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Iran, Oil, and the Strait of Hormuz

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March 26, 2007

The “Persian” or “Arabian” Gulf creates major strategic uncertainties for Iran, its neighbors, and the world. It is a 600-mile-long body of water that separates Iran from the Arabian Peninsula, and one of the most strategic waterways in the world due to its importance in world oil transportation. Incidents in the Gulf can escalate quickly in ways that neither Iran nor its potential opponents intend. Iran’s actions in Lebanon and in dealing with Hamas and the PIJ can provoke other unintended crises, and Iran is caught up in a broader, Sunni-dominated struggle for the future of Islam where some key Sunni Islamist extremist movements deny the legitimacy of Shi’ite beliefs. Military history is rarely determined by intentions and policy in peacetime, and crisis management often becomes an oxymoron as event spiral out of control, misperceptions dominate actions, and escalation becomes both asymmetric and an end in itself.

Iran and the Importance of Gulf Oil

The Gulf countries (Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates) produce nearly 30% of the world’s oil, while holding 57% (715 billion barrels) of the world's crude oil reserves. Iran alone is estimated to hold 11.1 percent of the world oil reserves (132.0 billion barrels of oil), and 15.3 percent of the world’s natural gas reserves (970.8 trillion cubic feet).¹ 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.

Iran’s coastline is particularly important because tanker and shipping routes pass so close to Iran’s land mass, the islands it controls in the Gulf, and its major naval bases. At its narrowest point (the Strait of Hormuz), the Gulf narrows to only 34 miles wide, with Iran to the North and Oman to the south. The key passages through the Strait consist 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 40% of all world traded oil, and the 17 MMBD or more of oil that normally are shipped through the Strait of Hormuz goes eastwards to Asia (especially Japan, China, and India) and westwards (via the Suez Canal, the Sumed pipeline). Any closure of the Strait of Hormuz would require use of longer alternate routes. Such routes are now limited to 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, although the GCC seems to have agreed to construct a new strategic pipeline through Oman to a port on the Gulf of Oman.²

Iran has long been involved in significant territorial disputes with its neighbors over control of the Islands in the Gulf and offshore oil and gas resources. It faced the Iran-Iraq War from 1980 to 1988, a “tanker war” with the U.S. over tanker movements through the Gulf from 1987-1988, and the risks posed by Iraq’s invasion of Kuwait in 1990-1991.

Ever since the time of the Shah, there has been a dispute between Iran and the UAE over ownership of three strategically important islands near key tanker routes to the Strait of Hormuz – Abu Musa, Greater Tunb Island, and Lesser Tunb Island. The three islands were first seized by the Shah after British withdrawal from the Gulf in the early 1970s, and were then occupied by Iranian troops in 1992. In 1995, the Iranian Foreign Ministry claimed that the islands were "an inseparable part of Iran."

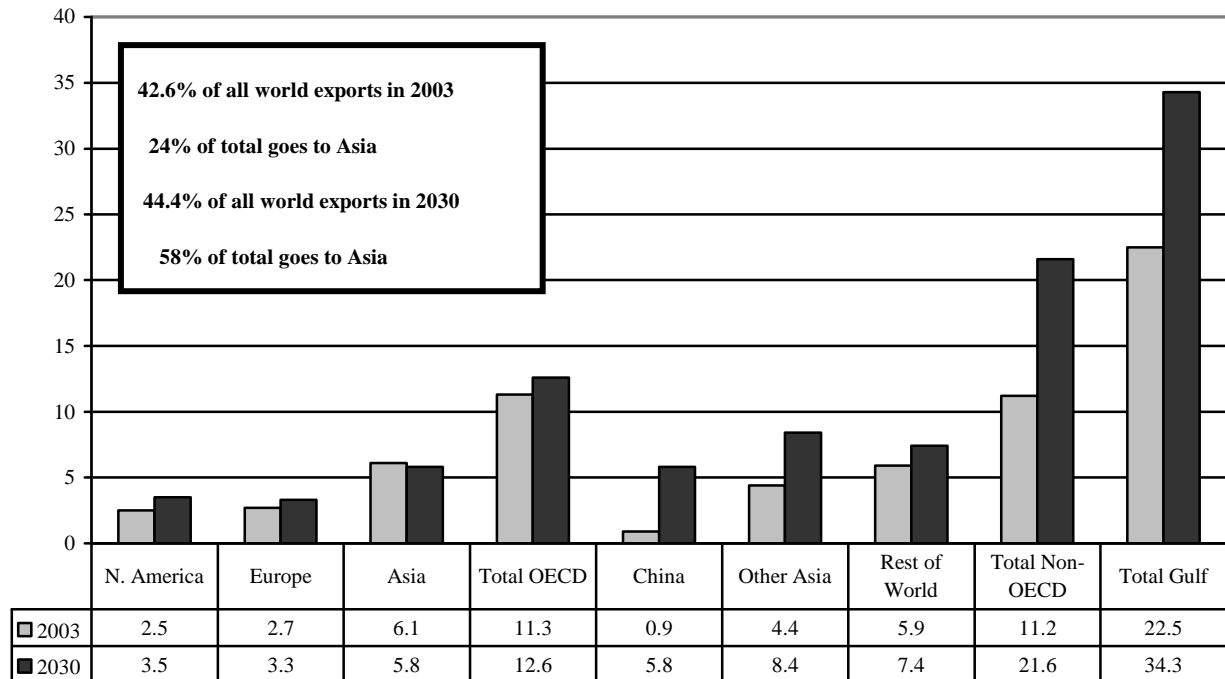
Iran has since rejected a 1996 proposal by the Gulf Cooperation Council (GCC) for the dispute to be resolved by the International Court of Justice, an option supported by the UAE. The GCC issued a statement reiterating its support for the UAE's sovereignty over Abu Musa and the Tunbs on December 31, 2001, 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." It has repeatedly attempted to persuade Iran to agree to refer the issue to the ICJ. Iran again refused the UAE's offer of arbitration by the International Court of Justice in September 2006, and the risk of a future clash or conflict remains. In addition, Iran and Qatar have claimed ownership of the North field (where most of Qatar's gas reserves are), and the issue has never been fully resolved.

The strategic importance of the Gulf will also increase significantly with time. According to the reference case estimate in the Energy Information Administration's *International Energy Outlook 2006*, Gulf oil production is expected to reach about 28.3 million barrels per day (MMBD) by 2010, 31.1 MMBD by 2020, and 36.8 MMBD by 2020; compared to about 18.7 MMBD in 1990, 21.7 MMBD in 2000, and 23.7 MMBD in 2003. This would increase Gulf oil production capacity to 33% of the world total by 2020 (107.6 MMBD and 36% by 2030 (123.3 MMBD), up from 28% in 2000.³

As **Figure One** shows, the Gulf's importance as a percent of total world exports will most likely also increase, and the total volume of Gulf exports will increase from 22.5 to 34.3 MMBD. While much of this increase will go to Asia, it will also make a sharp increase in indirect U.S. and European dependence on the Gulf. Asia is so dependent on Gulf oil that a large amount of the energy Asia uses in producing goods for export to the U.S. and Europe comes from Gulf oil exports. The exact rise that will actually occur in Gulf exports is highly unpredictable, but parametric modeling of other price and economic growth cases shows that significant rises seem highly likely over the next two decades.

Figure One: The Growing Volume of Gulf Oil Exports 2003-2030

(In Millions of Barrels per Day)



Source: DOE/EIA, International Energy Outlook, 2006, DOE, Washington, June 2006, Table 7, p. 34.
<http://www.eia.doe.gov/oiaf/ieo/index.html>.

The Iranian Threat in the Gulf

Iran has built up a large mix of unconventional forces in the Gulf that can challenge its neighbors in a wide variety of asymmetric wars, including low-level wars of attrition. These include a wide range of elements in the regular forces and IRGC as well as some elements in the Ministry of Intelligence and Security (MOIS), or Vezarat-e Ettela' at va Aminat-e Keshvar (VEVAK), which was installed following the revolution to replace the now-disbanded National Organization for Intelligence and Security (SAVAK). In 2006, the MOIS employed about 15,000 civilian staff. Its major tasks included intelligence collection and operations in the Middle East and Central Asia as well as domestic intelligence and monitoring of clerical and government officials, as well as work on preventing conspiracies against the Islamic Republic.

Its air forces remain vulnerable in any form of mission, but are less vulnerable near Iranian bases, sensor coverage, and SAM coverage. Its naval forces include its three Kilo-class submarines, which can harass or seek to interdict ships moving in and out of the Gulf, a wide range of mines and vessels that can be used as mine layers or to release free floating mines.

They also include roughly 140 light patrol and coastal combatants, including 11 French-designed Kaman-class missile patrol boats with 2-4 CSS-N-4/YJ-1/ "Sardine" anti-ship missiles each. These are sea skimming, solid fueled missiles with a 42 to 50-kilometer

range, 165 kilogram warheads, INS and active radar similar to the Exocet, and can be used to harass civil shipping and tankers, and offshore facilities, as well as attack naval vessels. Iran may well have far more advanced Russian and Chinese-supplied missiles as well and claims to be developing advanced anti-ship and anti-fixed target missiles of its own.

Iran made claims in the spring of 2006 that it was testing more advanced weapons for such forces. These included a sonar-evading anti-ship missile that can be fired from submarines as well as surface combatants that IRGC Rear Admiral Ali Fadavi claimed no enemy warship could detect, and “no warship could escape because of its high velocity.” Iran also claimed to be testing a new missile called the Kowsar with a very large warhead and extremely high speed to attack “big ships and submarines” that it claimed could evade radar and antimissile missiles. While such tests may have been real, Iran has made so many grossly exaggerated claims about its weapons developments in the past, that it seems they were designed more to try to deter U.S. military action and/or reassure the Iranian public than truly being serious real world capabilities. It followed these actions up in the late summer of 2006 by testing new submarine launched anti-ship missiles.

It has a 20,000 man naval branch in the IRGC that includes some 5,000 marines. This branch of the IRGC has 10 Houdong missile patrol boats with CSS-N-8/C-802/YJ-2 missiles with 165 kilogram warheads, active and inertial guidance, and maximum ranges of 120 kilometers. It operates mobile land-based CSS-C-3/HY-2/Sea Eagle/Seersucker anti-ship missiles that can be rapidly emplaced on the Iranian coast or islands in the Gulf shipping channel. These systems have ranges of 95-100 kilometers, very large warheads, and autocontrol and radar homing guidance. They can be targeted by a remote air link, and the exact level of upgrading of these missiles since their initial delivery during the Iran-Iraq War is unknown.

The IRGC has large numbers of Boghammar and other patrol boats are with recoilless rifles, rocket launchers, manportable surface-to-air missiles, and anti-armor guided weapons. The IRGC routinely uses small civilian ships and vessels in unconventional operations in various exercises, including mine laying and raids on offshore facilities. This force has facilities at Bandar-e-Abbas, Khorramshar, and on the islands of Larak, Abu Musa, Al Farsiyah, SIRRIR and the Halul oil platform. It can make use of additional facilities at Iran’s main naval bases at Bander e-abbas, Bushehr, Kharg Island, Bandar e-Anzelli, Bandar e-Khomeini, Bandar e-Mahshahr, and Chah Bahar. These forces can rapidly disperse, and shelter in caves and hardened sites. Small ships can be very hard to detect with most radars even in a normal sea state, and civilian ships can easily change flags and meld in with commercial traffic.

According to one Israeli source, Iran plans to defeat the United States by attrition, trying to exploit perceived American psychological vulnerabilities for a high number of casualties. Further, the report states: “Iran’s military acquisitions reveal a rather defensive mindset with an intention to deter against an attack rather than to win a war by overwhelming force.”⁴

“Closing the Gulf?”

These light naval forces have special importance because of their potential ability to threaten oil and shipping traffic in the Gulf and the Gulf of Oman, raid key offshore facilities, and conduct raids on targets on the Gulf coast. Many Gulf energy facilities are extremely vulnerable, and the GCC states are extremely vulnerable to any form of attack on their desalination and coastal power facilities, and precision strikes on critical high-capacity, long-lead time replacement items in energy facilities and power grids. This vulnerability might also allow Iran to carry out very successful air attacks in a surprise raid with precision weapons, using IRGC “suicide” aircraft, and future UAVs and precision cruise missiles. It is also possible that Iran could conduct coastal raids with IRGC and/or Special Forces that went deeper into Southern Gulf territory.

Iran could not “close the Gulf” for more than a few days to two weeks even if it was willing to sacrifice all of these assets, suffer massive retaliation, and potentially lose many of its own oil facilities and export revenues. Its chronic economic mismanagement has made it extremely dependent on a few refineries, product imports, and food imports. It would almost certainly lose far more than it gained from such a “war,” but nations often fail to act as rational bargainers in a crisis, particularly if attacked or if their regimes are threatened.

Even sporadic, low-level attacks on Gulf shipping and facilities, however, could allow Iran to wage a war of intimidation in an effort to pressure its neighbors. As **Figure Two**, which is based on a recent International Energy Agency study shows, the current and future volume of oil export traffic through the Gulf is steadily increasing and presents a target with global strategic importance that will grow steadily in coming years even if one exempts growing the growth in tanker shipments of LPG. This will make any threat that sharply raises oil prices, deters smooth tanker flows and deliveries, and otherwise interferes with energy exports of great importance, particularly in a world where every developed economy is critically dependent on global trade and the continuing flow of Asian heavy manufactures that are steadily more dependent on Gulf oil.

It should be noted, however, that Iran is acutely dependent on oil revenues, and that attacks on its refineries and power plants could do immense retaliatory damage. In mid-September of 2006, reports also surfaced that the U.S. navy was reconsidering older plans for blocking two Iranian oil ports near the Straits of Hormuz. This apparently was accompanied by a “prepare-to-deploy” order for several mine-warfare vessels.⁵ In February 2007, a second aircraft-carrier group was deployed to the Persian Gulf, and reportedly plans to send a third one were considered.⁶ Iran is also as vulnerable to attacks on its oil platforms and loading facilities in the Gulf as the Southern Gulf states.⁷

Figure Two The Importance of Gulf Oil Exports

<u>Area of Export Flow</u>	<u>Current Flow in MMBD</u>	<u>Share of World Oil Demand in Percent</u>		
		In 2004	In 2030 Reference	In 2030 Lower Demand
Strait of Hormuz	17.4	21.2	28.1	19.4
Straits of Malacca/Far East	13	15.8	23.7	23.3
Bab el-Mandab	3.5	4.3	4.5	4.9
Suez	3.9	4.7	4.8	5.3

Source: Adapted by Anthony H. Cordesman from material provided by Ambassador William C. Ramsay, Deputy Executive Director, International Energy Agency, February 6, 2007.

¹ BP, *Statistical Review of World Energy*, June 2005.

² Adapted from reporting by the Energy Information Agency of the Department of Energy.

³ International Energy Outlook, 2006, <http://www.eia.doe.gov/oiaf/ieo/ieooil.html>.

⁴ Uzi Rubin: *The Global Reach of Iran's Ballistic Missiles*, Institute for National Security Studies, Tel Aviv, November 2006, p. 1.

⁵ Gordon Lubold, "DoD refutes report of navy plans for War with Iran", *ArmyTimes.com*, September 19, 2006.

⁶ Michael Hirsh and Maziar Bahari, "Hidden Wars with Iran", *Newsweek*, February 19, 2007.

⁷ Arthur Herman, "How to fight Iran", *New York Post*, January 26, 2007.