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Persian Gulf Oil and Gas Exports Fact Sheet

In 2003, the Persian Gulf countries (Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates) produced about 27% of the world's oil, while holding 57% (715 billion barrels) of the world's crude oil reserves. OECD gross oil imports from Persian Gulf countries averaged about 11.6 million barrels per day (bbl/d) during 2003, accounting for 46% of the OECD's total net oil imports. Besides oil, the Persian Gulf region also has huge reserves (2,462 trillion cubic feet -- Tcf) of natural gas, accounting for 45% of total proven world gas reserves.



GENERAL BACKGROUND

The Persian Gulf, also known as the Arabian Gulf, is a 600-mile-long body of water which separates Iran from the Arabian Peninsula, and one of the most strategic waterways in the world due to its importance in world oil transportation. At its narrowest point (the [Strait of Hormuz](#)), the Gulf narrows to only 34 miles wide.

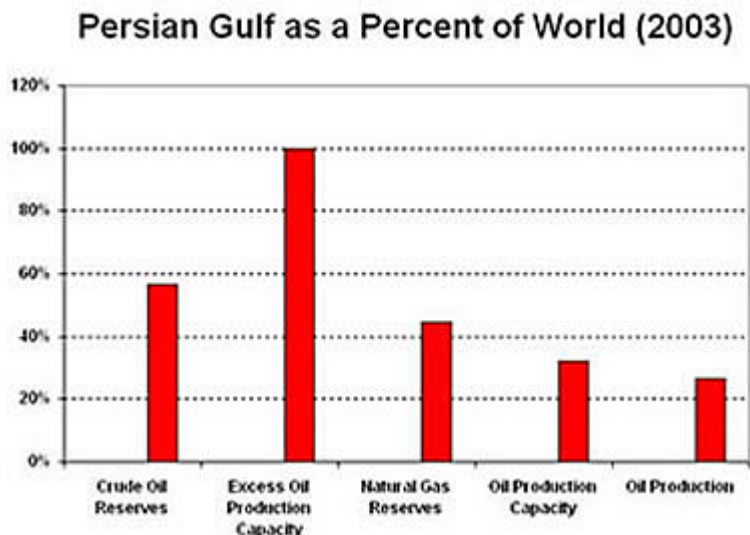
There have been, and continue to be, significant territorial disputes between Persian Gulf countries. Besides the Iraqi invasion of Kuwait in August 1990, and before that the Iran-Iraq War from 1980 to 1988,

another important dispute is between the UAE and Iran over ownership of three islands -- Abu Musa, Greater Tunb Island, and Lesser Tunb Island, all strategically located in the [Strait of Hormuz](#). The three islands were effectively occupied by Iranian troops in 1992. In 1995, the Iranian Foreign Ministry claimed that the islands were "an inseparable part of Iran." Iran rejected a 1996 proposal by the Gulf Cooperation Council (GCC) for the dispute to be resolved by the International Court of Justice, an option supported by the UAE. On December 31, 2001, the GCC issued a statement reiterating its support for the UAE's sovereignty over Abu Musa and the Tunbs, declared Iran's claims on the islands as "null and void," and backed "all measures...by the UAE to regain sovereignty on its three islands peacefully."

OIL AND GAS RESERVES, PRODUCTION, CAPACITY

The Persian Gulf contains 715 billion barrels of proven oil reserves, representing over half (57%) of the world's oil reserves, and 2,462 Tcf of natural gas reserves (45% of the world total). Also, at the end of 2003, Persian Gulf countries maintained about 22.9 million bbl/d of oil production capacity, or 32% of the world total. Perhaps even more significantly, the Persian Gulf countries normally maintains almost all of the world's *excess* oil production capacity. As of early September 2004, excess world oil production capacity was only about 0.5-1.0 million bbl/d, all of which was located in Saudi Arabia.

According to the Energy Information Administration's *International Energy Outlook 2003*, Persian Gulf oil production is expected to reach about 26 million bbl/d by 2010, and 35 million bbl/d by 2020, compared to about 21.7 million bbl/d in 2000. This would increase Persian Gulf oil production capacity to 33% of the world total by 2020, up from 28% in 2000.



In 2003, Persian Gulf countries had estimated net oil exports of 17.2 million bbl/d of oil (see pie chart). Saudi Arabia exported the most oil of any Persian Gulf country in 2003, with an estimated 8.40 million bbl/d (49% of the total). Also, Iran had estimated net exports of about 2.6 million bbl/d (15%), followed by the United Arab Emirates (2.4 million bbl/d -- 14%), Kuwait (2.0 million bbl/d -- 12%), Iraq (0.9 million bbl/d -- 5%), Qatar (0.9 million bbl/d -- 5%), and Bahrain (0.01 million bbl/d -- 0.1%).

Offshore Persian Gulf Oil Development

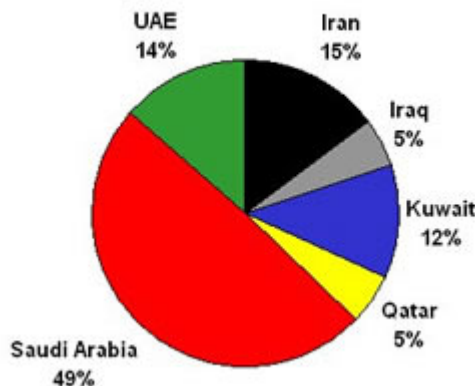
Major offshore Persian Gulf oil fields include Khafji and Hout, both of which are connected to Saudi Arabia's Safaniyah, the world's largest offshore oilfield (with estimated reserves of 35 billion barrels). Offshore production includes Arab Medium crude from the Zuluf (over 500,000 bbl/d capacity) and Marjan (270,000 bbl/d capacity) fields and Arab Heavy crude from the Safaniya field.

The Doroud 1&2, Salman, Abuzar, Foroozan, and Sirri fields comprised the bulk of Iran's offshore output, all of which is exported. Iran plans extensive development of existing offshore fields and hopes to raise its offshore production capacity sharply to 1.1 million bbl/d from about 675,000 bbl/d currently. In early October 2003, Iran re-launched a tender for eight exploration blocks in the Persian Gulf after receiving little interest from a January 2003 announcement. One area considered to have potential is located near the Strait of Hormuz. Another interesting area is offshore near Bushehr, where Iran claimed in July 2003 to have discovered three fields with as much as 38 billion barrels of oil reserves.

Offshore Persian Gulf Natural Gas Development

Besides oil, the Persian Gulf region also is important because it contains huge reserves (2,462 Tcf) of natural gas, with Iran, Qatar, Saudi Arabia, and the United Arab Emirates holding the world's second, third, fourth, and fifth-largest reserves (behind Russia), respectively. This likely will become increasingly important in coming years, as both domestic gas consumption and gas exports (by pipeline and also by liquefied natural gas -- LNG -- tanker) increase.

Persian Gulf Exports by Country -- 2003

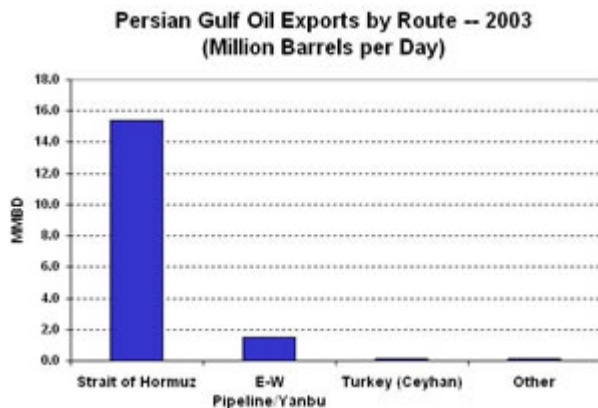


Most of Saudi Arabia's currently proven natural gas reserves consist of associated gas, including the

offshore Safaniya and Zuluf field. A huge (13-Tcf) natural gas field, called Dorra, is located offshore near the Khafji oil field in the Saudi-Kuwaiti Neutral Zone and may be developed by Japan's AOC. Dorra development is controversial, however, because part of it is also claimed by Iran (which calls the field Arash). The maritime border between Kuwait and Iran remain undemarcated, but Saudi Arabia reached an agreement with Kuwait in July 2000 to share Dorra equally. Currently, Iran is resisting any moves by Kuwait and Saudi Arabia to develop the field on their own. Iran and Kuwait have been discussing their offshore boundary since 2000.

Most of Qatar's natural gas proven reserves of 509 trillion cubic feet (Tcf) are located in the offshore North Field, which is the largest known non-associated natural gas field in the world. 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. One 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.

Iran's largest non-associated natural gas field is South Pars, geologically an extension of Qatar's North Field. Current estimates are that South Pars contains 280 Tcf or more (some estimates go as high as 500 Tcf) of natural gas, of which a large fraction will be recoverable, and over 17 billion barrels of liquids. Development of South Pars is Iran's largest energy project, already having attracted around \$15 billion in investment. Natural gas from South Pars largely is slated to be shipped north via the planned 56-inch, 300-mile, \$500 million, IGAT-3 pipeline, as well as planned IGAT-4 and IGAT-5 lines. Gas also will be reinjected to boost oil output at the mature Agha Jari oil field, and possibly the Ahwaz and Mansouri fields. Besides condensate production and reinjection/enhanced oil recovery, South Pars natural gas also is intended for export, by pipeline and also possibly by liquefied natural gas (LNG) tanker. Sales from South Pars could earn Iran as much as \$11 billion per year over 30 years, according to Iran's Oil Ministry.



OIL FLOWS

Strait of Hormuz

In 2003, the vast majority (about 90%) of oil exported from the Persian Gulf transited by tanker through the [Strait of Hormuz](#), located between Oman and Iran. The Strait consists of 2-mile wide channels for inbound and outbound tanker traffic, as well as a 2-mile wide buffer zone. Oil flows through the Strait of Hormuz account for roughly two-fifths of all world traded oil, and closure of the Strait of Hormuz would require use of longer alternate routes (if

available) at increased transportation costs. Such routes include the approximately 5-million-bbl/d-capacity East-West Pipeline across Saudi Arabia to the port of Yanbu, and the Abqaiq-Yanbu natural gas liquids line across Saudi Arabia to the Red Sea. The 15.0-15.5 million bbl/d or so of oil which transit the Strait of Hormuz goes both eastwards to Asia (especially Japan, China, and India) and westwards (via the Suez Canal, the Sumed pipeline, and around the Cape of Good Hope in South Africa) to Western Europe and the United States.

Bab al-Mandab

Oil heading westwards by tanker from the Persian Gulf towards the Suez Canal or Sumed pipeline must pass through the [Bab al-Mandab](#). Located between Djibouti and Eritrea in Africa, and Yemen on the Arabian Peninsula, the Bab al-Mandab connects the Red Sea with the Gulf of Aden and the

Arabian Sea. Any closure of the Bab al-Mandab could keep tankers from reaching the Suez Canal/Sumed Pipeline complex, diverting them around the southern tip of Africa. This would add greatly to transit time and cost, and effectively tie up spare tanker capacity. In December 1995, Yemen fought a brief battle with Eritrea over Greater Hanish Island, located just north of the Bab al-Mandab. The Bab al-Mandab could be bypassed by utilizing the East-West oil pipeline. However, southbound oil traffic would still be blocked. In addition, closure of the Bab al-Mandab would effectively block non-oil shipping from using the Suez Canal, except for limited trade within the Red Sea region.



Suez/Sumed Complex

After passing through the Bab al-Mandab, oil en route from the Persian Gulf to Europe must pass either through the Suez Canal or the Sumed Pipeline complex in Egypt. Both of these routes connect the Red Sea and Gulf of Suez with the Mediterranean Sea. Any closure of the Suez Canal and/or Sumed Pipeline would divert tankers around the southern tip of Africa (the Cape of Good Hope), adding greatly to transit time and effectively tying up tanker capacity.

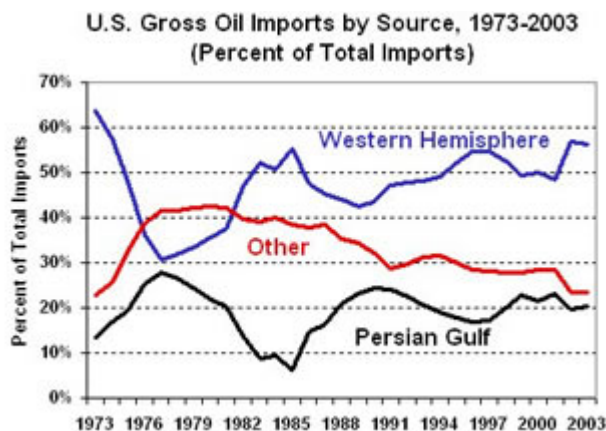
Other Export Routes

Small amounts of oil from the Persian Gulf were exported via routes besides the Strait of Hormuz in 2003. This oil was exported mainly via pipeline from Iraq's Kirkuk oil region to the Turkish port of Ceyhan and by truck to Jordan.

Source: Oil Capital Ltd.

OECD Oil Imports from the Persian Gulf

U.S. gross oil imports from the Persian Gulf rose during 2003 to 2.5 million bbl/d (almost all of which was crude), from 2.3 million bbl/d in 2002. The vast majority of Persian Gulf oil imported by the United States came from Saudi Arabia (71%), with significant amounts also coming from Iraq (19%), Kuwait (9%), and small amounts (less than 1% total) from Qatar and the United Arab Emirates. Iraqi oil exports to the United States rose slightly in 2003, to 481,000 bbl/d, compared to 442,000 bbl/d in 2002. Saudi exports rose from 1.55 million bbl/d in 2002 to 1.77 million bbl/d in 2003.

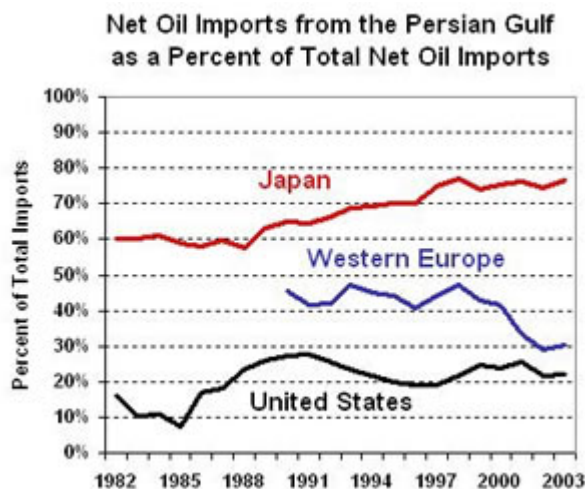


Overall, the Persian Gulf accounted for about 22% of U.S. net oil imports, and 12% of U.S. oil demand, in 2003.

Western Europe (defined as European countries belonging to the Organization for Economic Cooperation and Development -- OECD) averaged 2.6 million bbl/d of oil imports from the Persian Gulf during 2003, an increase of about 0.2 million bbl/d from the same period in 2002. The largest share of Persian Gulf oil exports to Western Europe came from Saudi Arabia (52%), with significant amounts also coming from Iran (33%), Iraq (7%), and Kuwait (6%).

Japan averaged 4.2 million bbl/d of net oil imports from the Persian Gulf during 2003. Japan's dependence on the Persian Gulf for its oil supplies increased sharply since the low point of 57% in 1988 to a high of 78% in 2003. About 30% of Japan's Persian Gulf imports in 2003 came

from Saudi Arabia, 29% from the United Arab Emirates, 17% from Iran, 12% from Kuwait, 11% from Qatar, and around 1% from Bahrain and Iraq combined. Japan's oil imports from the Persian Gulf as a percentage of demand continued to rise to new highs, reaching 78% in 2003.



Net Oil Imports from the Persian Gulf Region

	<u>As % of Demand</u>			<u>As % of Total Net Oil Imports</u>		
	US	W. Europe	Japan	US	W. Europe	Japan
1982	10%	NA	58%	16%	NA	60%
1983	10%	NA	60%	10%	NA	60%
1984	10%	NA	61%	11%	NA	61%
1985	10%	NA	58%	7%	NA	59%
1986	10%	NA	58%	17%	NA	58%
1987	9%	NA	59%	18%	NA	60%
1988	9%	NA	57%	23%	NA	58%
1989	9%	NA	64%	26%	NA	63%
1990	12%	29%	66%	27%	45%	65%
1991	11%	27%	65%	28%	41%	64%
1992	10%	26%	67%	26%	42%	66%
1993	10%	29%	70%	23%	47%	69%
1994	10%	25%	70%	21%	45%	69%
1995	9%	23%	71%	20%	44%	70%
1996	9%	22%	69%	19%	41%	70%
1997	9%	23%	76%	19%	44%	75%
1998	11%	26%	76%	22%	47%	77%
1999	13%	22%	73%	25%	43%	74%
2000	13%	22%	75%	24%	42%	75%
2001	14%	18%	76%	25%	33%	76%
2002	12%	16%	74%	22%	29%	74%
2003	12%	17%	78%	22%	30%	76%

LINKS

For more information from EIA on the Persian Gulf, please see:

[EIA - Country Information on Bahrain](#)
[EIA - Country Information on Iran](#)
[EIA - Country Information on Iraq](#)
[EIA - Country Information on Kuwait](#)
[EIA - Country Information on Qatar](#)
[EIA - Country Information on Saudi Arabia](#)
[EIA - Country Information on the United Arab Emirates](#)
[EIA - Information on OPEC](#)
[OPEC Fact Sheet](#)
[OPEC Revenues Fact Sheet](#)
[World Oil Transit Chokepoints - Strait of Hormuz](#)

Links to other U.S. government sites:

[CIA World Factbook](#)
[U.S. Department of Energy - Office of Fossil Energy's International section \(South and Southwest Asia\)](#)
[U.S. Department of State - Bureau of Near Eastern Affairs](#)

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