

# COUNTRY ANALYSIS BRIEFS

## Bahrain

Last Updated: April 2007

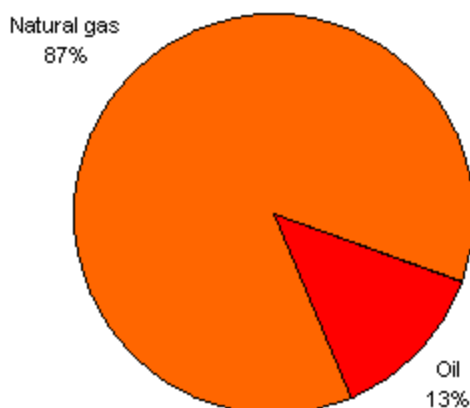
### Background

***Bahrain's oil sector accounts for about three-fourths of total government revenues.***

Bahrain is comprised of a group of small islands linked by causeway to Saudi Arabia, in the energy-rich Persian Gulf. Bahrain's economy is highly dependent on the oil sector, with oil revenues amounting to about three-fourths of total government revenues. While Bahrain is an exporter of oil, it is the smallest Middle East oil producer by volume. Domestically, the vast majority of Bahrain's total energy consumption comes from natural gas, while the balance is supplied by oil.



### Total Energy Consumption in Bahrain, by Type (2004)



Source: EIA International Energy Annual 2004

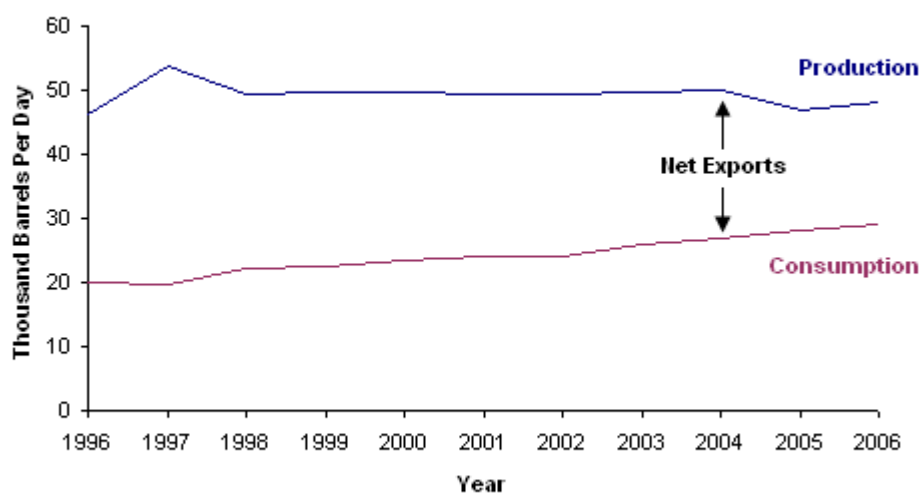
## Oil

**Bahrain exports much of its oil in the form of refined petroleum products rather than crude oil.**

According to *Oil & Gas Journal (OGJ)*, Bahrain's proven oil reserves stood at 125 million barrels as of January 2007, all of which are located in the Awali field. In addition to what is produced in its territory, Bahrain and Saudi Arabia share the 300,000 bbl/d of oil production from the offshore Abu Saafa field. This figure is counted in Saudi oil production figures, but half of the output is given to Bahrain. Separately, Bahrain also purchases Arab Light crude oil from Saudi Arabia via a subsea pipeline, which it refines for export at its Sitra refinery (see the [Saudi Arabia Country Analysis Brief](#) for more information).

In 2006, Bahrain produced an estimated 48,000 bbl/d of total oil liquids, of which 35,000 bbl/d was crude oil, 11,000 bbl/d was natural gas liquids, and 2,000 bbl/d was refinery gain. This amount excludes joint production from the Abu Saafa field, of which Bahrain's share is about 150,000 bbl/d. During 2006, Bahrain consumed an estimated 29,000 bbl/d of oil.

### Bahrain's Oil Production and Consumption, 1996-2006\*



Source: EIA International Energy Annual 2004;  
Short-Term Energy Outlook (April 2007)

\*2006 is estimate

## Sector Organization

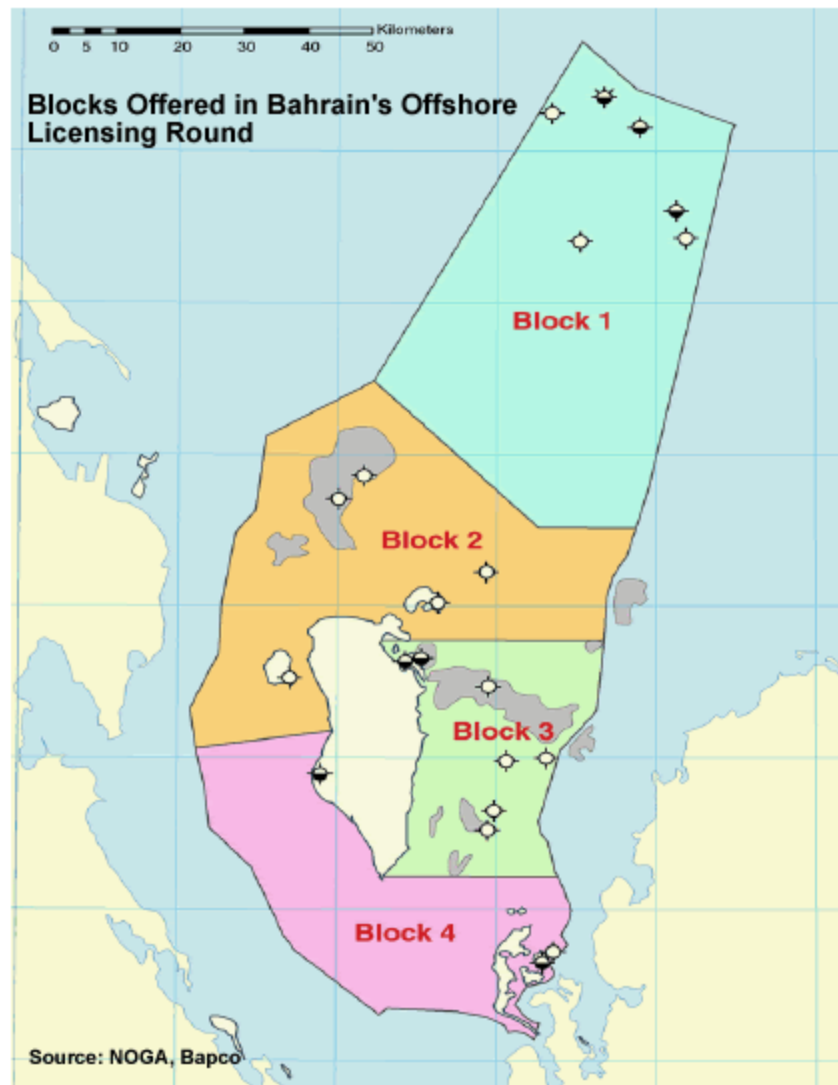
Bahrain's oil sector is dominated by state-owned Bahrain Petroleum Company (Bapco), which is charged with the exploration, production, refining, marketing, and distribution of Bahraini oil for domestic use and the international market. In 2005, Bahrain's government issued a royal decree establishing the National Oil and Gas Authority (NOGA), which replaced the Ministry of Oil. NOGA is the primary body with regulatory and oversight authority as well as policymaking functions for the oil sector. Dr. Abd al-Husayn Mirza was appointed as the Chairman of NOGA. Dr. Mirza also holds the title of Minister of Oil & Gas Affairs, although there is no longer an oil ministry.

### **Exploration and Production**

Bahrain is one of the oldest oil-producing countries in the Persian Gulf. Current crude oil production of 35,000 bbl/d from the Awali field is well below peak production of 75,000 bbl/d in the 1970s. To help offset continuing declines in oil output, Bapco announced that it expects to drill 700 new wells at the Awali field between 2007 and 2015. Company officials have said that they expect the drilling program to increase the field's production capacity by 12,000 bbl/d, which is only likely to offset anticipated declines.

### *Offshore Licensing Round*

To encourage greater foreign investment in Bahrain's upstream oil sector, in March 2007 NOGA announced that it had opened a new licensing round for four offshore exploration and production (E&P) projects. Until 2001, much of the offshore territory in the Gulf of Bahrain was unavailable for E&P work as a result of a territorial dispute with Qatar, which was eventually resolved by the International Court of Justice (see the [Qatar Country Analysis Brief](#) for more information). Aside from the joint offshore development with Saudi Arabia, Bahrain has been slow to explore for oil in its offshore waters. The country lies in a hydrocarbon-rich area in the Persian Gulf, which Bahraini officials hope may lead to further oil and natural gas finds.



### Refining

According to *OGJ*, Bahrain had 250,000 bbl/d of refining capacity at the Bapco-owned Sitra facility. However, NOGA figures show that in 2006 the Sitra plant ran at an average rate of 263,000 bbl/d, slightly higher than its nameplate capacity. The Sitra refinery has undergone several modernization programs. Most recently, Bapco invested \$900 million in a refinery modernization project that, among other things, introduced a 40,000-bbl/d low sulfur diesel unit at Sitra, which allows Bahrain to export to countries where sulfur content is regulated. The government of Bahrain has studied the possibility of building a petrochemical complex alongside the Sitra refinery, but no final decision has been reached on whether or not to proceed with such a project.

### Oil Imports and Exports

Unlike other Gulf states, Bahrain exports refined petroleum products rather than crude oil. Bahrain's domestic oil pipeline network is rather limited, focused primarily on delivering crude oil from the Awali field to the refinery at Sitra. Because domestic production is much lower than the country's refining capacity, Bahrain imports about 225,000 bbl/d of Arab Light crude oil from Saudi Arabia via a subsea pipeline linking the two countries. Bapco refines this crude oil and exports much of it via tanker, with most of Bahrain's exports going to India and other Asian markets. Joint crude oil production from the offshore Abu Saafa field is sold from the Ras Tannurah terminal in Saudi Arabia, the world's largest export terminal.

### Natural Gas

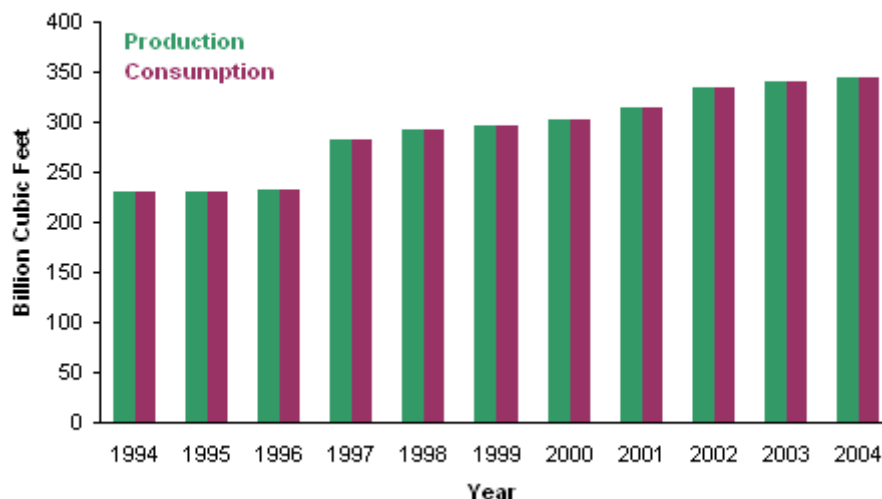
According to *OGJ*, Bahrain's proven natural gas reserves stood at 3.25 trillion cubic feet (Tcf) as

***Bahrain has modest natural gas reserves,***

**and is looking to import natural gas supplies from neighboring countries.**

of January 2007, much of it associated gas from the Awali oil field. In 2004, the country produced and consumed 344 billion cubic feet (Bcf) of natural gas.

**Bahrain's Natural Gas Production and Consumption, 1994-2004**



Source: EIA International Energy Annual 2004

### Sector Organization

Natural gas production and processing is handled by the Bahrain National Gas Company (Banagas), which was established in 1979 to capture associated natural gas at the Awali field that had previously been wasted. Banagas is 75 percent-owned by the Bahraini government, with the remaining share held by the Arab Petroleum Investment Corporation (APIC) and Caltex Bahrain (Chevron).

All of Bahrain's natural gas production is used domestically, either in power plants, enhanced oil recovery (EOR) projects, or in heavy industry where natural gas is used as a feedstock. The largest domestic consumer of natural gas is Aluminum Bahrain (Alba), which is the largest aluminum smelter in the world and also operates a large natural gas-fired power plant.

### Exploration and Production

Natural gas demand in Bahrain is expected to grow in the coming years as a result of greater natural gas requirements for power plants and domestic industry. To help meet rising demand, Bapco is leading an effort to increase the company's natural gas supply by 500 million cubic feet per day (MMcf/d), a 53 percent increase from 2004 levels. Bapco plans to introduce new natural gas production incrementally over the next several years, including drilling new wells and improving natural gas recovery rates at existing fields.

### Natural Gas Imports

Bahrain has also pursued natural gas supply arrangements with neighboring countries. In 2001, Bahrain signed an initial agreement with Qatar for the supply of 500 MMcf/d of piped natural gas from Qatar's massive North Field. However, the agreement was not finalized, and Qatari officials put a moratorium on the signing of further natural gas export deals until the country reevaluated its North Field reserves, which is expected to come in 2008. While a possible final agreement is discussed, Bahraini officials have also held discussions with Iran about importing piped natural gas supplies, although no concrete project plans have emerged from the talks (see the [Iran Country Analysis Brief](#) for more information).

### Electricity

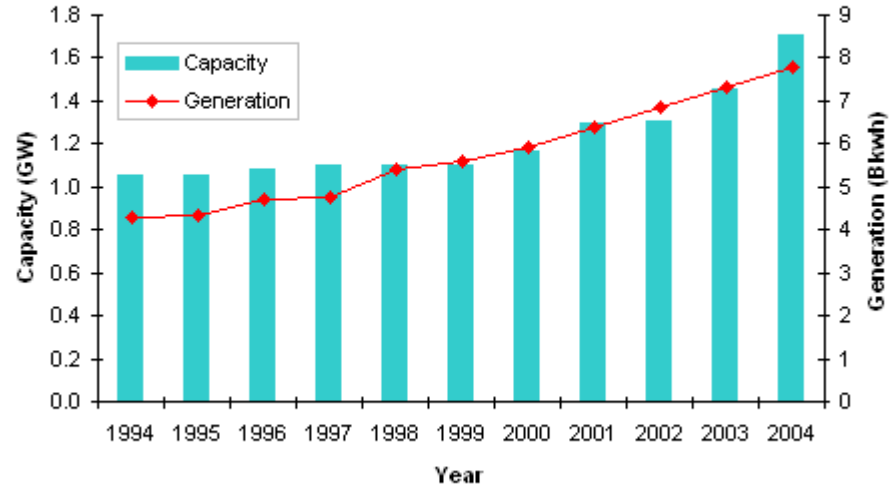
**Bahrain's government expects that the country's electricity demand**

In 2004, Bahrain had 1.7 gigawatts (GW) of installed electric generating capacity, all of which came from conventional thermal sources, and generated 7.8 billion kilowatthours (Bkwh) of electricity. Electricity demand is expected to grow considerably in the future. Officials from Bahrain's Ministry of Electricity and Water (MEW) expect that electricity demand will grow by 7

**will grow by 7 percent annually through 2020.**

percent annually through 2020. To help meet rising demand, Bahrain has encouraged independent power projects (IPPs) and has allowed the privatization of some state-owned power sector assets. Bahrain's first IPP power station, the natural gas-fired Al Ezzel plant, started commercial operations in 2006. Al Ezzel has an initial capacity of 470 megawatts (MW), and is expected to reach peak capacity of 950 MW during 2007. In January 2006, Bahrain's government announced the sale of the state-owned Al Hidd power and desalination plant to a consortium of private companies, which formed the Hidd Power Company (HPC). Al Hidd is the largest power plant in Bahrain, with 965 MW of current generating capacity and plans to expand the facility in the future.

**Bahrain's Electricity Generation and Installed Capacity, 1994-2004**



Source: EIA International Energy Annual 2004

## Profile

### Country Overview

<b>Head of State</b>	King Hamad bin Isa al-Khalifa
<b>Location</b>	Middle East, archipelago in the Persian Gulf, east of Saudi Arabia
<b>Population (July 2006E)</b>	698,585 note: includes 235,108 non-nationals

### Economic Overview

<b>Minister of Industry and Commerce</b>	Hasan bin Abdallah al-Fakhru
<b>Currency/Exchange Rate (April 18, 2007)</b>	1 Bahraini Dinar = \$2.65 US (Fixed)
<b>Inflation Rate (2006E)</b>	2.5%
<b>Gross Domestic Product (GDP, 2006E)</b>	\$15.4 billion
<b>Real GDP Growth Rate (2006E)</b>	7.1%
<b>Exports (2006E)</b>	\$14.0 billion
<b>Exports - Commodities</b>	petroleum and petroleum products, aluminum, textiles
<b>Exports - Partners (2005E)</b>	Saudi Arabia 3.3%, US 2.6%, UAE 2.3%
<b>Imports (2006E)</b>	\$10.0 billion
<b>Imports - Commodities</b>	crude oil, machinery, chemicals
<b>Imports - Partners (2005E)</b>	Saudi Arabia 36.5%, Japan 6.6%, Germany 6.4%, US 5.4%, UK 5%, UAE 4.1%

## Energy Overview

<b>Chairman of National Oil &amp; Gas Authority</b>	Abd al-Husayn Mirza
<b>Proven Oil Reserves (January 1, 2007E)</b>	125 million barrels
<b>Oil Production (2006E)</b>	48,000 barrels per day, of which 73% was crude oil.
<b>Oil Consumption (2006E)</b>	29,000 barrels per day
<b>Crude Oil Distillation Capacity (January 1, 2007E)</b>	248,900 barrels per day
<b>Proven Natural Gas Reserves (January 1, 2007E)</b>	3.25 trillion cubic feet
<b>Natural Gas Production/Consumption (2004E)</b>	344 billion cubic feet
<b>Recoverable Coal Reserves (2004E)</b>	None
<b>Coal Production (2004E)</b>	None
<b>Coal Consumption (2004E)</b>	None
<b>Electricity Installed Capacity (2004E)</b>	1.7 gigawatts
<b>Electricity Production (2004E)</b>	7.8 billion kilowatt hours
<b>Electricity Consumption (2004E)</b>	7.2 billion kilowatt hours
<b>Total Energy Consumption (2004E)</b>	0.4 quadrillion Btus*, of which Natural Gas (87%), Oil (13%)
<b>Total Per Capita Energy Consumption (2004E)</b>	611.5 million Btus
<b>Energy Intensity (2004E)</b>	31,533 Btu per \$2000-PPP**

## Environmental Overview

<b>Energy-Related Carbon Dioxide Emissions (2004E)</b>	22.7 million metric tons, of which Natural Gas (84%), Oil (16%)
<b>Per-Capita, Energy-Related Carbon Dioxide Emissions (2004E)</b>	33.5 metric tons
<b>Carbon Dioxide Intensity (2004E)</b>	1.7 Metric tons per thousand \$2000-PPP**
<b>Environmental Issues</b>	desertification resulting from the degradation of limited arable land, periods of drought, and dust storms; coastal degradation (damage to coastlines, coral reefs, and sea vegetation) resulting from oil spills and other discharges from large tankers, oil refineries, and distribution stations; lack of freshwater resources, groundwater and seawater are the only sources for all water needs
<b>Major Environmental Agreements</b>	Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Wetlands

## Oil and Gas Industry

<b>Organization</b>	Bahrain Petroleum Company (Bapco); Bahrain Natural Gas Company (Banagas)
<b>Major Oil Fields</b>	Awali (35,000 bbl/d)
<b>Major Refineries</b>	Sitra (248,900 bbl/d)

\* 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 figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

## Links

**U.S. Government**

[CIA World Factbook - Bahrain](#)

[US State Department Consular Information Sheet - Bahrain](#)

[US State Department](#)

[US Embassy in Manama, Bahrain](#)

**Foreign Government Agencies**

[Bahrain e-Government Portal](#)

[Embassy of Bahrain in Washington, DC](#)

[National Oil & Gas Authority \(NOGA\)](#)

**Oil and Natural Gas**

[Bahrain National Gas Company \(Banagas\)](#)

[Bahrain Petroleum Company \(Bapco\)](#)

**Sources**

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Global Insight

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Oil & Gas Journal

Petroleum Economist

Petroleum Intelligence Weekly

Platts Oilgram News

Power Engineering International

Power in Asia

Project Finance Magazine

Upstream

U.S. Energy Information Administration

World Gas Intelligence

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