million cubic meters per year. In 2014, Libya's crude oil prices decreased slightly compared with those of 2013. The average price for Ess Sider crude decreased by 9% to $98.51 per barrel in 2014 from $108.51 per barrel in 2013 (U.S. Energy Information Administration, 2014; Organization of the Petroleum Exporting Countries, 2015, p. 8,16–17, 82).

In 2014, Libya's imports of semifinished and finished steel products decreased to 610,000 t from 967,000 t in 2013, including 370,000 t of long products, 130,000 t of flat products, 67,000 t of ingots and semis, and 42,000 t of tubular products. Similarly, the country's cement imports decreased to an estimated 4 Mt in 2014 compared with 4.9 Mt in 2013 and 5.2 Mt in 2012. The decreases were attributed to the country's political unrest (International Cement Review, 2015, p. 214; World Steel Association, 2015, p. 57, 62, 67, 72, 77).

U.S. exports to Libya decreased by 38% to $532 million in 2014 from $864 million in 2013. U.S. imports from Libya decreased by 91% to $225 million in 2014 from $2,558 million in 2013. The significant decrease in U.S. imports from Libya was attributed to the decrease in petroleum products imports, which was caused by the stoppage of petroleum production and exports at several oilfields and export terminals during 2014. Crude oil exports decreased to $144 million in 2014 from $1,774 million in 2013; fuel oil, to $55 million from $630 million; other petroleum products, to $10 million from $125 million; and nitrogen fertilizer, to about $15 million from $27 million (U.S. Census Bureau, 2015a, b).

Commodity Review

Metals

Iron and Steel.—In 2014, Lisco produced 968,000 t of crude steel, which was an increase of 35% compared with the 715,000 t produced in 2013 and 207% compared with the 315,000 t produced in 2012. Lisco also produced about 1 Mt of DRI compared with 950,000 t in 2013 and 508,000 t in 2012. Output of hot-rolled products was estimated to have decreased to 710,000 t in 2014 from 750,000 t in 2013, and concrete-reinforcing bar (rebar) and rods decreased to 410,000 t in 2014 from 435,000 t in 2013. In 2013, the company began an expansion project to increase production capacity of finished steel products to 2.4 Mt/yr from 1.6 Mt/yr. The project, which was expected to be completed in April 2015, was delayed because of the armed conflict and electricity shortages (Libyan Iron and Steel Co., 2015; Midrex Technologies Inc., 2015, p. 8; World Steel Association, 2015, p. 32, 34).

Industrial Minerals

Cement and Gypsum.—In 2014, Libyan Cement Co. Inc. (LCC) was the leading cement production company in eastern Libya in terms of the tonnage produced and production capacity. LCC had six production lines in three plants in eastern Libya. LCC's cement plants at Benghazi, Derna, and El Hawari, had a total capacity of 3 Mt/yr. Because of the armed conflict, the Derna cement plant was the only plant in operation in 2014, and it produced 300,000 t in eastern Libya. A group of investors led by Libya Holding Group Ltd. was negotiating with Quadra Cir A.G. of Austria to acquire majority shares of Quadra Cir, which held 90% interest in LCC through its subsidiary Asamer Industrial Group. The transaction was expected to be finalized by April 2015 (Libya Business News, 2015; Libyan Cement Co. Inc., 2015).

Alahliya Cement Co. operated four cement plants at El Margueb, Lubda, Souk el Khamis, and Zliten, which had a total capacity of 4.5 Mt/yr. The company produced 1.3 Mt of cement in 2012 compared with 502,000 t in 2011 (the latest years for which information was available); the company's production peaked at 2.5 Mt in 2008. Alahliya also had the capacity to produce 1 Mt/yr of gypsum at its plant in Ghadames and 9,000 metric tons per year (t/yr) of gypsum at its plant in Souk el Khamis. No information was available on gypsum production at the Souk el Khamis plant (Alahliya Cement Co., 2015; International Cement Review, 2015, p. 213).

The Al Burj Cement plant was operated by Arab Union Contracting Co., which was a joint venture of the Governments of Libya and Syria. The 1.4-Mt/yr-capacity cement plant was built in Zliten, which is located 150 km east of Tripoli and covers an area of 84 hectares with access to gypsum, limestone, and pure limestone quarries. No up-to-date information was available on the plant in 2014. The Government planned to increase Libya's cement production capacity to 15 Mt/yr from the current capacity of 10.7 Mt/yr to meet domestic demand and to export the surplus output (table 2; Arab Union Contracting Co., 2015).

Mineral Fuels

Petroleum.—Crude oil and condensate output decreased by about 50% in 2014 to 498,000 bbl/d from 988,000 bbl/d in 2013 and by 67% from 1.51 million barrels per day in 2012. The number of crude-oil-producing wells in Libya decreased by about 52% to 632 wells in 2014 from 1,308 wells in 2013, which was a 32% decrease from that in 2012. The number of wells completed, including development and exploration wells, increased by 53% to 162 wells in 2014 from 106 wells in 2013. Libya had 31 active oil rigs in 2013 and 2014 compared with 60 rigs in 2010 (BP p.l.c., 2015, p. 8; Organization of the Petroleum Exporting Countries, 2015, p. 23–27).

Eight companies produced crude oil in Libya in the first half of 2014, including Akakus Oil Operations, which was responsible for 37% of the country's total production, followed by Mellitah Oil Co. (29%), Sirte Oil Co. (17%), Mabruk Oil Operations (10%), Arab Gulf Oil Co. and Waha Oil Co. (3% each), Harouge Oil Operations Co. and Zueitina Oil Co. (1% combined). Seven oil and gas discoveries were reported in Libya in 2013. These discoveries were expected to add 6,719 bbl/d and 1.2 million cubic meters per day of new capacity, respectively (Central Bank of Libya, 2015, p. 52–54; Organization of the Petroleum Exporting Countries, 2015, p. 25–27).

Libya's hydrocarbon industry continued to be crippled by protests throughout 2014. The armed conflict led to the closure of oil terminals, loading ports, oilfields, and pipelines and caused security issues at oil installations in the central and eastern regions of Libya. Protests forced the complete or partial closing of oilfields linked to the ports. At the end of August 2013, militia members blocked the pipelines that linked the El Sharara oilfield to the Zawia petroleum export terminal and the El Feel field to the Mellitah petroleum export terminal in western Libya, forcing the shutdown of those fields. Owing to protests at ports and at several oilfields, crude oil production decreased to 200,000 bbl/d by yearend 2013. In June, NOC lifted force majeure from the Ports of Es-Sider and Ras Lanuf, which had the capacity to export 560,000 bbl/d and had been shut down for about 1 year because they were blocked by militants. NOC also resumed operations at the 340,000-bbl/d El Sharara oilfield, which had been shut down for 4 months because of protests (Crisp, 2014; Nield, 2014; U.S. Energy Information Administration, 2014).

Outlook

The armed conflict in Libya, which intensified in 2013 and 2014, delayed the start of several mineral exploration projects and the development of metal mining projects, including gold, iron ore, and crude steel as well as the development of such industrial mineral mining projects as diatomite, gypsum, kaolin, marble, and silica sand. The short-term outlook for the mineral industry of Libya depends largely on negotiating a political agreement that establishes a general ceasefire; inclusive political institutions, including a national unity government; and robust security measures. Production of mineral commodities, such as cement, crude oil, crude steel, gypsum, and nitrogen fertilizer, is likely after the armed conflict is ended and a national unity government is created (U.S. Department of State, 2015a, b).

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TABLE 1
LIBYA: PRODUCTION OF MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

Commodity[2]		2010	2011	2012	2013	2014
METALS						
Iron and steel, metal:						
Direct-reduced iron[3]		1,270	165	508	950	1,000
Crude steel		825	100	315	715	968
INDUSTRIAL MINERALS						
Cement, hydraulic[e]		7,000	3,500	2,000	2,000	2,000
Gypsum[e]		280 r	140 r	80 r	80 r	80
Lime[e]		250	125	150	150 r	150
Nitrogen:						
N content of ammonia		64 r	22 r	67 r	124 r	208
N content of urea		384 r	70 r	15 r	194 r	75
Salt[e]		40	20	30	30	30
Sulfur, byproduct of petroleum and natural gas[e]		132	37	138	134 r	100
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	30,257	9,861	23,435	22,874	21,016
Dry	do.	16,814	7,855	18,118	18,462 r	16,523
Methanol		638	85	60 r	276 r	265
Petroleum:						
Crude	thousand 42-gallon barrels	605,535	174,835	550,785	360,620	181,770
Refinery products:						
Liquefied petroleum gas	do.	2,014 r	858 r	984 r	1,246 r	615
Gasoline	do.	5,913	5,690 r	6,146 r	6,404 r	6,096
Kerosene and jet fuel	do.	15,805	6,216	7,389 r	9,154 r	6,132
Naphtha	do.	20,196	5,332	11,081 r	12,604	4,930
Distillate fuel oil	do.	31,914 r	9,833 r	14,540 r	17,926 r	13,834
Residual fuel oil	do.	47,303 r	14,932	20,797 r	28,366 r	15,440
Total	do.	123,145 r	42,861 r	60,937 r	75,700 r	47,047

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto.

[1]Table includes data available through July 15, 2015.

[2]In addition to the commodities listed, clay, dolomite, limestone, sand, and crushed construction stone were produced, and natron (soda ash) may have been produced, but available information was inadequate to make reliable estimates of output. Natural gas liquids also were produced but were blended with crude petroleum and reported as part of that total.

[3]Includes hot-briquetted iron.

TABLE 2
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Libyan Cement Co. Inc. (LCC) (Asamer Industrial Group, 90%, and plant employees, 10%)	Benghazi	1,000
Do.		do.	El Fataih, Derna	1,000
Do.		do.	El Hawari	1,000
Do.		Arab Union Contracting Co.	Al Burj Cement plant at Zliten	3,200
Do.		Alahliya Cement Co. [National Investment Co., 64.9%; Economic and Social Development Fund (ESDF), 32.8%; others, 2.3%]	Lubda	1,000
Do.		do.	Souk el Khamis	2,100
Do.		do.	Zliten	1,000
Do.		do.	El Margueb	400
Dolomite and lime		Libyan Iron and Steel Co. (Lisco) (Government, 100%)	Sedada Quarry, east of Misuratah	88
Gypsum		Alahliya Cement Co.	Ghadames	1,000
Do.		do.	Souk el Khamis	9
Do.		Arab Union Contracting Co.	Burj Cement 1, Zliten	35
Iron and steel:				
Iron:				
Direct-reduced (sponge iron)		Libyan Iron and Steel Co. (Lisco) (Government, 100%)	Misuratah	1,100
Hot-briquetted iron		do.	do.	650
Steel:				
Crude		do.	do.	1,241
Rolled:				
Bar and rod		do.	do.	800
Cold-rolled strip		do.	do.	140
Hot-rolled strip		do.	do.	580
Methanol		Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Marsa El Brega	680
Natural gas:				
Dry	million cubic meters	Mellitah Oil and Gas B.V. [National Oil Corp. (NOC), 50% and Eni S.p.A., 50%]	Mellitah	10,000
Liquefied		Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Mersa El Brega	700 [1]
Nitrogen:				
Ammonia		Libyan Norwegian Fertilizer Co. (Lifeco) [Yara International ASA, 50%; National Oil Corp. (NOC), 25%; Libyan Investment Authority, 25%]	do.	800
Urea		do.	do.	1,000
Petroleum:				
Crude	thousand 42-gallon barrels	Mellitah Oil Co. [National Oil Corp. (NOC), 85%, and Eni S.p.A., 15%]	Oilfields include the Bhar Essalam, the Bouri (offshore), the Bu Attifel, the El Feel, KK, NC–125, NC–169, NC–174, OO–82, the Rimal, UU–82, XX–82, and the Wafa	72,700 [2]
Do.	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Sarir and the Nagoora Augila	11,820
Do.	do.	Akakus Oil Operations A.G. [National Oil Corp. (NOC), 88%, and Repsol YPF S.A., 12%]	El Sharara (NC-115), NC–186, and Zawiya oilfields	107,300 [2]
Do.	do.	Waha Oil Co. [National Oil Corp. (NOC), 59.2%; and Conoco Phillips Co., Marathon Oil Corp., and Hess Corp., 40.8%]	Oilfields include the Dahra, the Gialo, the Samah, and the Waha	107,800
Do.	do.	Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Assumud, the Attahadi, and the Raguba	23,700
Do.	do.	Wintershall joint venture [National Oil Corp. (NOC), 51%, and Wintershall Holding GmbH, 49%]	Oilfields include the As-Sarah, the Hamid, the Jakhir, the Nakhla, and the Tauma	30,500
Do.	do.	Harouge Oil Operations Co. [National Oil Corp. (NOC), 88%, and Petro-Canada, 12%]	Oilfields include the Amal, the En Naga North, the En Naga West, and the Tibisti	3,000
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, NC744, and the Zella	15,400

See footnotes at end of table.

TABLE 2—Continued
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(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	Mabruk Oil Operations [National Oil Corp. (NOC), 73%; Total S.A., 20.25%; Wintershall Holding GmbH, 6.75%]	Al-Jurf (offshore) and Mabruk oilfields	24,700
Refined	do.	Ras Lanuf Oil and Gas Processing Co. [National Oil Corp. (NOC), 100%]	Ras Lanuf	80,300
Do.	do.	Azzawiya Oil Refining Co. [National Oil Corp. (NOC), 100%)]	Az Zawiya	43,800
Do.	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Tobruk	7,300
Do.	do.	do.	Sarir	3,650
Do.	do.	National Oil Corp. (NOC)	Marsa el Brega	2,920
Sulfur		Mellitah Oil and Gas B.V. [National Oil Corp. (NOC), 60%, and Eni S.p.A., 40%]	Mellitah	165

Do., do. Ditto.

[1]Liquefied natural gas production was suspended in 2011.

[2]Production from the El Feel and the El Sharara fields was stopped during 2013 and 2014.