



2010 Minerals Yearbook

OMAN

THE MINERAL INDUSTRY OF OMAN

By Mowafa Taib

Oman is the second largest of the Gulf Cooperation Council countries after Saudi Arabia in terms of land area. In 2010, production of minerals, especially mineral fuels, was an essential component of Oman's economy, and further development of the country's metals and industrial mineral resources could significantly increase the mineral industry's contribution to the national economy. Oman was the seventh ranked crude oil producer in the Middle East and accounted for about 1% of total world crude oil production. The country also produced aluminum, cement, chromite, clay, copper, gypsum, iron and steel, laterite (low-grade iron oxide), limestone, marble, nitrogen fertilizer, refined petroleum products, quartz, and salt (table 1; BP p.l.c., 2011, p. 8).

Minerals in the National Economy

In 2010, Oman's economy rebounded following a significant contraction in 2009. The country's gross domestic product (GDP) increased in real terms by 4.2% compared with an increase of 1.1% in 2009. The contribution of the hydrocarbon sector to Oman's GDP increased to 46.5% from 40.6% in 2009, of which crude oil contributed 42.4% and natural gas contributed 4.1% compared with 3.9% in 2009. Oman's economic growth was driven by higher crude oil prices, which averaged \$76.60 in 2010 compared with \$57.70 in 2009, and by an increase of 6.5% in the volume of crude oil production. In 2010, the contribution of the nonoil sector to the GDP decreased to 55.5% from 61.6% in 2009. The contribution of the industrial sector, which included aluminum, nitrogen fertilizer, and steel manufacturing, decreased to 16.7% from 18.5% in 2009. The mining and quarrying subsector activity, which made up 2.3% of the nonpetroleum industrial sector activities, increased in value by 3% in 2010. The value of construction subsector activity, which made up 32.4% of the activities of the nonpetroleum industrial sector, increased by 2.1% compared with that of 2009 (Central Bank of Oman, 2011, p. 16–18).

Oman's trade balance, which is the sum of the nation's exports and imports, increased by 71% in 2010 compared with a decrease of 33% in 2009. Oman's total merchandise exports increased, by value, by about 33% to about \$36.5 billion¹ in 2010 from \$27.5 billion in 2009. This increase was attributable mainly to higher crude oil prices and an increase in output in 2010. The value of crude oil exports in 2010 increased by about 50% to \$20.8 billion from \$13.9 billion in 2009. The value of liquefied natural gas exports increased by about 22% to \$3.05 billion from \$2.51 billion in 2009, and the value of refined petroleum products exports decreased by 16.1% to about \$1.4 billion from about 1.6 billion in 2009. The value of exports of mineral products and chemical industry products was \$1.0 billion each, and that of base metals and articles

manufactured from base metals was about \$951 million (Central Bank of Oman, 2011, p. 92–94).

Omani imports increased by 11% in 2010 to about \$20 billion from about \$18 billion in 2009. Mineral fuels imports increased by about 45% to \$1.45 billion from \$1 billion, and crude materials imports increased by 22% to \$529 million from about \$433 million in 2009. Of about 1 million private sector employees, more than 12,500, or 1.3%, were employed in the mining and quarrying industry (Central Bank of Oman, 2011, p. 92, 97).

Government Policies and Programs

Mineral Development of Oman (MDO) was a public entity established by the Government in 2008 to encourage investment in the country's mineral industry. MDO was a partnership between the Government's General Directorate of Minerals and private companies. Takamul Investment Co. S.A.O.C., which was owned by Oman Oil Co. S.A.O.C. (90%) and Abu Dhabi Water and Electricity Authority (ADWEA) and Al Maha Strategic Industries for Investments L.L.C., both of the United Arab Emirates (5% each), financed several metal, mineral, and petrochemical production projects in the country, including downstream aluminum projects at Metal Park in the Sohar Industrial Estate. Takamul had plans to establish two "Mineral Cities" in Oman to serve as the center for mineral-based downstream industries. The first Mineral City would be located in the Sohar Industrial Estate, and the second one was proposed for the Shuwaymiyah Wadi, which is located between Ad Duqm and Salalah in southeastern Oman. Takamul planned to establish a dolomite-based magnesium production project and a ferrochromite production project, as well as a 100,000-metric-ton-per-year (t/yr) salt production facility, a 500,000-t/yr-capacity soda ash production project with Tata Chemical Ltd. of India, and a 40,000-t/yr-capacity silicon carbide processing plant in a joint venture with SNAM Abrasives of India (Zawya, 2008; O'Driscoll, 2010b; Takamul Investment Co. S.A.O.C., 2010).

Sohar Industrial Port Co. was a 50-50 joint venture of the Government and the Port of Rotterdam Authority of the Netherlands to build a mineral export terminal at Sohar called the General Dry Bulk and Aggregate Terminal that would have the capacity to handle from 6 to 10 Mt/yr of aggregates and dry bulk commodities. The new terminal would facilitate exports and imports of such bulk mineral commodities as cement, chromite, coal, and limestone. The \$30 million export terminal was scheduled to be completed in 2012 (O'Driscoll, 2010a).

Structure of the Mineral Industry

The Ministry of Commerce and Industry regulates Oman's mining activities according to the Mining Law (Royal Decree No. 27/2003), which provides for the issuance

¹Where necessary, values have been converted from Omani rials (RO) to U.S. dollars (US\$) at the average rate of RO0.386=US\$1.00.

of mining licenses, the resolution of mining sector disputes, and the protection of the environment. 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 Panama (2%), produced more than 80% of the country's crude oil and almost all the supply of natural gas. The Government owned 100% of Oman Oil Co., 75% of Oman Refineries and Petrochemicals Co. L.L.C. (ORPC), 51% of Oman Liquefied Natural Gas L.L.C., and 46.84% of Qualhat Liquefied Natural Gas S.A.O.C.

In July, ADWEA, which owned a 40% interest in Sohar Aluminium Co., transferred its share in the Sohar aluminum smelter and powerplant to Abu Dhabi Energy Co. (Taqa) of the United Arab Emirates for \$400 million. The two other shareholders in Sohar Aluminum were Oman Oil (40% interest) and Rio Tinto Alcan of Canada (20% interest) (Baxter, 2010d).

Oman India Fertilizer Co. S.A.O.C. (OMIFCO), which was a joint venture of Oman Oil (50%), and Indian Farmers Fertiliser Cooperative Ltd. and Krishak Bharati Cooperative Ltd. (25% each) produced nitrogen fertilizer. The other producer of nitrogen fertilizer in Oman was Sohar International Urea and Chemical Industries S.A.O.C. (SIUCI) (a subsidiary of Suhail Bahwan Group). SIUCI was one of the leading privately owned nitrogen fertilizer producers in the Middle East (Oman India Fertilizer Co. S.A.O.C., 2011).

Two companies were responsible for cement production in Oman—Oman Cement Co. S.A.O.C. and Raysut Cement Co. S.A.O.C. The Government put its plan to build a new cement plant in Ad Duqm, which is located in southeastern Oman, on hold because it could not commit adequate natural gas for the plant because of a lack of sustainable supply of natural gas in the southern part of the country. Several small-, medium-, and large-size companies produced chromite in Oman in 2010, including Al Tamman Trading Establishment L.L.C., Gulf Mining and Materials Co., Hatton FZE, and Oman Chromite Co. S.A.O.G. Copper was produced by Mawarid Mining L.L.C., which was a wholly owned subsidiary of MB Holding Co. L.L.C. Oman had more than 500 active industrial minerals mining operations, including 183 for crushed stone; 150 for landfill material; 71 for chromite; 57 for marble; 4 each for clay, gypsum; and laterite; 3 for sandstone; 2 for limestone; and 1 for salt (Industrial Minerals, 2010).

Production

Notable increases in Oman's mineral production in 2010 compared with that of 2009 included an increase in gypsum output by 56%; limestone, by 31%; urea, by 15%; and ammonia and cement, by 12% each. Notable decreases in mineral production included a decrease in salt production by 50%; marble, by 20%; quartz, by 19%; laterite, by 15%; and gravel, by 10% (table 1).

Commodity Review

Metals

Aluminum.—Output from the Sohar aluminum smelter, which was owned and operated by Sohar Aluminium, increased by 4.6% in 2010 to 367,000 metric tons (t) from 352,000 t in 2009. Sohar Aluminium produced hot metal, ingots, and sows. The Sohar smelter used alumina imported from Australia. The company signed a 15-year contract with Oman Shipping Co. S.A.O.C. to carry 690,000 metric tons per year (t/yr) of alumina to Oman from Australia.

In August, Gulf Aluminium Rolling Mill Co. (Gramco) of Bahrain pulled out of the project to build a \$350 million aluminum rolling mill next to Sohar Aluminium's smelter. The downstream aluminum project was a joint venture between ADWEA, Gramco, and Takamul (Baxter, 2010b).

Aluminium Rolling Co. L.L.C., which was established by Takamul as its leading value-added project in Oman's aluminum industry, signed an agreement with FATA EPC (a subsidiary of FATA S.p.A. of Italy) to build an aluminum rolling mill at the Sohar Industrial Estate at a cost of \$385 million. The mill would have the capacity to produce 140,000 t of multipurpose rolled aluminum sheets and would be completed by yearend 2013. The mill would be supplied with natural gas by Oman Oil Co. (Oman Oil Co. S.A.O.C., 2011).

Chromium and Manganese.—In February, Gulf Mining inaugurated the country's first chromite ore concentration plant at Wadi Mahram in the Governorate of Samayil; the plant had an intake capacity of 180,000 t/yr. Gulf Mining expected to supply nonmetallurgical-grade chromium to the abrasive and foundry industries. In July, Al Tamman and Indsil Group of India announced a plan to build a \$70 million chromite smelter at the Sohar Industrial Estate. The 75,000-metric-ton-per-year capacity smelter would export its carbon ferrochromite. Al Tamman was one of the leading exporters and producers of chromite ore in Oman from its Al Ram and Wadi Rajmi Mines. The company planned to build a 100,000-t/yr chromite and manganese beneficiation plant to increase chromite and manganese concentration in the mined ore. Al Tamman completed scoping studies, geologic mapping, and a topographic survey for manganese ore concessions in the Al Mintirib, the Al Mudhaybi, the Al Qabil, and the Ja'alan sites (Baxter, 2010c; Darwish, 2010; Al Tamman Trading Establishment L.L.C, 2011).

Copper.—Mawarid continued to produce copper from the Shinas Mine's open pit in the Al Batinah region, where the company had been mining copper since 2008. The company had produced about 500,000 t of ore by yearend 2010. Operations at the Hatta South pit, which started in May, reached full capacity in 2010. Mawarid held an exploration and production permit in Blocks 1 and 2, which are located in northwestern Sohar, and the Ghuzayn Block, which is located in southeastern Sohar. Mawarid explored for volcanic massive sulfide copper-gold deposits in the volcanic sequence of the Semail ophiolite. The company completed a feasibility study for the development of the Mandoos Mine and the Safwa Mine, which are located 53 kilometers (km) and 43 km northwest of Sohar, respectively. The company was conducting a feasibility study for the

Khuzayn 1, 2 and 3 prospects where it had identified copper mineralization earlier during the exploration phase. Mawarid owned and operated a copper concentrator at Lasail, which was located 35 km west of Sohar. The concentrator increased copper content in the mined copper ore from between 2% and 3% to between 18% and 24% and had a throughput of 140 metric tons per hour. Copper concentrates were refined and sold by the Government-owned Oman Mining Company L.L.C. (Mawarid Mining Co. L.L.C., 2010).

Iron and Steel.—In May, Jindal Steel and Power Ltd. of India acquired Shadeed Iron and Steel L.L.C., which was a subsidiary of Al-Ghaith Holding P.J.S.C. of the United Arab Emirates, for \$464 million. Shadeed was building a gas-based hot-briquetted iron plant in the Sohar Industrial Estate that would have the capacity to produce 1.5 million metric tons per year (Mt/yr) of direct-reduced iron. Production from the plant was expected to commence in the first quarter of 2011. Jindal planned to invest an additional \$400 million for the second phase of the steel plant it acquired from Shadeed to build a steel shop, a billet caster, and a rolling mill to produce steel bars, rods, and wires (Arab Steel, 2010; Deccan Herald, 2010; Baxter, 2011).

Vale Oman Pelletizing Co. LLC (VOPC) (a subsidiary of Vale S.A. of Brazil) proceeded with building a \$1.35 billion direct-reduction pelletizing plant and distribution center located within the Sohar Industrial Estate in Oman. The 9-Mt/yr-capacity plant was expected to begin operations in the first half of 2011. The maritime terminal and distribution center, which was being built by VOPC in Sohar Port, would have the capacity to handle up to 40 Mt/yr of iron ore and pellet. All iron ore for the pellet plant would be shipped from Vale's iron ore mines in Brazil by way of four 400,000-t-capacity ore carriers that were being built in China for Oman Shipping Co. Vale offered Gulf United Steel Holding Co. (Foulath) of Bahrain a partnership share in its industrial complex in Sohar because it was worried that it might not receive the entire natural gas allocations for the project. Foulath did not accept the offer because it had plans to build a 7-Mt/yr pelletizing plant in Southern Salalah. In May, Vale sold a 30% share of its subsidiary VOPC to Oman Oil Co. for \$125 million to ensure a strategic partnership with the Government and to enhance its commitment to Oman's economic and social development (Ellsworth, 2010).

Foulath (60%) and JFE Steel Corp. of Japan (40%) created the joint-venture company Foulath Oman in December 2008 to build an iron ore pelletizing plant in the Salalah Free Zone. Foulath Oman, which expected to import iron ore from Brazil, would apply a technology similar to that used by the Foulath Bahrain plant to produce 7 Mt/yr of combined blast-furnace-grade and direct-reduced pellets. JFE agreed to take one-half of the production (3.5 Mt/yr) for a period of 20 years, and the remaining output would be exported. As of yearend 2010, the project had not been made final and no engineering and procurement contract for the project had been issued (Baxter, 2010a; Steel Guru, 2010).

In August, Zoom Group of India created a joint venture, Zoom Steel Co., with an unnamed local partner to build a \$665 million steel plant at Sur, which was located in eastern Oman. The plant, which would have the capacity to produce 1.2 Mt of steel billet

and blooms, was expected to commence production in early 2013 (Baxter, 2010e).

Industrial Minerals

Cement.—Oman's consumption of cement was estimated to be 5 Mt in 2010, which was expected to increase to 6.5 Mt/yr in 2013. Production of cement by Oman Cement decreased by 18% to 1.7 Mt in 2010 from 2.075 Mt in 2009, including production of more than 0.5 Mt of cement from imported clinker. China National Building Material Equipment Corp. installed a third production line for Oman Cement as part of an expansion plan that included a capacity increase and an upgraded packaging and loading facility. The new line, which was to be completed in the first quarter of 2011, would double the company's clinker production capacity to 2.4 Mt/yr and add about 1.5 Mt/yr of cement output. Raysut Cement increased its cement production capacity to 3.8 Mt/yr in 2010 from 2.9 Mt/yr with the installation of a fourth mill. Raysut produced 2.20 Mt of clinker compared with 2.04 Mt in 2009 and 2.08 Mt of cement compared with 1.66 Mt in 2009. In 2010, Al Madinah Cement Co. L.L.C., which was a member of Al Buraimi Group, completed the construction of a greenfield cement plant at Wadi Saa in Buraimi Governorate. The plant had the capacity to produce 750,000 t/yr of cement (Oman Daily Observer, 2010; Oman Cement Co. S.A.O.C., 2011; Raysut Cement Co. S.A.O.C., 2011).

Nitrogen.—OMIFCO produced about 1.4 Mt/yr of ammonia and 2.1 Mt/yr of granulated urea in 2010 at its plant in the Sur Industrial Area. OMIFCO's entire output was exported to India under a long-term take-or-pay offtake agreement. In 2009, SIUCI began production of ammonia and urea at its plant located at the Sohar Industrial Estate, which is located 250 kilometers northwest of Muscat. The plant's initial production capacity was 1.2 Mt/yr of granular urea. The project, which comprised a 2,000-metric-ton-per-day (t/d)-capacity ammonia production plant and two granular urea plants with a combined capacity of 3,500 t/d, was built by Mitsubishi Heavy Industries Fertilizer Project Contracting and Construction Co. L.L.C. (a subsidiary of Mitsubishi Heavy Industries Ltd. of Japan). The plant used natural gas as a feedstock supplied through overland pipeline and the Seawater Intake/Outfall Facility in the Sohar Industrial Estate for cooling and desalination (Suhail Bahwan Group, 2009, 2010, 2011; Arab Fertilizers Association, 2011, p. 19, 23).

Mineral Fuels

Coal.—Oman Power and Water Co. S.A.O.C. approved a plan to build the first imported coal-fired independent water and power project (IWPP) at Ad Duqm in the Wusta region on the east coast of Oman. The Ad Duqm IWPP, which was estimated to cost about \$2 billion to construct, was expected to have 1 gigawatt of capacity; initial power production would begin in April 2015 and commercial production would begin in January 2016. The plant, which was expected to consume several million metric tons per year of coal, would use coal imported from Indonesia or South Africa because local coal deposits did not

meet the grade and specifications suitable for use in thermal powerplants. The Government created a national purchasing agency to secure the feedstock of coal needed for the IWPP operation and signed contracts with Worley Parsons Ltd. of Australia for Worley Parsons to serve as the project's technical advisor and with KPMG International of Switzerland for KPMG to serve as the project's financial advisor.

Outlook

The mineral industry of Oman is expected to continue to grow significantly in the next 5 years as international investors from Canada, India, and countries of the Gulf region continue to build iron and steel plants in Oman to take advantage of the country's role as a distribution center to Africa, Asia, and Europe. In May 2011, VOPC commenced iron ore pellet production from the first phase of its direct-reduction pelletizing plant and distribution center at the Sohar Industrial Estate. The new facility would produce 9 Mt/yr of iron ore pellets and reexport 40 Mt/yr of iron ore imported from Vale's iron ore mines in Brazil. Production of chromite, which had been increasing steadily during the past 5 years, is expected to continue to increase during the next 5 years following the construction of the first 180,000-t/yr chromite ore concentration plant at Wadi Mahram in the Governorate of Samayil. Exports of industrial minerals are expected to increase following of the completion of the General Dry Bulk and Aggregate Terminal in Sohar.

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TABLE 1
OMAN: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010
METALS					
Aluminum	--	--	49	351	367
Chromium:					
Gross weight	276	408	8,597	798 ^r	802
Metal content (35% chromic oxide)	97	143	301	279 ^r	281
Copper, metal:					
Ore, metal content	--	1	2	2	2
Smelter output, metal content	21	14	12	16	16
Refined metal	21	14	12	15	15
Gold kilograms	201	125	49	28	--
Iron and steel:					
Crude steel ^e	84	84	84	84	84
Laterite	271	295	359	392 ^r	335
Silver kilograms	236	51	31	15	--
INDUSTRIAL MINERALS					
Cement, hydraulic	3,611	3,880	4,000	4,000	4,500
Clay	93	77	146	148 ^r	156
Gypsum	254	183	349	254 ^r	395
Limestone	2,733	3,098	3,845	3,353 ^r	4,389
Marble	271	312	501	631 ^r	508
Nitrogen:					
N content of ammonia	1,000	1,000	1,000	1,000	1,119
N content of urea	830	830	830	830	955
Quartz	182	212	191	209 ^r	170
Salt	26	10	11	31	12
Sand and gravel:					
Sand thousand metric tons	24,900	22,029	29,259	32,119 ^r	34,451
Gravel do.	51,715	39,438	49,434	69,203 ^r	62,401
Total do.	76,615	61,467	78,693	101,322 ^r	96,852
Sulfur ^e	40	50	50	30	30
MINERAL FUELS AND RELATED MATERIALS					
Gas, natural:					
Gross million cubic meters	29,783	30,320	30,265	31,080	33,259
Dry do.	23,163	24,128	24,037	25,189	27,086
Natural gas liquids ^e thousand 42-gallon barrels	7,000	7,100	7,100	6,000	6,000
Petroleum:					
Crude and condensate do.	269,242	259,293	276,971	296,600	315,575
Refinery products:					
Liquefied petroleum gas do.	630	915	915	862	862
Gasoline do.	5,078	3,908	6,514	6,604	6,426
Jet fuel and kerosene do.	2,339	2,160	3,037	3,225	2,720
Distillate fuel oil do.	6,750	2,849	8,132	6,662	6,639
Residual fuel oil do.	14,947	13,177	18,561	19,697	15,685
Other do.	1,283	1,661	510	1,195	1,527
Total do.	31,027	24,670	37,668	38,245	33,859

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through July 31, 2011.

TABLE 2
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum		Sohar Aluminium Co. [Oman Oil Co. S.A.O.C., 40%; Abu Dhabi Energy Co. (Taqa), 40%; Rio Tinto Alcan, 20%]	Smelter at Sohar	360,000
Cement		Oman Cement Co. S.A.O.G. (Ministry of Commerce and Industry, 30.4%)	Kilns and mills at Rusayl	2,500,000
Do.		Raysut Cement Co.	Kilns and mills at Salalah	2,700,000
Chromite		Hatton FZE	Mines south of Muscat	200,000
Do.		Gulf Mining and Materials Co.	Wadi Mahram area	200,000
Do.		Oman Chromite Co. S.A.O.G. (Ministry of Commerce and Industry, 15%)	Mines near Sohar	200,000
Do.		Al Tamman Trading Establishment L.L.C.	Al Ram Mine and Wadi Rajmi Mine	250,000
Clays		NA	NA	185
Copper:				
Ore		Mawarid Mining L.L.C. (MB Holding Co. L.L.C., 100%)	Open pit mines at Ajib and Shinas	80,000
Refined metal		Oman Mining Co. L.L.C. (Government, 100%)	Lasail, near Sohar	16,000
Gold:				
Ore		Mawarid Mining L.L.C. (MB Holding Co. L.L.C., 100%)	Open pit mines at Ajib and Shinas	NA
Metal	kilograms	Oman Mining Co. L.L.C. (Government, 100%)	Lasail, near Sohar	100
Gypsum		Cement Gypsum Products Co. S.A.O.G., Global Mining Co. L.L.C., and Gulf Mining and Materials Co.	Buraimi and Thumriat	180
Iron and steel:				
Iron ore (laterite)		Gulf Mining and Materials Co.	Barka	300,000
Crude steel		Modern Steel Mills L.L.C. (Oman International Development and Industrial Co. S.A.O.G., Assarain Group of Companies, Dharamsey Group, and others)	Rusayl	84,000
Do.		Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	Sohar	1,500,000
Rolled steel products (rebar)		Sharq Sohar Steel Rolling Mills L.L.C.	do.	250,000
Do.		Hadid Majan L.L.C.	Bait Al Falaj	100,000
Rolled steel products (tubes)		Al Jazeera Tube Mills Co. S.A.O.G.	Sohar	300,000
Limestone		Oman Cement Co. S.A.O.G. (Ministry of Commerce and Industry, 30.4%)	Rusayl	2,400,000
Marble		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 the Wilayat of Ibri and the Buraimi area	450,000
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%]	Gasfields and oilfields with associated natural gas in the Kauther/Yibal, the Saih Niyahda, and the Saih Rawl clusters	27,000
Natural gas, liquefied	do.	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.	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%; Mistubishi Corp., 3%; Oskas Gas Co. Ltd., 3%; Itochu Corp., 3%)	One train at Qalhat	3,300,000

See footnotes at end of table.

TABLE 2—Continued
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:				
Crude	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, the Fahud, the Harweel, the Lekhwair, the Marmul, the Nimr, the Qarn Alam, and the Yibal clusters	900,000
Do.	do.	Oxy 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	55,000
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, the Daleel, the Mezoon, and the Shadi fields	16,000
Do.	do.	Occidental Mukhaizna, L.L.C. [Occidental Petroleum Corp., 45%; Oman Oil Corp. S.A.O.C., 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	8,500
Do.	do.	Partnership of LG International Corp., 50%; Indago Oman Ltd., 40% (operator); Eagle Energy (Oman) Ltd., 10%	Block 8, Bukha field	1,100
Refined	million barrels per year	Oman Refineries and Petrochemicals Co. L.L.C. (ORPC) (Ministry of Finance, 75%, and Oman Oil Co. S.A.O.C., 25%)	Refinery at Sohar	41
Do.	do.	do.	Refinery at Mina Al-Fahal	39
Quartz		Gulf Stone Co. S.A.O.G.	Sohar	180
Salt, crude, industrial		Modern Salt Co. L.L.C.	Wilayat of Ibri	10
Sand		NA	NA	20
Silver	kilograms	Oman Mining Co. L.L.C.	Sohar and Yankul	50

Do., do. Ditto. NA Not available.