



2014 Minerals Yearbook

OMAN

THE MINERAL INDUSTRY OF OMAN

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The Sultanate of Oman, which is a country located on the southeastern tip of the Arabian Peninsula, is in a strategic location owing to its proximity to global energy shipping pathways at the Strait of Hormuz and the Gulf of Oman. In 2014, Oman's economy continued to be largely dependent on hydrocarbon revenues, which accounted for more than 84% of Government revenue in 2014. Oman accounted for about 1.1% of the world's production of crude oil and 0.8% of the world's production of natural gas in 2014. At the end of 2014, the country's proved crude oil and condensate reserves were estimated to be 5,300 million barrels (Mbbbl). In addition to mineral fuels, Oman supplied the world with such mineral commodities as ammonia, chromium, copper, gypsum, manganese, primary and secondary aluminum, and urea. In 2014, Oman produced iron ore pellets for use by direct-reduced iron (DRI) plants and accounted for about 2% of the world's DRI production. The country also produced cement, crude steel, iron oxides (laterite), kaolin, limestone, marble, quartz, salt, sand and gravel, and silica, which were mainly for local consumption. Oman's developed infrastructure, advantageous taxation system, and low cost fuel and labor attracted foreign direct investment (FDI) in the mining and mineral industry sectors (table 1; U.S. Energy Information Administration, 2014; BP p.l.c., 2015b, p. 8, 22; Central Bank of Oman, 2015, p. 7, 17, 40; Midrex Technologies Inc., 2015, p. 8).

The Government sought to diversify the economy and promote policies to increase FDI flow into the country as part of its 5-year development plan 2011–15 (the eighth such 5-year plan). Economic diversification, however, had progressed slowly in recent years owing to funding issues and the insufficient allocation of natural gas to supply proposed mineral beneficiation projects. By yearend 2014, 33 companies were involved in mineral exploration and mining operations in the country. Oman was estimated to have metallic mineral resources that contain chromium, cobalt, copper, gold, iron oxides (laterite), lead, magnesium, manganese, nickel, palladium, platinum, silver, vanadium, and zinc; and industrial minerals, such as clays (including kaolin), coal, dolomite, gypsum, limestone, marble, quartzite, salt, and silica sands in the ophiolite sequence zone, which is located in the northern mountainous part of the country (Central Bank of Oman, 2015, p. 14, 19, 43; Public Authority for Mining, The, 2015).

Minerals in the National Economy

Oman's real gross domestic product (GDP) increased by 2.9% in 2014 compared with an increase of 4.7% in 2013. Decreased global crude petroleum prices affected the Omani crude oil price, which decreased by 2.2% to an average of \$103.2 per barrel in 2014 compared with \$105.5 per barrel in 2013. The Government's revenue from petroleum decreased by 2.2% in 2014 compared with an increase of 6.1% in 2013.

The Government's revenue from natural gas, which accounted for 12.0% of its total revenue, increased by 12.9% in 2014 compared with a decrease of 5.6% in 2013. Crude oil revenue accounted for 43.8% of the country's GDP, while industrial sector revenue accounted for 18.1%, and natural gas sector revenue accounted for 3.4%. Oman's economic growth was driven by the increase of the nonpetroleum sector, which accounted for 60.2% of the GDP in 2014 compared with 57.2% in 2013; the nonpetroleum industrial sector consisted mainly of industrial and services activities. In 2014, the share of the nonoil industrial sector, which included aluminum, nitrogen fertilizer, and steel manufacturing, in the GDP was 18.1%. Manufacturing made up 55.2% of the value of the nonoil industrial sector followed by construction (36%), electricity and water supply (6.6%), and mining and quarrying (2.2%). The value of mining and quarrying increased by 8.5% in 2014 compared with that in 2013 (Central Bank of Oman, 2015, p. 1, 7, 18, 20, 47–48, 50, 60; International Monetary Fund, 2015, p. 175).

Government Policies and Programs

The mineral industry in Oman is regulated primarily by Royal Decree No. 27 of 2003 (the Mining Law) and its amendments and implementing regulations. The Mining Law permits mining companies to hold mining licenses; however, Omani nationals or companies are expected to maintain at least 70% of the total capital in such licenses. In recent years, the Ministry of Commerce and Industry (MOCI) was the Government body responsible for carrying out the regulation and management of the mining industry in Oman. Royal Decree No. 49, which was issued in September 2014, declared the establishment of the Public Authority for Mining (PAM) and its organizational system. According to the Decree, PAM falls under the MOCI authority and was assigned to monitor mineral industry activities, prepare plans and strategies relevant to the development of the mineral industry, and oversee the country's mineral policies. One of the PAM's responsibilities is to review and prepare research and studies about minerals and to coordinate with other Government agencies to approve mine and quarry designs and execution plans. In addition, the PAM is responsible for conducting geologic studies, executing economic-viability studies for minerals, issuing mining and quarrying permits, and promoting investment opportunities in the mineral sector (Norton Rose Fulbright LLP, 2013; Al Watan, 2014; Central Bank of Oman, 2015, p. 43; Ministry of Legal Affairs, 2015; Public Authority for Mining, The, 2015).

Mining and quarrying licenses in Oman permit activity on exploration, exploitation, and long-term mining concessions. An exploration license allows for exploration for specific minerals that are included in the license within a specified area for a period of 1 year and is renewable for another year based on a satisfactory outcome of the exploration. An exploitation

license permits the exploitation (production) of all minerals and rocks that are included in the license within a specific area of operations for a period of 5 years and is renewable based on the quantity of raw materials and the size of the mining operation. A long-term mining concession license permits license holders to drill, export, and sell minerals within a specified area for 25 years and is renewable based on the quantity of raw materials and the size of the mining operation (Norton Rose Fulbright LLP, 2013).

Production

Notable increases in Oman's mineral production in 2014 compared with production in of 2013 included the increase in limestone production by 59%; clay, 38%; iron oxides (laterite), 32%; mined copper, 26%; marble, 25%; gypsum, 22%; sand and gravel, 20%; liquefied natural gas (LNG), 15%; and salt, 10%. Notable decreases in Oman's mineral output in 2014 compared with that of 2013 included the decrease in kaolin production by 42%; natural gas liquids, 36%; manganese, 23%; and quartz, 18% (table 1).

Structure of the Mineral Industry

The Ministry of Oil and Gas managed the country's hydrocarbon sector; however, the Sultan of Oman made final decisions on the country's hydrocarbon investment and policies. 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 Panama (2%), carried out the hydrocarbon sector's policies. PDO held more than 90% of the country's petroleum reserves and produced more than 70% of the country's crude petroleum and almost all its natural gas output. 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, 2014).

Takamul Investment Co. S.A.O.C., which was a subsidiary of OOC, owned 10% of Salalah Methanol Co. L.L.C. and Sohar Sulphur Fertilizers L.L.C. OOC owned a 40% share in Sohar Aluminium Co. L.L.C., which was the sole primary aluminum producer in Oman, and a 30% share in Vale Oman Pelletizing Co. L.L.C. Oman India Fertilizer Co. S.A.O.C. (OMIFCO)—which was a joint venture of OOC (50%), Indian Farmers Fertilizer Cooperative Ltd. (25%), and Krishak Bharati Cooperative Ltd. (25%)—produced nitrogen fertilizer. The other producer of nitrogen fertilizer in Oman was Sohar International Urea & Chemical Industries S.A.O.C. (SIUCI), which was a wholly owned subsidiary of the Suhail Bahwan Group Holding L.L.C. (table 2; Oman India Fertiliser Co. S.A.O.C., 2015c; Suhail Bahwan Group Holding L.L.C., 2015).

Al Madinah Cement Co. L.L.C., Oman Cement Co. S.A.O.G., and Raysut Cement Co. S.A.O.G. (RCC) were the main producers of cement in Oman. Several small-, medium-, and large-size companies produced chromite in 2014, including

Al Tamman Trading Establishment L.L.C., Gulf Mining Group, Hatton FZE, Northern Minerals Co. L.L.C., and Oman Chromite Co. S.A.O.G. Mawarid Mining Co. L.L.C., which was a wholly owned subsidiary of MB Holding Co. L.L.C., produced copper (table 2).

Mineral Trade

In 2014, the total value of Oman's exports decreased by 5.7% compared with that of 2013. The decrease was attributable to a 6% decrease in the value of crude petroleum exports, a 10.6% decrease in the value of LNG exports, and a 9.2% decrease in the value of refined petroleum products exports compared with those of 2013. The volume of Oman's crude oil exports decreased by 3.9% to 292.2 Mbbl in 2014 from 304.2 Mbbl in 2013. Crude oil exports, by volume, went mainly to China (72%) followed by Taiwan (11.6%), Thailand (5.2%), and other Asian countries (11.2%). Crude petroleum, LNG, and refined petroleum products accounted for 65.5% of Oman's goods exports in 2014 compared with 66.1% in 2013 (including reexports). In 2014, Oman exported 7.9 million metric tons (Mt) of LNG and 246,000 metric tons (t) (2.6 Mbbl) of natural gas liquids. The value of nonoil exports increased by 8.4% in 2014 compared with that of 2013. The increase was attributable mainly to an 18.2% increase in the exports of chemical products (which include fertilizers) and a 5.7% increase in the exports of base metal and base-metal-related products compared with those of 2013. Oman's nonoil exports went mainly to the United Arab Emirates (18.8%) followed by Pakistan (11.3%), Saudi Arabia (10.6%), India (9.3%), the United States (5.4%), and China (5.3%), in addition to other countries (39.3%) (Central Bank of Oman, 2015, p. 39, 41–43, 100, 102–103).

In 2014, the value of Oman's total imports decreased by 14.6% compared with that of 2013. The decrease was attributable mainly to a 64.2% decrease in mineral products imports, which accounted for 11.5% of the total value of imports in 2014 compared with 27.5% in 2013. Oman's imports came mainly from the United Arab Emirates (32.5%), Japan (12.2%), China (4.8%), the United States and India (4.3% each), and Saudi Arabia (4.1%), in addition to other countries (37.8%) (Central Bank of Oman, 2015, p. 104–106).

The value of U.S. exports to Oman increased by about 28% to \$2.02 billion in 2014 from \$1.57 billion in 2013. The increase was attributable to a 77% increase in U.S. manufactured mineral supplies exports followed by an increase in finished metal shapes (by 60%), industrial supplies (49%), iron and steel products (38%), industrial engines (33%), and petroleum products (12%) compared with those of 2013. The value of U.S. imports of goods from Oman decreased slightly to about \$1.0 billion from \$1.02 billion in 2013. This decrease was attributable mainly to a 100% decrease in the value of crude oil imports in 2014 compared with a value of \$97.8 million in 2013 and \$364 million in 2012. U.S. chemical fertilizer imports decreased by 19% to about \$194 million in 2014 from about \$239 million in 2013; imports of finished metal shapes decreased by 15% to \$15.7 million in 2014 from \$18.6 million in 2013 (U.S. Census Bureau, 2015a, b).

Commodity Review

Metals

Aluminum.—Oman's only aluminum smelter, which was owned and operated by Sohar Aluminium, produced 364,000 t of primary aluminum in 2014, which was a 2.8% increase in production compared with that of 2013. The smelter had the capacity to produce 375,000 metric ton per year (t/yr) of primary aluminum. 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%), was formed in 2004, and it produced hot metal, ingots, and sows. Sohar Aluminum was the leading nonhydrocarbon industrial venture in Oman. Omani nationals made up about 72% of the company's workforce (table 2; Al Arimi, 2014; Arab Metal, 2015; Sohar Aluminium Co. L.L.C., 2015).

In November, Sohar Aluminum completed a potline upgrade at its smelter as part of a \$35 million optimization project to increase its production capacity by 28,000 t/yr by 2019. The upgrade program started in 2012 and gradually replaced 360 cells of the potline without interruption to production. The program was expected to extend the lifespan of the smelter's potline and increase energy efficiency. Most of the aluminum production at the Sohar smelter was used by domestic downstream industries, and the remainder was exported to various destinations worldwide. Domestic downstream aluminum plants were established near Sohar's smelter to support broader industrial diversification in Oman through the production of intermediate and manufactured aluminum products. Oman Aluminium Rolling Co. (OARC) awarded a \$32 million engineering, procurement, and construction contract to Habtoor Leighton Group of the United Arab Emirates to construct an aluminum coil coating plant in Sohar. The plant, which would be attached to the OARC aluminum rolling mill, was expected to have a capacity of 25,000 t/yr of aluminum coil coating. Construction work on the project started in May and was expected to be completed in mid-2015 (table 2; Al Arimi, 2014; Baxter, 2014; Watts, 2014a; Sohar Aluminium Co. L.L.C., 2015b).

Antimony.—In 2014, Strategic & Precious Metal Processing Co. (SPMP), which was a joint venture of Tristar Resources p.l.c. of the United Kingdom (40% interest), Oman Investment Fund (40% interest), and Castell Investments Ltd. (20% interest), moved forward with its Oman antimony roaster project. The project included plans to construct a 20,000-t/yr antimony metal and antimony trioxide plant, which would be located at the Sohar Port and Free Zone. The plant, which was expected to be completed by 2016 and to start commercial production in 2017, was expected to cost \$70 million to construct. By yearend, SPMP was close to securing funding for the project from Bank Nazwa (\$40 million), equity contributors (\$20 million), and a mezzanine loan (\$10 million). Also by yearend, SPMP received a project-no-objection letter from Oman Environmental Services Holding Co., which included approval for suggested plans to treat solid waste resulting from the project works (London Stock Exchange plc, 2014b, 2015b; Tristar Resources p.l.c., 2015; Wilkinson, 2015b).

Chromium and Ferrochromium.—According to the PAM, Oman held an estimated 2.5 Mt of chromite reserves ranging from 20% to 40% chromium oxide (Cr_2O_3) in the lower part of the Samail ophiolite coastal mountains, which are located in the northern part of the country. In 2014, Oman produced 751,000 t of chromite ore compared with 788,000 t in 2013. Gulf Mining Group operated a chromite ore concentration plant in the Ad Dakhiliyah area with the capacity to produce 55,000 t/yr of chromite concentrate grading from 24% to 42% Cr_2O_3 . By yearend, the company began to construct a \$19 million ferrochromium smelter in the Sohar Port and Free Zone. The plant was expected to create 30 direct and 90 indirect jobs. Production at the smelter was expected to start in 2015. Produced ferrochromium was expected to be used primarily for stainless steel production by plants in China and India (tables 1, 2; Gulf Mining Group, 2015; Public Authority for Mining, The, 2015; Trade Arabia, 2015).

Al Tamman Trading Establishment L.L.C. produced chromite ore from the Al Ram Mine, which is located 140 kilometers (km) south of Muscat, and from the Wadi Rajmi Mine, which is located 320 km north of Muscat. The company estimated the mineral resources at the Al Ram Mine to be 1 Mt of chromite ore grading 38% Cr_2O_3 . Annual production of chromite ore from the Al Ram Mine was about 200,000 t in 2014. The company estimated mineral resources at the Wadi Rajmi Mine to be 1 Mt of chromite ore grading 30% Cr_2O_3 . Annual production of chromite ore from the Wadi Rajmi Mine was 96,000 t in 2014 (table 2; Al Tamman Trading Establishment L.L.C., 2015).

Al Tamman Indsil Ferrochrome L.L.C. was Oman's first ferrochromium plant that was built at Sohar Free Zone and commenced production in July 2013. The plant was a 50–50 joint venture of Indsil Group of India and Muscat Overseas Group, (the parent company of Al Tamman Trading). The plant, which had the capacity to produce 70,000 t/yr of ferrochromium, produced 13,710 t in 2013 and 53,951 t in 2014. The plant was expected to produce 58,500 t in 2015 (Melwyn Lobo, Deputy Head, Al Tamman Indsil Ferrochrome LLC, written commun., December 7, 2015).

Copper and Gold.—Oman's copper mine output increased to 72,100 t of ore in 2014 from 57,400 t in 2013, entirely from Mawarid's copper project. Mawarid, which was the sole copper producer in Oman and operated the Lasail copper ore concentrator plant, continued its operations at the Mandoos Mine in Sohar, which contained an ore body that included mainly pyrite and chalcopyrite covered by a gossan of iron and silica. Mining operations were expected to conclude at Mandoos in 2015 owing to exhaustion of mineral resources. The company's concentrator plant at Lasail had the capacity to treat 130 metric tons per hour of copper ore, and it processed about 0.6 Mt of copper ore grading 2.44% copper between 2007 and 2014. By yearend, Mawarid continued plans to develop a new copper project at the Yanqul area, which contained five copper deposits in the Dhahira region in northern Oman. Mawarid established a joint venture with OOC and Oman Mining Co. L.L.C. to carry out the project (table 1, 2; Mawarid Mining Co. L.L.C., 2015).

In November, Savannah Resources plc of the United Kingdom acquired a 65% share in Al Thuraya LLC; Al Thuraya was the 100% owner of the Block 4 copper-gold project, which

covers an area of 408 square kilometers (km²) in the Semail ophiolite belt. Savannah was expected to invest \$4.6 million in the project during a period of 4 years. Savannah held exploration licenses in Blocks 4, 5, and 6 with a total area of 1,270 km². Early exploration work at the Salahi site in Block 4 indicated encouraging levels of mineralization. Assay results included 0.3% copper, 37.4 grams per metric ton (g/t) gold, and 88 g/t silver at the Salahi 1 prospect; 1.17% copper, 0.4 g/t gold, and 0.39% zinc at the Salahi 3 prospect; 8.19% copper and 1.8 g/t gold at the Salahi 4 prospect; and 4.5% copper and 11.3 g/t gold at the Salahi 5 prospect (London Stock Exchange plc, 2014b).

By yearend, Savannah Resources carried out a 4-week grand electromagnetic survey and mapping of the prospect area in Block 5. Indicated and inferred mineral resources in Block 5 were estimated by the company to be 1.7 Mt grading 2.2% copper, which included a zone that contained 0.5 Mt grading 4.5% copper. Based on previous surveying and mapping of the area, gold mineralization associated with copper mineralization was expected to be identified within Block 4. Rock chip samplings from the Gaddamah West site and the Salahi 1 site in Block 4 area showed results, including 5.7% copper and 3.7 g/t gold. Combined results from the surveying, mapping, and other data sources were expected to direct the company's drilling operations in Blocks 4 and 5. Drilling operations were expected to commence in the first quarter of 2015 (Savannah Resources plc, 2014; London Stock Exchange plc, 2015a; Muscat Daily, 2015a).

Iron and Steel.—In 2014, Oman produced 1.45 Mt of DRI compared with 1.47 Mt in 2013. Jindal Steel and Power Ltd. of India (the country's sole producer of DRI and hot-briquetted iron) operated its plant in the Sohar Industrial Zone. The plant's production capacity was 1.5 million metric tons per year (Mt/yr) in 2014. The company received a \$725 million syndicated loan from 11 financial institutions led by the local Bank Muscat to fund an expansion of its DRI production capacity. In February, the company commissioned a \$400 million iron ore billets, blooms, and rounded products facility, to be attached to its DRI plant in Sohar. Jindal also carried out plans to invest \$200 million in a new rolling mill at its Sohar complex. The construction of a 1.4-Mt/yr-capacity rolling mill was expected to be completed around mid-2015 (Watts, 2014b; Midrex Technologies Inc., 2015, p. 8; Organisation for Economic Co-operation and Development, 2015, p. 30).

In May, Sun Metals L.L.C., which was a subsidiary of Sun Metal Group of the United Arab Emirates, embarked on plans to construct a 2.5-Mt/yr-capacity steel mill at Sur Industrial Zone near the Port of Sur, which is located 150 km south of Muscat. The company planned to invest \$400 million in the project, which was expected to include two electric arc furnaces, two ladle-refining furnaces, one billet caster, and one rolled-steel products (rebar) mill. Construction work of the project was awarded to Posco Engineering and Construction Ltd. of the Republic of Korea and Sojitz Corp. of Japan and was expected to be completed in 2017 (Watts, 2014d; Organisation for Economic Co-operation and Development, 2015, p. 30).

In the second quarter of 2014, Sharq Sohar Steel Rolling Mills L.L.C., which was a subsidiary of Sohar Steel L.L.C., acquired

an electric rebar mill at Sohar Industrial Zone, which increased the company's rebar-production capacity to 500,000 t/yr. The mill was refurbished and relocated by the company from Emirate of Ras Al Khaimah in the United Arab Emirates to the Sohar Steel complex. Sharq Sohar used steel billets supplied by Sohar Steel's melt shop to produce rebar. The steel melt shop, which was located at the Port of Sohar, was operated by Sohar Steel and was going through an upgrade process in the third quarter of 2014 to increase its steel billet production capacity to 700,000 t/yr from 300,000 t/yr (table 2; Oman Observer, 2014; Organisation for Economic Co-operation and Development, 2015, p. 30; Sohar Steel L.L.C., 2015).

Manganese.—In 2014, Al Tamman Trading was the sole manganese producer in the country; it operated the Al Qabil Mine, which had the capacity to produce 60,000 t/yr of manganese ore. Oman produced 37,500 t of manganese ore (25% manganese content) from the Al Qabil Mine in 2014 compared with 49,000 t in 2013. The Al Qabil Mine, is located 220 km south of Muscat. The PAM estimated the country's "geologic reserves" to be 1.52 Mt containing 30% to 65% manganese that is associated with high silica content (table 1, 2; Al Tamman Trading Establishment L.L.C., 2015; Public Authority for Mining, The, 2015).

Industrial Minerals

Cement.—Oman was estimated to have produced 5.5 Mt of cement in 2014 compared with 5.8 Mt in 2013. Oman's cement sector had approximately 8.0 Mt/yr of production capacity. The sector's activity was linked closely to that of Government's infrastructure and construction development plans. Combined, Oman Cement and RCC met most of Oman's domestic cement demand. RCC was a public shareholding company that produced and traded in different types of cement in Oman, Somalia, and Yemen. The company, which had a production capacity of 4.7 Mt/yr at its Salalah complex, operated several packaging and storage terminals, including three terminals in Oman, two terminals in Yemen, and one terminal in Somalia. Oman Cement upgraded one of its three kilns in Rusayl in the first half of 2014 in order to improve production quality. The company added a grinding mill with a capacity of 150 tons per hour by yearend. Oman Cement produced four types of cement, including regular portland cement, moderate sulfate-resistant cement, petroleum well cement, and sulfate resistant cement, and sourced its raw materials locally (table 1, 2; Al Maha Financial Services LLC, 2014, p. 4, 6, 13; Financial Times, The, 2015; Oman Cement Co. S.A.O.G., 2015).

Gypsum.—Oman's output of gypsum increased to about 3.4 Mt in 2014 from about 2.8 Mt in 2013 and 1.9 Mt in 2012. Gypsum production in Oman had been increasing steadily during the past 5 years. According to the PAM, gypsum reserves were concentrated in the southern part of the country and were estimated to include 900 to 1,000 Mt of rock containing 90% minable gypsum in the Shuwaymiyah area; 200 to 400 Mt of rock containing 85% minable gypsum in the Thumrait area; 100 to 400 Mt of rock containing 85% minable gypsum in the Suddah area; 1 to 50 Mt of rock containing 85% minable gypsum in the Thakabayt area; 0.5 to 2.0 Mt of rock containing

85% minable gypsum in the Ghaba area; and 30,000 to 50,000 t of rock containing 97% minable gypsum in the Suraymi area (table 1; Public Authority for Mining, The, 2015).

Zawawi Minerals L.L.C. was the country's leading producer and exporter of gypsum in 2014. The company's two joint ventures, Zawawi Gypsum L.L.C. and USG Zawawi Drywall L.L.C. SFZ, were increasing production and exports of gypsum and manufacturing of gypsum boards in Oman. By yearend, USG Zawawi Drywall L.L.C. SFZ, which was a joint venture of Zawawi Minerals L.L.C. (50% interest), Boral Ltd. of Australia (27.5% interest), and USG Corp. of the United States (27.5% interest), was preparing to begin production at its new gypsum board plant in the Salalah Free Zone. The plant's initial production was expected to start in March 2015; gypsum would be sourced from the Thumrait Quarry in the Dhofar Governorate to produce 8 million square meters per year of gypsum board. In March, Zawawi Gypsum exported its first shipment of gypsum (66,000 t) from the Salalah Port to India. The company planned to export of 2 Mt/yr of gypsum in the next 3 years (Zawawi Minerals L.L.C., 2014, 2015; Muscat Daily, 2015b).

Lime and Limestone.—In 2014, Oman's limestone production increased to about 8.7 Mt compared with about 5.5 Mt in 2013. The country was estimated to have limestone reserves of 24 billion metric tons, according to the PAM. In the third quarter of 2014, Carmeuse Majan Group of Belgium commenced a greenfield lime plant at the Salalah Free Zone in the Dhofar Governorate. The plant had a designed capacity to produce 1 Mt/yr of lime from eight 125,000-t/yr-capacity kilns (table 1; Carmeuse Majan Group, 2015; Public Authority for Mining, The, 2015).

Nitrogen.—In 2014, OMIFCO and SIUCI were the the two nitrogen fertilizer producers and exporters in Oman. OMIFCO operated two ammonia plants that produced about 1.44 Mt/yr of ammonia, including anhydrous ammonia in the Sur Industrial Zone. OMIFCO also operated two urea plants that produced 2.05 Mt/yr of dehydrated granular urea in Sur Industrial Zone. SIUCI produced ammonia and urea at its complex, which was located about 250 km northwest of Muscat in the Sohar Industrial Zone. The plant had the capacity to produce 730,000 t/yr of ammonia and 1.3 Mt/yr of granular urea. The company used a dedicated terminal at the Port of Sohar to export most of its production to customers in Australia, India, Latin America, South Africa, Thailand, and the United States (Oman India Fertiliser Co. S.A.O.C., 2015a, b, d; Suhail Bahwan Group Holding L.L.C., 2015).

In June, Takamul Investment awarded the front-end engineering and design of its new ammonia plant at Salalah in southern Oman to Linde Group of Germany. The project was expected to have the capacity to produce 365,000 t/yr of ammonia using feedstock from the adjacent Salalah Methanol plant. The project was expected to be completed by 2017 (Watts, 2014c).

Mineral Fuels

Natural Gas.—In 2014, Oman held 680 billion cubic meters of proved natural gas reserves. Natural gas was used for industrial projects and power generation in the country. Oman's

gross natural gas production increased by 4% to 37,687 million cubic meters in 2014 compared with 36,330 million cubic meters in 2013. Dry or marketed gas production, however, decreased by 5% to 30,897 million cubic meters in 2014 from 32,620 million cubic meters in 2013. Oman had 33 natural-gas-producing wells in 2014. PDO controlled most of the nonassociated natural gas production in the country, including that of Block 6. Through Dolphin Energy Co. Ltd., Oman imported about 2 billion cubic meters of natural gas in 2014 by pipeline from neighboring Qatar to meet its energy consumption requirements, including natural gas reinjection in mature oilfields as part of the implementation of enhanced oil recovery (EOR) processes (table 1; Central Bank of Oman, 2015, p. 7, 42).

By yearend 2014, OOCPEP was prepared to begin exporting natural gas and condensate from the Abu Tabul gasfield, which extends over an area of 1,500 km² in Block 60, following the commissioning of a \$1 billion natural gas processing plant in September. The project, which was wholly owned and operated by OOCPEP, had been completed over the course of 3 years and was expected to reach a capacity of 2 million cubic meters per day of natural gas processing and 6,000 barrels per day (bbl/d) of condensate production by yearend 2015 (Oman Oil Company Exploration and Production L.L.C., 2015).

In 2014, construction work was begun at the Khazzan gasfield development project. The project was located in Block 61 and operated in partnership by BP p.l.c. of the United Kingdom (60%) and OOCPEP (40%). The Khazzan gasfield project, which was awarded by the Government in 2013, was expected to include drilling of nearly 300 wells during a 15-year period and eventually to increase Oman's natural gas capacity by about 28.3 million cubic meters per day. Initial natural gas production from the project was expected to commence by 2017 (BP p.l.c., 2015a).

Petroleum.—In 2014, Oman produced 344.4 Mbbbl of crude oil and condensate, or 944,000 bbl/d, from 217 oilfields compared with 343.8 Mbbbl or 941,900 bbl/d, respectively, in 2013. Almost all Oman's petroleum production came from the Oman Basin, which covers a large area of the country. The Government offered incentives to foreign petroleum companies to develop the country's hydrocarbon sector. Oman's crude oil production had been increasing steadily during the past 5 years (table 1). EOR technologies for mature oilfields, including a recently developed solar EOR project, contributed significantly to sustaining and increasing petroleum production in Oman in recent years (U.S. Energy Information Administration, 2014; Central Bank of Oman, 2015, p. 7, 40; Watts, 2015).

In 2013, GlassPoint Solar, Inc. of the United States invested \$53 million to develop a pilot thermal solar EOR project at Alam-West in southern Oman. By yearend 2014, GlassPoint had also embarked on a \$600 million solar EOR project called Miraah at the Amal oilfield in southern Oman that was completely financed by PDO. The solar EOR project would use solar-generated steam to recover petroleum from oilfields in place of natural gas. The process was expected to reduce carbon dioxide emissions by 300,000 t/yr and to improve energy efficiency by saving 5.6 trillion British thermal units per year of natural gas. When completed, the 1,021-megawatt-capacity Miraah plant will be one of the world's largest solar plants,

generating an average of 6,000 metric tons per day of solar steam using sunlight concentrators. Construction work on the project, which was expected to include 36 glasshouse modules covering more than 3 km², was expected to start in 2015 and to be completed in 2017 (GlassPoint Solar, Inc., 2015).

PDO continued to dominate the country's petroleum production in 2014, with an average 570,500 bbl/d of crude petroleum and condensate produced compared with 569,700 bbl/d in 2013. Occidental Oman, Inc., which was owned by Occidental Petroleum Corp. (65%) and Mitsui E&P Middle East B.V. (35%), managed Blocks 9 and 27 and increased its output by about 4% to 86,000 bbl/d in 2014 from 82,600 bbl/d in 2013. Daleel Petroleum Co. L.L.C., which was owned by Mazoon Petrogas S.A.O.C. and Mazoon Petrogas B.V.I. (50% each), managed Block 5 and increased its output by about 9% to 43,900 bbl/d in 2014 from 40,400 bbl/d in 2013. CC Energy Development (Oman) S.A.L., which managed Blocks 3 and 4 (which included the Saiwan and the Farha oilfields), increased its output by about 68% to 25,300 bbl/d in 2014 from 15,100 bbl/d in 2013 (table 2; Central Bank of Oman, 2015, p. 39, 40).

The Ministry of Oil and Gas continued its efforts to sustain and increase petroleum production in the country. In 2014, the Ministry awarded two new exploration and production-sharing agreements—one to Petrogas Kahli L.L.C. (a subsidiary of Petrogas E & P L.L.C.) for Block 55, which covers an area of 7,564 km² in Al Wusta Governorate, and another to Medco Arabia Ltd. of Indonesia and its partner Intaj L.L.C. for Block 56, which covers an area of 5,808 km² in Al Wusta Governorate. In 2014, 49 exploration wells were drilled in Oman, including 29 by PDO, 10 by Occidental Oman, 6 by CC Energy, and 4 by other companies. In addition to the Amal oilfield, PDO continued with plans to develop other oilfields using EOR technologies, including projects in Birba, Harweel-2AB, Qarn Alam, and Marmul (Central Bank of Oman, 2015, p. 40).

By yearend, ORPIC's \$2.1 billion Sohar refinery expansion was in development and was expected to be completed ahead of schedule. The project's engineering, procurement, and construction contract was awarded in 2013 to a joint venture of Daelim Industrial Co. Ltd. of the Republic of Korea and Petrofac Corp. Ltd. of the United Kingdom. The project was expected to increase Sohar's refinery capacity by nearly 70% to 198,000 bbl/d from 116,000 bbl/d when completed as expected by yearend 2016 (Finlayson, 2015).

Outlook

Oman's economy is expected grow at a rate of 4.6% in 2015 and 3.1% in 2016. The country's nonoil sector is expected to grow by 5.5% in 2015. Continued low global crude oil prices are expected to decrease the Government's revenue significantly and to increase its fiscal deficit (International Monetary Fund, 2015, p. 175; Wilkinson, 2015a).

Oman's mineral industry is expected to continue its growth in the next few years. Sohar's aluminum capacity expansion, which is planned to commence by 2019, is expected to sustain Oman as a regional primary and secondary aluminum producer. The country's first commercial antimony production, which

is planned to commence in 2017, is expected to mark Oman's entrance as a new producer of antimony oxide in the global market. The Gulf Mining ferrochromium smelter, which was planned to commence in 2015, is expected to support the iron and steel industry. Several ongoing downstream iron and steel projects are expected to increase Oman's production capacity of iron and steel products through 2017. Production of gypsum and lime is expected to increase steadily with the completion of greenfield projects. Nitrogen fertilizer and petrochemicals producers are expected to increase their production through the addition of new facilities. Crude oil production is expected to be steady, and it could increase modestly in the next 5 years owing to continued exploration and the implementation of the new solar EOR project. Production of refined petroleum products is expected to increase by 2017 owing to ORPIC's Sohar refinery expansion project. BP's large investment in the Khazzan full gasfield development project is expected to increase the country's natural gas production by about 29% to 46 million cubic meters, or 126,100 million cubic meters per day, in the medium term. The increase in Oman's natural gas production is expected to help meet its increased domestic demand for energy by mineral processing plants planned by several mining companies in the country.

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TABLE 1
OMAN: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity	2010	2011	2012	2013	2014
METALS					
Aluminum	367	373	360	354	364
Chromium:					
Ore, gross weight	865	617	602	788	751
Chromium (III) oxide content (35% Cr ₂ O ₃)	303	216	211	276	263
Copper:					
Mine output, gross weight	87	111	104	57	72
Ore, Cu content	2	2	2	1	1
Smelter output, Cu content	9	12	12	12	15
Refined, Cu content ^c	15	16	16	16	15
Gold, metal or Au content kilograms	82 ^r	40 ^r	19 ^r	20 ^r	20 ^c
Iron and steel:					
Crude steel	84	200 ^r	300 ^r	500 ^r	1,500 ²
Direct-reduced iron	--	1,110	1,460	1,470	1,450
Laterite (iron oxides)	375	722	710	572	753
Iron ore, pellets ³	--	--	9,000	9,000	9,000
Manganese ore:					
Gross weight metric tons	--	41,300	37,500	49,000	37,500
Mn content (25% Mn) do.	--	10,235	9,375	12,300 ^r	9,375
Silver, metal or Ag content kilograms	10	--	--	--	--
INDUSTRIAL MINERALS					
Cement, hydraulic	3,800 ^r	5,000	6,100 ^r	5,800 ^r	5,500 ^c
Clay	156	170	195	222	305
Gypsum	653	1,254	1,915	2,785	3,387
Kaolin	47	143	140	115	67
Limestone	4,638	4,995	6,488	5,489	8,724
Marble	695	931	1,165	1,255	1,565
Methanol	2,000	2,000	2,100	2,150	2,100
Nitrogen: ^e					
N content of ammonia	1,700 ^r	1,700 ^r	1,600 ^r	1,700 ^r	1,700
N content of urea	1,600 ^r	1,600 ^r	1,500 ^r	1,600 ^r	1,500
Quartz	187	217	623	347	283
Salt	12	12	13	12	13
Sand and gravel	70,686	69,391	72,990	50,300 ^r	60,200
Silica sand	34	38	47	47	47 ^c
Sulfur:					
Elemental	50	36	59	51	50
Sulfuric acid	1,200	1,200	1,400	1,400	1,400
MINERAL FUELS AND RELATED MATERIALS					
Gas, natural:					
Gross million cubic meters	33,259	34,721	35,942	36,330 ^r	37,687
Dry do.	27,086	28,595	29,606	32,620 ^r	30,897
Liquefied ⁴ thousand metric tons	9,000	8,890	8,620	9,200	10,600
Natural gas liquids thousand 42-gallon barrels	315,579	322,988	335,216	343,830	220,662

See footnotes at end of table.

TABLE 1—Continued
OMAN: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity		2010	2011	2012	2013	2014
MINERAL FUELS AND RELATED MATERIALS—Continued						
Petroleum:						
Crude and condensate	thousand 42-gallon barrels	315,575	325,215	335,070	343,830	344,400
Refinery products:						
Liquefied petroleum gas	do.	4,501	3,448	3,276	2,496	2,010
Gasoline	do.	16,242	23,250	23,324	21,737	18,495
Jet fuel and kerosene	do.	4,599	4,891	5,544	4,393	4,390
Distillate fuel oil	do.	11,132	15,804	15,476	14,108	14,250
Residual fuel oil	do.	2,263	3,342	3,242	2,084	2,095
Other	do.	21,063	26,375	25,258	24,842	22,010
Total	do.	59,800	77,110	76,120	69,660	63,250

⁰Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ¹Revised. do. Ditto. -- Zero.

¹Table includes data available through September 21, 2015.

²Reported figure.

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

⁴Liquefied natural gas is produced by treating gross natural gas in treatment plants to remove carbon sulfide, hydrogen sulfide, water, and other components.

TABLE 2
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(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, 20%]	Smelter at Sohar	375,000.
Secondary	Oman Aluminium Rolling Co. (OARC) (Takamul Investment Co. S.A.O.C.)	Sohar Industrial Estate	140,000.
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.G. (Government, 51%; Pension funds, 33.65%; Individual investors, 9.85%; Public Authority of Social Insurance, 5.50%)	Kilns and mills at Rusayl	2,400,000.
Do.	Raysut Cement Co. S.A.O.G. (RCC)	Kilns and mills at Salalah	4,700,000.
Do.	Al Madinah Cement Co. L.L.C.	Kilns and mills at Wadi Saa	750,000.
Chromite:			
Ore	Al Tamman Trading Establishment L.L.C.	Al Ram Mine	200,000.
Do.	do.	Wadi Rajmi Mine	100,000.
Do.	Hatton FZE	Mines south of Muscat	200,000.
Do.	Gulf Mining Group	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.) Value % Revised	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.
Concentrated	Gulf Mining Group	Ad Dakhiliyah	55,000.
Ferrochromium	Al Tamman Indsil Ferrochrome L.L.C.	Sohar Free Zone	70,000.
Clays	NA	NA	300,000.
Copper:			
Ore, gross weight	Mawarid Mining Co. L.L.C. (MB Holding Co. L.L.C., 100%)	Mandoos Mine in Sohar	75,000.
Concentrated ore	do.	Lasail, near Sohar	15,000.
Refined metal	Oman Mining Co. L.L.C. (Government, 100%)	Sohar Industrial Estate	20,000.

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
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.	Thamrait	200,000.
Do.		Global Mining Co., L.L.C.	Quarry at Thamrait	65,000.
Do.		Al-Rawas Mining Co. L.L.C. (Al-Rawas Holding L.L.C., 100%)	Salalah	2,000,000.
Do.		Zawawi Drywall L.L.C. SFZ (Zawawi Minerals L.L.C., 50%; Boral Ltd., 27.5%; USG Corp., 27.5%)	Thamrait, 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	9,000,000.
Iron ore (laterite)		Gulf Mining Group	Barka	300,000.
Crude steel		Jindal Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	Sohar	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	1,500,000.
Rolled (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.
Rolled (tubes)		Al Jazeera Steel Tube Mills Co. S.A.O.G.	Sohar	300,000.
Galvanized (wire)		Gulf Specialty Steel Industries L.L.C. (Global Steel Industries Pte Ltd. and Takamul Investment Co. S.A.O.C.)	do.	60,000.
Kaolin		NA	NA	150,000.
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.
Manganese		Al Tamman Trading Establishment L.L.C.	Al Qabil Mine	60,000.
Marble		do.	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 Ibbri Wilayat and the Buraimi Estate	450,000.
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	1,050,000.
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.

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Natural gas, liquefied—Continued		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%; Mistubishi 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, Meزون 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 Sahnah 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.
Refined	do.	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.
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.