



# 2014 Minerals Yearbook

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**QATAR**

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# THE MINERAL INDUSTRY OF QATAR

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The State of Qatar, which is a country located in the eastern part of the Arabian Peninsula, covers an area of 12,000 square kilometers (km<sup>2</sup>). In 2014, Qatar continued to play a significant role in the global mineral commodities sector, primarily as the world's leading exporter of liquefied natural gas (LNG), the world's second-ranked helium producer behind the United States, and the world's third-ranked natural gas producer behind the United States and Russia. Qatar was also the world's 4th-ranked urea producer, the world's 8th-ranked direct-reduced iron (DRI) producer, and the world's 11th-ranked ammonia producer. In 2014, Qatar was the world's 14th-ranked aluminum producer. By yearend, Qatar had a small number of large-scale industrial facilities, including metal production facilities, and produced moderate amounts of crude steel. In 2014, implementation of the Government's policies to diversify the industrial sector progressed at a slower pace than in neighboring countries, such as Oman and Saudi Arabia, which were supported by growth outside of the hydrocarbon sector. Qatar accounted for 5.1% of the world's total natural gas production in 2014. By yearend, Qatar held the third-ranked proved natural gas reserves in the world behind Russia and Iran; its reserves of natural gas were estimated to be 24.5 trillion cubic meters, or 13.1% of the world's total. In 2014, Qatar was a major crude petroleum and condensate producer and accounted for 2.0% of the world's total. By yearend, the country held 25.7 billion barrels, or 1.5% of the world's proved crude petroleum reserves. The country also produced other mineral commodities, including cement, gypsum, lime, methanol, sand, and sulfur (table 1; MEED, 2014; Qatar Fertilizer Co. Q.S.C., 2014, p. 4; B.P. p.l.c., 2015, p. 6, 8, 20, 22, 28; Midrex Technologies Inc., 2015, p. 8; Organization of the Petroleum Exporting Countries, 2015, p. 8, 97; Qatar National Bank S.A.Q., 2015, p. 3; Apodaca, 2016; Bray, 2016; Hamak, 2016).

## Minerals in the National Economy

Qatar's real gross domestic product (GDP) increased by 6.1% in 2014 compared with an increase of 6.3% in 2013. The country's economic growth in 2014 was led by the nonhydrocarbon sector, which increased by 11.3% owing to increased activities in the construction and services sectors in response to robust Government and private investments in infrastructure. The growth of the hydrocarbon sector decreased by 1.5% owing to decreased crude petroleum production from some of the mature oilfields and decreased global petroleum prices. The price of Qatar's Marine crude stream decreased by 8.5% to \$96.39 in 2014 from \$105.32 in 2013. Qatar's nonhydrocarbon sector accounted for 62% of real GDP in 2014 compared with 59% in 2013. Qatar's mineral sector, which included hydrocarbons, mining, and quarrying, accounted for 38% of real GDP in 2014 compared with 41% in 2013 (International Monetary Fund, 2015, p. 175; Organization of the Petroleum Exporting Countries, 2015, p. 82; Qatar National

Bank S.A.Q., 2015, p. 3, 9; Qatar Ministry of Development Planning and Statistics, 2015b, p. 17, 19).

## Government Policies and Programs

The Government in Qatar had embraced new plans by the mid-2000s that were focused on maintaining growth and responding flexibly to changes in the global economy. The Qatar National Vision (QNV 2030) set long-term economic transformation goals aimed at reducing reliance on the hydrocarbon sector by using conservative monetary policies and large investments in many industrial sectors. The core objective of the QNV is to transform Qatar into a diversified economy by 2030. By yearend 2014, a newly approved law concerning public finance was planned to be enacted by the beginning of 2015. The Public Finance Law No. (2) of 2015, was expected to support the adoption of long-term investment strategies through prioritizing state projects and capitalizing international institutions' best financial practices and standards. The Qatar Organization of Foreign Capital Investment Law No. (13) of 2000 permits foreign investors to own up to 100% of projects that involve the exploitation and development of natural (including mineral) resources and energy and development of the mining sector, contingent upon the Government's approval. The moratorium on new projects in Qatar's North Field (the largest nonassociated natural gas field in the world), which was declared in 2005 and took effect in 2012, was projected to continue until yearend 2015; the ongoing moratorium was expected to result in slower growth in production in the short term (U.S. Department of State, 2015, p. 1, 3–5).

## Production

Qatar's mineral production had several notable changes in 2014 compared with that of 2013. Most significantly, calcium carbonate production increased by 64.7%; iron and steel cast billet, by 50.4%; crude steel, by 36.9%; and washed sand, by 25.5%. Increases were recorded for the production of distillate fuel oil, by 28%, and gasoline, by 21%. Increases were also recorded for the production of cement, by 17.3%; DRI, by 15%; helium, by 14.8%; and lime, by 8.3%. Production of aluminum and sulfur increased slightly. Decreases were recorded for the production of kerosene and jet fuel, by 31%, and residual fuel oil, by 21%. Production of hot-rolled steel bars decreased by 6.3%, and liquefied petroleum gas (LPG) production decreased by 4.2%. Production of ammonia, crude petroleum and condensates, natural gas, and urea decreased slightly (table 1).

## Structure of the Mineral Industry

Qatar Petroleum (QP), which was a state-owned public corporation, owned and operated all exploration, refinery, and

production facilities in Qatar. Through its subsidiaries, QP controlled all aspects of Qatar's upstream and downstream crude oil and natural gas sectors, including the exploration, production, transport, storage, marketing, and sale of crude petroleum, gas-to-liquids (GTL), LNG, and natural gas liquids (NGL), in addition to fertilizers and petrochemicals. Qatargas Co. (Qatargas), a subsidiary of Qatargas Operating Co. Ltd. (OPCO), operated four primary LNG enterprises at Ras Laffan. RasGas Company Ltd. (RasGas) produced helium from two plants at Ras Laffan (table 2; U.S. Energy Information Administration, 2014).

Industries Qatar Q.S.C. (IQ), which was a state-owned company, owned 80% of Qatar Petrochemical Co. Ltd. Q.S.C. (QAPCO) (the remaining 20% of QAPCO shares were owned by Total S.A. of France), and 50% of Qatar Fuel Additives Co. Ltd. Q.S.C. (QAFAC) [the remainder of QAFAC shares were owned by OPIC Middle East Corp. (20%), and International Octane Ltd. and LCY Middle East Corp. (15% each)], which produced mainly methanol, petrochemicals, and sulfur. IQ also owned 75% of Qatar Fertilizer Co. S.A.Q. (QAFCO), and the remaining 25% of QAFCO shares were owned by Yara Netherland BV of the Netherlands, which produced primarily ammonia, urea, and urea formaldehyde condensate (UFC-85). Qatar Steel Co. Q.S.C. (QASCO), which was a wholly owned subsidiary of IQ, produced hot-briqueted iron (HBI) and DRI, steel reinforcing bar (rebar), steel billets, and steel coils, in addition to lime. Qatar Metals Coating Co. W.L.L. (Q-Coat) was a joint venture between QASCO and Qatar Industrial Manufacturing Co. and produced epoxy-coated rebar in its plant at Mesaieed. Qatar Aluminium Ltd. (QATALUM), which was a 50–50 joint venture between QP and Norsk Hydro ASA of Norway, produced primary and secondary aluminum from its smelter at Mesaieed (table 2; U.S. Energy Information Administration, 2014; Industries Qatar Q.S.C., 2015, p. 8, 10–12, 14; Norsk Hydro ASA, 2015; Qatar Steel Q.S.C., 2015, p. 15).

## Mineral Trade

According to the Qatar Ministry of Development Planning and Statistics, mineral fuels, lubricants, and related materials accounted for 90% of Qatar's total exports in 2014. The value of Qatar's total exports of goods (including reexports) decreased by 4.8% in 2014 compared with those of 2013. The year-on-year decrease in total exports was attributed to a 5.1% decrease in mineral fuels and lubricants and to an 8.8% decrease in chemicals and related products. Iron and steel shapes and sections exports increased by 19.8%. Other manufactured iron and steel products exports increased by 100.5%. Exports of chemical fertilizers decreased by 23.7%. Asia was the main destination for Qatar's exports, receiving 81.6% of exported goods in 2014, followed by the countries of the European Union (EU) (8.3%), countries of the Gulf Cooperation Council (GCC) (6.3%), and other countries (3.8%). According to QAFCO, Qatar was a world-leading exporter of urea and accounted for 15% of the world's total urea supply in 2014 (Qatar Fertilizer Co. Q.S.C., 2014, p. 4; Qatar Ministry of Development Planning and Statistics, 2015a, p. 4–6).

The value of Qatar's total imports of goods increased by 13.3% in 2014 compared with those of 2013. Most of the year-on-year increase in total imports was attributed to a 17.6% increase in manufactured goods, a 15.9% increase in chemicals and related products, and a 13.1% increase in machinery and transport equipment. Construction materials imports, including aggregate, cement, crushed stone, and lime, increased by 20%. In 2014, Asia was the main supplier of Qatar's imports of goods and accounted for 33.1%, followed by countries of the EU (28.4%), countries of the GCC (15.9%), the United States (11.4%), and other countries (11.2%) (Qatar Ministry of Development Planning and Statistics, 2015a, p. 8–9, 12).

The value of United States exports to Qatar increased by 4.3% to \$5.17 billion in 2014 compared with \$4.96 billion in 2013. U.S. exports included chemicals, drilling and oilfield equipment, finished metal shapes, industrial engines and machines, and steelmaking materials. The value of United States imports from Qatar increased by 34% to \$1.74 billion in 2014 from \$1.30 billion in 2013 owing to significant increases in the imports of fuel oil, chemical fertilizers, petroleum products, and iron and steel products (U.S. Census Bureau, 2015a, b).

## Commodity Review

### Metals

**Aluminum.**—In 2014, QATALUM recorded a slight increase in its production of aluminum compared with that of 2013. The company produced about 640,000 metric tons (t) of aluminum in 2014 compared with 634,000 t in 2013. Primary foundry alloys accounted for approximately 300,000 t and extrusion ingots accounted for approximately 340,000 t of the company's production in 2014. Nearly one-third of the foundry alloys produced by QATALUM were made from primary aluminum and about two-thirds were made from recycled aluminum. About 60% of the aluminum produced by the company was consumed by the automotive industry. Most of QATALUM's production was exported to 52 countries worldwide, including Asia, which accounted for 50%, followed by Turkey (20%), North America (16%), the Middle East (excluding Qatar) (7%), and other countries (7%). The company's complex in Mesaieed, which covered an area of approximately 2.7 km<sup>2</sup>, comprised a fully integrated aluminum smelter, carbon plant, casthouse, and gas-operated powerplant (table 2; Littlegate Publishing Ltd., 2015; Norsk Hydro ASA, 2015; Qatar Aluminium Ltd., 2015a, b).

**Iron and Steel.**—QASCO was the sole iron and steel production company in Qatar. QASCO's production of DRI increased to 2.745 million metric tons (Mt) in 2014 from 2.386 Mt in 2013. Crude steel output increased significantly to 3.474 Mt in 2014 from 2.536 Mt in 2013 owing to QASCO's commissioning of its fifth electric arc furnace (EAF) with a production capacity of 1.04 million metric tons per year (Mt/yr). In addition to increasing production capacity, the new EAF was expected to be the most energy efficient compared with other QASCO EAFs. The new EAF was expected to consume 540 kilowatt-hours (kWh) of energy compared with 700 kWh for the previously installed EAFs. QASCO implemented improvements and modifications to its operations

in 2014 in order to respond more efficiently to market demands. By yearend, QASCO developed a new high-strength rebar that was expected to reduce the cost and increase the efficiency in construction works by about 20% to 25%. QASCO also developed a new wire rod for welding, which was expected to decrease the country's reliance on imports of this type of wire rod that came mainly from China and India. QASCO supplied 88% of the rebar for Qatar and 15% for the countries of the GCC in 2014. QASCO used recycled scrap for 10.9% of its steel input in 2014 compared with 13.1% in 2013 owing to the decreased availability of scrap and increased prices for scrap locally (table 1, 2; Qatar Steel Q.S.C., 2015, p. 14, 15, 28, 31–32, 36, 49).

### *Industrial Minerals*

**Cement.**—In 2014, increased activities in Qatar's construction sector were expected to provide opportunities for growth in the cement sector. The expected growth in Qatar's cement sector was part of the implementation of the QNV 2030 development plan. Qatar's cement production increased to 6.1 Mt in 2014 compared with 5.2 Mt in 2013. Qatar National Cement Co. (QNCC) accounted for 57% of ordinary portland and sulfate-resistant cement produced in Qatar. The company produced about 3.5 Mt of cement in 2014, which was a slight increase from the previous year's production of 3.4 Mt. QNCC was pursuing efforts to increase its cement production to respond to the projected expansion in the domestic construction sector. In April, QNCC signed a \$275 million agreement with Fives Group of France to carry out a new cement development project. The new project, which was expected to be completed by yearend 2016, was planned to have the capacity to produce about 1.8 Mt/yr of clinker (table 1, 2; Watts, 2014; Qatar National Cement Company Q.S.C., 2015, p. 5).

Al Khalij Cement Co. (a subsidiary of Qatari Investors Group) accounted for 34% of cement production in Qatar. The company produced 2.1 Mt of cement in 2014, which was a 17% increase compared with that of 2013. By yearend, Al Khalij Cement embarked on plans to increase its clinker capacity by 2.1 Mt/yr by yearend 2015. The company continued plans in 2014 to use EAF dust pellets resulting from QASCO's operations in order to produce clinker. The process was expected to include feeding EAF dust pellets with other raw materials, including bauxite, limestone, and sand, to produce clinker. Al Khalij Cement was expected to use 109,500 metric tons per year of EAF dust pellets from QASCO in its clinker production in order to decrease reliance on imported iron ore (table 2; Qatari Investors Group, 2015, p. 25–26; Qatar Steel Q.S.C., 2015, p. 54).

**Nitrogen.**—In 2014, QAFCO was the sole producer of ammonia and urea in the country. QAFCO produced 3.6 Mt of ammonia from six ammonia production units in Mesaieed that had a combined capacity of 3.8 Mt, and produced 5.5 Mt of urea from six urea production units that had a combined capacity of 5.6 Mt. QAFCO consumed a notable portion of its ammonia to produce urea. Combined with decreased global urea prices, the cost to produce urea at QAFCO's plants increased owing to increased rates for natural gas supplied by QP in 2014. Because of the increase in the prices of ammonia and the decrease in the prices of urea globally in 2014, however, QAFCO increased its

production of ammonia and decreased its production of urea in one of its plants. By yearend, QAFCO exported 15% of its ammonia production and 97% of its urea production. QAFCO's exports of ammonia went mainly to India and South Africa, and its exports of urea went mainly to the United States and Brazil (table 2; Qatar Fertilizer Co. Q.S.C., 2014, p. 4; 2015, p. 19–22).

### *Mineral Fuels and Related Materials*

**Helium.**—In 2014, Qatar produced about 46 million cubic meters of helium compared with about 40 million cubic meters in 2013. Qatar was the world's leading helium exporter in 2014, according to RasGas, which commenced production in its second helium plant, Helium 2, in 2013. Combined, Helium 1 and Helium 2, which are located in Ras Laffan, had a total capacity of 55.4 million cubic meters per year of liquefied helium. RasGas invested in Qatar's North Field. Qatar accounted for about 25% of the world's helium output and 26% of the world's helium reserves in 2014 (table 1, 2; Chemicals Technology, 2015; RasGas Company Ltd., 2015a, p. 9; 2015b, p. 11–12).

**Natural Gas.**—In 2014, Qatar accounted for 33% of the world's LNG supply and exported about 103 billion cubic meters of LNG through vessels to 27 countries worldwide. Qatar's gross natural gas production decreased slightly in 2014 compared with that of 2013 owing to scheduled closures for maintenance at several natural gas facilities. Qatar produced about 180 million cubic meters of gross natural gas in 2014 compared with about 184 million cubic meters in 2013. The country produced about 177 million cubic meters of dry gas in 2014, which was a slight increase compared with that of 2013. Qatar exported about 123 million cubic meters of natural gas in 2014 (table 1; B.P. p.l.c., 2015, p. 28; Organization of the Petroleum Exporting Countries, 2015, p. 8).

In 2014, Qatargas produced 55.7 billion cubic meters of LNG compared with 56.4 billion cubic meters in 2013 from its four operational lines: Qatargas 1, Qatargas 2, Qatargas 3, and Qatargas 4. Asia received 70% of Qatargas' LNG exports in 2014, followed by Europe (24%), the Americas (4%), and the Middle East (2%). Qatargas implemented several internal processes to increase efficiency and to maintain production at the current levels in 2014, including drilling new offshore natural gas wells and constructing onshore facilities. Qatargas delivered its first shipment of LNG to the China National Oil Corp. (CNOC) at the new Hanian LNG terminal in August (B.P. p.l.c., 2015, p. 28; Qatargas Operating Co. Ltd., 2015, p. 10, 23–26; Qatar Petroleum, 2015, p. 11, 26).

RasGas, which produced 51.2 billion cubic meters of LNG in 2014 from seven LNG trains, operated the Al Khaleej Gas Project (AKG) and supplied natural gas to domestic beneficiaries. In 2014, AKG's average production of natural gas was about 55 million cubic meters and accounted for condensate, liquefied petroleum gas (LPG), and sulfur exports to markets worldwide. By yearend, QP completed the first phase of the Ras Laffan Port expansion project. The project was expected to have a storage capacity of about 106 billion cubic meters of LNG, including condensate and other liquid products (Qatar Petroleum, 2015, p. 60; RasGas Company Ltd., 2015b, p. 11–13).



The Barzan Gas development project, which was a \$10.3 billion LNG investment project, was expected to contribute significantly to meeting Qatar's increasing demand for energy and constitute a crucial segment of the QNV 2030 strategy. Construction work on the LNG Train 1 of the project was more than 95% complete by yearend, whereas work on the LNG Train 2 continued. QP, through its subsidiary Qatargas, held 93% of the joint venture with Exxon Mobil Corp. of the United States, which held the remainder of the stake through its subsidiary ExxonMobil Barzan. The joint venture planned to appoint RasGas as the manager and the operator of the development project when it was completed. The Barzan gas plant was expected to receive raw gas from a drilling platform that was located in Ras Laffan Industrial City, which was about 80 kilometers (km) inland. The Barzan project was expected to have the capacity to produce 39.62 million cubic meters per day of natural gas by processing the associated natural gas from the North Field, which covered an area of 6,000 km<sup>2</sup> and accounted for 10% of the world's recoverable natural gas reserves. The project was expected to start supplying natural gas to power stations and water desalination plants in the second-half of 2015 (table 1, 2; Peninsula, The, 2014; Qatargas Operating Co. Ltd., 2015, p. 10, 19, 23–27; Qatar National Bank S.A.Q., 2015, p. 6, 11; Qatar Petroleum, 2015, p. 60; RasGas Company Ltd., 2015b, p. 11–13).

**Petroleum.**—The volume of QP's crude petroleum and condensate production decreased to 1.982 million barrels per day (Mbbbl/d) in 2014 from 1.998 Mbbbl/d in 2013. According to statistics published by the Organization of the Petroleum Exporting Countries, Qatar produced an average of 709,200 barrels per day (bbl/d) of crude petroleum in 2014, which was a 2% decrease from the 723,900 bbl/d produced in 2013. All of Qatar's crude petroleum exports went to consumers in Asia and the Pacific (B.P. p.l.c., 2015, p. 8; Organization of the Petroleum Exporting Countries, 2015, p. 28, 49).

Qatar had 500 crude-petroleum-producing wells in 2014, which was a 2.2% decrease compared with that of 2013. Three fields—Al Shaheen, the Dukhan, and the Idd Al-Shargi fields—accounted for more than 85% of the country's crude petroleum production capacity. The main crude streams in the country consisted of the Qatar Land, the Qatar Marine, and Al Shaheen. The Qatar Land and the Qatar Marine were both lighter crudes, whereas the Al Shaheen, which produced 108 million barrels (Mbbbl) in 2014, was slightly heavier. The Qatar Marine and Al Shaheen streams contained a higher percentage of sulfur than the Qatar Land stream. The Idd Al-Shargi oilfield produced 36 Mbbbl in 2014 (U.S. Energy Information Administration, 2014; Organization of the Petroleum Exporting Countries, 2015, p. 26; Qatar Petroleum, 2015, p. 57–58).

Dukhan field, which was one of the largest onshore oil and gas fields in Qatar, had about 327 oil-producing wells in 2014 that QP used to produce and export crude petroleum through the Mesaieed terminal. The Dukhan field supplied condensate and NGL to the Mesaieed refinery. Seismic structural mapping and modeling of the main reservoirs were completed at the Dukhan field by yearend. QP drilled 25 new crude petroleum wells at the Dukhan field in 2014 in order to maintain current production levels. QP operated two offshore production stations—PS–2

and PS–3; both platforms produced crude oil, condensate, and natural gas. Production from the platforms was transported through pipelines to the Halul Island, which is located about 96 km northeast of Doha, in order to be stored and exported (Qatar Petroleum, 2015, p. 47–53).

**Refined Petroleum Products.**—Qatar's output of refined petroleum products decreased by 1.8% to 638,000 bbl/d in 2014 from 650,000 bbl/d in 2013. Qatar's exports of refined petroleum products, on the other hand, increased by 2.2% to 522,000 bbl/d in 2014 from 511,000 bbl/d in 2013. QP operated the first phase of the Laffan refinery, which had the capacity to produce 146,000 bbl/d of refined petroleum products, including 61,000 bbl/d of naphtha, 52,000 bbl/d of kerosene, 24,000 bbl/d of gasoil, and 9,000 bbl/d of LPG. In April, QP started construction of the second phase of the Laffan refinery, which was expected to produce an additional 146,000 bbl/d of refined products by yearend 2016. Qatar's refining capacity was expected to double upon completion of the second phase of refinery construction (Organization of the Petroleum Exporting Countries, 2015, p. 8, 39, 51; Qatar Petroleum, 2015, p. 70–71).

## Outlook

Qatar's economy is expected to grow 7.1% in 2015 and 6.5% in 2016. (International Monetary Fund, 2015, p. 175). A comprehensive look at the future of the mineral industry and production trends in Qatar has to take into consideration the expected effect of implementing the national development plan and the economic diversification policy. The Government is set to concentrate on encouraging investments in the infrastructure, manufacturing, and transportation sectors to meet its objectives. This strategy would provide the framework to achieve medium-term infrastructure-reinforcing projects in preparation for the 2022 FIFA World Cup™ tournament in Qatar. The development trend in the hydrocarbon sector is expected to be driven by the Barzan gas project. The key driver of economic growth is expected to be the nonhydrocarbon sector, as the domestic demand for such construction materials as aluminum, cement, and iron and steel is projected to see a major boost in the short and medium terms. Acceleration in the country's internal energy demand is likely to continue because of the increasing need of the infrastructure projects for manufactured minerals (Qatar Ministry of Development Planning and Statistics, 2015b, p. 2; Qatar National Bank S.A.Q., 2015, p. 6, 11).

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TABLE 1  
QATAR: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>	2010	2011	2012	2013	2014	
<b>METALS</b>						
Aluminum	126	487	628	634	640	
Iron and steel:						
Direct-reduced iron	2,157	2,230	2,420	2,386	2,745	
Semimanufactures:						
Bars, rolled	1,650	1,819	1,910	2,000	1,874	
Billet, cast	1,946	2,005	2,105	2,205	3,318	
Steel, crude	1,705	2,325 <sup>r</sup>	2,442 <sup>r</sup>	2,536 <sup>r</sup>	3,474	
<b>INDUSTRIAL MINERALS</b>						
Calcium carbonate	--	--	75	17	28	
Cement, all types	4,000	5,000	5,500	5,200 <sup>r</sup>	6,100	
Gypsum <sup>e</sup>	135	135	145	150	200	
Lime <sup>e</sup>	95	100	110	120	130	
Nitrogen fertilizer:						
N content of ammonia	1,883	1,919	2,665	2,985	2,952	
N content of urea	1,384	1,480	2,095	2,535	2,530	
Sand, washed	7,600	6,000	4,100	4,700	5,900	
Stone, limestone <sup>e</sup>	1,674 <sup>3</sup>	2,000	2,200	2,200	2,200	
Sulfur	850	850	820	820	850	
Sulfuric acid <sup>e</sup>	10	10	10	10	10	
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Gas, natural:						
Gross	million cubic meters	136,251	150,016	163,025	183,698	180,024
Dry	do.	126,300 <sup>r</sup>	161,100 <sup>r</sup>	170,500 <sup>r</sup>	176,500 <sup>r</sup>	177,200
Helium	do.	20	20	20	40 <sup>r</sup>	46
Methanol		879	1,022	983	1,000	982
Natural gas liquids	thousand 42-gallon barrels	80,300	85,000	81,375	81,375	81,000
Petroleum:						
Crude and condensates	do.	572,685	670,140	717,590	729,270 <sup>r</sup>	723,430
Refinery products:						
Liquefied petroleum gas	do.	112,092	118,552	118,552	130,500	124,962
Gasoline	do.	16,291	15,878	15,500	13,870	16,790
Kerosene and jet fuel	do.	8,979	8,405	8,405	7,884	5,455
Distillate fuel oil	do.	10,038	10,000	11,660	8,139	10,425
Residual fuel oil	do.	1,752	1,350	1,378	2,299	1,825
Other	do.	11,534	10,585	7,811	9,198	9,337
Total	do.	160,686	164,770	163,306	171,890 <sup>r</sup>	168,794

<sup>e</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. -- Zero.

<sup>1</sup>Table includes data available through October 13, 2015.

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

<sup>3</sup>Reported figure.

TABLE 2  
QATAR: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum		Qatar Aluminium Ltd. (QATALUM) [Qatar Petroleum (QP), 50%, and Norsk Hydro ASA, 50%]	Smelter at Mesaieed	640
Cement:				
Portland		Qatar National Cement Co. (QNCC) (Government, 43%, and private Qatari investors, 57%)	4 kilns and 4 mills at Umm Bab	4,400
Do.		Al Khalij Cement Co. (Qatari Investors Group 100%)	Kiln at Umm Bab	2,200
		Al Jabor Cement Industries Co. (Al Jabor Holdings, 75%, and Holcim Ltd., 25%)	2 clinker grinding mills at Mesaieed	900
White		Qatari Saudi Company for Industrial Transformation	do.	165
Calcium carbonate		Qatar National Cement Co. (QNCC) (Government, 43%, and private Qatari investors, 57%)	Umm Bab, 82 kilometers west of Doha	75
Gypsum		Qatari Saudi Company for Gypsum [Qatar Industrial Manufacturing Co., 33.375%; Qatar National Cement Co. (QNCC), 33.250%; National Gypsum Co., 33.375%]	Salwa Industrial Area	135
Helium	million cubic meters	Joint venture of Qatar Liquefied Gas Co. Ltd. 1 (Qatargas 1), Ras Laffan Liquefied Natural Gas Co. Ltd. (RasGas), and Ras Laffan Liquefied Natural Gas Co. Ltd. (II) (RasGas II)	Ras Laffan	55.4
Iron and steel:				
Iron, direct reduced		Qatar Steel Co. Q.S.C. (QASCO) [Industries Qatar Q.S.C. (IQ), 100%]	Mesaieed	2,800
Steel, crude		do.	Plant at Mesaieed	3,500
Steel, rolled		do.	Rolling mill at Mesaieed	1,440
Rebar, coating		Qatar Metals Coating Co. W.L.L. (Q-Coat) [Qatar Steel Co. Q.S.C. (QASCO) and Qatar Industrial Manufacturing Co.]	Plant at Mesaieed	100
Lime		Qatar National Cement Co. (QNCC) (Government, 43%, and private Qatari investors, 57%)	Kilns at Umm Bab	15
Do.		Qatar Steel Co. Q.S.C. (QASCO) [Industries Qatar Q.S.C. (IQ), 100%]	Mesaieed	200
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	1,000
Natural gas:				
Extracted	billion cubic meters	Qatar Petroleum (QP) (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 (QP), 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 (QP), 70%, and ExxonMobil Qatar Inc., 30%]	Train 4 at Ras Laffan	7,800
Do.		Qatar Liquefied Gas Co. Ltd. 2 (Qatargas 2) [Qatar Petroleum (QP), 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 (QP), 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 (QP), 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 (QP), 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 (QP), 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 (QP), 70%, and ExxonMobil Qatar Inc., 30%]	Trains 6 and 7 at Ras Laffan	15,600

See footnotes at end of table.



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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
<b>Nitrogen:</b>				
Ammonia	Qatar Fertilizer Co. S.A.Q. (QAFCO) [Industries Qatar Q.S.C. (IQ), 75%, and Yara Netherland BV, 25%]		QAFCO 1, Mesaieed	900
Do.	do.		QAFCO 2, Mesaieed	900
Do.	do.		QAFCO 3, Mesaieed	1,500
Do.	do.		QAFCO 4, Mesaieed	2,000
Do.	do.		QAFCO 5, Mesaieed	2,000
Do.	do.		QAFCO 6, Mesaieed	2,000
Urea	do.		QAFCO 1, Mesaieed	1,000
Do.	do.		QAFCO 2, Mesaieed	1,000
Do.	do.		QAFCO 3, Mesaieed	2,000
Do.	do.		QAFCO 4, Mesaieed	3,200
Do.	do.		QAFCO 5, Mesaieed	3,850
Do.	do.		QAFCO 6, Mesaieed	3,850
<b>Petroleum:</b>				
Crude 42-gallon barrels per day		Maersk Oil Qatar A.S., operator <sup>1</sup>	Al Shaheen field, offshore	330,000
Do.	do.	Qatar Petroleum (QP) (Government, 100%)	Dukhan field, onshore	256,000
Do.	do.	do.	Bul Hanine field, offshore	37,000
Do.	do.	Occidental Petroleum Corp., operator <sup>1</sup>	Idd Al Shargi, North Dome and South Dome, offshore	113,000
Do.	do.	do.	Al Rayyan, offshore	8,600
Do.	do.	United Petroleum Development Co. Ltd. (Bunduq Oil Production Co. Ltd, 97%, and BP p.l.c., 3%)	El Bunduq <sup>2</sup>	7,300
Do.	do.	Total E&P Qatar Ltd., operator <sup>1</sup>	Al Khaleej, offshore	37,500
Do.	do.	do.	Maydan Mahzam field, offshore	36,000
Do.	do.	Qatar Petroleum Development Co. operator <sup>1</sup> (Cosmo Oil Co., Nissho Iwai Corp., United Petroleum Development Co.)	Al Karkara and A Structure	6,200
Refined	do.	Qatar Petroleum Refinery [Qatar Petroleum (QP), 100%]	Mesaieed	137,000
Do.	do.	The Laffan Refinery Co. Ltd. [Qatar Petroleum (QP), 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	146,000
Sand, washed		Qatar National Cement Co. (QNCC) (Government, 43%, and private Qatari investors, 57%)	Umm Bab	10,000
Do.		Qatar Sand Treatment Plant (Qatar Industrial Manufacturing Co. (Q.S.C.))	do.	1,000
<b>Sulfur:</b>				
Elemental		Ras Laffan Liquefied Natural Gas Co. Ltd. (RasGas)	do.	400
Do.		Qatar Petroleum (QP) (Government, 100%)	Mesaieed	100
Do.		Qatar Petrochemical Co. Ltd. Q.S.C. (QAPCO)	Umm Said	100
Do.		Qatar Liquefied Gas Co. Ltd. Q.S.C. (Qatargas)	Ras Laffan	300
Sulfuric acid		Qatar Industrial Manufacturing Co. (Q.S.C.)	Mesaieed	11

Do., do. Ditto.

<sup>1</sup>Operated under a development and production-sharing agreement with Qatar Petroleum.

<sup>2</sup>El Bunduq field is located on the border between Qatar and the United Arab Emirates. Royalties are shared by the Governments.