



Home > Country Analysis Briefs > Qatar Country Analysis Brief

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[Background](#) | [Oil](#) | [Natural Gas](#) | [Electricity](#) | [Profile](#) | [Links](#)

Qatar

Qatar contains the third largest natural gas reserves and the largest non-associated gas field in the world. Qatar is also emerging as a major exporter of liquefied natural gas. An OPEC member, Qatar exported slightly less than 900,000 barrels per day of oil during the first ten months of 2003.

Note: The information contained in this report is the best available as of November 2003 and may change.



GENERAL BACKGROUND

Since 1995, Qatar has been ruled by Sheikh Hamad bin Khalifa al-Thani. Sheikh Hamad has implemented several changes in policy, including a limited political liberalization creating an elected council and giving women the right to vote. In the economic sphere, Qatar has suffered from many of the same problems as other oil-dependent Persian Gulf states, especially the need to diversify economic development beyond crude oil exports and scale back the generous state subsidies for consumers. However, due to new revenue streams from imports of liquefied natural gas (LNG), as well as its very small population, Qatar has not experienced the erosion of per capita gross domestic product (GDP) which has been seen in Saudi Arabia and some other Persian Gulf oil exporters in recent years.

Qatar's real gross domestic product (GDP) is projected to grow at an annual rate of 5.0% in 2003, after growth of 3.8% in 2002. Growth for 2004 is forecast at 4.7%. This follows a phenomenal growth rate of 11.5% in 2000, which was largely the result of a sharp increase in natural gas exports. Inflation in Qatar remains relatively low, projected at 1.2% for 2003.

Qatar's policy of economic diversification has led to a surge in investment in projects for the export of liquefied natural gas (LNG) and petrochemicals. The government expects that it will be able to earn more per barrel of crude oil produced if it can export refined products and petrochemicals, as well as create private sector jobs -

in a country which has been heavily dependent on government ministries to provide employment for the population.

Qatar has begun to pay down its large external debt, which peaked at nearly \$12 billion in 1999. Qatar accumulated this debt largely for infrastructure investment in oil and gas projects, which sharply increased Qatar's oil production capacity, construction of facilities for the export of LNG, and petrochemical plants.

Qatar recorded a large budget surplus for the 2002/2003 fiscal year, which ended in March 2003. Government spending increased by 14%, after a policy of fiscal restraint the previous two years designed to pay down the country's debts. Surging oil and natural gas export revenues, however, will likely result in a continuation of the budget surplus through the current fiscal year.

In a ruling issued in March 2001, the International Court of Justice resolved the dispute between Qatar and Bahrain over the Hawar Islands and neighboring islands. Sovereignty over the Hawar Islands was awarded to Bahrain, while Qatar retained the neighboring islands of Zubarah and Janan.

OIL

Qatar has proven, recoverable oil reserves of 15.2 billion barrels. The onshore Dukhan field, located along the west coast of the peninsula, is Qatar's largest producing oilfield. Qatar also has six offshore fields, Bul Hanine, Maydan Mahzam, Id al-Shargi North Dome, al-Shaheen, al-Rayyan, and al-Khalij. Qatari crude oil has gravities in the 24^o-41^o API range. The country's two primary export streams are Dukhan (41^o API) and Marine (36^o API) blend. Despite the country's significant oil production and reserves, oil accounts for less than 15% of domestic energy consumption.

Qatar exports almost all of its oil production to Asia, with Japan by far its largest customer. In the first ten months of 2003, net oil exports totaled 898,055 barrels per day (bbl/d). During this period, Qatar produced 928,055 bbl/d of liquids (including crude oil, natural gas liquids, and condensate), up from 840,110 bbl/d in 2002. The reversal of the previous downward trend was the result of ending production cuts undertaken in coordination with OPEC, which had begun in January 2002. The country also produces a significant amount of lease condensate and other natural gas liquids (NGLs), both of which fall outside Qatar's OPEC crude production quota, which has been set at 635,000 bbl/d since November 1, 2003. Production on NGLs has been rising as a byproduct of increased natural gas production.

Following the coup in 1995, Qatar initiated a number of new policies aimed at increasing oil production, locating additional oil reserves before existing reserves become too expensive to recover, and investing in advanced oil recovery systems to extend the life of existing fields. To accomplish this, the government in recent years has improved the terms of exploration and production contracts and production sharing agreements (PSA). The improved terms are designed to encourage foreign oil companies to improve oil recovery in producing fields and to explore for new oil deposits. Foreign companies now account for more than one-third of Qatar's oil production capacity, which is expected to increase to 1.05 million bbl/d by 2006, from its current 850,000-bbl/d capacity.

Onshore Development

In March 1998, Qatar signed an onshore oil exploration agreement with Chevron (now ChevronTexaco), which is still in effect. It is a five-year PSA and exploration agreement, covering a 4,209 square-mile area known as Block-2. Block-2 covers virtually all of the Qatari peninsula except for the Dukhan field. Seismic surveys were conducted in 1998, and drilling commenced in

1999. ChevronTexaco also holds offshore Block-1 jointly with Hungary's MOL.

Offshore Development

One of Qatar's newer oil fields is al-Rayyan, operated by Anadarko Petroleum, which bought the stakes in the project previously owned by BP, BG, Wintershall, and Gulfstream Petroleum in a series of transactions in 2001 and 2002. The field came on stream in November 1996, producing 20,000 bbl/d of heavy oil from four wells. It lies in offshore Block-11 at the southern edge of the North Field near Ras Laffan. The PSA for the field was signed on July 16, 1997. Al-Rayyan has been producing about 35,000 bbl/d in recent months, and Anadarko is planning to raise production capacity at Rayyan to 70,000 bbl/d by the end of 2004.

Qatar's latest offshore oil field to come onstream is al-Khalij. Production began in March 1997, after five years of exploration and appraisal work, at an initial rate of 6,000 bbl/d. Al-Khalij is located in Block-6, along Qatar's maritime border with Iran, and to the east of the North Field. Development of the field had been delayed since 1991 as Elf Aquitaine Qatar, the field's operator, sought improved production sharing terms from Qatar Petroleum (formerly QGPC). TotalFinaElf (the result of mergers between the three French oil majors, including Elf Aquitaine) completed a capacity expansion in early 2002 which brought the field's total production capacity to 60,000 bbl/d. Another series of upgrades currently is in progress, which will expand capacity to 80,000 bbl/d by mid-2004. Al-Khalij produces a medium/sweet (28° API) oil with about 1% sulphur. The oil is piped to Halul Island for processing and transportation. TotalFinaElf holds a 100% interest in the 25-year PSA, with an option for a five-year extension, having acquired ENI's 45% equity stake in May 2002.

Maydan Mahzam became operational in 1965, and its production is currently around 60,000 bbl/d, which is down significantly from its peak. However, Qatar Petroleum is currently undertaking a renovation intended to extend the life of the field. Qatar Petroleum expects the field's production capacity to recover to 75,000 bbl/d by the end of 2004.

Bul Hanine came on line in 1973, producing well over 100,000 bbl/d, but production began falling off in the early 1990s. Current output is around 75,000 bbl/d, with a capacity of 90,000 bbl/d. Upgrades to infrastructure at the field are expected to bring its capacity to 100,000 bbl/d by late 2004. Development plans to boost production include drilling 86 new wells. Bul Hanine holds approximately 700 million barrels of recoverable reserves.

Al-Shaheen, operated by Maersk Oil Qatar of Denmark, has become one of Qatar's productive oil fields, with production capacity of around 130,000 bbl/d, though production in recent months has been around 110,000 bbl/d. Located in Block-5 about 43 miles off Qatar's northeastern coast, al-Shaheen produces a sour (29°-33° API) oil with 1.7%-2% sulphur content. The field is thought to be linked to a section of the North Field. Maersk agreed in February 2001 to expand the field to a production capacity of 200,000 bbl/d by late 2004. More than 70 new wells are being drilled.

Id al-Shargi North Dome (ISND), first discovered by Shell in 1960 and now operated by Occidental Petroleum, lies 59 miles east of Qatar's northern tip. In 1994, the field was producing 12,000 bbl/d when Occidental signed a 25-year PSA with Qatar Petroleum, agreeing to invest \$700 million in field development, reservoir repairs, gas and water injection systems, and further exploration. Output from ISND currently is about 90,000 bbl/d.

In September 1997, Occidental signed another PSA with Qatar Petroleum (then known as QGPC) to develop the Id al-Shargi South Dome (ISSD) oil field. ISSD is located 15 miles from ISND, and

Occidental will operate ISSD as a satellite of ISND, keeping overall per-unit operating costs lower. The field came onstream in November 1999 at 11,000 bbl/d, and it currently is producing around 17,000 bbl/d. Occidental's ownership interest in ISSD is 44%. ISSD is estimated to contain recoverable reserves of 200 million-300 million barrels.

Qatar Petroleum and Cosmo Oil concluded a contract in October 2003 for the development of two small offshore oil deposits, Al-Karkara and A-North. Production from seven wells, four in Al-Karkara and three in A-North, is set to begin in 2005, and reach a peak of about 10,000 bbl/d.

Downstream

Qatar's QP Refinery (formerly known as the National Oil Distribution Company) recently upgraded its refinery at Umm Said. The expansion, completed in early 2002, increased capacity from 57,500 bbl/d to 137,000 bbl/d.

In November 1997, Chevron Phillips Chemical Company signed an \$1.1-billion deal with Qatar Petroleum to build a petrochemical plant, Q-Chem, which was completed in 2002. An project to expand the facility, Q-Chem II, is currently under discussion and planned for completion in 2007. Bids for the project are set to be received in the first half of 2004.

NATURAL GAS

With proven reserves of 509 trillion cubic feet (Tcf), Qatar's natural gas resources ranks third in size behind Russia's and Iran's. Most of Qatar's natural gas is located in the offshore North Field, which is the largest known non-associated natural gas field in the world. In addition, the onshore Dukhan field contains an estimated 5 Tcf of associated and 0.5 Tcf of non-associated gas. Smaller associated gas reserves also are contained in the Id al-Shargi, Maydan Mahzam, Bul Hanine, and al-Rayyan offshore oil fields. The Qatari government believes that the country's economic future lies in developing this vast natural gas potential. Currently, Qatar has two liquefied natural gas (LNG) exporters: Qatar LNG Company (Qatargas); and Ras Laffan LNG Company (Rasgas).

The Qatargas downstream consortium comprises Qatar Petroleum (65%), Total (10%), ExxonMobil (10%), Mitsui (7.5%), and Marubeni (7.5%). In December 1996, the Qatargas venture delivered its first shipment of LNG to Japan. The Qatargas LNG plant consists of three, 2-million-ton-per-year (Mmt/y) (97 billion cubic feet - Bcf) trains. The third train was completed in 1999. Qatargas currently is proceeding with a project to debottleneck its existing liquefaction trains, which is to expand total capacity to 9.2 Mmt/y (446 Bcf) when it is completed in 2005.

Rasgas is Qatar's second LNG project. The two major shareholders in the project are Qatar Petroleum and ExxonMobil. Rasgas consists of two 3.3-Mmt/y (163 Bcf) trains. The first train was completed in early 1999, and loaded its first cargo in August 1999 for South Korea's Kogas, which has a long-term supply contract. The second train came onstream in April 2000. Rasgas contracted with Chiyoda, Mitsui, and Snamprogetti in April 2001 for the construction of the third 4.7-Mmt/y (228 Bcf) train, scheduled for completion in 2004.

Qatar Petroleum and ExxonMobil signed an agreement in October 2003 for the construction of RasGas II, adding 15.6 Mmt/y (756 Bcf) of liquefaction capacity. The facility will comprise two liquefaction trains, with a capacity of 7.8 Mmt/y (378 Bcf) each -- the largest liquefaction trains ever built. The first of the two trains is expected to commence commercial operation in 2008 or 2009. Much of the LNG produced at Qatargas II will be imported into the United States, through import terminals to be built on the Gulf of Mexico, under the 25-year agreement. Reserves of 26 Tcf from the North Field have been earmarked for export through the RasGas II terminal. Qatar

Petroleum will hold a 70% stake in the export terminal, with ExxonMobil holding the remaining 30%.

Qatargas also may undertake another major expansion in the near future. Negotiations are reportedly at an advanced stage for the construction Qatargas II --which like RasGas II would involve two 7.8 Mmt/y (378 Bcf) liquefaction trains, to begin operation in 2008. The project would supply customers in the UK and continental Europe. A preliminary agreement also has been signed with ConocoPhillips for Qatargas III, which would involve 7.5 Mmt/y of liquefaction capacity, aimed at the U.S. market, to begin operation in 2009 or 2010.

Qatar's original markets for its LNG exports were Japan and South Korea, the world's two largest LNG importers. India also may eventually become a major market for Qatari LNG. RasGas signed an agreement in July 1999 to supply 7.5 Mmt/y (365 Bcf/y) of LNG to Petronet, an Indian LNG import and gas distribution project. Deliveries under the Petronet contract are now expected to begin in January 2004. Spain's Enagas also has signed a purchase agreement with Italy's Edison, its first term-contract customer in Europe. Deliveries of 3.5 Mmt/y (170 Bcf) are to commence in 2005.

In May 2000, ExxonMobil and Qatar Petroleum signed a final development and production sharing agreement for the North Field. The Enhanced Gas Utilization (EGU) project will develop upstream infrastructure in a portion of the field for domestic use, export to neighboring Persian Gulf states, and use as a feedstock for petrochemical projects. The initial phase of the project will produce 500 million cubic feet per day (Mmcfd), with eventual capacity slated to rise to 1.75 Bcf/d.

Another significant proposed project will tie Qatar into the United Arab Emirates (UAE) Dolphin Project, an integrated natural gas pipeline grid for Qatar, UAE, and Oman, with a possible subsea connection linking Oman to Pakistan. The United Offsets Group (UOG), a UAE state-owned corporation backing the project, signed preliminary memorandums of understanding with Qatar, Oman, and Pakistan in June 1999. ExxonMobil also signed a preliminary agreement in June 1999 for the natural gas supply from ExxonMobil's production capacity in the North Field. The total project is expected to cost around \$10 billion, including costs associated with the development of more extensive gas distribution networks in the UAE and Oman. Qatar initially will sell around 730 Bcf/y of North Field natural gas, starting in 2006, transported through a subsea pipeline linking the North Field to Abu Dhabi in the UAE. Links between Abu Dhabi, Dubai, and Oman will be added afterwards. UOG announced in March 2000 that TotalFinaElf and Enron had been selected to implement the project, and each would have an equity stake of 24.5%. Enron, however, announced in May 2001 that it was pulling out of the project, and UOG acquired Enron's equity stake, which was resold to Occidental Petroleum in May 2002. The Dolphin Project has been driven in part by the desire of UAE and Oman to use more natural gas for power generation and industrial uses, and the decline in their own production of associated natural gas. Pakistan's participation is highly doubtful, due to its financial condition and the possibility of imports from Iran.

Kuwait also has held discussions with Qatar about the purchase of Qatari gas. A preliminary agreement was signed for gas sales in July 2000, which would source the gas from ExxonMobil's North Field holdings. Details of the project and volumes are still being discussed, and a final agreement has not been reached. Qatar also has held discussions with Bahrain on the possible supply of North Field natural gas, which could be accomplished with a "spur" from the proposed North Field-Kuwait pipeline.

With such vast reserves of natural gas, Qatar has also been interested in potential development of Gas-to-Liquids (GTL) projects. Shell signed a contract with Qatar Petroleum in October 2003 for a

140,000 bbl/d GTL facility to be built at Ras Laffan. The first 70,000 bbl/d of capacity is expected to commence operation by 2009, with the rest in 2010 or 2011. If completed, it will be the world's largest GTL plant.

ELECTRICITY

Qatar currently has an electric generation capacity of 1,475 megawatts (MW), and produces 9.3 billion kilowatthours of electricity per year. Most of the country's power plants are natural gas-fired. The residential sector accounts for about 80% of Qatar's electricity consumption, but this share is likely to decline somewhat as power demand associated with LNG export terminals increases. In response to financial pressures, the Qatari government announced in 1999 that it would limit the provision of free electricity to Qatari-citizen households, with payment required for consumption above a set threshold.

In May 2000, the Qatari government took a major step towards privatization of its power sector. Assets owned by the Ministry of Electricity and Water (MEW) were transferred to the Qatar General Electricity and Water Corporation (QEWC). QEWC is 57% controlled by local investors and 43% controlled by the government.

The Ras Abu Fontas B-plant is the country's largest and newest power and water desalination plant. It currently has an electric generation capacity of 1,030 MW. France's Alstom Power completed an additional 380-MW generation unit at the facility in June 2002.

QEWC awarded a contract in May 2001 for the Ras Laffan Independent Power and Water Project ("Ras Laffan IWPP"), which will be co-located with the Ras Laffan gas and industrial complex. The plant will have a generating capacity of 750 MW when completed in 2004. AES will own a 55% equity stake in the project, with QEWC holding 45%.

Sources for this report include: APS Review of Oil Market Trends; CIA World Factbook; Dow Jones News Wire service; Economist Intelligence Unit ViewsWire; Global Insight Middle East Economic Outlook; Gulf News; Hart's Middle East Oil and Gas; International Market Insight Reports; Oil and Gas Journal; Petroleum Economist; Petroleum Intelligence Weekly; U.S. Energy Information Administration; World Gas Intelligence.

COUNTRY OVERVIEW

Head of State: Sheikh Hamad bin Khalifa al-Thani

Independence: September 3, 1971 (from United Kingdom)

Population (2003E): 811,052

Location/Size: Persian Gulf/4,416 square miles, slightly smaller than Connecticut

Major Cities: Doha (capital), Umm Said, Dukhan, al-Khawr

Languages: Arabic (English widely spoken)

Ethnic Groups: Arab (40%), Pakistani (18%), Indian (18%), Iranian (10%), other (14%)

Religion: Muslim (95%)

ECONOMIC OVERVIEW

Currency: Qatari Riyal

Market Exchange Rate (11/25/03): US\$1 = 3.64 Qatari riyals

Nominal Gross Domestic Product (2003E): \$18.8 billion **(2004F):** \$20.2 billion

Real GDP Growth Rate (2003E): 5.0% **(2004F):** 4.7%

Inflation Rate (consumer prices) (2003E): 1.2% **(2004F):** 2.5%

Current Account Balance (2003E): \$4.5 billion **(2004F):** \$4.6 billion

Major Trading Partners: Japan, United Kingdom, United States, Italy, Germany, France, South Korea

Merchandise Exports (2003E): \$12.0 billion

Merchandise Imports (2002E): \$4.8 billion

Major Export Products: Crude oil, LNG

Major Import Products: Machinery and transport equipment, manufactured goods, food and live animals

ENERGY OVERVIEW

Minister of Energy and Industry: Sheikh Abdullah bin Hamad al-Attiyeh

Proven Oil Reserves (1/1/03E): 15.2 billion barrels

Oil Production (1st ten months of 2003E): 928,055 barrels per day (bbl/d), of which 714,384 bbl/d was crude oil

OPEC Crude Oil Production Quota (effective since 11/1/03): 635,000 bbl/d of crude oil (not including condensate)

Natural Gas Liquids Production (1st ten months of 2003E): 177,671 bbl/d

Oil Consumption (2003E): 30,000 bbl/d

Net Oil Exports (1st ten months of 2003E): 898,055 bbl/d

Crude Oil Refining Capacity (1/1/03E): 137,000 bbl/d

Natural Gas Reserves (1/1/03E): 509 trillion cubic feet (Tcf)

Natural Gas Production (2001E): 1.14 billion cubic feet (Bcf)

Natural Gas Consumption (2001E): 560 Bcf

Net Natural Gas Exports (2001E): 580 Bcf

Electric Generation Capacity (1/1/01E): 1.5 gigawatts

Electricity Production (2001E): 9.3 billion kilowatthours

ENVIRONMENTAL OVERVIEW

Total Energy Consumption (2001E): 0.6 quadrillion Btu* (0.16% of world total energy consumption)

Energy-Related Carbon Emissions (2001E): 9.6 million metric tons of carbon (0.15% of world total carbon emissions)

Per Capita Energy Consumption (2001E): 921.4 million Btu (vs. U.S. value of 341.8 million Btu)

Per Capita Carbon Emissions (2001E): 13.7 metric tons of carbon (vs. U.S. value of 5.5 metric tons of carbon)

Energy Intensity (2001E): 37,063 Btu/\$1995 (vs U.S. value of 10,736 Btu/\$1995)**

Carbon Intensity (2001E): 0.6 metric tons of carbon/thousand \$1995 (vs U.S. value of 0.17 metric tons/thousand \$1995)**

Fuel Share of Energy Consumption (2001E): Natural Gas (90.9%), Oil (9.1%), Coal (0.0%)

Fuel Share of Carbon Emissions (2001E): Natural Gas (88.3%), Oil (11.7%), Coal (0.0%)

Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified April 18th, 1996). Not a signatory to the Kyoto Protocol.

Major Environmental Issues: limited natural fresh water resources are increasing dependence on large-scale desalination facilities.

Major International Environmental Agreements: A party to Conventions on Biodiversity, Climate Change, Hazardous Wastes and Ozone Layer Protection. Has signed, but not ratified, Law of the Sea.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro,

nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP based on OECD Purchasing Power Parity (PPP) figures

OIL AND GAS INDUSTRIES

Organization: Qatar Petroleum - exploration, production, refining and distribution; Qatar Liquefied Gas Company (Qatargas) and Ras Laffan LNG Company (Rasgas) - production and marketing of liquefied natural gas (LNG)

Major Foreign Oil Company Involvement: Anadarko Petroleum, BP, ChevronTexaco, ExxonMobil, Maersk, Marubeni, Mitsui, MOL, Occidental, OMV, Phillips Petroleum, TotalFinaElf

Major Ports: Umm Said, Ras Laffan

Producing Oil Fields: Dukhan, Id al-Shargi North Dome, Bul Hanine, Maydan Mahzam, al-Shaheen, al-Rayyan, and al-Khalij

Major Pipelines: Dukhan-Umm Said, an offshore network connecting Halul Island to al-Khalij, Bul Hanine, and Maydan Mahzam, and Das Island (U.A.E.)-al-Bunduq

Major Refineries (capacity - bbl/d): Umm Said (137,000)

LINKS

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Links to other U.S. government sites:

[CIA World Factbook - Qatar](#)

[U.S. Department of Energy - Office of Fossil Energy - Qatar](#)

[U.S. State Department Consular Information Sheet - Qatar](#)

[U.S. State Department Country Commercial Guide - Qatar](#)

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