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COUNTRY ANALYSIS BRIEFS

Kuwait

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Background

Kuwait contains 104 billion barrels of proven oil reserves (including its share of the Neutral Zone), or roughly 8 percent of the world's total oil reserves.

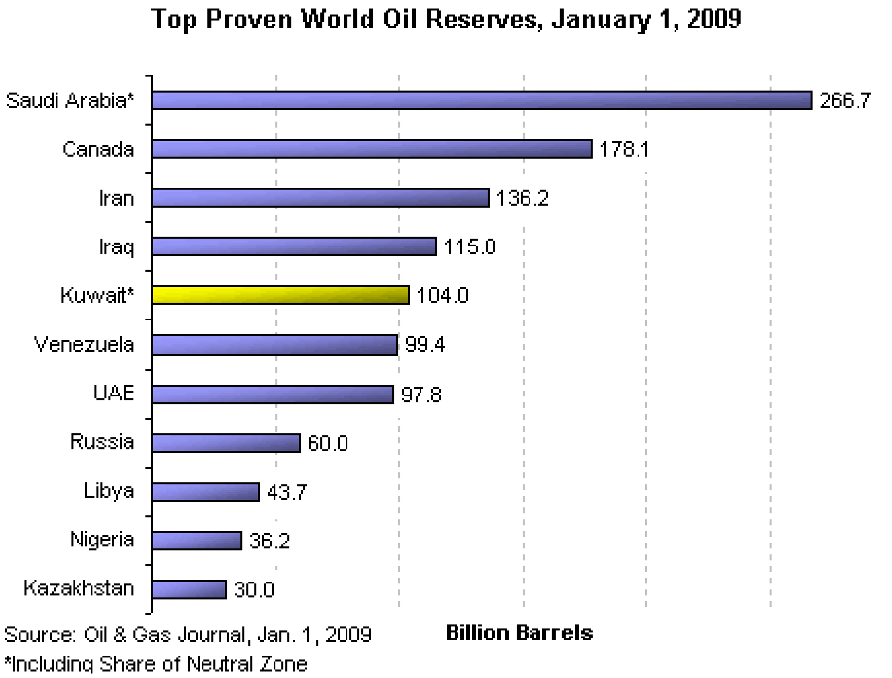
Despite its relatively small size, Kuwait is one of the world's top exporters of oil, with over 2.6 million barrels per day exported in 2007. Kuwait's economy is heavily dependent on oil export revenues which account for roughly 90 percent of total export earnings. Kuwait channels around 10 percent of its oil revenues into the "Future Generations Fund" for the day when oil income runs out. The bulk of this reserve is generally invested in the United States, Germany, the United Kingdom, France, Japan, and Southeast Asia.

The Kuwaiti constitution forbids foreign ownership of Kuwait's mineral resources. The Kuwaiti Parliament passed the "Foreign Direct Investment Act" in 2001, aimed at promoting foreign investment in Kuwait's oil and gas sectors, which facilitated some development in Kuwait's oil and gas sectors. However, major projects such as Project Kuwait remain at a standstill due to disagreements between Parliament and the ruling Al-Sabah family.

Oil

Kuwait is OPEC's fourth largest crude oil producer.

According to *Oil and Gas Journal*, Kuwait's territorial boundaries contain an estimated 101.5 billion barrels (bbl) of proven oil reserves, roughly 8 percent of the world total. The Neutral Zone (a.k.a. Divided Zone), which Kuwait shares 50-50 with Saudi Arabia, holds an additional 5 billion bbl of reserves, bringing Kuwait's total oil reserves to 104 billion bbl. Click here for a map of major oil fields from Kuwait's Ministry of Oil.



The Supreme Petroleum Council oversees Kuwait's oil sector and sets oil policy. The Kuwait Petroleum Council (KPC) manages domestic and foreign oil investments. KOC, nationalized in 1979, is KPC's upstream arm in Kuwait. The Kuwait Gulf Oil Company (KGOC), set up in 2002, oversees the bulk of Kuwait's interests in the Neutral Zone. Most Kuwaiti crude oil is sold on term contracts, with the price of Kuwaiti crude oil tied to Saudi Arabian Medium (for western customers) and a monthly average of Dubai and Oman crudes (for Asian buyers).

Most of Kuwait's oil reserves are located south of Kuwait City. The 70-billion bbl Greater Burgan area, which comprises the Burgan, Magwa and Ahmadi fields, is widely considered the world's second largest oil field, surpassed only by Saudi Arabia's Ghawar field. Producing oil since the 1950's, Greater Burgan generally produces lighter crudes with API's in the 28°-36° range, and has a production capacity of 1.6 million bbl/d. The South Magwa field (discovered in 1984) is estimated to hold at least 25 billion bbl of light crude.

Other fields surrounding the Greater Burgan area include Umm Gudair, Minagish, and Abdaliya. Umm Gudair and Minagish produce heavier crude oil, with gravities in the 22°-26° API range, and have a combined production capacity of 200,000 bbl per day. In January 2003, water injection began at Minagish to offset declines in production.

Northern Kuwait holds the majority of Kuwait's larger fields after Greater Burgan. Kuwait's second largest field, Raudhatain, was discovered in 1955 by KOC, and has 9.55 billion bbl of proven and probable recoverable oil. Raudhatain has the capacity to produce 450,000 bbl of oil per day.

Neutral Zone

The Neutral Zone (NZ) was established in 1922 to settle a territorial dispute between Kuwait and Saudi Arabia. The NZ encompasses a 6,200 square-mile area and contains an estimated 5 billion bbl of oil and 1 trillion cubic feet (Tcf) of natural gas. A Joint Operations Committee, with representatives from both Kuwait and Saudi Arabia, manages the resources in the NZ. Kuwait is represented by the Wafra Joint Operations Group, and Saudi Arabia is represented by Chevron. Oil production capacity in the NZ is currently about 600,000 barrels per day, all of which is divided equally between Saudi Arabia and Kuwait.

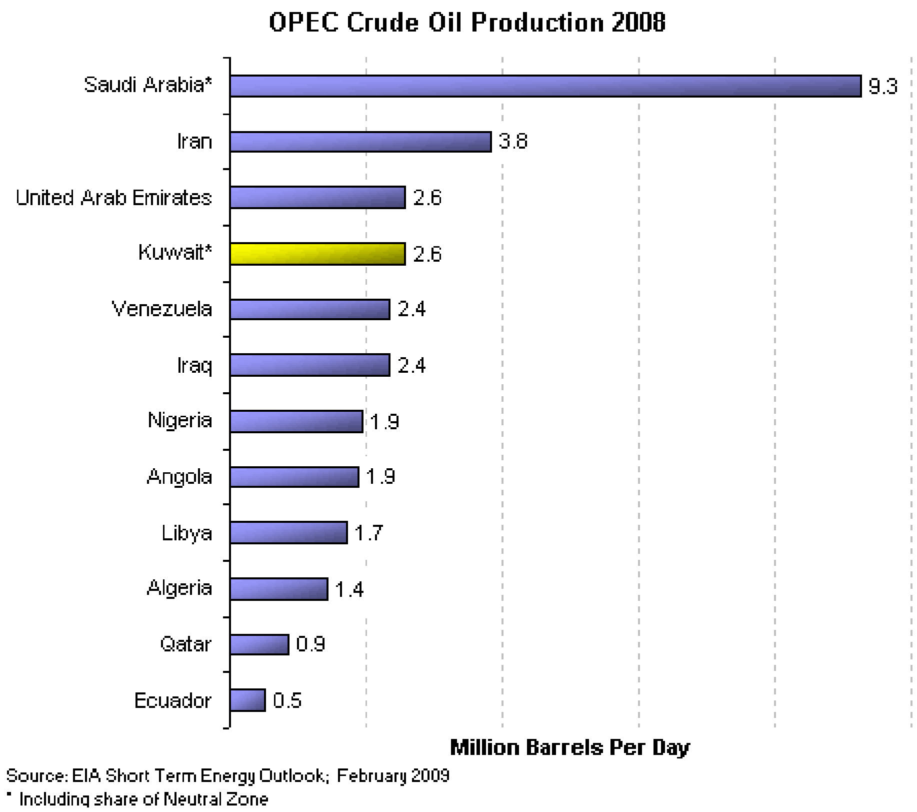
Onshore production in the NZ centers on Wafra. On stream since 1954, Wafra is the largest of the NZ's onshore fields with approximately 3.4 billion in proven and probable reserves. Wafra has related production facilities and gathering centers with South Umm Gudair and South Fuwaris. Onshore production in the NZ has a capacity of around 274,000 bbl/d.

The production capacity of offshore fields in the NZ is 300,000 bbl/d, with almost 90 percent coming from Khafji. Offshore production is about four times as expensive in the NZ as in the rest of Kuwait. Khafji, an extension of Saudi Arabia's Safaniyah (the world's largest offshore field), Hout, also an extension of Safaniyah, and Dorra, an extension of Iran's Arash, are the largest fields. Dorra is not currently under production pending resolution of boundary demarcation negotiations between Kuwait and Iran.

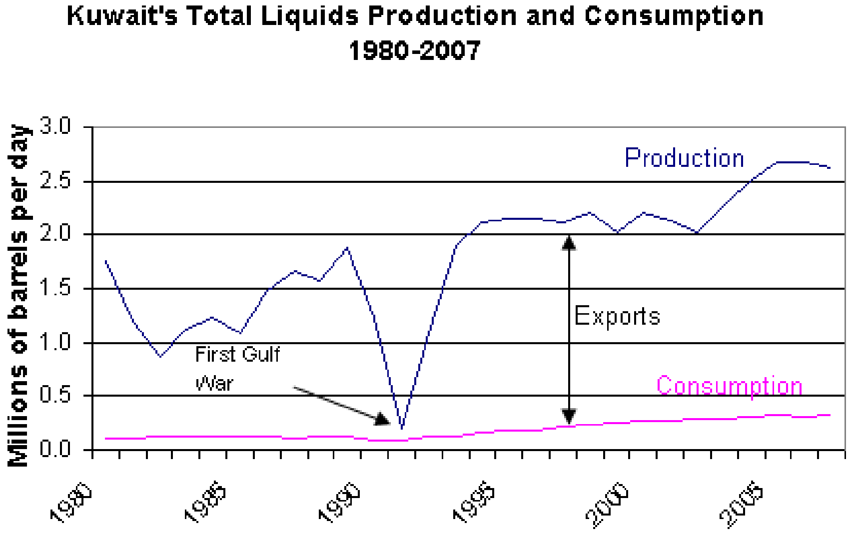
Kuwait holds equity interests in oil production in 14 countries through the Kuwait Foreign Petroleum Exploration Company (KUFPEC), established in 1981. KUFPEC is active in Australia, Indonesia, and Tunisia, among others. According to KUFPEC, the company aims to increase its production capacity to 100,000 bbl/d oil equivalent by 2010, up from around 60,300 bbl/d oil equivalent in 2007.

Production

In 2008, Kuwait produced approximately 2.7 million barrels per day (bbl/d) of oil, which includes about 300,000 bbl/d of production from the Neutral Zone. Of 2008 production, 2.57 million bbl/d was crude and 170,000 bbl/d was non-crude liquids. Overall, around two-thirds of Kuwaiti oil production comes from the southeast of the country.



Most of Kuwait's major producing fields are over sixty years old, and therefore field maturity is becoming a concern. In 2005, KOC, citing field exhaustion, lowered its production plateau estimates for the Greater Burgan area from 2 million bbl/d to 1.7 million bbl/d over a 20-30 year period. This issue places added significance on development of other Kuwaiti reserves going forward.



Source: EIA *International Energy Statistics*

Developments

Kuwait plans to increase oil production capacity from its current 2.6 million bbl/d to 4 million bbl/d by 2020, largely via Project Kuwait. Progress towards achieving this goal, however, remains caught in the disagreement between Parliament and the ruling family on how best to proceed.

Kuwait's constitution - and longtime policy - bars foreign investment in the country's natural resources, except as provided for by law. In order to allow IOC involvement, "incentivized buy-back contract" (IBBC) arrangements, which do not involve production sharing, concessions, or the "booking" of reserves by foreign companies, have been created. The structure of the IBBC agreements allows the Kuwaiti government to retain full ownership of oil reserves, control over oil production levels, and strategic management of the ventures. Foreign firms are to be paid a "per barrel" fee, along with allowances for capital recovery and incentive fees for increasing reserves, in their role as service provider/contractor. In May 2007, the Kuwaiti ruling family conceded the responsibility to approve each related IBBC for Project Kuwait to Parliament.

In 2008, PK was projected to cost $8.5 billion. PK aims to increase the country's oil production capacity from four northern oil fields – Raudhatain, Sabriya, Ratqa, and Abdali - to 3.5 million bbl/d by 2015, and then 4 million bbl/d by 2020 with the help of international oil companies (IOC).

Heavy oil is a major component of Kuwait's increased production capacity plans. Estimated heavy oil reserves of approximately 13 billion bbl are located primarily in the north of Kuwait.

KOC also plans to drill for oil in South East Kuwait and West Kuwait. In South East Kuwait, which holds the vast Burgan field, production is to increase by 200,000 b/d to a total of 1.7 million bbl/d; KOC hopes to maintain capacity in West Kuwait at 500,000 b/d.

Exports

In 2007, Kuwait's total exports of crude and refined products reached nearly 2.7 million bbl/d. Of the 2.6 million bbl/d of crude oil Kuwait produced, roughly 1.6 million bbl/d was exported. The Asia-Pacific region received 1.3 million bbl/d, the United States received 175,000 bbl/d, and Western Europe received 109,000 bbl/d. Of the 739,000 bbl/d of refined product, roughly 584,000 bbl/d were exported; Asia-Pacific countries received 480,000 bbl/d and Western Europe received 236,700 bbl/d. Kuwait's single export blend ("Kuwait Export") has a specific gravity of 31.4°API (a typical medium Mideast crude), and is considered sour with 2.52 percent sulfur content.

Mina al-Ahmadi is the country's main port for the export of crude oil. Kuwait also has operational oil export terminals at Mina Abdullah, Shuaiba, and at Mina Saud. To handle increased production generated by Project Kuwait, a new terminal is planned for construction on Bubiyan Island.

Downstream

Kuwait's three domestic refineries have a combined capacity of roughly 936,000 bbl/d. The country's largest refinery is Mina al-Ahmadi, with capacity of 466,000 bbl/d, followed by Mina Abdullah (270,000 bbl/d) and Shuaiba (200,000 bbl/d). High demand over the last two years has kept Kuwait's refining sector running at close to full capacity. Kuwait's total oil consumption reached 325,000 bbl/d in 2007.

Kuwait Petroleum International (KPI; a.k.a. "Q8") manages KPC's refining and marketing operations internationally, with approximately 4,000 retail stations across Western Europe (Belgium, Spain, Sweden, Luxembourg, and Italy). KPI owns an 80,000 bbl/d refinery in Rotterdam, Netherlands and has a 50:50 joint venture with AGIP in the 240,000 bbl/d capacity refinery in Milazzo, Italy.

With the growth of downstream markets in Asia, Kuwait has been keenly interested in acquiring downstream assets in large emerging markets such as China and India. In March 2008, KPI, Royal Dutch Shell, and China's Sinochem announced a deal to build a 240,000 bbl/d refinery in Fujian Province in China. The refinery is expected onstream in 2010 and will be designed to process Kuwaiti heavy crude. Also, in China's Guangdong Province, KPC is negotiating a partnership with China's Sinopec and Dow Chemical Company. At a projected cost of $5 billion, the plant will feature a 300,000 bbl/d capacity refinery and a 1 million tons per year ethylene steam cracker.

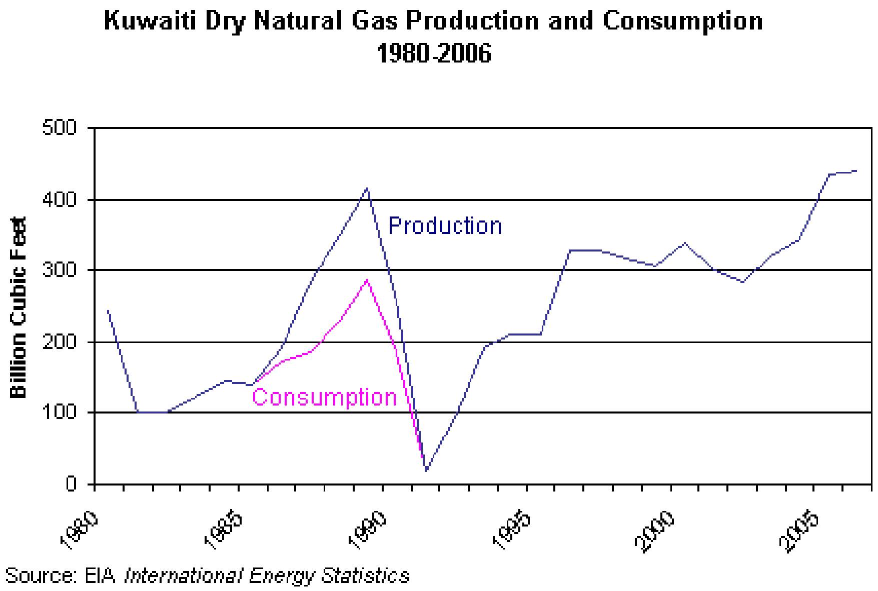
Clean Fuels Project

The Clean Fuels Project (CFP) is the umbrella under which Kuwait's existing refineries will be upgraded. With a 2008 price tag of $18 billion, the CFP is split into three packages. In Package 1, Mina Abdullah's distillation capacity will be increased to 420,000 bbl/d. Package 2 will consist of revamping Mina Abdullah's utilities both on and offsite. Package 3 will restore and repair necessary elements of Mina Al-Ahmadi.

Natural Gas

Kuwait holds a modest amount of natural gas reserves but hopes to significantly increase its use of domestic and imported natural gas in electricity generation and other sectors to free up additional oil for export.

According to *Oil and Gas Journal*, in January 2009 Kuwait's estimated natural gas reserves stood at nearly 63 trillion cubic feet (Tcf). Kuwait produces a relatively modest volume of dry natural gas, an estimated 441 billion cf (Bcf) in 2006, the vast majority of which is "associated gas" (i.e., found and produced in conjunction with oil).



Production

Kuwait seeks to significantly increase its use of natural gas in electricity generation, water desalination, and petrochemicals to free up as much as 100,000 barrels per day of oil for export. Kuwait hopes to accomplish this through increased drilling for natural gas, and tying together gathering centers to create the infrastructure necessary to reduce associated gas flaring.

In 2005, an estimated 35 Tcf of non-associated gas was discovered in several fields near Sabriya and Umm Niga in northern Kuwait. In the summer of 2008, Kuwait began production of approximately 175 million cf per day, planned to rise to nearly 1 Bcf per day by 2015. The new production is not expected to offset Kuwait's rising demand.

As with oil, negotiations continue between Kuwait and Iran regarding the disputed Dorra offshore natural gas field and any development requires resolution of demarcation issues. The Dorra field has been claimed by Saudi Arabia, Kuwait, and Iran, and may contain up to 11 Tcf of recoverable natural gas reserves. It is not currently in production.

Consumption & Imports

In 2006, Kuwait consumed 441 Bcf of natural gas. Although on an annual basis natural gas consumption matches production, in recent years, Kuwait's electricity demand, the generation of which is fueled by natural gas, has outpaced natural gas production during the summer months, resulting in the shutdown of refinery and petrochemical operations to meet the increased demand in electricity.

In March 2009, Kuwait and Qatar signed an agreement whereby Kuwait would import nearly 67 Bcf of liquefied natural gas each summer for 5 years, beginning in June 2009. Besides Qatar, Kuwait seeks to import natural gas from Iran, most likely from its huge South Pars gas field. Iran and Kuwait signed a preliminary memorandum of understanding for natural gas sales in March 2005, but commerce requires the resolution of maritime border issues in the region, specifically with regards to Dorra.

Profile

Energy Overview

Proven Oil Reserves (January 1, 2009E)	104 billion barrels (includes half of Neutral Zone)
Oil Production (2008)	2.7 million barrels per day, of which 2.57 million was crude.
Oil Consumption (2007)	325 thousand barrels per day
Crude Oil Distillation Capacity (2008)	936 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2009E)	63 trillion cubic feet
Natural Gas Production (2006)	.441 trillion cubic feet
Natural Gas Consumption (2006)	.441 trillion cubic feet
Recoverable Coal Reserves (2009E)	None
Coal Production (2009E)	None
Coal Consumption (2009E)	None
Electricity Installed Capacity (2006)	10.855 gigawatts

Electricity Production (2006)	44.751 billion kilowatt hours
Electricity Consumption (2006)	39.543 billion kilowatt hours
Total Energy Consumption (2006)	1.136 quadrillion Btus*, of which Oil (59%), Natural Gas (41%), Coal (0%), Nuclear (0%), Hydroelectricity (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2006)	469.8 million Btus
Energy Intensity (2006)	10,240 Btu per $2000-PPP**

Oil and Gas Industry

Organization	The Supreme Petroleum Council governs the nationalized oil industry, which is run by Kuwait Petroleum Corporation (KPC). KPC subsidiaries include: Kuwait Oil Company (KOC) - exploration and production of oil and gas; Kuwait National Petroleum Company (KNPC) - refining and shipping; Kuwait Petroleum International (KPI) - refining and product marketing; Petrochemical Industries Company (PIC) - production and marketing of chemical products; Kuwait Foreign Petroleum Exploration Company (KUFPEC) - foreign exploration; and Kuwait Oil Tanker Corporation (KOTC) - tanker operations.
Major Oil Terminals	Mina Al-Ahmadi, Mina Abdullah, Shuaiba, Mina Saud
Foreign Company Involvement	BP, Chevron, Total, ExxonMobil, Shell, Arabian Oil Company, Parsons Corp., Fluor Corp.
Major Oil Fields (reserves, billion barrels)	Greater Burgan -- Burgan, Magwa, and Ahmadi (70); Raudhatain (9.55); Sabriya; Minagish; Abdali; Rugei; Bahra; Neutral Zone: Wafra (3.4); Al-Hout; Khafji; South Fawaris
Major Pipelines (capacity, Mmcf/d)	Raudhatain-Ahmadi; Minagish-Ahmadi; Umm Gudair-Shuaiba; Wafra-Mina Abdullah; Burgan-Ahmadi
Major Refineries (capacity, bbl/d)	Mina Al-Ahmadi (466,000), Mina Abdullah (270,000), Shuaiba (200,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.
**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

EIA - Kuwait Country Energy Profile

U.S. Government

CIA World Factbook - Kuwait
U.S. State Department Consular Information Sheet - Kuwait
Kuwait-Info.com
AME Info Middle East Business Information
Persian Gulf War Chronology

Oil and Natural Gas

Kuwait Gulf Oil Company
Kuwait Oil Company
KUFPEC
Oil Magazine
OPEC

Sources

Agence France Presse
APS Gas Market Trends

APS Oil Market Trends
APS Review Downstream Trends
Asian Wall Street Journal
Associated Press
Cambridge Energy Research Associates
Chemical Week
CIA World Factbook
Dow Jones News Wire service
Deutsche Presse-Agentur
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Energy Information Administration
FACTS, Inc
Financial Times
Global Insight
IHS
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Kuwait Petroleum International
Kuwait Times
Kuwaiti Foreign Petroleum Exploration Company
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Lloyd's List
Middle East and Africa Oil and Gas Insights
Middle East Economic Digest
Middle East Economic Survey
Oil and Gas Journal
OPEC
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