



2016 Minerals Yearbook

OMAN

THE MINERAL INDUSTRY OF OMAN

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In 2016, the crude petroleum and natural gas sector continued to play a significant role in Oman's economy. Oman accounted for about 1.1% of global crude petroleum production and 1.0% of global natural gas production in 2016. The country was also the eighth-ranked producer of gypsum, accounting for 2.3% of the world's gypsum production in 2016. At yearend, Oman's crude petroleum and condensate reserves were estimated to be 5,400 million barrels (Mbbbl); natural gas reserves were estimated to be 700 billion cubic meters. Oman produced metals, such as aluminum (primary and secondary), chromium, copper, gold, iron and steel [direct-reduced iron (DRI) and raw steel], manganese, and silver. The country also produced iron ore pellets for use by DRI plants and accounted for about 2.0% of the world's DRI production. Oman's production of industrial minerals included ammonia, clay (kaolin and others), cement, gypsum, laterite (low-grade iron ore), limestone, marble, quartz, salt, sand and gravel, and silica, which were mainly for domestic consumption. The country is located on the southeastern tip of the Arabian Peninsula—a strategic location owing to its proximity to global energy shipping pathways in the Strait of Hormuz and the Gulf of Oman (table 1; BP p.l.c., 2017, p. 12, 14, 26, 28; Central Bank of Oman, 2017, p. 20, 46; Midrex Technologies Inc., 2017, p. 8; Crangle, 2018; International Monetary Fund, 2018, p. 245).

The Government identified the mining sector as a sector for potential growth in its ninth 5-year development plan. The plan sought to promote investment in the mining sector by increasing the role of the private sector in mining projects, updating energy and transportation infrastructure, expanding port facilities, and revising mining laws and regulations. The Government planned to spend \$5.2 billion by 2020 to develop the Duqm Special Economic Zone, which would cover an area of 1,745 square kilometers (km²) and serve as a trade and transportation hub in the region. Oman Rail (a wholly owned Government company) continued with plans to develop the 2,135-kilometer (km) national railway network project. The project was projected to cost \$15.5 billion and would link the deepwater Ports of Duqm, Salalah, and Sohar with the Gulf Cooperation Council's planned 2,177-km railway network, which would connect Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates by railway (Gavin, 2014; James, 2015; Business Year International Inc., The, 2016, p. 117, 206; Central Bank of Oman, 2017, p. 21; Oman Ministry of Legal Affairs, 2017; Oxford Business Group, 2017).

In 2016, there were 234 mineral exploration and production permits active in the country. According to the Public Authority for Mining, Oman has undeveloped mineral resources in the ophiolite sequence zone (located in the northern mountainous part of the country) that include metallic mineral commodities, such as chromium, copper, gold, lead, magnesium, manganese, nickel, palladium, platinum, silver, vanadium, and zinc; and industrial minerals and mineral fuels, such as clay, coal,

dolomite, gypsum, kaolin, laterite, limestone, marble, quartzite, salt, and silica sands (Public Authority for Mining, The, 2015, p. 15–25; Central Bank of Oman, 2017, p. 46–47).

Minerals in the National Economy

In 2016, Oman's nominal gross domestic product (GDP) decreased by 5.1% to \$66.3 billion.¹ The hydrocarbon sector played a significant role in the country's economy, accounting for 68.2% of Government revenues, 57.9% of total merchandise exports, and 27.4% of the GDP. The value added by Oman's hydrocarbon sector decreased by 23.7% to \$18.2 billion in 2016 as Government revenue from crude petroleum decreased by 35.4% to \$9.5 billion. Oman's crude petroleum price decreased by 28.9% to an average of \$40.14 per barrel in 2016 compared with \$56.45 per barrel in 2015. Government revenue from natural gas production increased by 3.5% to \$4.0 billion in 2016. Industrial activity other than petroleum-related activity accounted for 20.1% of the nominal GDP, of which the value of construction accounted for 8.9%; manufacturing, 8.5%; electricity and water supply, 2.2%; and mining and quarrying, 0.5%. Growth in the gross output of the nonpetroleum industrial sector, which increased by 0.4%, was driven by construction, which increased by 10.5% in 2016; mining and quarrying, 5.4%; and electricity and water, 5.4%. The gross output of the manufacturing sector decreased by 17.2% in 2016 (Central Bank of Oman, 2017, p. 7, 20, 23, 40, 41, 53–54, 104).

In 2016, the value of exports and imports decreased by 22.8% and 19.9%, respectively. Decreased exports were the result of a 26.1% and 20.9% decrease in the export value of crude petroleum and liquid natural gas, respectively, owing to decreased prices. Total merchandise exports were valued at \$27.5 billion, of which crude petroleum accounted for 47%, or \$12.8 billion; liquefied natural gas, 10%, or \$2.6 billion; base metals and articles manufactured from base metals, 5%, or \$1.3 billion; mineral products, 5%, or \$1.3 billion; and refined petroleum products, 2%, or \$486 million. The value of imports decreased by 20.2% to about \$23.1 billion, of which base metals and articles manufactured from base metals accounted for 12%, or about \$3.0 billion, and mineral products accounted for 15%, or about \$2.9 billion (Central Bank of Oman, 2017, p. 96, 98, 104–107, 110, 113).

Production

Notable increases in Oman's mineral production in 2016 compared with that of 2015 included production of silica sand (unspecified), which increased by 89%; clay (other), by 69%; silver, by 37%; iron ore (pellets), by 19%; and clay (kaolin), by 11%. Increased production of these commodities was attributed

¹Where necessary, values have been converted from Omani rials (OMR) to U.S. dollars (US\$) at the annual average exchange rate of OMR 0.3845=US\$1.00 for 2016 and 2015.

to growth in the domestic construction sector and increased demand from international markets. Notable decreases in production included that of gold, which decreased by 34%; residual fuel oil, by 28%; manganese ore and content, by 25%; iron oxide pigments (laterite), by 21%; sulfur, by 18%; liquefied petroleum gas, by 16%; and marble, by 15%. Data on mineral production are in table 1.

Structure of the Mineral Industry

The Ministry of Commerce and Industry (MOCI) regulated the country's mining sector in accordance with the Mining Law, Royal Decree No. 27 of 2003, and its amendments and implementing regulations. Under the Mining Law, the Government maintains ownership of all minerals found in Oman, and only companies in which at least 70% of the total capital is held by Omani nationals are issued mining permits. Royal Decree No. 49 of 2014 established the Public Authority for Mining (PAM), under the authority of the MOCI, to monitor mineral industry activities, prepare plans and strategies relevant to the development of the mineral industry, and oversee the country's mineral policies. The PAM is responsible for conducting geologic studies, executing economic viability studies, issuing mining and quarrying permits, and promoting investment opportunities in the minerals sector. In 2016, the PAM established Mining Development Oman (MDO), which is a holding company that serves as the executive arm of the PAM for investing in the mineral sector. By yearend 2016, the PAM had drafted a new mineral law, which was expected to reform the permitting process and increase license durations. The law was under MOCI review at yearend 2016 (Public Authority for Mining, The, 2015; Oxford Business Group, 2015, 2016, 2017; Oman Ministry of Legal Affairs, 2017).

The Ministry of Oil and Gas manages the country's hydrocarbon sector. Petroleum Development Oman L.L.C. (PDO)—which was owned by the Government (60%), Royal Dutch Shell plc of the Netherlands (34%), Total S.A. of France (4%), and Partex (Oman) Corp. of Portugal (2%)—held more than 90% of the country's crude petroleum reserves and produced more than 70% of the country's crude petroleum and almost all its natural gas. The Government owned 100% of Oman Oil Co. S.A.O.C. (OOC) and Oman Oil Company Exploration and Production L.L.C. (OOCEP), 75% of Oman Oil Refineries and Petroleum Industries Co. (ORPIC), 51% of Oman Liquefied Natural Gas L.L.C., and 46.84% of Qalhat Liquefied Natural Gas S.A.O.C (U.S. Energy Information Administration, 2017, p. 7). Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Aluminum.—Sohar Aluminium Co. L.L.C. produced more than 386,000 metric tons (t) of primary aluminum in 2016 compared with 377,000 t in 2015. The increased production was attributed to greater furnace operating efficiency. The company owned and operated the Sohar aluminum smelter located in Sohar, which had a capacity of 389,000 metric tons per year (t/yr). Sohar Aluminium, which was owned by OOC (40%),

Abu Dhabi National Energy Co. P.J.S.C. (40%), and Rio Tinto Alcan Inc. of Canada (20%), produced ingots, sows, and hot metal. In 2016, the company reported that 64,261 t of liquid aluminum was sold to two domestic downstream producers, Oman Aluminium Rolling Co. and Oman Aluminum Processing Industries L.L.C. (table 2; Sohar Aluminium Co. L.L.C., 2017, p. 21, 49).

Antimony.—Strategic & Precious Metal Processing Co. (SPMP), which was a joint venture of Tristar Resources p.l.c. of the United Kingdom (40%), Oman Investment Fund (40%), and DNR Industries Ltd. (20%), continued to develop an antimony metal and antimony trioxide plant. The plant was located at the Sohar Industrial Zone. In 2016, SPMP increased the planned capacity to 26,000 t/yr from 20,000 t/yr in 2015 and added a planned gold recovery circuit with the capacity to produce about 1,555 kilograms per year of gold. SPMP was expected to commission the plant in 2017 and to start commercial production in the first quarter of 2018 (Tristar Resources p.l.c., 2016, p. 3–5).

Chromium and Ferrochromium.—In 2016, Oman produced 451,000 t of chromite ore compared with 443,000 t in 2015. The country was estimated to have produced 64,000 t of ferrochrome metal in 2016 compared with 63,750 t in 2015. Gulf Mining Group (GMG), which operated a 50,000-t/yr ferrochrome smelter located in the Sohar Freezone, planned to increase the capacity of the ferrochrome smelter to 150,000 t/yr by 2020 (tables 1, 2; Ferro-alloys.com, 2015; Business Year International Inc., The, 2016, p. 112; Platts, 2017).

Copper and Gold.—Savannah Resources plc of the United Kingdom continued exploration of Blocks 4 and 5, which covered 1,006 km² in the Semail ophiolite belt located about 180 km northwest of Muscat. Block 5 was the most advanced of the company's licenses in the country. The block held the Mahab 4 and the Maqail South deposits, which held a combined indicated and inferred mineral resource of 1.7 million metric tons (Mt) grading 2.2% copper. At the Maqail South deposit, the company planned to develop an open pit mine. At the Mahab 4 deposit, the company planned to develop an underground mine. The company planned to start mining operations at Block 5 in late 2017 and to establish a copper concentrate facility by 2018. At Block 4, the company focused drilling efforts on the Aarja, the Bayda, and the Lasail prospects. Savannah Resources held a 51% interest in the Omani company, Al Thuraya LLC, which was the owner of the Block 4 license; in addition, Savannah Resources held a 65% interest in Al Fairuz Mining, which was the owner of the Block 5 license (Savannah Resources plc, 2017, p. 5–6, 36).

Iron and Steel.—In 2016, Oman produced 1.46 Mt of DRI compared with 1.48 Mt in 2015. Jindal Steel and Power Ltd. of India, which was the country's sole producer of DRI, operated a 1.5-million-metric-ton-per-year (Mt/yr) plant in the Sohar Industrial Zone. The company also operated a 2-Mt/yr integrated steel plant located in Sohar. In January, Jindal commissioned a 1.4-Mt/yr rebar mill (table 2; Jindal Steel and Power Ltd., 2016, p. 23; 2017, p. 5, 24; Midrex Technologies Inc., 2017, p. 8).

Industrial Minerals

Nitrogen.—In 2016, Salalah Methanol Company LLC (SMC), a subsidiary of OOC and Takamul Investment Co., continued the development of the 365,000-t/yr ammonia plant. The plant was to be located adjacent to the company's Salalah methanol plant, in the Salalah Free Zone, and would use byproduct purge gas as feedstock. The company planned to build a pipeline to export liquid ammonia to the Port of Salalah. In 2015, SMC prequalified eight international firms to bid on the engineering and construction contract. The project was expected to be completed by 2017 (Watts, 2014; Trade Arabia, 2015; Salalah Methanol Company LLC, 2016).

Mineral Fuels

Natural Gas.—In 2016, the country's gross natural gas production increased by 3% to 40,471 million cubic meters from 39,438 million cubic meters in 2015. Oman had 35 natural-gas-producing fields. The country exported 8.5 Mt of liquefied natural gas in 2016 (table 1; BP p.l.c., 2017, p. 34; Central Bank of Oman, 2017, p. 44–46; Organization of the Petroleum Exporting Countries, 2017, p. 131).

In 2016, BP Oman, which was a subsidiary of BP p.l.c. of the United Kingdom (60%) and OOC (40%), continued to develop the Khazzan-Makarem gasfield and processing facility, located in Block 61 in the Al Dhahlah Governorate. By yearend, 30 rigs were operational and 45 wells had been drilled. Natural gas production from the Khazzan field was expected to enter the pipeline network by yearend 2017. The project was expected to produce about 42.5 million cubic meters per day of natural gas. BP reported that the project was 93% completed at yearend. In November, the Government amended the Block 61 exploration and production-sharing agreement to extend the license area, which added more than 1,000 km² for further drilling (Central Bank of Oman, 2017, p. 45; U.S. Energy Information Administration, 2017, p. 11–12; BP p.l.c., 2018).

Petroleum.—In 2016, Oman produced 367.5 Mbbl of crude petroleum and condensate from 242 oilfields, which represented a 2.6% increase compared with the 358.1 Mbbl produced in 2015. The increase in production was attributed to increased output from Occidental Oman, CC Energy, and PDO (Central Bank of Oman, 2017, p. 41–42).

In 2016, ORPIC continued construction and development of the \$2.1 billion Sohar Refinery Improvement Project. The project was expected to increase the Sohar refinery's capacity to 198,000 barrels per day (bbl/d) from 116,000 bbl/d. Commercial operations were expected to begin in the second quarter of 2017. The company continued with construction of the \$320 million Muscat Sohar Products Pipeline (MSPP) and the Al Jafinain Terminal project. The MSPP project aimed to connect the Mina Al Fahal refinery to the Sohar refinery through a 290-km multiple-product pipeline and storage terminal facility. The MSPP and the Al Jafinain Terminal were expected to be completed by 2017 (Finlayson, 2015; Oman Oil Refineries and Petrochemical Industries Company L.L.C., 2015a, b; James, 2016).

GlassPoint Solar, Inc. of the United States and PDO continued construction on the Miraah project at the Amal oilfield. The company aimed to construct a 1,021-megawatt solar thermal facility to produce steam to be used in thermal enhanced oil recovery to extract heavy and viscous crude petroleum at the Amal oilfield. The project was expected to generate 6,000 metric tons per day of steam and was expected to begin operation in 2017 (Central Bank of Oman, 2017, p. 43; Petroleum Development Oman, 2017).

Duqm Refinery and Petrochemical Industries Company L.L.C., which was a joint venture between OOC (50%) and Kuwait Petroleum International (50%) of Kuwait, continued the development of the 230,000-bbl/d refinery in the Duqm Economic Freezone in Duqm. Refinery products were expected to include diesel, jet fuel, gasoline, liquefied petroleum gas, and naphtha as well as hydrogen and sulfur. Although site preparation began in late 2015, the International Petroleum Investment Co. of the United Arab Emirates withdrew its partnership in November, which delayed project development (Watts, 2014; Oman Oil Company S.A.O.C., 2017; Duqm Refinery and Petrochemical Industries Company L.L.C., 2018a, b).

Outlook

The International Monetary Fund forecasted Oman's GDP to increase by 2.1% in 2018; the economy is expected to remain closely tied to the performance of the hydrocarbons sector. Continued low global crude petroleum prices are expected to further decrease Government revenue from the mineral fuels sector, increasing the fiscal deficit and challenging the capability of the Government to invest in infrastructure development. The development of the Khazzan gasfield is expected to increase natural gas production; this field would provide a low-cost energy source for industrial development. The Government is likely to continue its efforts to diversify the country's economy by providing incentives for industrial growth in value-added projects through expanding Free Economic and Trade Zones and developing energy and transportation infrastructure. The mining industry is likely to benefit, as feedstock demand from downstream producers is likely to increase. The Government's ability to implement a modernized mining law that streamlines mine permitting is likely to be central to attracting investment into the mining sector (International Monetary Fund, 2018, p. 245).

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TABLE 1
OMAN: PRODUCTION OF MINERAL COMMODITIES¹

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

Commodity	2012	2013	2014	2015	2016
METALS					
Aluminum metal, primary	360	354	364	377	386
Chromium:					
Chromite, mine:					
Gross weight	602	788 ^r	751	443	451
Cr content (35% Cr ₂ O ₃) ^e	210 ^r	280 ^r	260 ^r	160 ^r	160
Ferrosilicon metric tons	--	20,625 ^r	44,063 ^r	63,750 ^r	64,000 ^e
Copper:					
Mine, gross weight	104	57	72	41	--
Ore, Cu content ^e	21	11	14	8	--
Refinery, primary, Cu content ^e	12	12	12 ^r	12 ^r	12
Smelter, primary, Cu content ^e	12	12	12 ^r	12 ^r	12
Gold, mine, Au content ² kilograms	19	76	165 ^e	102	67
Iron and steel:					
Direct-reduced iron	1,460	1,470	1,450	1,480	1,460
Raw steel ^e	300	500	1,500	2,000	2,000 ^e
Iron ore, pellets, from imports ³	9,000	9,000	9,000	9,000	10,700
Manganese, mine:					
Gross weight metric tons	37,500	51,400	37,500	15,800 ^r	11,800
Mn content, 25% Mn ^e do.	9,400 ^r	12,000 ^r	9,400 ^r	4,000 ^r	3,000
Silver, mine, Ag content ² kilograms	486	2,820	3,285	2,645	3,621
INDUSTRIAL MINERALS					
Cement, hydraulic	6,100 ^e	5,800	5,100 ^e	5,300 ^e	5,500 ^e
Clay and shale:					
Kaolin	140	115	67	170	188
Other	195	222	305	286	482
Gypsum	1,915	2,785 ^r	3,387	6,049	5,483
Iron oxide pigments, laterite iron oxides	710	572	753	720	568
Nitrogen, N content:					
Ammonia ^e	1,600	1,700	1,700	1,700	1,700
Urea ^e	1,500	1,600	1,500	1,500	1,500
Salt ^e	13	12	13	13	12
Stone, sand, and gravel:					
Sand and gravel, construction, unspecified	72,990	74,217	62,547	76,332 ^r	77,612
Silica, mine:					
Quartz	623	347	283	351	362
Unspecified	47	47	-- ^r	9	17
Stone, crushed:					
Limestone	6,488	5,489	8,724	12,156	12,471
Marble	1,165	1,255	1,565	1,632 ^r	1,380
Sulfur compounds, sulfuric acid ^e	1,400	1,400	1,400	1,400	1,500
Sulfur, petroleum, byproduct, S content	59	33	42 ^r	38 ^r	31
MINERAL FUELS AND RELATED MATERIALS					
Methanol	2,100	2,150	2,100	2,100	2,000 ^e
Natural gas:					
Gross million cubic meters	35,942 ^r	36,330 ^r	37,687 ^r	39,438	40,471
Dry basis do.	29,606 ^r	32,620 ^r	30,897 ^r	32,501	33,646
Liquefied natural gas	8,400 ^r	8,900 ^r	7,950	7,910	8,500
Natural gas liquids thousand 42-gallon barrels	261,527 ^r	278,404 ^r	255,539 ^r	250,832 ^r	264,190
Petroleum:					
Crude, including condensate do.	335,070	343,830	344,400	358,100	367,500
Refinery:					
Distillate fuel oil do.	15,476	14,108	14,250 ^r	20,102	21,549
Gasoline do.	23,324	21,737	25,356 ^r	26,107 ^r	25,743

See footnotes at end of table.

TABLE 1—Continued
OMAN: PRODUCTION OF MINERAL COMMODITIES¹

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

Commodity	2012	2013	2014	2015	2016
MINERAL FUELS AND RELATED MATERIALS—Continued					
Petroleum:—Continued					
Refinery:—Continued					
Jet fuel, including kerosene thousand 42-gallon barrels	5,544	4,393 ^r	4,390 ^r	5,170	5,202
Liquefied petroleum gas do.	3,276	2,496	2,913 ^r	2,790	2,342
Residual fuel oil do.	3,242	2,084	2,095 ^r	2,563	1,838
Other do.	25,258	24,842 ^r	25,256 ^r	27,226 ^r	26,401
Total do.	76,100 ^r	69,700 ^r	74,300 ^r	84,000 ^r	83,100

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

¹Table includes data available through March 15, 2018. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits.

²Reported sales.

³Pellets were produced from imported iron ore for use by direct-reduction plants.

TABLE 2
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum:			
Primary	Sohar Aluminium Co. L.L.C. [Oman Oil Co. S.A.O.C. (OOC), 40%; Abu Dhabi National Energy Co. P.J.S.C., 40%; Rio Tinto Alcan Inc., 20%]	Smelter at Sohar	389,000.
Secondary	Oman Aluminium Rolling Co. (OARC) (Takamul Investment Co. S.A.O.C.)	Sohar Industrial Estate	70,000.
Do.	Oman Aluminum Processing Industries L.L.C. (Oman Cables Industries S.A.O.C., 51%, and Takamul Investment Co. S.A.O.C., 49%)	Muscat	60,000.
Calcium carbonate	Northern Minerals Co. L.L.C.	Ruwi	70,000.
Cement	Oman Cement Co. S.A.O.C. (Government, 51%; Pension funds, 33.65%; Individual investors, 9.85%; Public Authority of Social Insurance, 5.50%)	Kilns and mills at Rusayl	2,740,000.
Do.	Raysut Cement Co. S.A.O.C. (RCC)	Kilns and mills at Salalah	2,700,000.
Do.	Al Madinah Cement Co. L.L.C.	Kilns and mills at Wadi Saa	1,120,000.
Chromium:			
Chromite, ore	Al Tamman Trading Establishment L.L.C.	Al Ram and Wadi Rajmi	296,000.
Do.	Hatton FZE	Mines south of Muscat	200,000.
Do.	Gulf Mining Group (GMG)	Wadi Mahram Estate	200,000.
Do.	Oman Chromite Co. S.A.O.G. (Al Qurum Establishment L.L.C., Government, Oman Mining Co. L.L.C.)	Mines near Sohar	200,000.
Do.	Northern Minerals Co. L.L.C.	Somail	20,000.
Do.	Sun National Minerals L.L.C. (Zawawi Minerals L.L.C., 80%)	Northern Oman	NA.
Chromite, concentrate	Gulf Mining Group (GMG)	Ad Dakhiliyah	55,000.
Ferrochrome	Al Tamman Indsil Ferro Chrome L.L.C.	Sohar Freezone	150,000.
Do.	Gulf Mining Group (GMG)	do.	50,000.
Clay:			
Kaolin	NA	NA	150,000.
Other	do.	do.	300,000.
Copper:			
Ore	Mawarid Mining L.L.C. (MB Holding Co. L.L.C., 100%)	Mine at Mandoos	75,000.
Concentrate	do.	Lasail, near Sohar	15,000.
Refined metal	Oman Mining Co. L.L.C. (Government, 100%)	Sohar Industrial Estate	20,000.
Gold:			
Ore kilograms	Mawarid Mining L.L.C. (MB Holding Co. L.L.C., 100%)	Mine at Mandoos	100.
Refined	Oman Mining Co. L.L.C. (Government, 100%)	Sohar Industrial Estate	500.
Gypsum	Cement Gypsum Products Co. S.A.O.G.	Buraimi and Thumrait	180,000.
Do.	Gulf Mining and Material Co.	Thumrait	200,000.
Do.	Global Mining Co., L.L.C.	Quarry at Thumrait	65,000.
Do.	Al-Rawas Mining Co. L.L.C. (Al-Rawas Holding L.L.C., 100%)	Salalah	2,000,000.
Do.	Zawawi Gypsum L.L.C. (USG Boral Building Products Pty Ltd., 55%, and Zawawi Minerals L.L.C., 45%)	Quarry at Thumrait, Dhofar Governorate	3,000,000.
Do.	USG Zawawi Drywall L.L.C. SFZ (USG Boral Building Products Pty Ltd., 50%, and Zawawi Minerals L.L.C., 50%)	Salalah Freezone, Dhofar Governorate	3,000,000.
Iron and steel:			
Iron ore pellets	Vale Oman Pelletizing Co. L.L.C. [Vale S.A., 70%, and Oman Oil Co. S.A.O.C. (OOC), 30%]	Sohar Industrial Zone	9,000,000.
Crude steel	Jindal Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	do.	2,000,000.
Do.	Modern Steel Mills L.L.C.	Rusayl	160,000.
Direct-reduced iron	Jindal Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	Sohar Industrial Zone	1,500,000.
Roller (rebar)	Sharq Sohar Steel Rolling Mill L.L.C. (Sohar Steel L.L.C.)	do.	500,000.
Do.	Hadid Majan L.L.C.	Bait Al Falaj	100,000.
Do.	Jindal Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	Sohar Industrial Zone	1,400,000.

See footnotes at end of table.

TABLE 2—Continued
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel:—Continued				
Rolled (tubes)		Al Jazeera Steel Tube Mills Co. S.A.O.G.	Sohar	300,000.
Galvanized (wires)		Gulf Specialty Steel Industries L.L.C. (Global Steel Industries Pte Ltd. and Takamul Investment Co. S.A.O.C.)	do.	60,000.
Iron oxide pigment (laterite)		Gulf Mining Group (GMG)	Barka	300,000.
Manganese		Al Tamman Trading Establishment L.L.C.	Al Qabil	60,000.
Methanol		Salalah Methanol Co. L.L.C. [Oman Oil Co. S.A.O.C. (OOC) 90%, and Takamul Investment Co., S.A.O.C., 10%]	Salalah Free Zone	1,150,000.
Do.		Oman Methanol Co. L.L.C. (Oman Methanol Holding Co. LLC and Methanol Holding International Ltd.)	Sohar Port	1,050,000.
Natural gas	million cubic meters	Petroleum Development Oman L.L.C. (PDO) [Government, 60%; Royal Dutch Shell plc, 34%; Total S.A., 4%; Partex (Oman) Corp., 2%]	Associated natural gas in the Kauther/Yibal, the Saih Niyahda, and the Saih Rawl clusters	27,000.
Do.	do.	Oman Oil Company Exploration and Production LLC (OOCEP) [100% owned by Oman Oil Co. S.A.O.C. (OOC)]	Block 60 (Abu Tabul)	723.
Natural gas, liquefied		Oman Liquefied Natural Gas L.L.C. [Government, 51%; Shell Gas B.V., 30%; Total S.A., 5.54%; Korea LNG, 5%; Mitsubishi Corp., 2.77%; Mitsui E&P Middle East B.V., 2.77%; Partex (Oman) Corp., 2%; Itochu Corp., 0.92%]	Two trains at Qalhat	6,600,000.
Do.		Qalhat Liquefied Natural Gas S.A.O.C. (Government, 46.84%; Oman Liquefied Natural Gas L.L.C., 36.8%; Union Fenosa S.A., 7.36%; Mitsubishi Corp., 3%; Oskas Gas Co. Ltd., 3%; Itochu Corp., 3%)	One train at Qalhat	3,300,000.
Nitrogen fertilizer	thousand metric tons	Oman India Fertiliser Co. S.A.O.G. (OMIFCO) [Oman Oil Co. S.A.O.C. (OOC), 50%; Indian Farmers Fertiliser Cooperative Ltd., 25%; Krishak Bharati Cooperative Ltd., 25%]	Sur	1,150 ammonia, 1,652 urea.
Do.	do.	Sohar International Urea & Chemical Industries S.A.O.G. (SIUCI) (Suhail Bahwan Group Holding L.L.C., 100%)	Sohar	730 ammonia, 1,300 urea.
Petroleum:				
Crude	thousand 42-gallon barrels per day	Petroleum Development Oman L.L.C. (PDO) [Government, 60%; Royal Dutch Shell plc, 34%; Total S.A., 4%; Partex (Oman) Corp., 2%]	About 100 oilfields in the Bahja, Fahud, Harweel, Lekhwair, Marmul, Nimr, Qarn Alam, and Yibal clusters	655,000.
Do.	do.	Occidental Oman, Inc. (Occidental Petroleum Corp., 65%, and Mitsui E&P Middle East B.V., 35%)	Blocks 9 and 27, includes the Safah and Al Sunienah fields	90,400.
Do.	do.	Daleel Petroleum Co. L.L.C. (Mazoon Petrogas S.A.O.C., 50%, and Mazoon Petrogas B.V.I., 50%)	Block 5, includes the Bushra, Daleel, Mezoon and Shadi fields	45,000.
Do.	do.	Occidental Mukhaizna, L.L.C. [Occidental Petroleum Corp., 45%; Oman Oil Co. S.A.O.C. (OOC), 20%; Shell Oman Trading Co. Ltd., 17%; Liwa Energy Ltd., 15%; Total Exploration and Production Oman, 2%; Partex (Oman) Corp., 1%]	Block 53, Mukhaizna field	122,800.
Do.	do.	Joint venture of DNO International ASA, 50%, and LG International Corp., 50%	Block 8, Bukha field	12,800.
Do.	do.	CC Energy Development S.A.L.	Blocks 3 and 4, Saiwan and Farha fields	25,300.
Do.	do.	Petrogas E & P L.L.C., 50%; Tethys Oil, 30%; Mitsui E&P Middle East B.V., 20%	Rija, Ramlat, and Sahmah fields (Block 7)	1,100.
Do.	do.	PTT Exploration and Production Public Company Ltd.	Block 44	3,400.
Do.	do.	BP Oman [BP p.l.c., 60%, and Oman Oil Co. S.A.O.C. (OOC), 40%]	Khazzan and Makarem gasfields (Block 61)	300.

See footnotes at end of table.

TABLE 2—Continued
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:—Continued				
Refined	thousand 42-gallon barrels per day	Oman Oil Refineries and Petroleum Industries Co. (ORPIC) (Ministry of Finance, 75%, and Oman Oil Co. S.A.O.C., 25%)	Refinery at Sohar	116,000.
Do.	do.	do.	Refinery at Mina Al-Fahal	106,000.
Quartz		Gulf Stone Co. S.A.O.G.	Sohar	650,000.
Salt, crude, industrial		Modern Salt Co. L.L.C.	Ibri Wilayat	12,000.
Sand and gravel		NA	NA	70,000,000.
Silica sand		Industrial Minerals Co. LLC (Northern Minerals Co. L.L.C., 100%)	NA	50,000.
Silver	kilograms	Oman Mining Co. L.L.C. (Government, 100%)	Sohar and Yankul	50.
Stone:				
Limestone		Oman Cement Co. S.A.O.C. (Government, 51%; pension funds, 33.65%; individual investors, 9.85%; Public Authority of Social Insurance, 5.50%)	Rusayl	2,400,000.
Do.		Northern Minerals Co. L.L.C.	Wadi Al Jizzi, Al Batinah	900,000.
Do.		Global Mining Co., L.L.C.	Sohar	NA.
Marble		Al Tamman Trading Establishment L.L.C.	Buraimi	700,000.
Do.		Companies that quarried marble included Al Ajmi Marble Co., Al Madinah Marble Co., Al Nasser Marble Co., Al Rushaidi Marble Co., Al Shanfri Marble Co., Al Zarabi Marble Co., Gulf Mining Materials Co., International Marble, and Omani Marble Co.	Quarries located primarily in Ibri Wilayat and the Buraimi Estate	450,000.
Sulfur:				
Elemental	thousand metric tons	Oman Oil Refineries and Petroleum Industries Co. (ORPIC) (Ministry of Finance, 75%, and Oman Oil Co. S.A.O.C., 25%)	Refinery at Sohar	50.
Fertilizer	do.	Sohar Sulphur Fertilizers L.L.C. (SSF) (Takamul Investment Co. S.A.O.C., 69%)	Sohar Industrial Estate	30.
Sulfuric acid	do.	Sohar Chemical Industries (SCI) (Suhail Bahwan Group)	do.	1,460.

Do., do. Ditto. NA Not available.