



# 2011 Minerals Yearbook

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## QATAR

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# THE MINERAL INDUSTRY OF QATAR

By Mowafa Taib

Qatar was a major producer of crude oil, direct-reduced iron (DRI), helium, natural gas, and urea in 2011. Qatar continued to be the world's leading exporter of liquefied natural gas (LNG). The country was the world's fifth ranked producer of natural gas after the United States, Russia, Canada, and Iran and accounted for 4.5% of the world's output. Qatar's proved natural gas reserves, which were estimated to be 25.1 trillion cubic meters (884.5 trillion cubic feet) at the end of 2011, accounted for 12.0% of the world's total natural gas reserves and were the world's third largest reserves after those of Russia and Iran. Qatar contributed 1.8% of the world's supply of crude oil, and its crude oil reserves were estimated at the end of 2011 to be about 24.7 billion barrels, or 1.5% of the world's total reserves. Qatar was also one of the world's top producers of helium and urea. Other mineral commodities produced in Qatar included such metals as aluminum, concrete-reinforcing bar (rebar), continuous cast billet, and crude steel as well as such industrial mineral commodities as cement, gypsum, lime, limestone, sulfur, and washed sand (Apodaca, 2012; BP p.l.c., 2012, p. 6, 8, 20, 22; Madrid, 2012).

## Minerals in the National Economy

In 2011, the Qatari economy grew at a rate of 13.0% in real terms compared with a 16.7% growth rate in 2010. The main drivers of Qatar's economic growth were high oil prices and increases in production and exports of aluminum, crude oil, fertilizer, LNG, and refined petroleum products. The share of the hydrocarbon sector in the Qatari economy was about 57.7% of the gross domestic product (GDP) at current prices compared with about 51.7% of the GDP in 2010. Hydrocarbon sector activity increased in nominal value by 52% in 2011 compared with an increase of 50% in 2010. The activities of the nonhydrocarbon sector, which accounted for 42.3% of the GDP at current prices, increased by 19% in 2011 compared with an increase of about 14% in 2010. Industrial sector activity, which included the production of aluminum, cement, fertilizer, iron and steel, and refined petroleum products, accounted for 9.8% of the GDP. The industrial sector increased in value by 17% in 2011 compared with an increase of about 14% in 2010. Construction sector activity, which accounted for 3.6% of the GDP, increased in value by 6.5% compared with an increase of 6.6% in 2010. The share of the natural gas liquids (NGL) subsector in Qatar's industrial sector in terms of value was 37%, followed by refined petroleum products, 32%; petrochemicals, 17%; metals, 8%; and fertilizers, 6% (QNB Capital L.L.C., 2012, p. 14, 20, 61–63).

## Production

The most notable increases in mineral production in 2011 were aluminum, production of which increased by about 153% because Qatar's first aluminum smelter was producing at full capacity; sulfur, 56%; natural gas, 21%; methanol, 16%; and

crude oil and rolled steel bar, about 10% each. The volume of output of ammonia, cement, crude steel, DRI, and urea also increased in 2011 compared with that of 2010. Production of residual fuel oil and washed sand decreased by 29% and 20%, respectively (table 1).

## Structure of the Mineral Industry

The Natural Resources Law No. 3 of 2007 grants the state ownership of and exploitation rights to the country's natural resources. The Ministry of Industry and Energy controls the country's crude oil and natural gas policy under the consent of the Emir of Qatar. Qatar Petroleum (QP) is the Government-owned company responsible for managing all aspects of natural gas and crude oil development, exploration, production, and transportation in the country through its subsidiaries and joint ventures. The company operates onshore sites at Doha, Dukhan, Mesaieed Industrial City, and Ras Laffan Industrial City, and offshore sites at Halul Island and the North gasfield. QP had signed several exploration, development, and production-sharing agreements on behalf of the State of Qatar with such international oil companies as ConocoPhillips Co., Exxon Mobil Qatar Inc., and Occidental Petroleum of Qatar Ltd. (all of the United States); LNG Japan Corp. and Mitsui & Co. Ltd. (both of Japan); Royal Dutch Shell p.l.c. of the United Kingdom; and Total E&P Qatar Ltd. of France to operate and produce LNG from the North field. QP's subsidiaries included Qatar Petroleum Qatar Gas (3) Ltd., Qatar Petroleum Qatar Gas (4) Co. Ltd., and Qatar Petroleum RasGas (3) Ltd., The company had majority interest in a number of joint ventures, including Barzan Gas Co. Ltd. (93%); Qatargas Operating Co. Ltd. and Rasgas Co. Ltd. (70% each); Qatar Liquefied Gas Co. Ltd. 2 Q.S.C. (Qatargas 2) (67.5%); Ras Laffan Liquefied Natural Gas Co. Ltd. 2 (Rasgas 2) (67.1%); Qatar Liquefied Gas Co. Ltd. Q.S.C. and Qatar Upstream joint venture (not yet incorporated) (65% each); Ras Laffan Liquefied Natural Gas Co. Ltd. (Rasgas) (63%); and Laffan Refinery Co. Ltd., Oryx GTL Ltd., Qatar Chemical Co. Ltd. Q.S.C., and Qatar Chemical Co. Ltd. II (51% each). Some of QP's subsidiaries created their own joint ventures, which included Qatar Fertilizer Co. S.A.Q. Ltd., Qatar Liquefied Gas Co. Ltd. 3 (Qatargas 3), Qatar Liquefied Gas Co. Ltd. 4 (Qatargas 4), Qatar Petrochemical Co. Ltd. (Qapco), and Ras Laffan Liquefied Natural Gas Co. Ltd. 3 (Rasgas 3) (Qatar Petroleum, 2012, p. 8–9).

Industries Qatar Q.S.C., which was one of QP's majority-owned companies, held a 100% interest in Qatar Steel Co. Q.S.C. (Qasco), an 80% interest each in Qatar Nitrogen Co. and Qatar Petrochemical Co. (Qapco), a 75% interest in Qatar Fertilizer Co. S.A.Q. (Qafco), and a 50% interest in Qatar Fuel Additives Co. Ltd. Q.S.C. (Qafac). Qatar Aluminium Ltd. (Qatalum) was a 50-50 joint venture of QP and Norsk Hydro A.S.A of Norway (table 2; Industries Qatar Q.S.C., 2012a; Qatar Aluminium Ltd., 2012; Qatar Petroleum, 2012, p. 8–9).

## Mineral Trade

The value of Qatar's exports of goods increased by about 49% to \$114.3 billion in 2011 from revised \$74.8 billion in 2010. Exports included natural gas (LNG and piped) valued at \$42.4 billion; crude oil, \$26.4 billion; natural gas liquids (NGLs), \$8.5 billion; refined petroleum and gas-to-liquids (GTLs), \$7.4 billion; petrochemical products, \$3.9 billion; metals, \$1.9 billion; and fertilizer, \$1.5 billion. The volume of natural gas exports increased to about 123 billion cubic meters from about 120 billion cubic meters in 2010. Japan was the leading importer from Qatar, followed by the Republic of Korea, India, Singapore, and the United Kingdom. The spot Organization of Petroleum Exporting Countries (OPEC) reference basket price for Qatar Marine crude averaged \$106.23 per barrel in 2011 compared with an average of \$78.18 per barrel in 2010. The volume of crude oil exports, which was 588,000 barrels per day (bbl/d) in 2011, was slightly higher than that of 2010, which averaged 586,000 bbl/d (Organization of the Petroleum Exporting Countries, 2012, p. 49, 56, 82; QNB Capital L.L.C., 2012, p. 14, 18, 63).

In 2011, Qatar's LNG exports amounted to 75 Mt. They were shipped to the Asia and the Pacific region (47%), Europe (42%), North America (6%), other Middle Eastern countries (2%), and South America (1%). Qatar exported 15 Mt of natural gas to the United Arab Emirates through the Dolphin pipeline (QNB Capital, 2012, p. 17).

Qatar emerged as a main swing provider of LNG to Japan to meet Japan's energy needs in the aftermath of the shutdown of most of Japan's nuclear reactors following the earthquake and tsunami that damaged the Fukushima powerplants in 2011. The increased demand for LNG by Japan made up for the decrease in LNG demand from the United States following increased exploitation of shale gas deposits in the United States (QNB Capital, 2012, p. 16).

Qatar was the 64th ranked trading partner of goods with the United States, in terms of the value of trade. It was the 56th ranked market for goods from the United States and the 76th ranked supplier of goods to the United States. The U.S. trade surplus with Qatar was about \$1.6 billion in 2011. U.S. exports to Qatar decreased by 11.5% to about \$2.8 billion from about \$3.2 billion in 2010 whereas U.S. imports from Qatar increased by about 171% to \$1,234 million from \$466 million in 2010. The main U.S. exports of goods to Qatar included aircraft (\$1.2 billion), machinery (\$341 million), and vehicles (\$324 million). Qatar's exports to the United States included LNG (\$830 million), aluminum (\$173 million), nitrogen fertilizer (\$161 million), and sulfur (\$15 million) (Office of the United States Trade Representative, 2012).

Qatar exported ammonia and urea to more than 35 countries. India received 57% of Qafco's ammonia exports, followed by Jordan (23%), South Africa (14%), and Indonesia, Morocco, and the Republic of Korea (2% each). Urea exports went to Australia (19%), Thailand and the United States (14% each), Bangladesh (12%), South Africa (8%), the Philippines and the Republic of Korea (7% each), and other countries (19%) (Qatar Fertilizer Co. Q.S.C., 2012, p. 22).

## Commodity Review

### Metals

**Aluminum.**—Qatalum's aluminum smelter reached its full capacity of 585,000 metric tons per year (t/yr) of primary aluminum in September. The \$6 billion smelter was located at Mesaieed (40 kilometers south of Doha) and had its own 1,370-megawatt powerplant and the option to increase capacity to 1.2 million metric tons per year (Mt/yr). The company planned to increase production to 609,000 t/yr by 2013 and later to 1.2 Mt/yr. Qatalum's smelter consumed 1.3 Mt/yr of alumina, which was shipped in 42,000-metric-ton (t) shipments from alumina refineries in Australia and Brazil that were partially owned by Norsk Hydro (Qatar Aluminium Ltd., 2012).

**Iron and Steel.**—Qasco's production of DRI and steel increased slightly in 2011 compared with that of 2010. Most of the rebar production was consumed by the domestic market, and about 20% was exported to neighboring Gulf countries. In 2010 (the latest year for which comprehensive information was available), Qasco used 3.25 million metric tons (Mt) of iron ore, which was imported from Brazil by vessels, 317,000 t of scrap (28% of which was from within the plant), 94,000 t of lime, and 44,200 t of ferroalloys (Qatar Steel Co. Q.S.C., 2011, p. 2, 20).

In March, Qasco began construction work for its steelmaking facility at Mesaieed. The expansion project would add 1.1 Mt/yr of steel. Siemens VAI of Germany was building the expansion project, which would be located next to the existing steel plant. The new plant, which was expected to be completed by 2013, would include a 110-t electric arc furnace, a 110-t ladle furnace, and a 6-strand high-speed billet caster coupled with a fume extraction system (QNB Capital, L.L.C., 2012, p. 22).

### Industrial Minerals

**Cement, Lime, and Limestone.**—In 2011, Qatar National Cement Co. (QNCC), which was the leading producer of cement in Qatar, reported an output of 3.9 Mt of washed sand, 3.6 Mt of cement, and 14,400 t of lime. The company commenced production of limestone at its new facility at Umm Bab. The limestone would be used mainly for water desalinization plants by Qatar Electricity and Water Co. (QEWC). QNCC agreed to supply QEWC with calcium carbonate for 25 years from its 75,000-t-capacity plant at Umm Bab (John, 2012).

**Nitrogen.**—Qafco was the leading producer of nitrogen fertilizer in the Middle East and North Africa region. The company produced about 2.3 Mt of ammonia at its four ammonia plants (Ammonia 1–4) and 3.2 Mt of urea at its four urea plants (Urea 1–4). Qafco completed a \$3.2 billion expansion project in 2011, Qafco-5, which would increase the company's production capacity to 3.0 Mt/yr of ammonia and 4.3 Mt/yr of urea in 2012 and would make Qafco the world's largest single-site producer of both ammonia and urea. Qafco-5 was a joint venture of Industries Qatar (75% interest) and Yara International (25% interest). Construction works for a second expansion project, Qafco-6, continued in 2011. Qafco-6 was expected to increase the company's production capacity to 3.8 Mt/yr of ammonia and 5.6 Mt/yr of urea. The second expansion project was expected to be completed by 2012, and

the total cost was estimated to be \$610 million (Industries Qatar Q.S.C., 2012b; QNB Capital L.L.C., 2012, p. 22).

### **Mineral Fuels and Related Materials**

**Helium.**—Construction of the second helium production plant in Qatar, Qatar Helium 2, moved forward and was expected to be completed in 2013. The Qatar Helium 2 project was a joint venture of Qatargas 2, Qatargas 3, Qatargas 4, and Rasgas. The \$500 million project, which would be managed by Rasgas, would have the capacity to produce 38 million cubic meters per year at Ras Laffan. Once completed, Qatar would have the capacity to produce 58 million cubic meters per year, or about one-third of the world's demand for helium. One-half of the helium output from both helium plants would be sold to Air Liquide, 30% would be sold to Linde Industrial Gases (a subsidiary of Linde AG of Germany), and 20% would be sold to Iwatani Corp. of Japan (Air Liquide, S.A., 2010; Qatargas Operating Co. Ltd., 2010).

**Natural Gas.**—QP and ExxonMobil, which was a major partner with QP in several LNG projects and had 20% share in overall LNG production capacity, signed a joint-venture agreement as well as a development and fiscal agreement for the Barzan gas project. The joint venture, Barzan Gas Co. Ltd., was expected to supply about 1.4 billion cubic feet per day (39.7 million cubic meters per day) of natural gas, mainly to power utilities and industrial plants in Qatar (Qatar Petroleum, 2012).

In February, Qatargas became the world's leading LNG producer with the commissioning of its seventh and final train at Ras Laffan, which had the capacity to produce 7.8 Mt/yr of LNG. Train 7 was part of Qatargas 4, which was jointly owned by QP (70%) and Shell (30%). QP signed an exploration and production-sharing agreement with JX Nippon Oil and Gas Exploration (Qatar) Ltd. of Japan for Offshore Block A, which covers an area of 6,173 square kilometers and is located northeast of Ras Laffan Industrial City. JX Nippon would be the contractor and operator of the project. In May, QP signed an agreement with CNOOC Middle East (Qatar) Ltd. of China and Total Group, under which Total would acquire a 25% interest in Qatar's Block BC exploration license and CNOOC Middle East would continue to be the operator of the block and hold a 75% interest in it (Qatar Petroleum, 2012).

Qatar was the world's leading producer of GTL, which was a marketable and transportable liquid fuel made from crude natural gas. Oryx GTL, which was a joint venture of QP and Sasol Ltd. of South Africa, produced 24,000 bbl/d of diesel, 9,000 bbl/d of naphtha, and 1,000 bbl/d of liquefied petroleum gas (LPG). In 2011, Pearl GTL, which was a joint venture of QP and Shell, commenced production at the world's largest capacity GTL plant, Pearl GTL, at Ras Laffan Industrial City; the plant had the capacity to produce 140,000 barrels per day of GTL products and 120,000 bbl/d of natural gas liquids. In June, the first shipment of Pearl GTL products was carried out by Shell, which was the operator of the project (Oil and Gas Journal, 2011; Qatar Petroleum, 2012).

**Petroleum.**—Qatar's production of crude liquid hydrocarbons, including crude oil, condensates, and natural

gas liquids, averaged 1.72 million barrels per day (Mbb/d) in 2011 and was expected to increase to 1.83 Mbb/d by 2013. The Dukhan oilfield, which produced about 230,000 bbl/d of crude oil and condensate, was Qatar's only onshore oilfield. The rest of the active oilfields were located offshore and included the Al Karkara, the Al Khalij, the Al Rayyan, the Al Shaheen, the Bul Hanine, the Idd Al Shargi North Dome, the Idd Al Shargi South Dome, and the Maydan Mahzam oilfields. The number of producing oil wells in Qatar increased by 4 to 517 wells in 2011 from 513 wells in 2010, including 29 wells completed in 2011 compared with 35 wells completed in 2010 (U.S. Energy Information Administration, 2011; Organization of the Petroleum Exporting Countries, 2012, p. 26–27; QNB Capital L.L.C., 2012, p. 18).

In 2011, QP was focusing on expanding the refining capacity of the Laffan condensate refinery at Ras Laffan, which commenced production in 2009 and processed natural gas from the North field to produce gas oil, jet fuel, kerosene, LPG, and naphtha. The 146,000-bbl/d-capacity refinery was operated by Rasgas and controlled by a group of investors, including QP (51%); Cosmo Oil Co. of Japan, ExxonMobil, Idemitsu Kosan Co. Ltd. of Japan, and Total (10% each); and Mitsui and Co. Ltd. and Marubeni Corp. of Japan (4.5% each). QP planned to increase the Ras Laffan refinery's production capacity to 292,000 bbl/d of refined petroleum products by 2016 (QNB Capital L.L.C., 2012, p. 20).

### **Outlook**

The mineral industry of Qatar is expected to continue to grow in the short and long terms. The Government has been investing in the country's mineral fuel sector, economic diversification projects, and infrastructure projects needed to host the FIFA World Cup to be held in Doha in 2022. Qatar has completed its LNG production capacity expansion and is likely to become a major producer of aluminum, helium, steel, and urea.

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TABLE 1  
QATAR: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>  
(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>	2007	2008	2009	2010	2011
<b>METALS</b>					
Aluminum	--	--	10 <sup>r</sup>	190 <sup>r</sup>	480
Iron and steel:					
Direct-reduced iron	1,296	1,638	2,096 <sup>r</sup>	2,157	2,213
Steel, crude	1,175	1,146 <sup>r</sup>	1,566 <sup>r</sup>	1,705 <sup>r</sup>	1,821
Semimanufactures:					
Billet, cast	1,147	1,405	1,448	1,946	2,005
Bars, rolled	958	1,150	1,468	1,650	1,819
<b>INDUSTRIAL MINERALS</b>					
Cement, all types	2,400	3,800	4,100	4,000 <sup>r</sup>	4,300
Gypsum	NA	135	135	135	135
Lime	NA	25	22	19	20
Nitrogen fertilizer:					
N content of ammonia	1,817	1,812	1,828	1,883	1,919
N content of urea	1,363	1,378	1,380 <sup>r</sup>	1,384	1,480
Sand, washed	NA	6,500	7,500	7,600 <sup>r</sup>	6,000
Stone, limestone <sup>c</sup>	1,100	1,100	2,220	1,674	1,674
Sulfur	500	600	658	1,780 <sup>r</sup>	2,780
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Gas, natural:					
Gross	77,200	90,887	102,800	110,205 <sup>r</sup>	130,270
Dry	63,200	77,000	89,300	96,335	116,700
Helium <sup>c</sup>	7,100	12,700	20,000	20,000	20,000
Methanol	884	997 <sup>r</sup>	1,042 <sup>r</sup>	879 <sup>r</sup>	1,022
Natural gas liquids	76,650	73,000 <sup>r</sup>	80,300 <sup>r</sup>	80,300 <sup>r</sup>	85,000
Petroleum:					
Crude and condensates	426,132	502,970	490,925	572,685	628,895
Refinery products:					
Liquefied petroleum gas	43,508	47,888	70,482	112,092 <sup>r</sup>	118,552
Gasoline	17,702	17,228	13,930	16,291	15,878
Kerosene and jet fuel	10,877	9,417	10,900	8,979 <sup>r</sup>	8,405
Distillate fuel oil	9,088	10,877	11,607 <sup>r</sup>	10,038 <sup>r</sup>	10,000
Residual fuel oil	2,847 <sup>r</sup>	1,424 <sup>r</sup>	1,533 <sup>r</sup>	1,752	1,350
Other	47,778 <sup>r</sup>	39,366 <sup>r</sup>	17,848 <sup>r</sup>	11,534 <sup>r</sup>	10,585
Total	131,800 <sup>r</sup>	126,200 <sup>r</sup>	126,300 <sup>r</sup>	160,686 <sup>r</sup>	164,770

<sup>a</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. NA Not available. -- Zero.

<sup>1</sup>Table includes data available through September 30, 2012.

<sup>2</sup>In addition to the commodities listed, clays, dolomite, sand and gravel, and shale are produced, but available information is inadequate to make reliable estimates of output.

TABLE 2  
QATAR: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
Aluminum	Qatar Aluminium Ltd. (Qatalum) (Qatar Petroleum, 50%, and Norsk Hydro ASA, 50%)		Smelter at Mesaieed	585
Cement:				
Portland	Qatar National Cement Co. (Government, 43%, and private Qatari investors, 57%)		4 kilns and 4 mills at Umm Bab	5,650
Do.	Al-Jabor Cement Industries Co.		Clinker grinding mill at Mesaieed	165
White	Qatari Saudi Company for Industrial Transformation		do.	165
Gypsum	Qatari Saudi Company for Gypsum (Qatar Industrial Manufacturing Co., 33.375%; Qatar National Cement Co., 33.250%; National Gypsum Co., 33.375%)		Salwa Industrial Area	135
Helium	Joint venture of Qatar Liquefied Gas Co. Ltd. I (Qatargas 1), Ras Laffan Liquefied Natural Gas Co. Ltd. (Rasgas), and Ras Laffan Liquefied Natural Gas Co. Ltd. (II) (Rasgas II)		Ras Laffan	12,500
Iron and steel:				
Iron, direct reduced	Qatar Steel Co. Q.S.C. (Qasco) (Industries Qatar Q.S.C., 100%)		Mesaieed	2,400
Steel, crude	do.		Plant at Mesaieed	1,470
Steel, rolled	do.		Rolling mill at Mesaieed	1,440
Lime	Qatar National Cement Co. (Government, 43%, and private Qatari investors, 57%)		Kilns at Umm Bab	28
Limestone	do.		Umm Bab	75
Methanol	Qatar Fuel Additives Co. Ltd. Q.S.C. (Qafac) (Industries Qatar Q.S.C., 50%; OPIC Netherlands Antilles N.V., 20%; Lee Chang Yung Chemical Industry Corp., 15%; International Octane Ltd., 15%)		Mesaieed	913
Natural gas:				
Extracted	billion cubic meters	Qatar Petroleum (Government, 100%)	Al Khaleej field	8
Do.	do.	do.	North field	20
Do.	do.	do.	North field Alpha	10
Liquefied	Qatar Liquefied Gas Co. Ltd. 1 (Qatargas 1) (Qatar Petroleum, 65%; Total S.A., 10%; ExxonMobil Qatar Inc., 10%; Mitsui & Co., Ltd., 7.5%; Marubeni Corp., 7.5%)		Three trains at Ras Laffan	10,200
Do.	Qatar Liquefied Gas Co. Ltd. 2 (Qatargas 2) (Qatar Petroleum, 70%, and ExxonMobil Qatar Inc., 30%)		Train 4 at Ras Laffan	7,800
Do.	Qatar Liquefied Gas Co. Ltd. 2 (Qatargas 2) (Qatar Petroleum, 65%; ExxonMobil Qatar Inc., 18.3%; Total S.A., 16.7%)		Train 5 at Ras Laffan	7,800
Do.	Qatar Liquefied Gas Co. Ltd. 3 (Qatargas 3) (Qatar Petroleum, 68.5%; ConocoPhillips Co., 30%; Mitsui & Co. Ltd., 1.5%)		Train 6 at Ras Laffan	7,800
Do.	Qatar Petroleum Qatar Gas (4) Co. Ltd. (Qatargas 4) (Qatar Petroleum, 70%, and Royal Dutch Shell plc, 30%)		Train 7 at Ras Laffan	7,800
Do.	Ras Laffan Liquefied Natural Gas Co. Ltd. (Rasgas) (Qatar Petroleum, 63%; ExxonMobil Qatar Inc., 25%; Korea Gas Corp., 5%; Itochu Corp., 4%; LNG Japan Corp., 3%)		Trains 1 and 2 at Ras Laffan	6,600
Do.	Ras Laffan Liquefied Natural Gas Co. Ltd. 2 (Rasgas 2) (Qatar Petroleum, 70%, and ExxonMobil Qatar Inc., 30%)		Trains 3, 4, and 5 at Ras Laffan	14,300
Do.	Ras Laffan Liquefied Natural Gas Co. Ltd. 3 (Rasgas 3) (Qatar Petroleum, 70%, and ExxonMobil Qatar Inc., 30%)		Trains 6 and 7 at Ras Laffan	15,600
Nitrogen:				
Ammonia	Qatar Fertilizer Co. S.A.Q. (Qafco) (Industries Qatar Q.S.C., 75% and Yara Netherland BV, 25%)		QAFCO 1, Mesaieed	420
Do.	do.		QAFCO 2, Mesaieed	445
Do.	do.		QAFCO 3, Mesaieed	650
Do.	do.		QAFCO 5, Mesaieed	800
Do.	do.		QAFCO 6, Mesaieed	800 <sup>1</sup>
Urea	do.		QAFCO 1, Mesaieed	475
Do.	do.		QAFCO 2, Mesaieed	530

See footnotes at end of table.

TABLE 2—Continued  
QATAR: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Nitrogen—Continued:				
Urea—Continued		Qatar Fertilizer Co. S.A.Q. (Qafco) (Industries Qatar Q.S.C., 75% and Yara Netherland BV, 25%)	QAFCO 3, Mesaieed	895
Do.		do.	QAFCO 4, Mesaieed	1,300
Do.		do.	QAFCO 5, Mesaieed	1,200 <sup>1</sup>
Do.		do.	QAFCO 6, Mesaieed	1,200 <sup>1</sup>
Petroleum:				
Crude	42-gallon barrels per day	Maersk Oil Qatar A.S., operator <sup>2</sup>	Al Shaheen field, offshore	330,000
Do.	do.	Qatar Petroleum (Government, 100%)	Dukhan field, onshore	256,000
Do.	do.	do.	Bul Hanine field, offshore	37,000
Do.	do.	Occidental Petroleum Corp., operator <sup>2</sup>	Idd Al Sharqi, North Dome and South Dome, offshore	113,000
Do.	do.	do.	Al Rayyan, offshore	8,600
Do.	do.	Bunduq Co., Ltd. operator <sup>2</sup> (United Petroleum Development Co. Ltd.)	El Bunduq <sup>3</sup>	7,300
Do.	do.	Total E&P Qatar Ltd., operator <sup>2</sup>	Al Khaleej, offshore	37,500
Do.	do.	do.	Maydan Mahzam field, offshore	36,000
Do.	do.	Qatar Petroleum Development Co. operator <sup>2</sup> (Cosmo Oil Co., Nissho Iwai Corp., and United Petroleum Development Co.)	Al Karkara and A Structure	6,200
Refined	do.	Qatar Petroleum Refinery (Qatar Petroleum, 100%)	Umm Said	200,000
Do.	do.	The Laffan Refinery Co. Ltd. (Qatar Petroleum, 51%; Cosmo Oil Co., 10%; Exxon Mobil Corp., 10%; Idemitsu Kosan Co. Ltd., 10%; Mitsui and Co., 4.5%; Marubeni Corp. 4.5%)	Ras Laffan	138,700
Do.	do.	Oryx GTL Ltd. (Qatar Petroleum, 51%, and Sasol Ltd., 49%)	do.	12,400
Sulfur		Ras Laffan Liquefied Natural Gas Co. Ltd. (Rasgas)	do.	110
Do.		Qatar Petroleum (Government, 100%)	Mesaieed	95
Do.		Qatar Petrochemical Co. (Qapco)	Umm Said	70
Do.		Qatar Liquefied Gas Co. Ltd. (Qatargas)	Ras Laffan	66

Do., do. Ditto.

<sup>1</sup>Under construction.

<sup>2</sup>Operated under a development and production-sharing agreement with Qatar Petroleum.

<sup>3</sup>El Bunduq field is located on the border between Qatar and the United Arab Emirates. Royalties are shared by the Governments.