



ENERGY FORUM
JAMES A. BAKER III
INSTITUTE FOR PUBLIC POLICY
RICE UNIVERSITY

Working Paper Series:

The Global Energy Market:
Comprehensive Strategies to Meet
Geopolitical and Financial Risks



Iran, Energy and Geopolitics

Daniel Brumberg, Jareer Elass, Amy Myers Jaffe and Kenneth B. Medlock III



THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY
RICE UNIVERSITY

THE GLOBAL ENERGY MARKET:
COMPREHENSIVE STRATEGIES TO MEET GEOPOLITICAL
AND FINANCIAL RISKS

THE G8, ENERGY SECURITY, AND GLOBAL CLIMATE ISSUES

PREPARED IN CONJUNCTION WITH AN ENERGY STUDY SPONSORED BY
THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY
AND THE INSTITUTE OF ENERGY ECONOMICS, JAPAN
MAY 2008

THIS PAPER WAS WRITTEN BY A RESEARCHER (OR RESEARCHERS) WHO PARTICIPATED IN THE JOINT BAKER INSTITUTE / IEEJ STUDY. WHEREVER FEASIBLE, THIS PAPER HAS BEEN REVIEWED BY OUTSIDE EXPERTS BEFORE RELEASE. HOWEVER, THE RESEARCH AND THE VIEWS EXPRESSED WITHIN ARE THOSE OF THE INDIVIDUAL RESEARCHER(S) AND DO NOT NECESSARILY REPRESENT THE VIEWS OF THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY OR THE INSTITUTE OF ENERGY ECONOMICS, JAPAN.

© 2008 BY THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY OF RICE UNIVERSITY

THIS MATERIAL MAY BE QUOTED OR REPRODUCED WITHOUT PRIOR PERMISSION,
PROVIDED APPROPRIATE CREDIT IS GIVEN TO THE AUTHOR(S) AND
THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY

ACKNOWLEDGEMENTS

The Energy Forum of the James A. Baker III Institute for Public Policy would like to thank The Institute of Energy Economics, Japan, and the sponsors of the Baker Institute Energy Forum for their generous support of this program. The Energy Forum further acknowledges contributions by study researchers and writers.

STUDY AUTHORS

JOE BARNES
DANIEL BRUMBERG
MATTHEW E. CHEN
DAVID BRYAN COOK
MAHMOUD EL-GAMAL
MALCOLM GILLIS
JORGE GONZALEZ GOMEZ
PETER R. HARTLEY
DONALD HERTZMARK
AMY MYERS JAFFE
YOON JUNG KIM
NEAL LANE
DONGCHAO LI
DAVID R. MARES
KIRSTIN MATTHEWS
KENNETH B. MEDLOCK III
RONALD SOLIGO
LAUREN SMULCER
RICHARD STOLL
XIAOJIE XU

ABOUT THE GLOBAL ENERGY MARKET STUDY

The Global Energy Market: Comprehensive Strategies to Meet Geopolitical and Financial Risks—The G8, Energy Security, and Global Climate Issues examines a variety of scenarios for the future of global energy markets. Some of these scenarios evaluate factors that could trigger a regional or worldwide energy crisis. The study assesses the geopolitical risks currently facing international energy markets and the global financial system. It also investigates the consequences that such risks could pose to energy security, pricing, and supply, as well as to the transparent and smooth operation of the global market for oil and natural gas trade and investment. By analyzing these threats in depth, the study identifies a series of policy frameworks that can be used to fortify the current market system and ensure that it can respond flexibly to the array of threats that might be encountered in the coming years. The study also looks at the impact of emerging climate policy on the future of world energy markets.

ABOUT THE ENERGY FORUM AT THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY

The **Baker Institute Energy Forum** is a multifaceted center that promotes original, forward-looking discussion and research on the energy-related challenges facing our society in the 21st century. The mission of the Energy Forum is to promote the development of informed and realistic public policy choices in the energy area by educating policymakers and the public about important trends—both regional and global—that shape the nature of global energy markets and influence the quantity and security of vital supplies needed to fuel world economic growth and prosperity.

The forum is one of several major foreign policy programs at the James A. Baker III Institute for Public Policy of Rice University. The mission of the Baker Institute is to help bridge the gap between the theory and practice of public policy by drawing together experts from academia, government, the media, business, and nongovernmental organizations. By involving both policymakers and scholars, the institute seeks to improve the debate on selected public policy issues and make a difference in the formulation, implementation, and evaluation of public policy.

The James A. Baker III Institute for Public Policy

Rice University – MS 40

P.O. Box 1892

Houston, TX 77251-1892 USA

<http://www.bakerinstitute.org>

bipp@rice.edu

ENERGY FORUM SPONSORS

ACCENTURE

AIR LIQUIDE U.S.A. LLC

ANADARKO PETROLEUM CORPORATION

THE HONORABLE & MRS. HUSHANG ANSARY

APACHE CORPORATION

BAKER BOTTS L.L.P.

BAKER HUGHES INCORPORATED

BP

CHEVRON CORPORATION

CONOCOPHILLIPS

DUKE ENERGY INTERNATIONAL

EL PASO CORPORATION

EXXONMOBIL CORPORATION

GE ENERGY

HALLIBURTON

THE INSTITUTE OF ENERGY ECONOMICS, JAPAN (IEEJ)

MARATHON OIL CORPORATION

MORGAN STANLEY

SCHLUMBERGER

SHELL

SHELL EXPLORATION & PRODUCTION Co.

SIMMONS & COMPANY INTERNATIONAL

TOTAL E&P USA, INC.

TUDOR, PICKERING, HOLT & Co. LLC

WALLACE S. WILSON

ABOUT THE INSTITUTE OF ENERGY ECONOMICS, JAPAN

The Institute of Energy Economics, Japan (IEEJ), was established in June 1966 and specializes in research activities in the area of energy from the viewpoint of Japan's national economy in a bid to contribute to sound development of Japanese energy supply and consumption industries and to the improvement of domestic welfare by objectively analyzing energy problems and providing basic data, information and the reports necessary for policy formulation. With the diversification of social needs during the three and a half decades of its operation, IEEJ has expanded its scope of research activities to include such topics as environmental problems and international cooperation closely related to energy. The Energy Data and Modeling Center (EDMC), which merged with the IEEJ in July 1999, was established in October 1984 as an IEEJ-affiliated organization to carry out such tasks as the development of energy data bases, the building of various energy models and the econometric analyses of energy.

The Institute of Energy Economics, Japan

Inui Building
Kachidoki 10th, 11th, and 16th Floor
13-1, Kachidoki 1-chome
Chuo-ku, Tokyo 104-0054 Japan

<http://eneken.ieej.or.jp/en/>

ABOUT THE AUTHORS

DANIEL BRUMBERG

ASSOCIATE PROFESSOR, DEPARTMENT OF GOVERNMENT, GEORGETOWN UNIVERSITY
ACTING DIRECTOR, UNITED STATES INSTITUTE OF PEACE MUSLIM WORLD INITIATIVE,
CENTER FOR CONFLICT ANALYSIS AND PREVENTION

Daniel Brumberg is an associate professor in the Department of Government at Georgetown University and also serves as acting director for the United States Institute of Peace (USIP) Muslim World Initiative in the Center for Conflict Analysis and Prevention. A scholar of politics and social change in the Middle East and the wider Islamic world, he is author of “Reinventing Khomeini: The Struggle for Reform in Iran” (The University of Chicago Press, 2001), and co-editor with Larry Diamond and Marc Plattner of “Islam and Democracy in the Middle East” (The Johns Hopkins University Press, 2003). Brumberg has taught at the Graduate School of Business of The University of Chicago and Sciences Po in Paris, and he has also served as a senior fellow in the Carnegie Endowment for International Peace. He has conducted research in Algeria, Morocco, Kuwait, Egypt and Indonesia, and speaks Arabic, French and Hebrew. Brumberg received his B.A. from Indiana University and his Ph.D. from The University of Chicago.

JAREER ELASS

ENERGY CONSULTANT AND EDITOR
JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY

Jareer Elass, a well-known energy analyst with 20 years experience in the energy publishing business, is an energy consultant and editor for the Baker Institute Energy Forum. Prior to working with the Baker Institute, Elass served as the managing director of Oil Navigator, an online energy consulting firm specializing in Middle East energy sector news and analysis. Elass also served for many years as an editor and reporter for *Energy Intelligence Group* oil publications covering political and oil developments within the OPEC countries, with lead responsibility for ongoing coverage of political developments within Saudi Arabia, Iraq, the U.S. and the U.N. focusing on multilateral and unilateral sanctions. He also managed *EIG's* special publications, including *EIG's* analysis reports on state oil companies. Elass was raised in Saudi Arabia, where he also served as an editor of Aramco's in-house magazine. He graduated *cum laude* from Arizona State University in 1984 with a BA in English Literature.

AMY MYERS JAFFE

WALLACE S. WILSON FELLOW IN ENERGY STUDIES
JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY

Amy Myers Jaffe, a Princeton University graduate in Arabic studies, is the Wallace S. Wilson Fellow in Energy Studies at the Baker Institute and associate director of the Rice University energy program. Jaffe's research focuses on oil geopolitics, strategic energy policy including energy science policy, and energy economics. Jaffe is widely published and served as co-editor of *Energy in the Caspian Region: Present and Future* (Palgrave,

2002) and *Natural Gas and Geopolitics: From 1970 to 2040* (Cambridge University Press, 2006). Jaffe served as a member of the reconstruction and economy working group of the Baker/Hamilton Iraq Study Group, as project director for the Baker Institute/Council on Foreign Relations task force on Strategic Energy Policy, and as a principal advisor to USAID's project on Options for Developing a Long Term Sustainable Iraqi Oil Industry. She is currently serving as a strategic advisor to the American Automobile Association (AAA) of the United States, helping to fashion a voice for the American motorist in the U.S. energy policy debate. Jaffe was among the 2004 Key Women in Energy-Americas honorees in the Pathfinders/Trailblazers category. In 2005 she was an honoree for *Esquire's* annual 100 Best and Brightest in the contribution to society category and *Elle* magazine's 2006 Women for the Environment. She has been named to Who's Who in America, 2008, and was a contributor to *Foreign Policy's* "21 Solutions to Save the World" (May/June 2007). She also received the 1994 Award for Excellence by the International Association for Energy Economics. She is currently a member of the Council on Foreign Relations. Prior to joining the Baker Institute, she was the senior editor and Middle East analyst for *Petroleum Intelligence Weekly*. Jaffe has written for a variety of news media including *The New York Times*, Dow Jones International, and the *Mideast Report*.

KENNETH B. MEDLOCK III, PH.D.

FELLOW IN ENERGY STUDIES, JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY
ADJUNCT ASSISTANT PROFESSOR OF ECONOMICS, RICE UNIVERSITY

Kenneth B. Medlock III is currently research fellow in energy studies at the James A. Baker III Institute for Public Policy and adjunct assistant professor in the department of economics at Rice University. He is a principal in the development of the Rice World Natural Gas Trade Model, which is aimed at assessing the future of liquefied natural gas (LNG) trade. Medlock's research covers a wide range of topics in energy economics, such as domestic and international natural gas markets, choice in electricity generation capacity and the importance of diversification, gasoline markets, emerging technologies in the transportation sector, modeling national oil company behavior, economic development and energy demand, forecasting energy demand, and energy use and the environment. His research has been published in numerous academic journals, book chapters and industry periodicals. For the department of economics, Medlock teaches courses in energy economics.

IRAN, ENERGY AND GEOPOLITICS

DANIEL BRUMBERG, ASSOCIATE PROFESSOR OF GOVERNMENT, GEORGETOWN UNIVERSITY

JAREER ELASS, ENERGY CONSULTANT AND EDITOR, BAKER INSTITUTE

AMY MYERS JAFFE, WALLACE S. WILSON FELLOW IN ENERGY STUDIES, BAKER INSTITUTE

KENNETH B. MEDLOCK III, FELLOW IN ENERGY STUDIES, BAKER INSTITUTE

INTRODUCTION

Iran's role in the Persian Gulf region has great bearing on the stability of the Middle East and, by extension, energy security. Iran's active support for such subnational groups as Hizbollah is a major factor in regional politics, as highlighted by Israel's conflict with Hizbollah in Lebanon in the summer of 2006. That lingering conflict could, if not properly managed by effective diplomacy, expand to embroil a wider range of countries and it remains a destabilizing factor in the region. Iran's role in Iraq also gives Tehran a pivotal input into regional stability. An expanded proxy war in Iraq—fanned by the actions of its neighbors—could create a political and humanitarian crisis of even greater proportions and would be detrimental to the region as a whole. An expansion in violence in Iraq and beyond would also greatly damage the stability of the oil market.

Beyond its role as a regional power broker, Iran has geographical leverage on the Strait of Hormuz, the main passageway for 16 to 17 million barrels of oil a day (b/d), roughly two-thirds of total world oil trade by tanker and 20 percent of total world daily oil demand. Oil and petroleum products from Iraq, Iran, Kuwait, Saudi Arabia, Qatar and

the United Arab Emirates transit the Strait of Hormuz. Large quantities of liquefied natural gas (LNG) are also exported from Qatar through the Strait. Moreover, the significance of the Strait of Hormuz has become enhanced in recent years because virtually all of the world's excess spare production capacity that can be brought on line quickly to defend against the adverse effects of a sudden oil supply crisis or disruption is located in Saudi Arabia, Kuwait and the United Arab Emirates, and thereby could be cut off if the Strait were closed.

Iran's pursuit of nuclear technology also hangs over regional stability. A nuclear Iran might drive other countries in the region, notably Saudi Arabia, Egypt and Turkey, to consider nuclear capabilities. Officials at a March 2007 Arab summit meeting declared that Iran's drive for atomic technology could begin "a grave and destructive nuclear arms race in the region." Several Middle East nations, like Egypt, Jordan, and Turkey, are investigating the nuclear power option. Russian President Vladimir Putin visited Saudi Arabia in February 2007, offering the kingdom a range of nuclear aid. More recently, U.S. White House announced new cooperation agreements under which the United States would assist Saudi Arabia in developing civilian nuclear power for medical and industrial uses as well as generating electricity. The agreement is to provide access to safe, reliable fuel sources for nuclear reactors and is intended to demonstrate what the Bush administration calls Saudi leadership as a non-proliferation model for the region. The agreement will expand cooperation to better safeguard the kingdom's vast oil reserves and its pipeline distribution system, as well as its borders. As part of the deal, Saudi Arabia is to join a global initiative to combat nuclear terrorism, to enhance the protection of nuclear systems and improve its ability to detect and confiscate illegally-held nuclear

material. The kingdom will also join an international alliance to combat the proliferation of weapons of mass destruction and related materials, including delivery systems.¹

The Gulf Cooperation Council (GCC) announced in late 2006 that it would embark on a nuclear energy program by 2009. Indeed, in February 2007, the GCC and the International Atomic Energy Agency (IAEA) agreed to work together on a nuclear power plan for the Gulf Arab states. The IAEA was to provide technical expertise and the GCC was to hire a consulting firm to speed its nuclear discussions.² Unlike Iran, GCC countries have proposed uranium enrichment be undertaken in a neutral country, reducing some of the potential crossover with a nuclear arms development program.³

Beyond the proliferation issue, the backdrop of conventional Iranian military actions inside the Persian Gulf over the last two and a half decades has also raised concerns about whether a nuclear Iran would leverage its nuclear capability to demand political or other gains by threatening traffic through the Strait of Hormuz via conventional or non-conventional means. U.S. initiatives to block Iran's nuclear ambitions sent oil prices up by several dollars a barrel in the autumn of 2006 and remain a feature driving price volatility today.

The U.N. Security Council has imposed three sets of sanctions on Iran for its failure to suspend uranium enrichment—a process that can be used to make nuclear weapons. The most recent set of sanctions, passed by the Security Council on March 3, 2008, authorizes inspections of suspicious cargo to and from Iran, tightens the monitoring

¹ Stearns, Scott, "Bush in Saudi Arabia for Nuclear Deal," May, 16, 2008. Voice of America Website <http://voanews.com/english/2008-05-16-voa23.cfm>

² "With Eye on Iran, Rivals Also Want Nuclear Power," William J. Broad and David E. Sanger, *The New York Times*, April 15, 2007. <http://www.nytimes.com/2007/04/15/world/middleeast/15sunnis.html>

³ "Gulf nuclear plans face big hurdles, says IAEA." *Reuters*, January 28, 2008. http://www.gulf-times.com/site/topics/article.asp?cu_no=2&item_no=198325&version=1&template_id=48&parent_id=28

of Iranian financial institutions and extends travel bans and asset freezes against persons and companies involved in the Iranian nuclear program. The U.N. resolution added 13 names to the existing list of 5 individuals and 12 companies subject to travel and asset restrictions as mandated by two previous U.N. resolutions. The new names included people with direct responsibility for building fast-spinning centrifuges that enrich uranium ore and a brigadier general engaged in “efforts to get around the sanctions” in the two earlier resolutions.⁴ The first two resolutions were passed on December 2006 and March 2007 and sought to pressure Iran to renounce its nuclear program by placing travel and financial restrictions on key individuals and organizations. Iran has dismissed as illegal and ineffective the threat of new U.N. sanctions and said it would clear up any remaining questions about its nuclear program in talks with the Vienna-based IAEA.⁵

Iran’s leaders have put the “oil weapon” card on the table in response to threats that more stringent sanctions might be imposed on it for pursuing nuclear ambitions. Iran said it would cut its oil exports to the West if a U.S.-led coalition imposed sanctions on it in response to its alleged plans to develop nuclear weapons. Iranian Supreme Leader Ayatollah Ali Khamenei in June 2006 warned the United States that Washington “should know that the slightest misbehavior on your part would endanger the entire region’s energy security...You are not capable of guaranteeing energy security in the region.”⁶

⁴ Warren Hoge and Elaine Sciolino, “Security Council Adds Sanctions Against Iran,” *The New York Times*, March 4, 2008. <http://www.nytimes.com/2008/03/04/world/middleeast/04nations.html>

⁵ “UN Security Council to review Iran sanctions.” *Agence France-Presse*. January 26, 2008. <http://afp.google.com/article/ALeqM5hs0YKYBvn8J2uuEE0pGkC-KPOlrg>

⁶ “Iran Warns U.S. on oil shipments.” CNN website. June 4, 2006. <http://www.cnn.com/2006/WORLD/meast/06/04us.iran/>

Saudi Arabia responded initially to this rhetoric by increasing its investments in upstream oil production capability in order to be able to replace any lost Iranian exports.⁷

Saudi leaders have been critical of Iranian policies. Saudi Foreign Minister Prince Saud al-Faisal bin Abdul-Aziz raised the specter of the conflict in Iraq becoming a proxy war between Gulf Sunnis and Shi'as, potentially engulfing the entire region, including Saudi Arabia, Iran, Syria, and Turkey. Noted the minister:

The real danger is in the division that is being projected between the Arabs of Iraq, dividing them into Shias and Sunnis, especially a separate entity for both... This is a recipe for bringing the countries around Iraq into conflict themselves. You have Iran on one side which will come in with the Shias. We have the Turks on the other side which will come in to fight with the Kurds, and the Arabs will definitely be dragged into the fight on the part of the Sunnis...

“Unless the Sunnis and Shias are brought together, it will disintegrate into civil war,” he added. “And then, the whole region will also disintegrate and conflicts that we have not dreamt of in the past will be facing the international community.”⁸

The Saudi government has a strong interest in national reconciliation in Iraq and in the peaceful coexistence of Sunni and Shi'a Arab populations. With the rise of a Shi'a-dominated government in Baghdad, Iran has been able to expand its influence in Iraq, a development of concern to Saudi Arabia and other countries with regional Arab Sunni majorities. With its own Shi'a minority estimated by some to be between 10 and 20

⁷ See *Saudi Aramco: National Flagship with International Responsibilities*, James A. Baker III Institute for Public Policy, at www.rice.edu/energy

⁸ The Baker Institute, Transcript of Lecture Address, 2005. Available at: www.bakerinstitute.org/events_sept_26_transcript.pdf.

percent of its population, Saudi Arabia is clearly worried about a “pan-Shi’a” movement in the Persian Gulf hostile to the Saudi regime. The possibility of popular unrest in Shi’a areas is no small matter of concern for Riyadh. Most Saudi Shi’as live in the oil-rich Eastern province where the vast bulk of Saudi Arabia’s oil production is located. A majority of skilled workers for Saudi Aramco, the state oil monopoly, in the Eastern province oil fields are of Shi’a origin despite a program to diversify the workforce in recent years. This means any kind of politically motivated work stoppage, strike, social protest or repressive clamp-down could have immediate ramifications for stable oil production flows.⁹

The rhetoric between Saudi Arabia and Iran escalated in early 2007, after a meeting between Ali Larijani, Secretary of the Supreme National Iranian Security Council and Saudi King Abdullah. Following the meeting, King Abdullah warned in an interview with the Kuwaiti newspaper, *Al-Seyassah*, about Iran exploiting the Israeli-Palestinian conflict to its own ends. “The Arabs alone should solve the issue of Palestine...We don’t want anyone to trade in our issues and become stronger through them.” King Abdullah also said efforts to spread Shi’ism in the Sunni Arab world would fail: “We are following this issue and we are aware of the extent of Shi’ite proselytism and where it has reached. But we do not think it will achieve its goal because the huge majority of Muslims who are Sunnis would not change their faith and sect...” King Abdullah warned that “the dangers it (the Iranian government) could fall into will fall upon all of us.”¹⁰

⁹ Jaffe, Amy Myers and Joe Barnes, “The Persian Gulf and the Geopolitics of Oil, IISS Survival, Vol. 48, No. 1, Spring 2006.

¹⁰“Saudi King Says Iran Putting Region in Danger,” *Reuters*, January 27, 2007.

Iran, Energy and Geopolitics

In March 2007, King Abdullah met with Iranian President Mahmoud Ahmadinejad, and reports surfaced that the discussions included a blunt dialogue about the future of Iraq. According to Simon Henderson, a Saudi watcher based at the Washington Institute for Near East Policy: “The Saudi monarch is believed to have told the Iranian leader that Iran was vulnerable to domestic insurrection by its ethnic minorities (Khuzestan Arab minority), implying or even stating that Saudi Arabia was prepared to finance or otherwise instigate such activities.”¹¹

Because of its regional leadership role, its position as the guardian of the holy sites of Medina and Mecca, its close ties to Iraq and Lebanon, and its large Shi’a population, Saudi Arabia has a strategic interest in reining in Tehran. Hints that Saudi Arabia might back Sunni fighters inside Iraq to protect its interests against Iranian-backed militias are a warning of possible negative scenarios that could emerge if stability cannot be achieved in Iraq through political means.

For its part, by mid-July of 2007, Iran put its Gulf neighbors on notice that it could be more aggressive, with Hussain Shariatmadari, an advisor to Iranian Supreme Leader Ali Khamenei and managing editor of the Iranian daily, *Kayhan*, claiming that Shi’a populations in Bahrain demand the reunification of “this province of Iran to its motherland.” He added, “It goes without saying that such an indisputable right for Iran and the people of this province should not and cannot be overlooked.”¹² While this statement was modified by other Iranian leaders’ comments, it had its political impact on the Arab Gulf countries.

¹¹ Simon Henderson, “Saudi Arabia: The Nightmare of Iraq,” *Policy Focus* 70, June 2007.

¹² “Iran Stakes Claim to Bahrain: Public Seeks ‘Reunification’... with its motherland,” July 13, 2007. Available at: http://www.worldtribune.com/worldtribune/WTARC/2007/me_iran_07_13.asp

The GCC initially responded to Iranian threats by increasing spending on military defense. By the end of July 2007, the Bush administration announced plans to offer a \$20 billion arms package for Saudi Arabia and its Gulf Arab neighbors. U.S. Undersecretary of State Nicholas Burns described the arms package as aimed to “enable these countries to strengthen their defenses and therefore to provide a deterrence against Iranian expansion and Iranian aggression in the future.”¹³

Gulf Arab officials remained critical of Tehran, and in November 2007, Bahraini Crown Prince Salman bin-Hamad Al-Khalifa made a blunt public accusation about Iran’s pursuit of nuclear weapons.¹⁴ Shortly thereafter, the Iranian President traveled to Bahrain on November 17, 2007 to meet with Bahraini ruler Hamid bin Isa Al-Khalifa. Following the meeting, Ahmadinejad dismissed speculation of war breaking out in the Gulf region over his country’s nuclear drive, and insisted that Washington was “contriving crises in the region.”

The Bahraini meeting highlighted an Iranian strategy to build economic bridges to the Arab Gulf and a tendency among the smaller GCC states to pursue a hedging strategy towards Iran. At the meeting the Iranian President and the ruler of Bahrain, signed an oil and gas memorandum of understanding (MOU) that would provide for the future supply of 1 billion cubic feet a day (bcf/d) (28 million cubic meters a day (mmcm/d) of Iranian natural gas to Bahrain. According to Bahraini Oil and Gas Minister Abdul Hussain

¹³ Vali Nasr and Ray Tayeyh, “The Costs of Containing Iran,” *Foreign Affairs* 81, no. 1 (2008): 85-94.

¹⁴ Breffni O’Rourke, “Iran: Ahmadinejad’s Bahrain Visit New Piece In Complex Pattern,” *RadioFreeEurope/RadioLiberty*, November 15, 2007.
<http://www.rferl.org/featuresarticle/2007/11/b3994453-90f3-43f1-89a0-b9399884d99b.html>

Mirza, negotiations on the supply of the gas should be completed within a year. He stated it would take three years to build the pipelines that will carry it.¹⁵

Bahrain is not the only GCC state to entertain stronger economic ties with Iran. Qatar and the United Arab Emirates have also been building economic ties with Iran since the late 1990s. The United Arab Emirates serves as a re-export point for Iranian trade (worth \$7 billion annually), and Iranian assets in the emirates are estimated at \$66 billion. As Middle East analysts Vali Nasr and Ray Takeyh note, in criticizing U.S. containment policy against Iran, “Even U.S. allies in the Middle East will assess their capabilities and vulnerabilities, shape their alliances, and pursue their interests with the understanding that they, too, are susceptible to Iran’s influence.”¹⁶ Other commentators note that GCC leaders may hope that economic engagement with Iran will serve to lessen overall political tensions. “It seems the UAE is weighing its options to enhance its ties with Western powers while building bridges with Tehran through high-level diplomatic visits...; improved economic and commercial ties to create homogenous interests that Iran would have a great stake in not destabilizing the UAE; and lastly to create political assets valuable for Iran such as Egypt’s increased diplomatic dialogue with Tehran and encourage Iran not to jeopardize Arab goodwill toward Iran.”¹⁷

Evidence that the GCC is engaged in a hedging strategy - one that acknowledges Iran’s growing power as a pivotal regional state and seeks to engage Iran as a more constructive regional player that would benefit from limiting its adventurism in Iraq, Lebanon and Palestine in favor of a more positive political and economic regional

¹⁵ “Ahmadinejad Dismisses War Talk in Bahrain Visit,” *Agence France-Presse*, November 17, 2007.

¹⁶ Vali Nasr and Ray Tayeyh, op cit.

¹⁷ Ibtisam Al-Kitbi, Assistant Professor of Political Science at the United Arab Emirates University, Talk before the Middle East Institute, February 19, 2008. See: <http://www.mideasti.org/encounter/interview-iran-conference-panelist-ibtisam-al-kitbi>

relations - is found in recent diplomatic initiatives between Iran and the Gulf Arab states. The GCC hosted President Ahmadinejad at its summit in Doha in early December 2007, marking the first time an Iranian leader had ever attended a GCC summit. This breakthrough is all the more remarkable, given that the GCC was formed in 1981 as a means for the Gulf Arabs to counter Iranian influence in the region. Although host state Qatar reportedly surprised its fellow council members by inviting Ahmadinejad to the summit, it was significant that none of them protested.

The final communiqué from the summit reiterated the GCC's desire for a peaceful solution to the conflict over Iran's nuclear ambitions. While stating that the GCC member states would form a common market in 2008, the communiqué said the organization would also study Ahmadinejad's offer of closer security and economic ties. Iran has previously called for Gulf security pacts, but the Arab states in the region have repeatedly ignored or rejected these proposals. The Iranian president called for peace and security "without foreign interference."¹⁸

Still, the contentious dispute over ownership of the Greater and Lesser Tunbs and Abu Musa Islands between Iran and the United Arab Emirates continues to be a divisive issue between Iran and the GCC, which has backed Abu Dhabi in the decades-long quarrel. Iran seized control of the three islands in 1971 and refuses to agree to international arbitration that Abu Dhabi has repeatedly requested, claiming full sovereignty over the islands. The ownership of Abu Musa is significant for the GCC members in that it is located in the Gulf about halfway between Iran and the United Arab Emirates, and is positioned at the narrow mouth of the Strait of Hormuz, enhancing

¹⁸ "Gulf States Urge Peace with Iran," BBC News, December 4, 2007.
http://news.bbc.co.uk/2/hi/middle_east/7127451.stm

Tehran's ability to close the Strait. Even though Ahmadinejad made an historic visit to the United Arab Emirates in May 2007—the first Iranian head of state to visit the emirates since its formation in 1971—it appears that Abu Musa was off the agenda.¹⁹ Gulf Arab leaders continue to be quite concerned about the risks to the Strait of Hormuz posed by Iran and are starting to consider steps to develop bypass routes and strategic stockpiles and investments outside the chokepoint.²⁰

THE SPECIFIC CHALLENGE OF STRAIT OF HORMUZ

The Strait of Hormuz is by far the single most important chokepoint in the world oil transportation system, providing the main passageway for 16 to 17 million b/d of oil—roughly two-thirds of total world oil trade by tanker and 20 percent of total world daily oil demand. The United States alone receives about 25 percent of its oil through the Strait.²¹

The significance of the Strait of Hormuz has become enhanced in recent years because virtually all of the world's excess spare production capacity that can be brought on line quickly to defend against the adverse effects of a sudden oil supply crisis or disruption is located in Saudi Arabia, Kuwait and the United Arab Emirates and thereby could be cut off if the Strait could be closed.

Maintaining the free flow of oil through the Strait of Hormuz is of vital strategic importance to the GCC countries and to the world economy. There have been several challenges to the freedom of navigation in the Strait of Hormuz and adjacent territories

¹⁹“Iran's Ahmadinejad in UAE talks,” BBC News, May 13, 2007.
http://news.bbc.co.uk/2/hi/middle_east/6650745.stm

²⁰ Authors' interviews with GCC oil industry officials.

²¹ Dagobert Brito and Amy Myers Jaffe, “Reducing Vulnerability of the Strait of Hormuz,” in *Getting Ready for a Nuclear-Ready Iran*, ed. Henry Sokolski and Patrick Clawson, U.S. Army War College Strategic Studies Institute, 2005.

over the last several decades. The most prolonged threat to navigation in the Persian Gulf in recent years arose during the eight-year war between Iraq and Iran. By 1984, the then three-year-old Iraq-Iran war entered its so-called “tanker phase” with regular bombings of shipping, oil export facilities and mining of the waters of the Persian Gulf.²² By 1987, the United States responded to the escalation of attacks on Persian Gulf shipping by organizing a fleet of frigates, destroyers and minesweepers in the region to combat the threat against shipping.²³ In March 1987, the U.S. government agreed to transfer Kuwait oil and gas tankers to the American flag and in July 1987, the U.S. Navy initiated Operation Earnest Will, providing naval escorts to tankers passing through the Persian Gulf.²⁴

More recently in April 2004, U.S. Navy vessels were called to service to repel attacks by terrorist suicide bombers on both of Iraq’s offshore oil shipping terminals, and shippers from the Persian Gulf region are again asking the U.S. military to provide naval escorts.²⁵ The possibility of terrorist attacks at the Strait of Hormuz cannot be ruled out, as similar threats have already been identified in Asia against another vital oil waterway, the Straits of Malacca.²⁶

In early January 2008, U.S. warships almost clashed with five Iranian Revolutionary Guard speedboats that approached them in Gulf waters, in a reminder of

²²Nadia El-Sayyed El-Shazly, *The Gulf Tanker War: Iran and Iraq’s Maritime Swordplay* (London: Macmillan Press, 1997).

²³ Rosemarie Said Zahlan, “The Impact of US Policy on the Stability of the Gulf States: A Historian’s View” in *Iran, Iraq and the Gulf Arab States*, ed. Joseph Kechichian (New York: Palgrave, 2001).

²⁴ John Partin, History and Research Office, USSOCCOM, Special Operation Forces in Operation Earnest Will, Prime Chance I, April 1998, p. 5-7; Also, Hassan Hamdan Al-Alkim, “The Arabian Gulf at the New Millennium: Security Challenges” in *Iran, Iraq and the Gulf Arab States*, ed. Joseph Kechichian (New York: Palgrave, 2001).

²⁵ Chip Cummins, “As Threats to Oil Facilities Rise, US Military Becomes Protector,” *Wall Street Journal*, June 30, 2004, p. A1.

²⁶ http://www.janes.com/security/international_security/news/fr/fr040630_1_n.shtml;
<http://www.nydailynews.com/front/story/119482p-107611c.html>

the difficulties in protecting oil traffic from small speedboat attackers. The incident occurred on January 7, 2008, when five Iranian patrol boats swarmed erratically around the USS Port Royal and its accompanying frigate and destroyer and then dropped small white, box-like items in the water. The three U.S. warships—the USS Port Royal, destroyer USS Hopper and frigate USS Ingraham—were headed into the Persian Gulf through the Strait of Hormuz on what the U.S. Navy called a routine passage inside international waters when they were approached by the five small high-speed vessels believed to be from Iran's Revolutionary Guard Corps Navy. The U.S. ships were reportedly seconds from firing on the speedboats before they turned and headed toward Iran, according to Pentagon officials.²⁷ No shot was fired during the entire incident, nor was anyone hurt.

As mentioned above, a territorial dispute between Iran and the United Arab Emirates over three islands inside the shipping lanes of the Strait of Hormuz has continued for several decades. The islands, Abu Musa and the Greater and Lesser Tunbs, were determined to be run under co-sovereignty by the two nations in 1971, following the departure of British colonial rule from the region. However, since 1992, Iran has occupied the islands and taken steps towards unilateral control over the course of the 1990s, restricting outside access, building an airstrip and deploying SA-6 surface-to-air missiles, 155-millimeter artillery and anti-aircraft missiles on Abu Musa.²⁸ Iran test-fired anti-ship missiles near the Strait of Hormuz in 1987²⁹ and again in January 1996.³⁰ Iran has Silkworm missiles deployed at Qeshm, Abu Musa Island and Sirri Island, all within

²⁷ Robin Wright, "Iranian Boats May Not Have Made Radio Threat, Pentagon Says," *The Washington Post*, January 11, 2008. www.washingtonpost.com/wp-dyn/content/article/2008/01/10/AR2008011000692_pf.html.

²⁸ BBC website, BBC Timeline, Abu Dhabi; Also, Hassan Hamdan Al-Alkim, op cit.

²⁹ http://www.nti.org/e_research/profiles/Iran/Missile/3876_4086.html

³⁰ <http://www.converger.com/eiacab/chron.htm>

range of shipping transiting the Strait.³¹ In March 2000, *Jane's Defense Weekly* reported that satellite images of Abu Musa and the Tunbs did not show any evidence that Iran had fortified the islands militarily.³²

Questions have been raised whether Iran's possible use of asymmetric naval warfare tactics, such as swarming speedboats or swarming speed boats used in combination with missile attacks, could be successful against conventionally superior Western-armed formations in the Persian Gulf. The Iranian Revolutionary Guard Corps (IRGC) has been estimated to have roughly 1,000 boats within the 17- to 60-foot range. The issue has been under study by the U.S. military ever since vulnerabilities were discovered during a war game exercise in 2002.³³

More recently, academic analysis has investigated whether swarming tactics could produce a sustained disruption in oil shipments in the Strait of Hormuz. The authors estimate the chances of Iran successfully stopping an oil-laden VLCC via a small boat attack at between 14 and 33 percent.³⁴

The backdrop of conventional Iranian military actions inside the Persian Gulf has raised concerns about whether a nuclear Iran would use the leverage of nuclear capability to demand political or other gains by threatening traffic through the Strait of Hormuz via conventional or non-conventional means.

To use such leverage, it is only necessary that Iran have the ability to credibly threaten to target specific exports of other countries, and not necessarily to actually carry out such threats. Currently, all of Iran's oil exports depart the country via the Strait, and

³¹ http://www.nti.org/e_research/profiles/Iran/Missile/3876_4086.html

³² www.eia.doe/emeu/cabs/pgulf.html

³³ Thom Shanker, "Iran Encounter Grimly Echoes 02 War Game," *The New York Times*, January 12, 2008.

³⁴ Eugene Gholtz, "Threats to Oil Flows Through Strait of Hormuz: Implications for American Grand Strategy," Working Group, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin.

the country has few, if any, options to bypass the Strait on an immediate basis (except trucking of small amounts of oil or sending oil to Iraq), making it unlikely that Iran would want to close the Strait completely. Rather, Iran would be more likely consider its options to bar passage of ships from specific countries. Iran's economy is highly dependent on oil export revenues, which constitute roughly 80 percent of total export earnings and 40-50 percent of the government budget and 10-20 percent of gross domestic product (GDP).

Strategies exist that could give the United States and its Gulf Cooperation Council allies time to pursue negotiated solutions to potential conflicts or to properly prepare for a military response. Among those alternatives are to use existing pipeline and oil export infrastructure to create a bypass to the Strait of Hormuz. The costs and options for doing so have been studied in detail by the James A. Baker III Institute and the Center for Naval Analysis.³⁵

In addition, the GCC, United States, China, and other major powers could work together through a multinational convention to create freedom-of-sea guarantees in the Persian Gulf that would be followed by all users of the Strait of Hormuz.³⁶ Such a convention might include a ban on sea mines in the waterway; a prevention-of-incidents management agreement (focused on freedom of navigation and avoidance of provocation) that more specifically defines maritime rules and regulations in the region; or creation of a multilateral organization to deal with the Strait of Hormuz. Such an

³⁵ For a detailed study of this subject, which is the basis for this section of this chapter, see M. Webster Ewell, Jr., Dagobert Briton and John Noer, "An Alternative Pipeline Strategy in the Persian Gulf," available at www.rice.edu/energy under Research/Other Publications and Presentations. A classified version of the study also exists that should be revisited by policy makers given the risks to Persian Gulf facilities described in this paper (Drag Reduction Agents: An Energy Security Bargain, M. Webster Ewell, Dagobert L. Brito and John Noer), Center for Naval Analyses, CRM 99-87.09 (1999).

³⁶ Douglas Streusand, "Managing the Iranian Threat to Sea Commerce Diplomatically" NPEC working paper.

initiative would have the advantage of convincing Iran that unilateral action would be counterproductive, while at the same time demonstrating that the United States and Gulf countries recognize Iran's strategic interests. The process of negotiating a convention would also create a coalition of countries that could respond in case Iran did pose a threat to freedom of navigation at the Strait.

MISMANAGEMENT OF THE IRANIAN ENERGY SECTOR:

IS NUCLEAR ENERGY REALLY NEEDED?

There are concrete reasons why Iran would want to be a nuclear power. The country sits geographically amid nuclear powers, including Pakistan, India, Russia and Israel. As the conflict between Israel and Hizbollah in the summer of 2006 highlighted, Tehran's support for subnational terrorist groups could accidentally trigger a broader conflict that could pit Iran against a nuclear state. Some analysts even couch the strategic calculus in religious terms, arguing that Iran feels a "Shi'ite" nuclear capability is needed to offset the "Sunni" nuclear capability (i.e. Pakistan).³⁷

But aside from the strategic calculus—which Iran has tended to avoid discussing—there are two basic non-military arguments made by Iran about why it needs nuclear power:

1. Iran is facing a tremendous shortfall of electricity and needs nuclear power to meet its own internal energy requirements, especially given the difficulties faced in natural gas and petroleum product production.

³⁷ See transcript of a talk at the Middle East Institute in Washington, D.C. by Dr. Wahid Hashim, associate professor of political science at King Abdul Aziz University in Jedda. Dr. Hashim notes, "Iran, in order to maintain and safeguard its national interest as well as its national security, had to play a role in the region. It had also to build its strength in order to face the so-called Sunni Islamic bomb. In my view, Iran's main intention is to develop its own Shi'ite bomb in order to balance the power in the region; to deter any Pakistani in the future to interfere on behalf of the Gulf if any hostility breaks out between the Iranians and the Gulf states..." Available at: <http://www.mideasti.org/transcript/conference-iran-horizon-february-1-2008>

2. Nuclear power would allow a greater amount of oil and natural gas exports, thus shoring up government revenues.

There is no question that Iran has been suffering from extreme energy shortages in recent years. Since the 1980s, energy demand growth in Iran has exceeded supply growth, with some analysts predicting that Iran could become a net oil importer by 2014-2015, given the country's problems attracting sufficient investment.³⁸

Solving the problem is made more difficult by the fact that Iran's government—under pressure to provide fiscal support to the Iranian economy—has continued its policy of heavily subsidizing electricity and other fuels to its rapidly growing population. Iran's large energy subsidies, which represent more than the equivalent of 10 percent of GDP, have stimulated strong energy demand growth, especially in the transport and electricity sectors. While eliminating the subsidies would likely encourage conservation and efficiency thereby lowering energy demand, such a policy could significantly lower economic growth by effectively providing a price shock to domestic energy consumers. Lifting the energy subsidies also runs the risk of creating popular unrest, as the subsidies are important to the daily lives of average Iranians. Hence, certain power groups inside the Iranian government are advocating for other sources of energy—i.e., nuclear energy—as a means of circumventing the impending fuel shortage problem.

Iran's approach to its multi-faceted energy sector seems unfavorable or even irrational when viewed through a strictly economic lens. As the following analysis suggests, the most effective long-term solution to Iran's energy needs lies in reforming its inefficient oil and gas sectors. Certainly, reform will require relieving the huge financial

³⁸ Roger Stern, "The Iranian Petroleum Crisis and United States National Security," Proceedings of the National Academy of Sciences (PNAS) 104, no. 1 (2007): 377-382.

burden that the oil industry has long shouldered as the primary foundation of the nation's populist development strategy—a sector that has recently been experiencing unprecedented profits. Reforming Iran's energy sector will also require substantial foreign investment, which its turn to the “East,” i.e., China, Indonesia, Malaysia or Japan, cannot hope to fully provide. As for on-going efforts to develop what Iran claims to be peaceful nuclear energy, as currently envisioned, nuclear power cannot make up for the structural weaknesses in Iran's oil and gas industries. Thus, we are left with two possibilities: either Iran's leaders are badly misinformed about the economic benefits of nuclear power, or -- as is more likely -- Tehran is using economic arguments to legitimate a program that is ultimately driven by political, symbolic/nationalist, and strategic calculations.

It is, of course, precisely such motivations that explain the determination of Washington to thwart Tehran's quest to acquire an independent fuel cycle. The 2005 election of President Ahmadinejad reinforced this resolve. Far more adept than many expected, the new president put into place a nation-wide network of hard-line allies. What is more, he did so with such apparent speed and success that some scholars concluded that Iran was undergoing a hard-line coup—one that promised to subordinate the clerical establishment itself to the dictates of an increasingly hegemonic security apparatus. In short, Iran was becoming just “another” authoritarian state.³⁹

While there is no denying the challenge that Ahmadinejad and his allies pose at home and abroad, this paper will discuss why they are unlikely to prevail and the role the energy sector and the nuclear question play in this highly-politicized process. Even if the

³⁹ Elliot Hen-Tov, “Understanding Iran's New Authoritarianism,” *Washington Quarterly*, Winter 2007: 163-79. http://www.twq.com/07winter/docs/07winter_hentov.pdf

vast majority of elites within the political establishment do support the quest for nuclear energy, many harbor deep misgivings about the pragmatic consequences of blindly pursuing this objective. Indeed, by linking the nuclear issue to a dangerous ideological, social, and geo-strategic project, Iran's Radical Populists have provoked a counter-attack from a heterogeneous grouping center and right-of-center forces. Led by conservative clerics and businessmen, these reformist and conservative groups have two closely-related goals. The first is to revive and strengthen the "dissonant" system of state-controlled competition and power sharing that constitutes the very heart of Iran's political system. The second is to reinvigorate the privileged relations between private-sector businessmen and the state, a strategy that requires co-opting—and containing—the radical populists. While it is too early to predict success, this struggle to deflect or even roll back the political, ideological, and economic dangers posed by Ahmadinejad and his allies may create openings for smarter U.S. diplomacy.

IRANIAN ELECTRICITY SHORTAGES AND NUCLEAR POWER: MYTHS AND REALITIES

Iranian energy demand has been rising at more than five percent a year over the past decade, and Iranian electricity demand has grown faster than its GDP in recent years. According to projections from the International Energy Agency (IEA), Iranian electricity demand is expected to grow at 3.2 percent a year to 2030, increasing from 153 Terrawatt Hour (TWH) in 2003 to 359 TWH in 2030 and requiring \$92 billion in new investment.⁴⁰ Of course, if the energy price subsidies are removed, the growth in demand would likely be significantly lower. For example, using a long-run price elasticity of demand for electricity of -0.4, a doubling of price, which would likely still not entirely remove the price subsidy, would result in a reduction of 40 percent in the annual growth rate of

⁴⁰ *World Energy Outlook* (Paris: International Energy Agency, 2005).

electricity demand, thus reducing growth to about two percent per year.⁴¹ (Note that if one accounts for any slowdown in economic growth as a result of the lifting of price subsidies, the savings is even larger).

Given the immediate plans for nuclear generation capacity (1360 MW), the amount of electricity saved by eliminating the price subsidies for domestic consumption would more than offset the planned nuclear capacity additions. In fact, using the above figures for elasticity and growth, a doubling of price saves by 2030 more than 13,800 MW (assuming these are baseload power plants operating at 85 percent capacity utilization), which represents the equivalent of the electricity provided by almost fourteen 1,000 MW nuclear power plants. Moreover, lower electricity demand, if stimulated by a reduction in price subsidies, results in a considerable capital savings, and those funds could be used for other endeavors. Thus, price reform is a more effective means of overcoming the projected domestic energy shortage than the expensive upfront capital commitment to nuclear power.

Price subsidies are also creating problems for meeting energy needs in other domestic end-use sectors. Iran's domestic oil refineries have not been able to keep pace with growing domestic transportation fuel demand. This has led Iran to import fuels, paying international prices and selling them at much lower subsidized rates. More recently, Iran has also had to resort to fuel rationing.

Seasonal winter shortfalls of natural gas have also become commonplace. The winter of 2007-08 was one of the coldest winters that Iranians had experienced in recent

⁴¹ Lijesen (2006) reports a range of studies in which the price elasticity of electricity has been estimated for different regions of the world. Al Farris (2002) reports price elasticities for a handful of Middle East countries, exclusive of Iran. The elasticities reported by Faris fall in the middle of the range reported by Lijesen.

memory, and some tens of thousands of citizens across the country were without heat for days and even weeks. This was compounded by rolling blackouts every night for a month in Tehran, leaving residents without electricity and heat for hours at a time.⁴² The heat and power deficit was the result of acute shortages of natural gas, caused by a combination of factors such as a supply cut-off of natural exports from Turkmenistan, some of the coldest winter weather in recent history, and delays implementing new phases of the South Pars natural gas project. As a result, state oil firm NIOC was forced to stop all gas reinjection in its oil fields in January.⁴³

The Iranian shortage of natural gas reflects poor management. As Iran was developing its natural gas sector over the past decade or two, the government encouraged domestic natural gas consumption. This policy was aimed at reducing gas flaring at oil fields as well as making more oil available for export by encouraging substitution of natural gas for oil in end-use. The policy has been successful, as the annual growth of gas consumption has seen increases of as much as 17 percent in recent years, thanks in large part to the low prices.⁴⁴ In fact, Iran has significantly expanded its gas network making gas available to consumers in all economic sectors, even to households in small communities in remote locations across Iran.⁴⁵ However, as with electricity and petroleum product demand, artificially low prices have contributed to Iranian natural gas demand rapidly outstripping available domestic supply, creating new problems for the regime.

⁴² Andrew Blackman, "A Frail Economy Raises Pressure on Iran's Rulers," *The New York Times*, February 3, 2008.

http://www.nytimes.com/2008/02/03/world/middleeast/03iran.html?pagewanted=2&_r=1&sq=Iran,%20natural%20gas&st=nyt&scp=1

⁴³ "Iranian Natural Gas Shortages Affect Production," *The Oil Daily*, January 30, 2008.

<http://www.energyintel.com/>

⁴⁴ Dr. Manouchehr Takin, "Iran's Energy Crisis," Centre for Global Energy Studies, May 2007, p. 50.

⁴⁵ Takin, p. 50.

Iran ranks second globally in both proved natural gas reserves and undiscovered potential natural gas resource, but only ranks 25th among world natural gas exporters. Around 62 percent of Iranian natural gas reserves are located in non-associated fields, and have not been developed. Natural gas is consumed as a petrochemical feedstock, for power generation, and as a component to enhance recovery in oil fields. In fact, almost one-fifth of Iranian natural gas production is injected into oil fields to enhance production, resulting in a large quantity of gas being unavailable for export. In 2005, 60 percent of Iranian gross natural gas production was ultimately sold to domestic consumers, 19 percent was used for re-injection in EOR efforts, and the remaining 22 percent was lost due to flaring and processing.⁴⁶ According to official U.S. Energy Information Administration (EIA) statistics, in 2004, roughly two-thirds of the gas in the flaring and processing category was actually consumed in flaring. Thus, flaring practices result in about 23 bcm/yr (1.8 bcf/d) of gas that could otherwise be marketed.

Table 1. Breakdown of Natural Gas Use, 2005

Consuming Sector	Bcm/yr	Bcf/d	Share
Household/Commercial	34	3.290	21%
Electricity Generation	33	3.193	21%
Industry/Petchems/Refining	28	2.709	18%
Reinjection	30	2.903	19%
Flaring/Processing	35	3.386	22%
Total Gross Production	160	15.481	100%

Source: Iran Ministry of Power, CGES

⁴⁶ CGES.

Iran, Energy and Geopolitics

Gross natural gas production in Iran (including wet gas) is currently 440 mmcm/d (15.5 bcf/d) or 160 bcm/yr (5650 bcf/y). Domestic dry gas consumption plus re-injections were 380 mmcm/d (10.8 mmcf/d) in 2007, up 12 percent, according to the Iranian government. Average annual growth in Iranian dry natural gas consumption, not including re-injection, flaring and processing, has averaged about 9.5 percent over the past two decades. Iran exports natural gas to Turkey and Armenia. The natural gas destined for Armenia is part of a deal that involves the import of electricity back to Iran.

Iran imports about five percent of its domestic needs from Turkmenistan via the 125-mile Korpezhe-Kurt Kui pipeline, built in 1997.⁴⁷ Iran has been importing gas from Turkmenistan since 1998, with volumes reaching 6 bcm/y (212 bcf/y), and targeted to the country's north and northeastern regions. Despite these imports, it is not unusual for the country to face gas shortages during peak winter months due to high rates of consumption. However, shortages have also been exacerbated by disruptions in pipeline supplies from Turkmenistan, reportedly due to "technical problems." The disruptions have been attributed to price renegotiation tactics, especially in light of the fact that a recent deal with Gazprom means that Turkmen exports to Russia now receive a highly favorable price. On December 31, 2007, Turkmenistan halted supplies of 23 mmcm/d (812 mmcf/d) of gas to Iran, mirroring circumstances a year before when the Turkmens ceased their exports into Iran before an agreement was signed between the two sides that would stipulate a price increase for the gas deliveries and that Iran would double its Turkmen gas volumes. Past failures between Turkmenistan and Iran to agree to an

⁴⁷ "Oil Ministry Ready to Weather Frost." *Tehran Times*, January 12, 2008.
http://www.tehrantimes.com/index_View.asp?code=160987

acceptable price increase have reduced pipeline flows of Turkmen gas to 8 bcm/y (283 bcf/y), well below the contracted volume of 12 bcm/y (424 bcf/y).⁴⁸

Low domestic prices also make it very difficult to finance further development of domestic energy resources. Low petroleum product prices make it unlikely that refinery capacity will be profitable, which means that the government must underwrite the capital expense, anticipating that the expenditure will not offer a rate of return and therefore not contribute to any improvement in Iran's national financial difficulties. Low natural gas prices make expanding infrastructure and developing fields for domestic use an unattractive proposition for outside investment, meaning, yet again, that the government must underwrite the expense. While this can be done for some period of time, it can be an unsustainable path resulting in burgeoning government debt, rapidly growing energy demands, and an inability for domestic supply to keep pace.

Investment in nuclear power generation capacity has been cited by the government as a solution to Iran's rapidly growing electricity demand and the "insecurity of supply." Moreover, commentators regularly point to Iran's energy situation as a justification for its pursuit of nuclear capability. In one representative article on the subject, three Iranian professors argued in an editorial in the *International Herald Tribune* that Iran does indeed need nuclear power. In the editorial, the academics pointed out that Iran's present electrical requirements are far larger than had been predicted. They assert that there will be annual growth of six to eight percent in electricity demand, partially fueled by an Iranian population that is projected to reach 100 million by 2025. Given these figures they contend that Iran cannot possibly rely exclusively on oil and gas.

⁴⁸ "Iranian Natural Gas Shortages Affect Production," *The Oil Daily*, January 30, 2008.
<http://www.energyintel.com/>

According to the academics, Iran's current production level is increasingly geared toward domestic consumption, which has grown by more than 280 percent since 1979. If this trend continues, they suggest, Iran will become a net oil importer by 2010, a catastrophe for a country that relies on oil for 80 percent of its foreign currency and 45 percent of its annual budget.⁴⁹ Developing nuclear power generation capacity is cited as a means for Iran to expand government revenues and fortify its national treasury. By relying more heavily on nuclear power for domestic electricity, less petroleum and natural gas would be required, so the argument goes, thereby increasing the quantity of oil and natural gas available for export.⁵⁰

While such predictions seem dire, they rely on very aggressive projections for energy demand in Iran. This runs counter to many models that relate energy demand to economic development under reasonable scenarios for economic growth. In fact, it is arguable that the question of the rate of growth of energy demand in Iran, and in particular, the natural gas demand, has become incredibly politicized. Opponents to Iranian natural gas exports have argued that domestic requirements will be so high that it is not advisable for Iran to pursue natural gas exports.⁵¹ In fact, Western consultant FACTS Global Energy is predicting that Iran's natural gas exports will be minimal due to

⁴⁹ Mohammad Sahimi, Pirouz Mojtahed-Zadeh and Kaveh L. Afrasiabi, "Energy: Iran Needs Nuclear Power," *International Herald Tribune*, October 14, 2003.

http://www.iht.com/articles/2003/10/14/edsahimi_ed3_.php

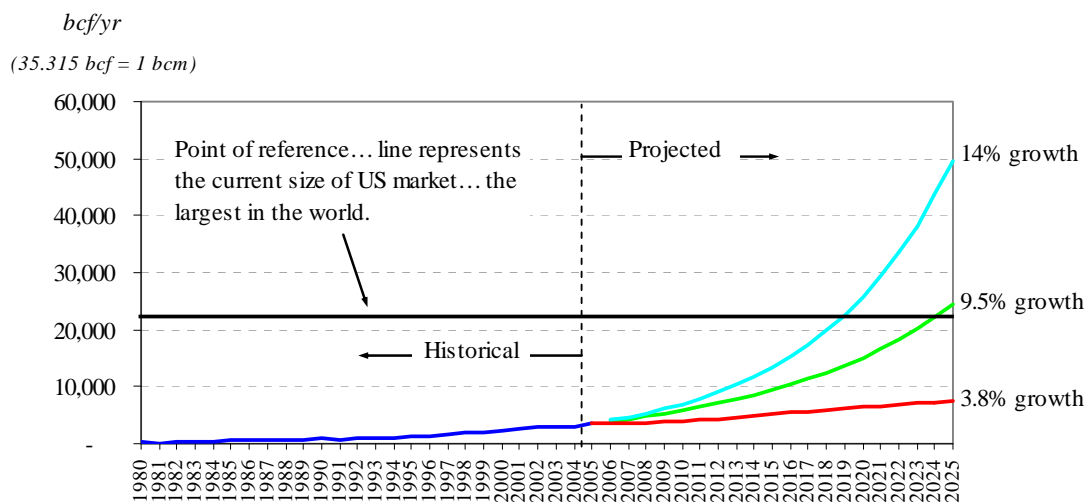
⁵⁰ A.F. Alhajji, "The Endless Iranian Nuclear Crisis," http://www/project-syndicate.org/print_commentary/alhajji4/English

⁵¹ The figures offered for one group arguing this line are that by 2010 domestic gas demand will be 42 bcf/d (434 bcm/y), of which almost half, 20 bcf/d (207 bcm/y), will be needed for oil field injection, while 10 bcf/d (103 bcm/y) will be required for commercial, residential, and compressed natural gas, including a CNG program to replace 63,000 b/d of gasoline by 2008-09. They forecast 7 bcf/d (72 bcm/y) to be dedicated for electric power production and a remaining 5 bcf/d (52 bcm/y) for industrial and petrochemical use. "Iran sees use of natural gas at issue as oil production sags." *Alexander's Gas & Oil Connections*, May 26, 2005. <http://gasandoil.com/goc/news/ntm52119.htm>

rising domestic demand even with future expansion and production from the massive South Pars project.

Independent projections are not as dire as many Iranian government forecasts. For example, Baker Institute forecasts put Iranian natural gas demand as increasing at an average annual rate of around 3.8 percent to 2025, substantially lower than the 14 percent growth being touted as recent rates of growth and less than the 9.5 percent average annual growth over the last 20 years (see Figure 1). A lower rate of demand growth calls into question claims that Iran will have increasing shortages of natural gas and will not be able to promote export projects due to rising internal demand. The Baker Institute forecasts are based on the model of natural gas demand in the Baker Institute World Gas Trade Model. The model takes into account factors such as population growth, economic growth and competition of fuels. Iranian population growth is estimated to rise at a rate of 1.2 percent a year for the next twenty years as projected by the United Nations. In real terms, the model also projects GDP growth in Iran averaging 4.2 percent, which is higher than the last 20 years.

Figure 1. Various Forecasts for Iranian Natural Gas Demand



Lower rates of growth in natural gas demand mean that the natural gas shortages projected by some to worsen in the coming decades may not be quite so severe, and may be avoidable. For example, average annual demand growth of 3.8 percent yields a very different picture of domestic supply requirements than demand growth of 9.5 percent, 14 percent or even 22 percent, the last of which yields demand that reaches 42 bcf/d (434 bcm/yr) by 2010. Therefore, those who advocate against natural gas exports or those advocating the need for nuclear power are basing their arguments on potentially exaggerated demand projections that will only yield one outcome—demand will outpace domestic supplies of fossil fuels. The reasonableness of these 9.5 percent to 14 percent demand projections is highly suspect.

Regardless of the demand outlook, the sheer size of the Iranian natural gas resource base means that it could become a significant natural gas exporter in the coming years, if it can make the massive investments needed to develop its resources. Thus, the outlook for domestic supply development is also important in determining the need for alternative energy sources in Iran. In fact, given the size of the Iranian resource base, if investment in domestic supplies were to be made at an efficient pace, it is doubtful that demand (under most reasonable growth rates) would outpace supply. An easing of domestic price subsidies could all but guarantee such a more positive outcome.

Therefore, the question for advocates of nuclear power is not whether Iran has large enough natural gas resources to meet its electricity needs. Rather, the question is whether the financial and technical resources needed to exploit undeveloped natural gas resources will be available to expand supply sufficiently to meet both domestic demand the country's planned and desired natural gas exports.

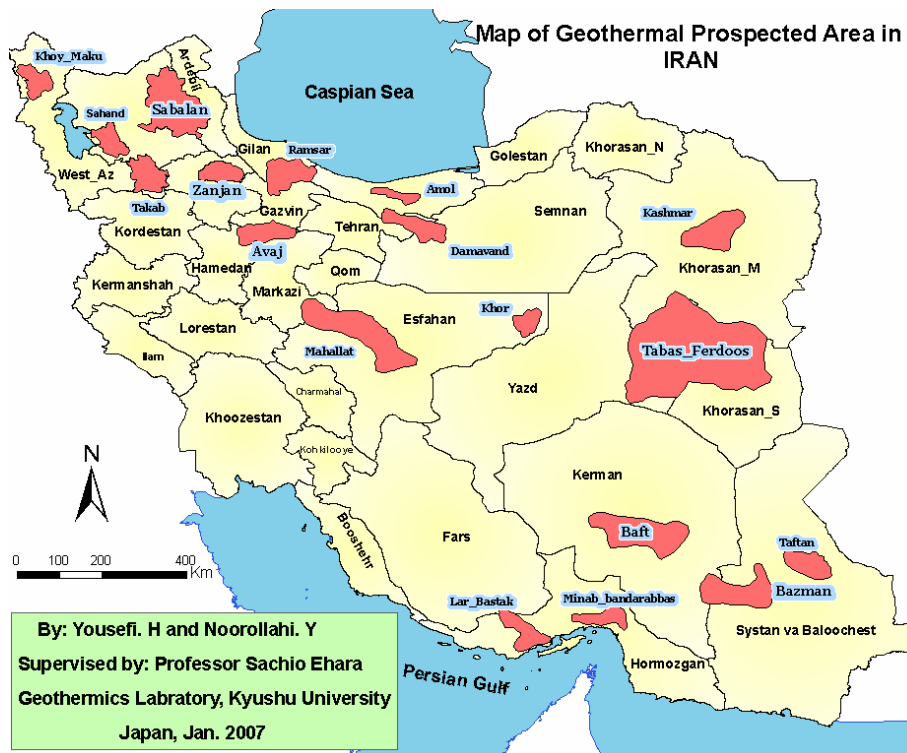
In addition, it must be determined whether that task could be facilitated in a cost-effective manner by meeting some portion of domestic electricity demand with nuclear power instead of natural gas-fired facilities. Thus, in analyzing the value of nuclear power, one must consider both whether it provides a low variable cost (but very high fixed cost) source of reliable electricity supply, and also if it will actually allow natural gas to be developed for export, where its value is tied to international prices rather than artificially-low domestic prices. If nuclear power plants allow natural gas production to grow but that production is not sold at international prices, then the diversification toward nuclear power will not provide the much touted source of government revenue.

In sum, this means that the value of nuclear power will be determined by its own revenue-generating capability *minus* the cost of development and operation *plus* the revenue uplift it provides to current and future natural gas supply projects. The benefit of nuclear power to Iran's finances is not assured but depends on other complementary Iranian policies and economic trends.

And, even if the value measure for nuclear power investment is positive, it still may not mean that nuclear power is the best option for Iran. For one, eliminating price subsidies on natural gas use is one action that could have a broader impact. It would raise the value of natural gas domestically, reduce the rate of demand growth, and encourage a more efficient use of domestic resources. Furthermore, as demonstrated above, removing or reducing price subsidies in electricity use would alleviate the need for a substantial amount of power generation capacity. However, removal of energy price subsidies has been a politically charged issue that has led to social unrest and street protests in the past and therefore is likely to be a policy of last resort to the Iranian leadership.

Power generation options other than nuclear powered facilities could also be considered. One such option is geothermal power generation. Yousefi et al. (2007) identifies several geothermal “hot spots” in Iran (see Figure 2). Other authors have done similar work and estimates of generation capacity potential range up to and in excess of 7,000 MW. There already exists a 55 MW geothermal power plant in Sabalan (in the northwest of Iran), but the potential is much higher. This would certainly be a viable source of power for the country, and the technology is proven, with large geothermal projects in various phases of development around the world. While each carries its own costs, given the international discontent with Iran’s nuclear development plans and the wide-ranging costs of any associated sanctions, it seems these options might be less burdensome than developing nuclear power generation capability.

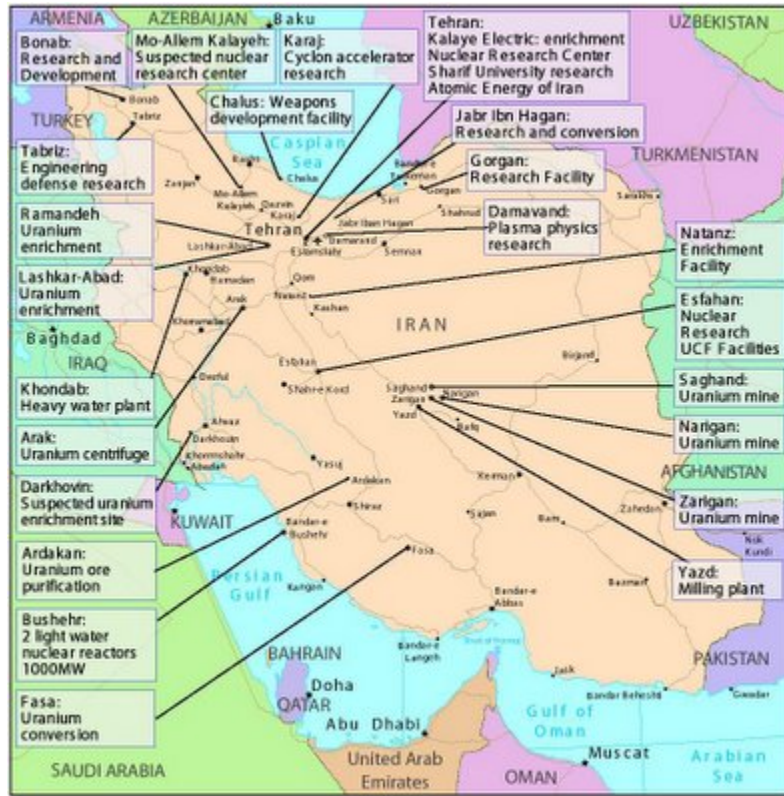
Figure 2. Geothermal Possibilities in Iran



Source: Yousefi, et al. (2007)

Iran's two planned nuclear facilities for a total of 1,360 megawatts (MW) would make available up to 200 mmcf/d (2.07 bcm/yr) of natural gas, assuming the plants could run at high utilization rates. This is much less than the amount of natural gas that could be freed by phasing out high price subsidies and reducing the need for 13,800 MW of electricity supply or the equivalent of 2 bcf/d or 20.8 bcm/yr of natural gas feedstock for power generation. Figure 3 indicates the location of nuclear-related facilities within Iran. Some have noted that the 1000 MW plant at Bushehr is being constructed in the southwest portion of the country, away from the northwest part of the country that lacks resources and has been dependent on natural gas imports from Turkmenistan. However, the location of the Bushehr plant makes sense for a variety of reasons, including water access and/or access to key electricity transmission corridors. But adequate and reliable power transmission infrastructure represents another substantial requirement for the plants sited in these areas to be able to meet adequately the supplementary electricity goal that is the stated purpose of the nuclear plants.

Figure 3. Iran’s Known Nuclear Facilities



Source: http://www.nti.org/e_research/profiles_pdfs/Iran/iran_nuclear_sites.pdf

Iran is building its first 1,000 MW nuclear power plant near the southern city of Bushehr. Officials have said that Russia delivered final supplies of nuclear fuel to run that plant in January 2008, and that the facility is expected to be operational in late 2008. Iran and Russia are currently in talks on nuclear fuel deliveries to Bushehr for the next 10 years. Ahmad Fayaz-Bakhsh, deputy head of Iran's Atomic Energy Organization, has put the total project cost of Bushehr at \$1.2 billion, which he said Iran had paid to Russia in installments,⁵² but the actual costs for the plant are probably considerably higher than

⁵² “Iran Pledges to Build Nuclear Plants Alone,” RIAN News Service, January 30, 2008. www.speroforum.com/site/article.asp?idarticle=14089&t=Iran+pledges+to+build+nuclear+plants+alone

that given that the facility was started in 1974 under the Shah, who had an extensive nuclear program under consideration.

Indeed, the Shah had unveiled plans to purchase several nuclear reactors from Germany, France and the United States to generate electricity. With Washington's blessing, the Shah's government awarded a contract to a subsidiary of the German company Siemens to construct two 1,200 MW reactors at Bushehr. The United States was encouraging the Shah to expand Iran's non-oil energy base given projections at that time for Iran's mushrooming electricity demand. The first generation of Iran's nuclear engineers was trained at the Massachusetts Institute of Technology. In recognition of Iran's energy needs, the final draft of the U.S.-Iran Nuclear Energy Agreement was signed in July 1978. The agreement stipulated, among other things, American export of nuclear technology and material and help in searching for uranium deposits.⁵³

At the time, the shah's goal was to build 20 nuclear power stations over a ten-year period to produce a total of 30,000 MW of atomic energy to ensure that it would be able to meet domestic energy demand and still maintain oil export levels. With the fall of the Shah in 1979 and the onset of the Islamic Revolution, one of Ayatollah Khomeini's first acts was to scrap the entirety of the shah's grandiose modernization program -- including the nuclear project.⁵⁴

The Bushehr I reactor was 85 percent complete and the Bushehr II reactor was partially complete at the onset of the Islamic Revolution. It subsequently was damaged by Iraq during the 1980-1988 Iran-Iraq war, and equipment was looted. Significant amounts

⁵³ Mohammad Sahimi, Pirouz Mojtahed-Zadeh and Kaveh L. Afrasiabi, "Energy: Iran Needs Nuclear Power." *International Herald Tribune*, October 14, 2004.
http://www.iht.com/articles/2003/10/14/edsahimi_ed3_.php

⁵⁴ Amir Tahiri, "Of Mullahs and Their Nukes: A deadly problem out of Iran," *National Review*, November 10, 2003. http://findarticles.com/p/articles/mi_m1282/is_21_55/ai_109186909

of money, possibly billions of dollars, had been spent on Bushehr to that point. Russia's involvement in Bushehr dates to 1992, when Germany abandoned work on the project—after being pressured by the United States—and Russia agreed to finish it.⁵⁵ In 1995, Russian signed an \$800 million contract with Iran to complete the work at Bushehr.

More recently, industry estimates place the construction cost of a new nuclear power plant in the United States at closer to \$5 billion. Thus, the future cost of Iranian facilities, which is major consideration here, could be substantially higher than the \$1.2 billion cost being officially cited for the Bushehr facility, raising questions about the profits new plants could potentially generate for the Iranian treasury in comparison to natural gas or other fuel sources.

Iran has reportedly begun constructing a second nuclear power plant, located at Darkhovin in the southwestern Khuzestan province. Iran has said it would construct a 360 MW plant at the site, the size of which is surprising small by commercial standards, as part of a planned network of a number of power plants with a combined capacity of 20,000 MW by 2020 to satisfy soaring domestic electricity demand. The United States responded to news about a second plant by saying that Washington saw no need for Tehran to build additional nuclear power plants.⁵⁶ According to Fayaz-Bakhsh, the Darkhovin plant is slated for completion in 2017, and will use locally-produced fuel. In addition, the Iranian official said that all construction stages will be supervised by the IAEA.

⁵⁵ Alex Rodriguez, “Iran gets nuclear fuel from Russia, but Tehran says deal won’t stop enrichment,” *The Chicago Tribune*, December 18, 2007.

⁵⁶ “Envoy: Iran Building Second Nuclear Plant,” *Reuters*, February 9, 2008. <http://www.dailyherald.com/story/?id=131664&src=93>

In terms of total costs, nuclear power might be more economic than additional natural gas-fired electric power capacity, especially once the added value of higher natural gas exports is considered. However, in general, given the high fixed cost of nuclear power plants, they must run a very high number of hours in order to drive down their average *total* cost. Only at very high utilization rates will nuclear power begin to look competitive with natural gas. The low fixed cost and high variable cost (due to fuel purchases) of natural gas power plants generally cause natural gas-powered facilities to have relatively high average total costs as their capacity utilization rates increase. In fact, in markets where regulatory delays and environmental restrictions have a significant impact on the up-front fixed costs of construction, the competitiveness of nuclear power stations versus natural gas-fired combined cycle plants may be quite marginal, if not negative.⁵⁷ However, in Iran, these added costs may not be present, especially since construction involves Russian suppliers and has government backing, meaning nuclear power could be significantly cheaper in Iran, making it a better cost option.

Figure 4 captures the above argument graphically. Consider two types of power plant, one with a high fixed cost but low variable cost (such as nuclear), and one with a low fixed cost but high variable cost (such as natural gas). The vertical intercept on the right-hand axis represents the fixed cost of each type of facility. The slope of the line extending from each vertical intercept is determined by each plant's variable cost, which is principally fuel cost. Thus, the flatter the slope, the lower the variable cost. As we move along each line, we have each plant's total cost for given rates of utilization (hours per year). The figure indicates that there is a breakeven point at which nuclear power

⁵⁷ A recent MIT study (see Deutch, 2003) compared the costs of natural gas combined cycle and nuclear. Assuming both are operated at similar capacity utilization rates, nuclear power only was an attractive option under certain high natural gas price scenarios.

becomes a lower cost option than natural gas. In fact, for run times less than t , one should only consider natural gas. Obviously, the “ t ” is critical here, and it is determined by the fixed and variable costs of the two plant types.

For the case of Iran, given a fixed cost of \$1.2 billion for a 1000 MW nuclear facility, we have a fixed cost of \$1200 per kW. Assuming the variable cost of operation is 1.5 cents per kWh, we have at 100percent utilization a total annual cost of \$1,331 per kW. By comparison, if the fixed cost of a natural gas combined cycle plant is \$800 per kW, and the variable cost is 7.2 cents per kWh (ignoring the subsidy on natural gas prices⁵⁸), we have at 100 percent utilization a total cost of \$1,360 per kW. Of course, as we approach zero percent utilization nuclear costs approach \$1200 and gas costs approach \$600 per kW. This implies a “crossover” point in total costs, which in this example is about 80.1 percent capacity utilization, meaning nuclear would be the lower cost option for any utilization exceeding 7017 hours per year, or 80.1 percent.⁵⁹

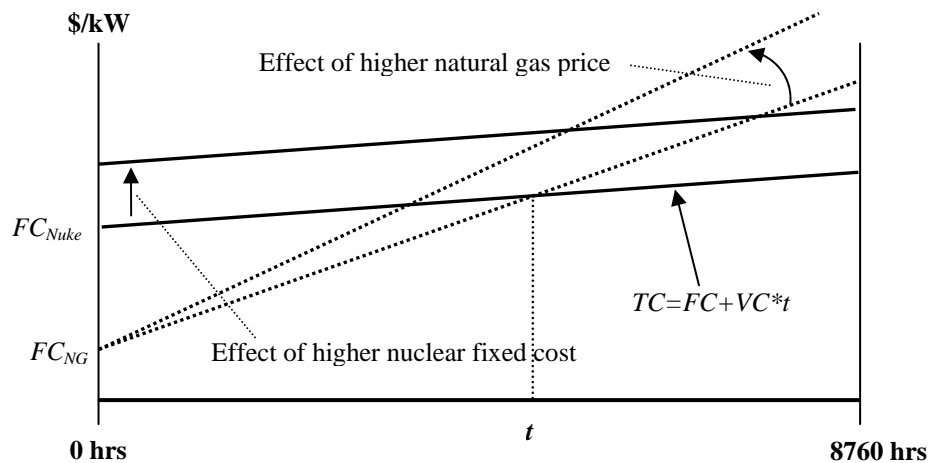
If we consider the fact that natural gas consumed domestically is much less expensive due to high subsidies, the variable cost for natural gas becomes much lower, making the competitiveness of nuclear power questionable at any capacity utilization factor. In fact, this encourages gas use over nuclear power for even baseload power. However, once we consider the opportunity cost of selling gas domestically rather than internationally, this tends to rotate the natural gas total cost line in Figure 4, making the point of competition with nuclear much lower. In fact, it brings us back to the example above, making nuclear the fuel of choice for capacity factors exceeding 80.1 percent, thus

⁵⁸ The assumption used is that gas price is \$9 per mmbtu (similar to a netback price from Henry Hub in the U.S.) and the plant heat rate is 8000 BTU/kWh.

⁵⁹ We find the breakeven point by solving $FC_{nuclear} + VC_{nuclear} \cdot t = FC_{naturalgas} + VC_{naturalgas} \cdot t$ for t , such that the total cost of each type of facility is the same.

leaving gas an uneconomic option for baseload power. However, if the fixed cost of building future nuclear plants is indeed higher than \$1.2 billion per 1000 MW, the breakeven point again changes, meaning nuclear power may not be a competitive power source. There may also be fixed political costs of nuclear power, which would tend to raise the total cost of nuclear and make natural gas a better option, even at international prices. Thus, the degree of competitiveness between natural gas and nuclear depends upon a number of factors, and it is, as a result, highly uncertain whether or not nuclear power is the least cost course of action for Iran.

Figure 4. Competitive Balance between Nuclear and Natural Gas



The above argument only captures the cost side of the equation. Given that much of the argument behind the need for nuclear power is based on expectations of very robust demand growth for natural gas, phasing out natural gas subsidies would be a more sensible policy approach to Iran's apparent natural gas shortages than building nuclear capacity. In fact, it would have a similar effect as that demonstrated above where electricity price subsidies are removed. In particular, by ending natural gas subsidies and

pricing that fuel at appropriate international levels, the Iranian government would be able to properly weigh the opportunity cost for the full range of uses for all of its natural gas production, and not just the very small volume that might be freed up from the construction of one or two nuclear power facilities. Moreover, natural gas flaring represents as much as 14 percent of total natural gas usage. If natural gas supplies currently being flared could be captured and sold in the Iranian market as feedstock for power generation, it could fuel more than eight times the amount of power generation currently planned to be provided by the two proposed nuclear power stations. Thus, it is possible that Iran's nuclear power station plans are not driven purely by economic considerations. Given the high level of opportunity cost accrued to the Iranian government by selling such a large portion of its natural gas at highly subsidized internal prices, it seems a rather small drop in the bucket to try to gain the very marginal economic benefits that would come from shifting to domestic nuclear power generation to free up more natural gas for export. Capturing natural gas that is being flared (22 bcm/y) might be more effective in terms of gaining more gas to enhance Iran's export options than freeing up natural gas through nuclear power (2.07 bcm/yr).

THE INTERNAL POLITICS OF NUCLEAR ENERGY IN IRAN:

GREASING THE POLITICAL WHEELS

To fully grasp the apparent *economic* irrationality of Iran's development strategy, it is important to understand the complex *political* rationality that animates (and hobbles) it. Iran's oil and gas industries are designed to grease the wheels of a system of authoritarian, state-controlled (and highly unequal) elite power-sharing arrangement. This power-sharing system survives by allowing a myriad of political, social, and religious

groups to share in the benefits of the huge financial rents derived from the state-owned oil industry. Three main groups—Political Reformists, Conservative Clerics and Radical Populists—were key players in the revolutionary family over which the Ayatollah Khomeini presided from 1979 to his death in 1989. All of them, with the possible exception of some elements within the “Political Reformists,” support the basic institutional structure of the Islamic Republic—including the office of the Supreme Leader or *rahbar*—now held by Ayatollah Khamanei. Still, on questions of economic development, these groups have different interests, motives, and goals.

That said, it must be emphasized that the institutional and ideological boundaries between these various competing factions that constitute Iran’s political arena are not merely fuzzy; they have been constantly configured and reconfigured in response to shifting domestic, regional, and global developments. What follows is a snapshot of the three competing camps—**Political Reformists**, **Pragmatic Conservatives** and **Radical Populists**—that have defined Iran’s multi-polar or dissonant system since roughly 2000.

The **Political Reformists** are rooted in Iran’s urban professional classes, academia, and elements of the business community. Their goal is to transform the *majles* and presidency into vehicles of genuine democratization. On economic issues, most reformists favored a rule of law approach and did not oppose market economic liberalization, but there was an important sub-faction that wants to retain the state’s role in the economy to assure a minimal level of social equity and social peace. During the era of former president Mohammed Khatami (1997-2005), this fissure over economic issues weakened the reformists. But internal differences regarding the costs and benefits of

market reform were far less decisive than the implacable hostility of conservative and radical clerics to the reformists' overall political agenda.

The **Pragmatic Conservatives** constitute a diverse group of religious and business actors that have roots in the urban *bazaar*. The clerical contingent is drawn from senior ayatollahs who sit in formal governmental institutions such the Council of Guardians, the Council of Experts and the Expediency Council, and in the non-governmental organizations that officially speak for the leading religious seminaries, but which also play a crucial informal role in the political system. The goal of these clerics is to retain their authority to interpret religious values and laws in ways that uphold the institutional and ideological foundations of the Islamic Republic. This requires deflecting the challenges from younger, more radical clerics or lay intellectuals to interpretations of the religious doctrines that senior clerics invoke to defend their institutional autonomy and authority.

The business contingent within the conservative camp hails from the traditional private sector (*bazaar*), but also includes actors drawn from the huge state-owned industries such as the National Iranian Oil Company (NIOC), as well as from the semi-private/semi-governmental parastatals and business-religious conglomerates (*bonyads*). The goal of these actors is to invigorate the freedom of maneuver, resources, and clout of the private sector, while at the same time enhancing the privileged access to state capital and contracts for private and semi-private actors. Thus, the conservatives are hardly devotees of Milton Friedman economics or, for that matter, of orthodox economic reform. Indeed, during the 1980s, their members expanded their influence under the umbrella of a heterodox system that links nationalized industries, semi-public para-

statal, *bonyads*, and private actors in an opaque web of mutually-interdependent actors and benefactors of state corruption. Thus, the conservatives seek to defend and expand their share of the state's largesse within a political economy that supports the private sector, but which cannot abandon its quasi-socialist foundations without committing political suicide.

The **Radical Populists** are led by a network of clerical and lay actors, many of whom fought in, or played leadership roles, in the Islamic Revolutionary Guard Corps (IRGC) during the last years of the Iran-Iraq war. Appointed (often self-appointed) "guardians" of the Ayatollah Khomeini's charismatic-populist vision of Twelver Shi'ism, the populists' goal is to strengthen the state's political and economic support for the urban and rural lower-middle classes, a sector that Ayatollah Khomeini and his allies referred to as the *mustazafeen* or "dispossessed." For this purpose, the populists espouse radical notions of political action that are meant to question, defy, or even subvert the authority of the more senior ruling clerics in the conservative camp.

Iran's formal political structure is designed to arbitrate, accommodate or otherwise manage the competing interests of the above three groups. In practice, this means that while at any one time one or more may wield less or more power, no one group can be excluded from the system, or have its most cherished political, economic or ideological interests *extinguished* by its rivals. Moreover, because the system is sustained by a rough balancing of the interests and agendas of all three groups, the system's stability ultimately depends on the arbitrating role of the Supreme Leader or *rahbar*. This axiom has huge implications for the very viability of the system, as the *rahbar* must

assure that no group overreaches in ways that undermine his capacity to play the neo-patrimonialist role of supreme balancer.

Two forces or factors sustain this tricky and ever-changing balancing act. The first, oil rents, make it possible for the state to pursue an economically inefficient (and inflationary) development strategy that emphasizes the “revolutionary” (*enqelab-i*) goals of distribution, welfare, and social justice without completely undermining the “institution building” (*isitqrar-i*) quest for capital accumulation, savings, and investment. The second sustaining factor is a set of “dissonant” institutions that provide arenas for controlled representation, competition, and occasional cooperation. The most important of these is the *majles* or parliament, followed by the semi-official and reformist press, and last but not least, the “Guardian Council,” a majority of whose members are clerics with close ties to the conservatives as well as more limited links to the populists.

During the last ten years, the very viability of this system has been challenged by significant shifts in the balance of power or authority between this triad that constitutes the ruling political establishment. The first such challenge came from President Khatami and his allies in the reformist movement. This movement never intended to pose a revolutionary and fundamental threat to the established political system; however, by implicitly (and sometimes explicitly) questioning some of the most sacred ideological cows of the Islamic Republic and its founding father(s), and by mobilizing mass support through an electoral system that was not intended as a mechanism to resolve disputes in any one group’s favor, Khatami and his allies provoked a near-fatal backlash from an alliance of conservatives and populists.

The second challenge came, paradoxically, from President Ahmadinejad and his allies in the populist camp. Following his 2005 election, and even more so during the ensuing two years, the new president and his allies advanced a three-pronged, ideological, socio-economic, and geo-strategic project, each piece of which threatened the economic and institutional interests of the pragmatic conservative camp. Below we analyze how each dimension of the populists' three-pronged agenda project provoked the conservatives. The conservatives consequently built a campaign to thwart the populists' quest for economic and political hegemony. The conservatives' counter-attack is designed to restore a measure of equilibrium to the political system itself and has thus been met with approval by the Supreme Leader, whose power derives from balancing the various political factions without eliminating any of them.

Scorned and underestimated by his rivals, President Ahmadinejad wasted little time following his 2005 election in placing a nation-wide network of like-minded "True Believers" in a myriad of formal and informal political institutions. One wing of the Radical faction had deep roots in the security apparatus or in the Revolutionary Guard; indeed many were officers in the long and bloody war with Iraq. Another, and closely related wing, had roots in the *Jamiat Motalefeh Eslami*, or Islamic Coalition Society (ICS). Established in the 1960s, under Khomeini's leadership, the ICS became a powerful advocate of social conservatism and fierce opposition to linking Iran's economy to the global capitalist market. Deeply ensconced in some of the most vital pillars of Iran's rent distribution system, they had emerged as very vocal opponents of Rafsanjani's quasi-liberalizing "reconstruction" strategy during the late nineties. They were also vociferous opponents of Khatami's political liberalization project in the years following his 1997

election.⁶⁰ Linked together by zealous commitment to this double agenda of ideological and economic autarchy, and by long-standing institutional, familial and personnel ties, these *osulgaran* or ‘principalists’ (as they were known in Iran), developed a capacity for collective action well before Ahmadenejad’s election in 2005.⁶¹

What Iran’s president did was take advantage of the radicals’ organizational and ideological assets to create a top-down network that gave them a distinct comparative advantage over the reformists and the conservatives. At least half of Ahmadinejad’s 21-member cabinet consisted of former members of the Revolutionary Guard, while the new Ministers of Information and the Interior were both notorious violators of human rights who had been implicated in the serial murders of prominent intellectuals during the late 1990s. By dint of action or inaction, these hard-line ministers facilitated a virtual purge of the Foreign Ministry, the top echelons of the universities, and almost all the posts of provincial governors. Indeed, one key element of the new president’s strategy was to bypass urban ruling elites by expanding his institutional and economic links to the rural areas. For this purpose, Ahmadinejad repeatedly visited the countryside, where his announcements of lavish spending programs were widely covered in the state media. Moreover, in 2006, he merged the Tehran-based Management and Planning Organization of the Provinces with the Governorates-General, a move that was clearly designed to facilitate coordination between the populists in the capital and their local allies in the governorates.

⁶⁰ Arang Keshavarzian, “Iran's Conservatives Face the Electorate,” *Middle East Report*, February 1, 2001. <http://www.merip.org/mero/mero020101.html> Accessed May 14, 2008.

⁶¹ I prefer to use the term “radical populists” over “Principalists” in order to emphasize economic dimensions of the Radical camp. But in Iran, Ahmadenejad’s allies proudly embraced the term “Principalists,” even though it was directly inspired by the Western concept of “fundamentalists.”

The new president pursued this strategy skillfully, taking care not to alienate too many potential rivals too quickly. As a result of targeting the reformists, Ahmadinejad avoided explicitly challenging the senior clerics who, as the institutional base of support for the Supreme Leader, could not be antagonized without provoking retaliation from the *rahbar* himself. By late 2006, however, the populists' leader was beginning to cross several key red lines, all of which intersected at the cross roads of the pragmatic conservative power and influence.

The first red line crossed by Ahmadinejad was ideological. One of the key doctrinal divides that set the new president apart from the pragmatic conservatives is his keen support for a messianic, quasi-mystical vision that is rooted in the conviction that bold political action and commitment will hasten the return of the Shi'ite 12th Imam. The Islamic Republic's first leader, Ayatollah Khomeini, had embraced this idea, injecting into his populist ideology a cultural idiom that had popular resonance, particularly during a time of domestic social and political upheaval. Whether Ahmadinejad's revival of this messianic ideology while he was mayor of Tehran, and even more so, during the two years following his 2005 election, was purely instrumental, or whether it indicated a genuine conviction that his own political and social acts could hasten the messianic moment during a similarly trying period in Iranian history, is hard to tell. But what is clear is that his periodic and very public references to the 12th Imam's return alarmed mainstream conservative clerics. Some of these clerics—including Iran's former chief nuclear negotiator Hassan Rowhani—publicly (if indirectly) lambasted Ahmadinejad for speaking foolishly and irresponsibly, or more seriously, for fishing in murky doctrinal

waters that most leading Ayatollahs had long avoided since Khomeini's death in 1989.⁶² By trespassing onto a complex and controversial ideological terrain for which he had no religious or institutional credentials, Ahmadinejad posed a challenge to the authority of many senior conservative clerics, and quite possibly, to their Supreme Leader himself.

The nature of that challenge became more pronounced in 2007. Putting aside their initial reluctance to take on leading conservatives, the populists directed their criticisms at two leading clerics: Hashemi Rafsanjani and Ayatollah Hashemi-Sharudi. The former was, of course, the titular head of the pragmatic conservatives, chairman of the Expedience Council (a body created to rule on conflicts between the parliament and the Council of Guardians), and key advocate of economic liberalization. The latter was none other than head of the Judiciary, and a close advisor of Supreme Leader Khamanei. The populists took Rafsanjani to task for claiming—in a published installment of his political memoirs—that the late Ayatollah Khomeini himself had advocated ending the practice of crowds shouting “Death to America,” during Tehran's Friday prayers. Asserting that this account was pure fiction and that they—not Rafsanjani—are following the true intention of Ayatollah Khomeini, the populists signaled their opposition to any opening to the United States. Hashemi-Sharudi was assailed by one close ally of President Ahmadinejad for his assertions that the former's anti-corruption campaign was scaring away private investors. Amplifying these verbal assaults, the chief of the armed forces joint headquarters, Hasan Firuzabadi, warned that a “shadow movement against the

⁶² Frances Harrison, “Row over Ahmadinejad Imam Beliefs,” BBC News, February 29, 2008. Accessed April 28, 2008. http://news.bbc.co.uk/2/hi/middle_east/7255602.stm

government” was engaged in activities that could very well amount to “cooperation with the enemy against the government.”⁶³

The second red line that the populists began to cross was economic. The issue runs much deeper than the 20 percent or higher inflation rate that was partly occasioned by Ahmadinejad’s irresponsible spending and his periodic raiding of the Oil Stabilization Fund (a resource that was reserved for periods of decreasing rather than increasing oil prices). By subordinating the judgments and interests of professional economists and experienced businessmen to the political whims of his closest allies, the president hampered long-standing hopes to rationalize the economy by promoting privatization and mobilizing domestic and external capital.

The populist victory in inserting themselves into the economic reform process was particularly notable. For example, in April 2006, Khamenei formally approved revisions to Article 44 to allow privatization of considerable state assets, but with the proviso that half of all privatized shares be reserved for provincial development corporations, another form of para-statal organizations charged with wealth redistribution.⁶⁴ But, in many cases, these “justice shares” were sold to financially solvent businesses controlled by the Revolutionary Guard, while shares in failing companies went to private citizens.⁶⁵ This dynamic, and the awarding of a \$2 billion no-bid contract to the Revolutionary Guard for the development of the South Pars gas field, not only decreased the prospects for foreign investment, it also helped to tie together the

⁶³ Vahid Sepehri, RFL/RI Iran Report, “Radical Right Renews Attacks on Moderate Clerics,” 10, no. 27 (2007). <http://www.rferl.org/reports/Print.aspx?report=71&id=2007/08/571-10-27>.

⁶⁴ “Iranian Leader Approves President’s Offer,” Office of the Supreme Leader, <http://www.leader.ir/langs/EN/index.php?p=news&id=3176> (accessed August 18, 2006).

⁶⁵ Ali Haqq, “Economy Minister: No Price Increases,” *Sharq*, July 11, 2006.

personal and financial networks that constituted the populists' expanding web of political and economic power.⁶⁶

Finally, there is the crucial and closely-related issue of Iran's efforts to secure an independent nuclear fuel cycle. On a purely symbolic level, it must be emphasized that all leaders of Iran's political establishment, regardless of what faction they come from, support the drive for nuclear energy. Iranian leaders, energy experts, and economists have frequently argued that this project will help diversify Iran's highly-inefficient energy sector. On the other hand, defenders of this position recognize that nuclear power is hardly a panacea. As Professor Pirouz Motahed put it before the European Parliament in July, 2007:

With an annual growth of 6 percent to 8 percent in demand for electricity and a population estimated to reach 100 million by 2025, Iran cannot possibly rely exclusively on oil and gas for its energy need. On the other hand, Iran's aging oil industry, substantially denied of foreign investment largely because of the unilaterally imposed sanctions by U.S., has not been able even to reach anywhere near the pre-revolution production level of 5.5 million barrels per day...Iran's current production level of 3.5 million barrels p/d is increasingly geared toward domestic consumption, which has grown by more than 280% since 1979

⁶⁶ "The Minority Deputies Demand an Explanation from the President Regarding the Recent Economic Contracts Awarded by the Petroleum Ministry to the Revolutionary Guards Object to \$2 Billion Dollar No-bid Deal," *Sharq*, June 28, 2006. During Ahmadinejad's first year the Guard acquired Oriental Kish, Iran's largest private oil company, for \$90 million. See Jehan Lazrak, "The Pasdaran's Private Empires," *Iran Almanac*, December 2006, www.iranalmancac.com/news/. Accessed April 28, 2008. A former senior Iranian official estimated that the Revolutionary Guard's annual earnings at about \$1 billion and that this "would rise to \$1.5 to \$2 billion" by spring 2007. Akhatam-ol-Anbia, one of the Guard's companies, was awarded a "\$1.3 billion contract to build a pipeline from the Gulf to the province of Sistan-Baluchistan, and the main exploration contract for phases 15 and 16 of the South Pars gas field," thus edging out its main Norwegian competitor, Kvaerner." See Najmeh Bozorghmehr and Gareth Smith, "Military Force Finds its Wealth Under Attacks," *Financial Times*, March 16, 2007.

revolution....If this trend continues, Iran will become a net oil importer by 2010, a catastrophe for a country that relies on oil for 80 percent of its foreign currency and 45 percent of its annual budget...*Nuclear reactors...will not resolve Iran's chronic supply of electricity...But they do represent an important first step in diversifying Iran's sources of energy* (emphasis our).⁶⁷

It is interesting to note that Motahed began his speech by describing the June 2007 Tehran riots that occurred following the introduction of gasoline rationing. His working assumption, namely that absent significant foreign investment Iran is unlikely to modernize its gas and oil industries, is probably correct. But as he suggests, the “first step” Iran is advancing will not resolve the heart of the problem, i.e., the continuing pressures to sacrifice economic efficiency to the political logic of regime survival.

Such arguments, studded as they are with their own contradictions, are not the primary ones advanced to secure public support for nuclear energy. Instead, Iran's leaders have used a nationalist-populist discourse of “rights” and “equal treatment” to mobilize public support behind the claim that international efforts to stop Tehran's enrichment project constitutes a massive injustice to Iran's sense of collective, national, or Muslim dignity. President Ahmadinejad forcefully articulated this position before the United Nations in September 2005:

Some powerful states practice a discriminatory approach against access of NPT members to material, equipment, and peaceful nuclear technology, and by doing so, intend to impose a nuclear apartheid....Peaceful use of nuclear energy without

⁶⁷ Pirouz Motahed, “Iran Needs Nuclear Energy for its Economic Survival,” *Tehran Times*, July 12, 2007. <http://www.tehrantimes.com/NCms/2007.asp?code=3144> Accessed April 28, 2008.

possession of nuclear fuel cycle is an empty proposition. Nuclear power plants can indeed lead to total dependence of countries and peoples if they need to rely for their fuel on coercive powers, who do not refrain from any measure in furtherance of their interests. No popularly elected and responsible government can consider such a situation in the interest of its people. The history of dependence on oil in oil rich countries under domination is an experiment that no independent country is willing to repeat.⁶⁸

This rhetorical strategy was hardly new. By playing on the heartstrings of Iranian pride, be it Islamic or national, Ahmadinejad defined the nuclear issue in terms that by their very emotive nature work against any kind of pragmatic compromise. However, the president added a new and highly threatening ingredient to the brew of self-justifying rhetoric that Iran uses to advance its case for nuclear power at home and abroad. Threats to wipe the “Zionist Regime off the map,” or periodic dismissals of the Holocaust, were only part of the equation. Equally, if not more importantly, in terms of Iran’s domestic politics was the president’s labeling of his critics in the parliament and press as “traitors.” Thus, in language that aimed to intimidate his domestic opponents, he told an audience of sympathetic students that, “if local agents (of the West) don’t stop their pressures, their names will be disclosed to the nation.”⁶⁹

In all likelihood, the president’s threats were not merely motivated by a desire to portray his critics in the conservative and reformist camps as a fifth column in the oft-

⁶⁸ “Iran’s President Ahmadinejad’s Speech at the UN.” *Information Clearing House*, September 15, 2005. <http://www.informationclearinghouse.info/article10336.htm>. Accessed April 29, 2008.

⁶⁹ Najmeh Bozorgmehr, “Ahmad-Nejad Labels Nuclear Critics as ‘Traitors,’” *Financial Times*, November 12, 2007.

mentioned “conspiracy” to deny Iran’s international right to nuclear energy. In a more elemental sense, Ahmadinejad and his allies sought to impugn the crucial, if implicit, assumption of the Iranian negotiators who had previously headed up the discussions with the West: namely, the implicit recognition that negotiations *de facto* mean to convey that (however sacrosanct or even strategic), the quest for an independent fuel cycle should be part and parcel of a wider negotiating strategy aimed at eliciting significant diplomatic and economic concessions from the West, in general, and the United States, in particular. This possibility of a concessionary posture was associated with an informal offer to the United States that Ali Larijani, a known pragmatist, would serve as a negotiator on the nuclear issue. In their drive to seize the prized position of Secretary of the Supreme National Security Council, however, the populists sought to bury this pragmatic position once and for all.

With chief nuclear negotiator Rowhani’s departure in July 2005 and Larijani’s resignation in October 2007, the populists may have concluded that they had won; but their success also opened the doors to three rounds of U.N. Security Council sanctions between December 2006 and March 2008. While the sanctions have failed to force Iran to accept Western demands for a renewal of Tehran’s previous temporary suspension of uranium enrichment, these new multilateral sanctions—backed as they were by both Russia and China— highlighted the growing political, economic, and diplomatic costs that Iran was paying at home and abroad for the escalating challenge posed by the populists, including Iran’s increasing difficulties arranging for international letters of credit and other financial services as discussed above.

On all three of the above issues, leading conservatives in the *Majles* and the national press launched public campaigns to portray Ahmadinejad and his allies as incompetent neophytes who were endangering Iran's economic, political, and strategic interests. Of particular interest is the storm of criticism over economic policy and the nuclear question directed at the populists from early 2006 through 2007. These criticisms helped to set the stage for the March 2008 parliamentary elections, which results we shall discuss below.

Majles conservatives have signaled their unhappiness over the politicization of economic policy in many ways, but the most significant was the rejection of the president's first three nominees for Minister of Oil. On all three occasions, conservatives asserted that the president was favoring political loyalty over competency.⁷⁰ But the charge was not limited to nominees for this one crucial ministerial post: Chairman of the *Majlis* Cultural Committee Emad Afrugh held that political favoritism was endemic. "Ahmadinejad," he claimed, "in hand picking his cabinet, has preferred not to use the tops guns...instead using ministers who are more compatible with him...this is not a favorable way to run a country."⁷¹ *Majles* Deputy Ghaisar Salehi went further. Referring by name to one of Ahmadinejad's closest allies (Mohammad Reza Bahonar), Saleh complained that, "only those who have been in the IRGC, in the [Tehran] municipality or have been Bahonar's friends are appointed minister or governor."⁷² The fact that both Afrugh and Salehi started out as allies of the new president suggested that conservatives

⁷⁰ In December 2007 the *Majles* approved Acting Oil Minister Kazem Vaziri-Hamaneh for the position. Echoing the typical conservative vision of the qualifications for this position, Kamal Daneshyar, head of the *Majles*' energy commission, said: "He has 30 years of experience in the oil sector... He is an expert, committed, a follower of the Supreme Leader and religious." BBC, December 4, 2005, http://news.bbc.co.uk/2/hi/middle_east/4498092.stm. Accessed April 18, 2008.

⁷¹ "Leading MP Calls for Cabinet Reshuffle," *Aftab-e Yazd*, April 9, 2006.

⁷² *Ibid.*

were picking up support from disillusioned populists, some of whom were ready to abandon ship.⁷³

The prospects for more defections from the populist to the conservative camp grew as Ahmadinejad's allies totaled up the economic bill for his incompetence. *Majles* Deputy Mohammad Khoshchehreh, an economist who worked closely with Ahmadinejad while he was Tehran mayor, concluded that the new president "wants to run the country with charity projects, like giving out loans."⁷⁴ When the inflation generated by such spending provoked sporadic unrest and protests in the very social sectors that constituted the backbone of Ahmadinejad's electoral base, such criticisms mounted on the floor of the *Majles*. Deputies launched verbal assaults on the Minister of Labor and even went so far to call for a motion of no confidence in Minister of Agriculture in October 2006. Although this initiative ultimately failed, more than a few of the 51 deputies who voted for Mohammad Reza Eskandari's impeachment were from the conservative camp.⁷⁵

Ahamadinejad's policies on nuclear energy also provoked intense scrutiny from both reformists and conservatives. This may seem surprising given the widespread support for the government's position. However, these critics focused their criticisms on the president's tactics rather than his strategy. They argued that by giving Washington the diplomatic ammunition it required to secure support from the Europeans, Chinese and the Russians for U.N. Security Council sanctions, Ahmadinejad and his allies were

⁷³ "‘Maybe it comes as a surprise to you that I voted for him,’ said [Mr.] Emad Afrough [a member of parliament] ‘... I liked the slogans demanding justice...But you cannot govern the country on a personal basis. You have to use public knowledge and consultation.’" See Michael Slackman, "U.S. Focus on Ahmadinejad Puzzles Iranians," <http://www.nytimes.com/2007/09/24/world/middleeast/24iran.html>. Accessed April 18, 2008.

⁷⁴ Nazila Fathi, March 14, 2008, "In This Election, Ahmadinejad Ally Is Now a Critic," <http://www.nytimes.com/2008/03/14/world/middleeast/14iran.html?fta=y>. Accessed April 18, 2008.

⁷⁵ See *Iran Daily*, "Agricultural Minister Survives Impeachment," October 23, 2006, <http://www.iran-daily.com/1385/2691/html/index.htm>, accessed April 18, 2008.

weakening Tehran's negotiating position. *Hamshahri*, a newspaper with close ties to the pragmatic conservatives, asserted that the President's "intense speeches raised suspicions and resulted in two resolutions for us." Echoing this critique, *Kargozoran*—the mouthpiece for Rafsanjani's Servants of Construction Party—held that, "reversion to a course of national discretion, which kept Iran out of the UN Security Council for three years, has now become a national demand pursued by every rooted political faction."⁷⁶ Moreover, Ahmadinejad's critics asserted that U.N. sanctions themselves were having a negative impact on economic development. Consequently, *Kargozoran* stated that the U.N. Security Council Resolution 1737 has, "indirect but severe impacts on Iran's economy."⁷⁷

Such criticisms did not prevent the October 2007 replacement of Larijani by Saeed Jalili, a populist with close ties to Ahmadinejad. On the contrary, Jalili's appointment sent a strong signal that the President's allies were pressing ahead despite the onslaught of criticisms coming from the *Majles* and the press. Nevertheless, by the close of 2007, the conservatives had sent their own message, namely that they would not stand idly by as their populist rivals pursued policies that were harmful to conservative interests. As one conservative put it, "The Majlis must speak independently of the government and in line with national interests."⁷⁸ It remained to be seen, however, whether Ahmadinejad's opponents could translate their two-year verbal campaign into concrete institutional and political gains.

⁷⁶ Qasem Ravanbaksh, "The Government's Nuclear Diplomacy is Active, Dignified," *Partow-e Sokhan*, January 18, 2007, and "Commentary," *Kargozaran*, December 28, 2006.

⁷⁷ *Ibid.*

⁷⁸ "Iran Must Understand International Rules, Says Conservative MP on Sanctions," *ISNA* website, December 24, 2006. This remark was made by Deputy Khoshchereh.

Bloodied but ever defiant, the populists have resisted efforts to reconsolidate conservative power. In assessing the populists' prospects, it is important to avoid the temptation to reduce their mobilizing capacity to the personal appeal, character, and talents (or stupidity) of Ahmadinejad. His rise reflects deep structural change. Particularly, it reflects the emergence of significant political elite which were previously sidelined, but which now are making a strong bid for its place in the political and economic sun, backed by local and rural elites around the country.

In advancing their cause, the populists have often moved aggressively—primarily on the political level—against their rivals. On the other hand, when it comes to the economic arena, the populists have tried to insert themselves into, rather than eliminate (as they promised while election campaigning), the opaque, corrupt system of distributing oil and gas rents to the political elite.

In point of fact, the new president threatened the powers that be within NIOC and related institutions when he came to power. His promise to root out “corruption” provoked a sharp response from leading conservatives, some of whom (such as head of Justice Shahroudi) denounced Ahmadinejad’s campaign for harming Iran’s oil industry. More importantly, rather than pursue this campaign to its logical and potentially destructive limits, the president’s allies in the Revolutionary Guard acquired economic (and thus political) stakes in various oil and gas related parastatals. If conservatives happily exposed the corruption and favoritism that inevitably accompanied this process, they certainly appreciated that populist camp had long included groups, such as the Islamic Coalition Society, whose leaders played a major role in the NIOC. Ahmadenjad’s

populist rhetoric provided an ideological cover for increasing the number of institutional players in an *expanding* rent distribution system whose basic rules remained intact.

The challenge for the conservatives, now, is to reassert their institutional interests and power while giving populists sufficient political space to fit into, rather than overwhelm, the political system. To strike this balance, Rafsanjani and his allies must unify their ranks and assert their collective presence in the key arenas through which the factional power-balancing game is played—particularly, the *Majles* and the Assembly of Experts. Moreover, and perhaps decisively, the conservatives must secure consistent public support from the Supreme Leader. The chances of doing this will improve if conservatives can demonstrate that a re-balancing of the political field will help stabilize the political system at the same time that it strengthens the Supreme Leader's authority as the supreme balancer.

The September 2007 election of Rafsanjani as Speaker of the Assembly of Experts suggested that the conservatives were well on their way to reinvigorating their institutional power. A little more than one year prior to his election, conservatives secured 65 out of 86 seats in nation-wide elections held to determine the composition of the Assembly. This election represented a significant defeat for the populists, inasmuch as the Constitution charges the Assembly of Experts with the duty to elect the Supreme Leader. Feeling pressured, the populists launched a very public campaign to vilify Rafsanjani and advance Ayatollah Jannati to the position of Council Speaker. Having deflected this challenge with strong support from his Assembly allies, Rafsanjani was careful to frame his success as a victory for the over-all principle of state-guided inclusion and power-sharing. As he put it:

Like the Revolutionary Guards and the Armed Forces, this Assembly has a very great role to prevent menaces created by the enemies against the regime, but the question is this: Has the Assembly of Experts the will to be useful for the regime? As for myself, my answer is yes. As the continuation of the work of the Guide and witnessing over the conditions of his leadership are the responsibilities of this Assembly, I'm confident that this Assembly can play a more important role.⁷⁹

Rafsanjani's reference to the "Guide" and, in particular, to the Assembly's "responsibilities" in "witnessing over the conditions of his leadership," constituted an implicit—if fairly clear—attempt by conservatives to reassert their special relationship with the office (and person) of the Supreme Leader. Paradoxically, in his seemingly successful efforts to take ownership of the nuclear issue and use it as a prop to advance his domestic popularity, Ahmadinejad not only antagonized the conservatives, but also posed a challenge to the Supreme Leader himself. Signaling Khamanei's discomfort with this state of affairs, *Jomhuri-ye Eslami*—the effective mouthpiece for the Supreme Leader—chastised the president for his "aggressive" manner of expression," and then sent him a clear signal that he should withdraw from speaking out on nuclear energy issues, as this was an "incorrect strategy and policy."⁸⁰ Emboldened by this development, *Majles* conservatives joined 150 deputies in signing a letter that assailed the president for his missteps on the economy and on the nuclear question.

⁷⁹ Safa Haeri, "Mr. Rafsanjani's Victory Is A Crushing Defeat For Ahmadi Nezhad," *Iran Press Service*, September 5, 2007. http://www.iran-press-service.com/ips/articles-2007/september-2007/rafsanjani_victory_6907.shtml. Accessed April 30, 2008.

⁸⁰ "Editorial Condemns Ahmadinejad's 'Offensive' Handling of the Nuclear Issues," *Jomhuri-ye Eslami*, January 9, 2007.

It is against the backdrop of these efforts by the Supreme Leader to rebalance the political field—and in so doing assert his own authority—that we should assess the results of the March 2008 *Majles* elections, and looking forward, consider the prospects for the 2009 presidential elections. As predicted, the *Majles* campaign witnessed an unprecedented number of reformists candidates (some 5,000) getting shut out of the race by the Council of Guardians. However, the campaign also saw significant defections of prominent populists—such as Mohammad Khoshchehreh—from the “United Principalist Front.”⁸¹ Although the results of the second round of voting in April 2008 for the remaining 78 seats were not finalized as this paper was being completed, early indications suggest that radicals and conservatives will each have about 30 percent of the seats, reformists 15 percent and independents the remaining 25 percent. Assuming (as is likely) some cooperation between reformists and conservatives and support from independents, conservatives should be well positioned to block populists from advancing radical initiatives. Indeed, conservatives may have sufficient numbers to elect Larijani to the key position of House Speaker. Having defeated his populist opponents in the politically and symbolically important electoral arena of Qom, this prominent conservative *apparatchik* (and son of a leading Ayatollah) can speak credibly for a clerical establishment that had repeatedly assailed Ahmadinejad and his allies.

A consolidation of conservative power in the *Majles* would improve the chances for conservative candidates in next year’s Presidential elections. Among the most promising of these prospective Conservative candidates is Mohammad Baqer Qalibaf, the present mayor of Tehran. An outspoken critic of Ahmadinejad, Qalibaf’s visibility and

⁸¹ *Tehran Times*, March 6, 2008. “Candidates Draw Horns for Parliament Seats.” <http://www.tehrantimes.com/NCms/2007.asp?code=164537>. Accessed April 20, 2008.

leverage was enhanced after the December 2006 Tehran City Council elections. Of the council's 15 seats, only two went to the populists, with four going to reformists and eight to conservatives with close ties to Qalibaf.⁸² Following in the footsteps of his predecessor (Ahmadinejad), Qalibaf will surely take full advantage of the city's large budget and politically important constituency to advance his candidacy. If conservatives join ranks and support Qalibaf, and what is more, are backed by reformists, Ahmadinejad will face a significant challenge. On the other hand, if conservatives are divided as they were in the 2005 presidential poll, Ahmadinejad will probably be re-elected.

Some Iran watchers speculate that the Supreme Leader might compel Ahmadinejad to declare his intention not to run in the 2009 presidential elections. This outcome is unlikely, if only because such a development would constitute an implicit admission of failure by those who manage Iran's political system that the populists have failed. Iran's top manager, Ayatollah Khamanei, has no interest in dealing any faction such a crushing blow. After all, and as we have noted above, his authority and power derives partly from his capacity to balance the different factions.

This is why the reassertion of conservative power is ultimately good news for the Supreme Leader and for the system itself. This is probably the reason that in the weeks leading up to the *Majles* elections, the Supreme Leader dealt the president yet another blow by ordering Ahmadinejad to sign a bill providing cheap gas to villages suffering power cuts. Having refused to sign the bill on the pretext that it constituted an unauthorized use of parliamentary powers, the president was compelled to respect the wishes of a parliament whose voice and authority he had frequently trampled on. As the

⁸² One independent candidate won as well.

Supreme Leader put it, "All legal legislation that has gone through [the required] procedures stipulated in the Constitution is binding for all branches of power."⁸³

This statement can hardly be construed as an unalloyed defense of parliamentary prerogatives. Ultimately, it is an assertion of power by a Supreme Leader who has worked over-time to maintain a balance of forces in a system that has experienced considerable economic and political strain since the late 1990s. Enlarging the number of actors who benefit from oil rents has relieved some of the strain. However, the necessary concession to the populists has also cost Iran dearly in terms of inflation and over-all macro-economic stability. From an economic perspective, far-reaching reforms, including rationalization of the oil and gas industries, would be of enormous benefit. But from a political vantage point, such reforms are destabilizing—a point amply illustrated by the violent protests that erupted following the imposition of fuel rationing in June 2007. Thus, barring a sudden and huge drop in oil prices, this political logic will likely continue to trump long-term economic considerations.

Even if the economic reforms that many Iranian businessmen have pressed for fail to materialize, or are compromised—as they surely will be—by persistent rent seeking, the on-gong efforts of pragmatic conservatives to reassert influence over the domestic economic and political agenda may create some space for Tehran and the West to devise an escape route from the current impasse over nuclear power. Certainly, Iran's conservatives will never give up on Iranian "rights." Indeed, as they know from experience, they must tread very carefully lest they support a position that might be construed by the radicals and/or the Supreme Leader as negating those rights. Khamane'i

⁸³ Robert Tait, "Iran's Supreme Leader Rebuffs Ahmadinejad in Gas Row," *The Guardian*, Monday, January 21, 2008. <http://www.guardian.co.uk/world/2008/jan/21/iran.roberttait3>. Accessed April 20, 2008.

may have been signaling as much when he stated in early May that “threats will not force the Iranian nation from backing down” from its quest to independently enrich uranium. This statement was also widely interpreted as a signal to the conservatives that having moved with some success to consolidate their position in the *Majles*, they should not overplay their hand on domestic or foreign policy issues.⁸⁴

Still, their concrete interests in promoting greater foreign investment and attaining a larger measure of autonomy for the private sector translate into a more flexible position on the nuclear power issue. Thus, it might be said that while the U.N. Security Council sanctions will never compel Tehran to capitulate, they do have *political value*, in that conservatives can (and have) invoked the costs of sanctions to discredit the populists. Furthermore, if new sanctions are complemented by new carrots, the new American president might find some common ground with the Iranians, particularly if conservatives consolidate their gains and limit the challenges posed by the populists.

IRAN’S ENERGY CRISIS AND THE ECONOMY

There is no question that Iran’s energy industry mismanagement has contributed to the country’s financial woes. In 2005, the International Monetary Fund estimated that energy subsidies accounted for 12 percent of Iran’s gross domestic product (GDP), the highest rate in the world according to an IEA study.⁸⁵

Iran is currently importing as much as 200,000 b/d of gasoline. Although the country was briefly a gasoil exporter, the country has also become a net gasoil importer

⁸⁴ “Khamenei rules out halt to Iran's nuclear drive,” http://news.yahoo.com/s/afp/20080504/w1_mideast_afp/irannuclearpoliticshamenei_080504105433. Accessed May 18, 2008.

⁸⁵ Department of Energy: Energy Information Administration website, Country Analysis Briefs: Iran. <http://www.eia.doe.gov/emeu/cabs/Iran/Oil.html>

since 2005. The routine shortage of natural gas in peak winter months has caused more gasoil to be used in the country's electricity generation.⁸⁶

Though figures vary as to exactly how much Iran is paying for its oil product imports, Iran's then-Deputy Oil Minister Mohammed-Reza Nematzadeh told a press conference in Tehran in early February 2008 that Iran needed to spend between \$7-8 billion on gasoline and gasoil imports in the 2008-09 budget year to begin on March 21, 2008. Nematzadeh noted that while \$2.5 billion had been earmarked for gasoline imports and \$1.3 billion had been stipulated for gasoil imports for the year ending March 20, 2008, more than \$6 billion had already been spent on the imports, with the extra budget costs covered from the resources of NIOC. The Iranian oil official reported that his government had put aside 30,000 billion riyals (\$3.237 billion) for fuel subsidies in the 2008-2009 budget. However, at least one recent study puts Iran's overall energy subsidies at more than \$20 billion a year, in part attributing extremely low gasoline prices leading to a rampant rise in gasoline consumption through wastage, misuse and the smuggling of fuels outside of the country.⁸⁷ Other outside experts suggest an even higher figure: that some \$30 billion is being spent on total energy subsidies—including gasoline and natural gas imports—accounting for 15 percent of the country's entire economy.⁸⁸ Even though Iran's oil revenues have been growing in recent years given rising world oil prices, the government has been impeded in making critical investments in its oil and gas sectors because of the money drained away for costly imports.⁸⁹

⁸⁶ Dr. Manouchehr Takin, *ibid*.

⁸⁷ *Ibid*, p.4.

⁸⁸ "Iran's decision to raise gas prices exposes economic vulnerability." *The Associated Press*, May 24, 2007. <http://www.iht.com/articles/ap/2007/05/25/africa/ME-GEN-Iran-Economic-Woes.php>

⁸⁹ Daniel Brumberg and Ariel Ahram, "The National Iranian Oil Company in Iranian Politics," *The Changing Role of National Oil Companies in International Energy Markets*, James A. Baker III Institute for Public Policy, Rice University, 2007 at: www.rice.edu/energy

Iran has some of the deepest energy subsidies in the world and these subsidies and strong population growth are driving domestic consumption of gasoline, diesel and kerosene. Furthermore, this subsidized fuel pricing creates an incentive for arbitrage-based smuggling of Iranian gasoline to neighboring states. By some estimates, nearly five percent of subsidized gasoline is smuggled abroad. NIOC administers this subsidy, allocating petroleum reserves for the domestic market. But, due to its limited refining capacity, NIOC has to sell hard currency in order to import refined gasoline back into the country. Concerns are rising that increasing domestic oil consumption will eventually shrink the amount of crude oil that can be sold for export, until Iran becomes a net oil importer, much the way Indonesia did from its similar program of petroleum products subsidies.⁹⁰

Iranian gasoline demand is soaking up much of the excess refining output from other Mideast Gulf states and India. In addition, Iranian gasoil demand increased sharply over the course of 2006, and NIOC was forced to import this product (though only in spot purchases) for the first time since the beginning of the decade.

In September 2006, the government announced it would launch a three-pronged solution to the looming gasoline crisis, by a phased rise of gasoline prices, a mandatory nation-wide rationing of gasoline, the substitution of liquefied petroleum gas (LPG) and compressed natural gas (CNG) for gasoline use and an acceleration of the refinery expansion program.⁹¹ But so far, the government has been relatively ineffective in slowing rising domestic energy consumption. Schemes to raise domestic prices have been

⁹⁰ Daniel Brumberg and Ariel Ahram, "The National Iranian Oil Company in Iranian Politics," *The Changing Role of National Oil Companies in International Energy Markets*, James A. Baker III Institute for Public Policy, Rice University, 2007, p. 40: www.rice.edu/energy.

⁹¹"Distant Horizons: The Future of Mideast Gulf Product Exports," Asia Pacific Energy Consulting, December 2006, p.55.

either toned down or struck down by a nervous parliament as public opposition to increases in energy prices threatens political turmoil. Indeed, the current government drew public ire over imposed fuel rationing and skyrocketing consumer prices that went into effect during the spring and summer of 2007. Access to cheap water, gasoline and electricity is part of the social contract in Iran, and President Ahmadinejad had campaigned for the presidency on the promise that he would eliminate “the oil mafia” which he accuses of corruption and misappropriating energy sector resources and share more of the country’s wealth with the nation’s poor. Ironically, Ahmadinejad is now facing criticism for failing to root out the “oil mafia.”

Although Iran had a law on its books saying gasoline prices must increase 10 percent every year, the president had resisted efforts by conservatives in the parliament to reverse a 2005 decision to suspend the annual increases, up until he was pressured to back price increases in the spring of 2007.

In May of 2007, the government jacked up gasoline prices by 25 percent from 800 rials per liter to 1,000 rials per liter (\$.30 a gallon to \$.38 a gallon). The savvy Iranian leader made it publicly clear that he had been forced by parliament to agree to the price increases.⁹²

As unpopular as the gasoline price increase was, the government earned even more wrath from the public in late June 2007, when it instituted fuel rationing. That step came after housing and food prices had been dramatically hiked over the year. The fuel rationing resulted in violence in the streets of Tehran initially, with shop windows being smashed and a dozen gasoline stations being set on fire before armed guards started

⁹² “Iran’s Decision to Raise Gas Prices Exposes Economic Vulnerability,” *The Associated Press*, May 24, 2007. <http://www.iht.com/articles/ap/2007/05/25/africa/ME-GEN-Iran-Economic-Woes.php>

protecting the gas stations. The rationing system first allowed each private driver only about 26 gallons of fuel each month at the subsidized price of 38 cents a gallon, with taxis allotted around 211 gallons a month at the same price. In December 2007, the quota was slightly raised for private drivers to 32 gallons a month, but dramatically reduced for taxis to 106 gallons a month, apparently in an effort to clamp down on rampant black market sales.⁹³

Inflation, which the Iranian Central Bank insisted was at 14 percent while independent experts have placed the rate at 25-30 percent, was expected to worsen after the fuel price jump.⁹⁴ The impact of the fuel rationing was a reduction of about 22 percent of the average daily consumption of gasoline to 59 million liters during the first six months of the rationing, compared to the same period in the previous year.⁹⁵

Concerned by the state of the economy, some 60 Iranian economists took Ahmadinejad to task both in a private meeting with the leader and publicly on July 14, 2007. In a letter read in public during the meeting, the economists told the president his government was ignoring academic findings, wasting huge oil revenues, and enforcing policies that have provoked greater inflation and worsening economic conditions. Describing Ahmadinejad's government as the wealthiest Iranian government in modern history due to soaring revenues from record-high oil prices, the economists blamed the regime for failing to capitalize on the windfall to correct the country's economic woes. "Economic policies in Your Excellency's government are adopted irrespective of

⁹³ Nasser Karimi, "Gasoline Black Market Thrives in Iran, Spurred by Fuel Rationing," *The Associated Press*, January 28, 2008.

⁹⁴ Ali Akbar Dareini, "Rationing Fuels Discontent in Iran," *The Associated Press*, July 1, 2007. http://www.washingtonpost.com/wp-dyn/content/article/2007/06/30/AR2007063000999.html?wpisrc=rss_business/special/3

⁹⁵ "Iran Fuel Subsidy Could End Soon," *Dow Jones*, February 5, 2008. <http://www.nasdaq.com/aspxcontent/NewsStory.aspx?cpath=20080205%5cACQDJON200802051003DO WJONESDJONLINE000346.htm>

academic support,” the economists told Ahmadinejad. “Excessive spending from oil revenues ... won't bring economic growth, but causes stagnation in the private sector, makes the size of the government bigger and causes greater inflation,” they said. Khatami had established a currency reserve fund during his presidency to hold surplus oil earnings, his successor, Ahmadinejad, is using those resources for government expenditures.⁹⁶

According to one NIOC official, the Iranian government may be close to ending fuel subsidies given to government agencies. While attending a London energy conference in early February 2008, NIOC International Affairs Director Hojatollah Ghanimi Fard was quoted as saying that while the gasoline rationing plan put into effect in June 2007 has curbed Iranian imports of road fuels, the country will not be able to wean itself off foreign gasoline and gasoil in the next fiscal year.⁹⁷

Pressure from the international community over Iran's nuclear ambitions has also had an impact on how Tehran buys its fuel. French banks BNP Paribas and Calyon ceased offering letters of credit (LCs) in the fall of 2007 for those involved in oil trading deals with Iran.⁹⁸ One immediate casualty was India's largest private refiner, which had been a major gasoline and occasional diesel seller to Iran. Reliance reportedly stopped its sales to Iran in October 2007. In the physical oil markets, the buyer of a cargo or volume of oil is usually required to open an LC from a top bank that the seller will do business with, in order to guarantee payment upon delivery or at the agreed-upon time. The LCs

⁹⁶ “Iranian Economists Blame President for Economic Woes Despite Huge Oil Revenues,” *The Associated Press*, July 14, 2007. <http://www.iht.com/articles/ap/2007/07/14/africa/ME-GEN-Iran-Economic-Woes.php>

⁹⁷ “Iran Fuel Subsidy to Government Agencies Could End Soon,” *Dow Jones*, February 5, 2008. <http://www.nasdaq.com/aspxcontent/NewsStory.aspx?cpath=20080205%5cACQDJON200802051003DO WJONESDJONLINE000346.htm>

⁹⁸ “French Banks Stop Credit for Iran Fuel Imports,” Nidhi Verma and Luke Pachymuthu, *Reuters*, January 10, 2008. <http://www.iranfocus.com/modules/news/article.php?storyid=13789>

usually need to be confirmed by European banks or even some Middle Eastern banks to ensure payment to the seller.

Although Reliance has stopped its Iranian sales, cargoes are still heading to the Gulf nation, as Iran has had to look for supplies elsewhere and also has had to be more creative in its financing of fuel imports. Iran reportedly has begun negotiating open credit lines with sellers, with the transactions settled in Euros rather than dollars to avoid U.S. scrutiny.⁹⁹ In April, Iran announced that it had stopped conducting oil transactions in U.S. dollars. Iran has put pressure on other OPEC countries to price oil in a basket of currencies, but has found few takers of its idea.¹⁰⁰ China's state-owned Zhuhai Zhenrong Corp., one of Iran's largest crude buyers, has been paying for oil in Euros since late 2007. Indian banks are also reportedly using letters of credit in different currencies to circumvent trade restrictions.¹⁰¹

THE CHALLENGE OF REFINERY EXPANSIONS

Despite its financial woes and competing needs for capital to invest in expanding oil field capacity, building its nuclear program and funding natural gas export projects, the Iranian government continues to announce ambitious plans to expand and improve upon the country's refinery system. Iran's National Refining and Distribution Company (NIORDC) has plans to upgrade the country's existing refineries and build three new ones over the next four years beginning in 2008 for a total outlay of \$18 billion. According to Aminolah Eskandari, NIORDC director of refining affairs, the investment is part of Iran's goal to boost refining capacity of 1.6 million b/d to around 3 million b/d

⁹⁹ "Iran Uses Euro Open Credit Lines to Buy Fuel-Source," *Reuters*, January 15, 2008.
<http://sg.news.yahoo.com/rtrs/20080114/tbs-iran-credit-imports-955c2a1.html>

¹⁰⁰ "Iran Stops Conducting Oil Transactions in U.S. Dollars," April 30, 2008, *The Associated Press*.

¹⁰¹ Somini Sengupta and Heather Timmons, "Visit by Iranian Leader Offers Bonus for India," *International Herald Tribune*, April 30, 2008, p. 5.

and to upgrade its existing units to meet the Euro 5 standard by 2011. Out of the \$18 billion cost, \$10 billion will be dedicated to building the three new refineries.

In an interview in February 2008, with energy newsletter, *Platt's Oilgram News*, Eskandari said that the planned work will allow Iran's gasoline output as a percentage of total production to increase to about 30-35 percent from current levels of about 16-17 percent, so that the country's fuel oil output will be reduced to about 10 percent from 30 percent while the remaining portions will be shared by middle distillates.¹⁰²

Some analysts have questioned whether the funding allocation for Iran's refining program will be adequate. According to Cambridge Energy Research Associates (CERA), NIOC's investment budget for fiscal year 2007-08—including both upstream and downstream—was not enough to fund the cost of one large new refinery. Wood Mackenzie suggests that Iran will fall short of expanding its refining capacity by 1.4 million b/d by 2011, but would instead likely be able to add around 700,000-800,000 b/d by 2014 at a cost of about \$10 billion. With a limited budget, NIOC is apt to focus on upstream investments and not have extra refining capacity siphon away greater crude volumes to domestic refineries and the subsidized market instead of the export market.¹⁰³

Not only do the goals for increasing Iran's refining capacity and subsequent boosts in gasoline and gasoil volumes to meet domestic demand appear unrealistic unless usage of these products is severely reined in, but the Iranian government is going to be hard-pressed to find adequate funding to reach these lofty goals. Indeed, the question is where and how the Iranian government is going to secure the investment capital should it

¹⁰² "Iran to Spend \$18 Billion on New Refinery, Upgrade Program," Takeo Kumagai, *Platts Oilgram News*, February 6, 2008. <http://www.platts.com/Oil/News/8514139.xml?src=Oilrsheadlines1>

¹⁰³ Simon Webb, "Iran Falling Short of Oil Refining Ambitions," *Reuters*, June 19, 2007.

decide to press ahead with its nuclear energy plans while at the same time trying to more than double its refining capacity.

Iran's access to financing of mega-projects in its upstream sector has been hindered by tighter credit from European banks and Western energy firms' reluctance to do business with the Islamic Republic. In recent months, the country has turned to Asia to find investment partners for its refinery and energy infrastructure expansion plans.¹⁰⁴

NIORDC and India's Essar Group are expected to start building a 300,000 b/d refinery at Bandar Abbas in early 2008. Essar, owned by the Mumbai-based Ruias family, will take a 60 percent equity stake in the project with Iran accounting for the rest. Essar is reportedly looking to strengthen its ties with Tehran by buying into Iranian exploration and production blocks to help meet electricity needs for its planned steel plant. India's oil minister, Murli Deora, has said that Essar is in talks to buy LNG from Iran, and the company is apparently in discussions to jointly develop the giant Azadegan field.¹⁰⁵

CONCLUSION

Future Iranian policies will have great bearing on the stability of the Persian Gulf and on energy security trends in international energy markets. Iran has geographic leverage over the vital Strait of Hormuz waterway, through which passes 20 percent of world oil supply. But Iran is also dependent on the Strait for the transit of its own oil exports which represent roughly 80 percent of Tehran's total export earnings, 40-50 percent of the government budget and 10-20 percent of GDP. Currently, Tehran is

¹⁰⁴ Luke Pachymuthu and Nidhi Verma, "Iran, India's Essar Refinery JV to Start Work in '08," *Reuters*, October 24, 2007.
<http://www.reuters.com/article/companyNewsAndPR/idUSSP9583420071024?pageNumber=3&virtualBrandChannel=0>

¹⁰⁵ Ibid.

benefiting from growing regional trade with its Arab neighbors, and regional leaders hope that this growing trade can influence an improvement in relations as well as create the incentives to temper Iranian hardliners who might support more aggressive regional postures.

In creating a constructive, effective regional policy towards Iran, legitimate national and economic interests must be recognized, while at the same time, the international community and the GCC must adopt strategies that discourage extreme scenarios and strengthen resilience of energy markets to those extreme scenarios. The continued support for oil export bypass routes and oil stocks held outside the Strait is an important element to a successful strategy to limit Iran's ability to threaten the oil market. In addition, the GCC, United States, China, and other major powers could work together to create a multinational convention to guarantee freedom of sea guarantees in the Persian Gulf that would be followed by all users of the Strait of Hormuz. Such a convention might include a ban on sea mines in the waterway; a prevention-of-incidents management agreement (focused on freedom of navigation and avoidance of provocation) that more specifically defines maritime rules and regulations in the region; or creation of a multilateral organization to deal with the Strait of Hormuz. Such an initiative would have the advantage of convincing Iran that unilateral action would be counterproductive and at the same time demonstrating that the United States and Gulf countries recognize Iran's strategic interests. The process of negotiating a convention would also create a coalition of countries that could respond in case Iran did pose a threat to freedom of navigation at the Strait.

Moreover, U.S. domestic energy policies taken to reduce demand for the marginal import barrel will contribute to weakening Iran's leverage in the oil market and could be strengthened by cooperation with China and other large energy consumers on similar kinds of measures.¹⁰⁶ To the extent that effective U.S. energy policy and energy consumer nation diplomacy were to contribute to a lower oil price, lower oil prices would translate into lower oil revenues, potentially further hurting the populists inside Iran and strengthening those calling for economic reforms and foreign investment in the energy sector.

The current shift in Iranian national politics in favor of the pragmatic conservatives may eventually create opportunities for the U.S. and its European allies to deploy a more effective strategy of coercive diplomacy. Multi-lateral sanctions are a key part of such a strategy, not because they will force Iran to suddenly accept Western demands. Rather, their potential effectiveness lies in the fact on a *political* level, sanctions have, in fact, raised the economic domestic, regional, and global costs to a key segment of the business and political elite that requires Western technology and investment. As Ali Ansari has so aptly noted "the mercantile system built up under Rafsanjani in the 1990s," cannot function "in isolation" from the international economic system. By ignoring this element fact, and indeed by pursuing policies that have facilitated consensus between Western Europe and the United States in favor of multilateral sanctions, "Ahmadenejad appeared to be doing America's work for it" by increasing Iran's economic and financial isolation.¹⁰⁷

¹⁰⁶ See Roger Stern, PNAS 2007 and Roger Stern, "Oil Market Power and United States National Security," PNAS 103, no. 5 (2006): 1650-1655; and Amy Myers Jaffe and Ronald Soligo, "Militarization of Energy – Geopolitical Threats to the Global Energy System" (in this study series).

¹⁰⁷ Ali M. Ansari, *Iran Under Ahmadenejad*, (London: Aldephi Papers, 2008), p. 84.

Iran, Energy and Geopolitics

For this reason- and in stark contrast to the conventional wisdom-- far from uniting Iran's various factions against the U.S.-- sanctions have strengthened the hand of the conservatives. This seemingly paradoxical development suggests that the threat of further or more robust sanctions-- *combined with the right financial and economic incentives* –might create conditions by which the conservatives could resume playing a key role in Iran's nuclear negotiations. For this reason, Washington should avoid being drawn into a direct military confrontation with the Iran, a development that would only strengthen the hands of the radicals at the very moment that they are losing domestic support.

Iran's active support for subnational groups such as Hizbollah and Hamas is intricately involved in any regional efforts to promote peace and stability in the Middle East. Moreover, controversy surrounding Iran's nuclear aspirations also complicate a highly volatile geopolitical situation in the Persian Gulf. It is clear from the Israel-Lebanon conflict of 2006 and ongoing violence inside Iraq that issues demand a political solution and that the costs for a military solution would be unsustainably high. The same applies to the conflict with Iran over its nuclear status. U.S. policy in the Middle East must move from conflict management to conflict resolution as a first measure approach.

There is no question that Iran has been suffering from debilitating energy shortages and that the development of domestic nuclear power plants is one option that might address, in part, these shortages. The construction of the planned nuclear power plants in Iran would indeed free up 200 mmcf/d (2.07 bcm/yr) of natural gas that could be directed to other uses outside the electricity sector or exported to reap higher revenues. But, the construction of the two nuclear power plants is a drop in the bucket when

compared to the real problems of the Iranian energy sector and serve more as a band-aid than as a salvo. While it is true that depending on the ultimate level of fixed construction costs for the plants, nuclear power may be slightly cheaper to build on a MW basis than similar capacity using natural gas-fired technology, the electricity created by these nuclear plants will only represent six percent of current total Iranian electricity generation.

Phasing out natural gas subsidies would be a more sensible policy approach to Iran's apparent natural gas shortages than building nuclear capacity. By ending natural gas subsidies and pricing fuel for power generation at appropriate international levels, the Iranian government would be able to properly weigh the opportunity cost for the full range of uses for all of its natural gas production, and not just the very small volume that might be freed up from the construction of one or two nuclear power facilities. Moreover, natural gas flaring represents as much as 14 percent of total natural gas usage. If natural gas supplies currently being flared could be captured and sold in the Iranian market as feedstock for power generation, it could fuel more than eight times the amount of power generation currently to be provided by the two proposed nuclear power stations. In terms of providing natural gas for export, the 2bcm/y freed up by nuclear power is considerably lower than the 22 bcm/y currently being flared, some of which might be exported if the sector was better managed.

REFERENCES

- “Agricultural Minister Survives Impeachment,” *Iran Daily*, October 23, 2006, <http://www.iran-daily.com/1385/2691/html/index.htm>, accessed April 18, 2008.
- “Ahmadinejad Dismisses War Talk in Bahrain Visit,” *Agence France-Presse*, November 17, 2007.
- “Editorial Condemns Ahmadinejad’s ‘Offensive’ Handling of the Nuclear Issues,” *Jomhuri-ye Eslami*, January 9, 2007.
- “Candidates Draw Horns for Parliament Seats,” *Tehran Times*, March 6, 2008. <http://www.tehrantimes.com/NCms/2007.asp?code=164537>. (Accessed April 20, 2008.)
- “Distant Horizons: The Future of Mideast Gulf Product Exports,” Asia Pacific Energy Consulting, December 2006, p.55
- “Envoy: Iran Building Second Nuclear Plant,” *Reuters*, February 9, 2008. <http://www.dailyherald.com/story/?id=131664&src=93>
- “French Banks Stop Credit for Iran Fuel Imports,” Nidhi Verma and Luke Pachymuthu, *Reuters*, January 10, 2008. <http://www.iranfocus.com/modules/news/article.php?storyid=13789>
- “Gulf Nuclear Plans Face Big Hurdles, Says IAEA,” *Reuters*, January 28, 2008. Available at: http://www.gulf-times.com/site/topics/article.asp?cu_no=2&item_no=198325&version=1&template_id=48&parent_id=28
- “Gulf States Urge Peace with Iran,” BBC News, December 4, 2007. http://news.bbc.co.uk/2/hi/middle_east/7127451.stm
- “Iran Stakes Claim to Bahrain: Public Seeks ‘Reunification’ ... with its motherland,” July 13, 2007. Available at: http://www.worldtribune.com/worldtribune/WTARC/2007/me_iran_07_13.asp
- “Iran to Spend \$18 Billion on New Refinery, Upgrade Program,” Takeo Kumagai, *Platts Oilgram News*, February 6, 2008. <http://www.platts.com/Oil/News/8514139.xml?src=Oilrsshedlines1>
- “Iran Warns U.S. on Oil Shipments,” CNN.com, June 4, 2006. <http://www.cnn.com/2006/WORLD/meast/06/04us.iran/>
- “Iran’s Ahmadinejad in UAE talks,” BBC News, May 13, 2007. http://news.bbc.co.uk/2/hi/middle_east/6650745.stm
- “Iran’s decision to raise gas prices exposes economic vulnerability.” *The Associated Press*, May 24, 2007. <http://www.ihf.com/articles/ap/2007/05/25/africa/ME-GEN-Iran-Economic-Woes.php>
- “Iran Fuel Subsidy Could End Soon,” *Dow Jones*, February 5, 2008. <http://www.nasdaq.com/aspxcontent/NewsStory.aspx?cpath=20080205%5cACQDJON200802051003DOWJONESDJONLINE000346.htm>
- “Iran Fuel Subsidy to Government Agencies Could End Soon,” *Dow Jones*, February 5, 2008. <http://www.nasdaq.com/aspxcontent/NewsStory.aspx?cpath=20080205%5cACQDJON200802051003DOWJONESDJONLINE000346.htm>
- “Iran Must Understand International Rules, Says Conservative MP on Sanctions,” *ISNA* website, December 24, 2006. remark made by Deputy Khoshchehreh.

- “Iran’s MPs Consider new oil nominee” BBC News, 4 December 2005
http://news.bbc.co.uk/2/hi/middle_east/4498092.stm. (Accessed April 18, 2008)
- “Iran Pledges to Build Nuclear Plants Alone,” RIAN News Service, January 30, 2008.
www.sperforum.com/site/article.asp?idarticle=14089&t=Iran+pledges+to+build+nuclear+plants+alone
- “Iran’s President Ahmadinejad’s Speech at the UN.” *Information Clearing House*, September 15, 2005. <http://www.informationclearinghouse.info/article10336.htm>. (Accessed April 29, 2008)
- “Iran Stops Conducting Oil Transactions in U.S. Dollars,” April 30, 2008, *The Associated Press*
- “Iran Uses Euro Open Credit Lines to Buy Fuel-Source,” *Reuters*, January 15, 2008.
<http://sg.news.yahoo.com/rtrs/20080114/tbs-iran-credit-imports-955c2a1.html>
- “Iran sees use of natural gas at issue as oil production sags.” *Alexander’s Gas & Oil Connections*, May 26, 2005. <http://gasandoil.com/goc/news/ntm52119.htm>
- “Iranian Economists Blame President for Economic Woes Despite Huge Oil Revenues,” *The Associated Press*, July 14, 2007.
<http://www.iht.com/articles/ap/2007/07/14/africa/ME-GEN-Iran-Economic-Woes.php>
- “Iranian Natural Gas Shortages Affect Production,” *The Oil Daily*, January 30, 2008.
<http://www.energyintel.com/>
- “Iranian Leader Approves President’s Offer,” Office of the Supreme Leader,
<http://www.leader.ir/langs/EN/index.php?p=news&id=3176> (accessed August 18, 2006).
- “Khamenei rules out halt to Iran's nuclear drive,”
http://news.yahoo.com/s/afp/20080504/wl_mideast_afp/irannuclearpoliticskhamenei_080504105433. (Accessed May 18, 2008)
- “Leading MP Calls for Cabinet Reshuffle,” *Aftab-e Yazd*, April 9, 2006.
- “Military Force Finds its Wealth Under Attacks,” Najmeh Bozorghmehr and Gareth Smith, *Financial Times*, March 16, 2007.
- “Oil Ministry Ready to Weather Frost.” *Tehran Times*, January 12, 2008.
http://www.tehrantimes.com/index_View.asp?code=160987
- “With Eye on Iran, Rivals Also Want Nuclear Power,” William J. Broad and David E. Sanger, *The New York Times*, April 15, 2007. Available at:
<http://www.nytimes.com/2007/04/15/world/middleeast/15sunnis.html>
- “UN Security Council to Review Iran Sanctions,” *Agence France-Presse*, January 26, 2008. <http://afp.google.com/article/ALeqM5hs0YKYBvn8J2uuEE0pGkC-KP0lrg>
- “U.S. Focus on Ahmadinejad Puzzles Iranians,” Michael Slackman,
<http://www.nytimes.com/2007/09/24/world/middleeast/24iran.html>. (Accessed April 18, 2008)
- “Saudi King Says Iran Putting Region in Danger,” *Reuters*, January 27, 2007.
- A.F. Alhajji, “The Endless Iranian Nuclear Crisis,” [http://www/project-syndicate.org/print_commentary/alhajji4/English](http://www.project-syndicate.org/print_commentary/alhajji4/English)
- Ali Akbar Dareini, “Rationing Fuels Discontent in Iran,” *The Associated Press*, July 1, 2007. http://www.washingtonpost.com/wp-dyn/content/article/2007/06/30/AR2007063000999.html?wpisrc=rss_business/special/3

- Al Faris, A.R.F. "The demand for electricity in the GCC countries," *Energy Policy* 30 (2002), pp. 117–124.
- Ali Haqq, "Economy Minister: No Price Increases," *Sharq*, July 11, 2006.
- Andrew Blackman, "A Frail Economy Raises Pressure on Iran's Rulers," *The New York Times*, February 3, 2008.
http://www.nytimes.com/2008/02/03/world/middleeast/03iran.html?pagewanted=2&_r=1&sq=Iran,%20natural%20gas&st=nyt&scp=1
- Amy Myers Jaffe and Joe Barnes, "The Persian Gulf and the Geopolitics of Oil, *IISS Survival* 48, no.1 (2006).
- Breffni O'Rourke, "Iran: Ahmadinejad's Bahrain Visit New Piece In Complex Pattern," *RadioFreeEurope/RadioLiberty*, November 15, 2007. Available at
<http://www.rferl.org/featuresarticle/2007/11/b3994453-90f3-43f1-89a0-b9399884d99b.html>
- Chip Cummins, "As Threats to Oil Facilities Rise, US Military Becomes Protector," *Wall Street Journal*, June 30, 2004, p. A1.
- Dagobert Brito and Amy Myers Jaffe, "Reducing Vulnerability of the Strait of Hormuz," in *Getting Ready for a Nuclear-Ready Iran*, ed. Henry Sokolski and Patrick Clawson, U.S. Army War College Strategic Studies Institute, 2005.
- Daniel Brumberg and Ariel Ahram, "The National Iranian Oil Company in Iranian Politics," *The Changing Role of National Oil Companies in International Energy Markets*, James A. Baker III Institute for Public Policy, Rice University, 2007. Available at: www.rice.edu/energy
- Daniel Brumberg and Ariel Ahram, "The National Iranian Oil Company in Iranian Politics," *The Changing Role of National Oil Companies in International Energy Markets*, James A. Baker III Institute for Public Policy, Rice University, 2007, p. 40. Available at: www.rice.edu/energy.
- Douglas Streusand, "Managing the Iranian Threat to Sea Commerce Diplomatically" NPEC working paper.
- Elliot Hen-Tov, "Understanding Iran's New Authoritarianism," *Washington Quarterly*, Winter 2007: 163-79. http://www.twq.com/07winter/docs/07winter_hentov.pdf
- Eugene Gholtz, "Threats to Oil Flows Through Strait of Hormuz: Implications for American Grand Strategy," Working Group, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin.
- Frances Harrison, "Row over Ahmadinejad Imam Beliefs," *BBC News*, February 29, 2008. Accessed April 28, 2008.
http://news.bbc.co.uk/2/hi/middle_east/7255602.stm
- Ibtisam Al-Kitbi, Assistant Professor of Political Science at the United Arab Emirates University, Talk before the Middle East Institute, February 19, 2008. Available at: <http://www.mideasti.org/encounter/interview-iran-conference-panelist-ibtisam-al-kitbi>.
- John Partin, History and Research Office, USSOCCOM, Special Operation Forces in Operation Earnest Will, Prime Chance I, April 1998, p. 5-7; Also, Hassan Hamdan Al-Alkim, "The Arabian Gulf at the New Millennium: Security Challenges" in *Iran, Iraq and the Gulf Arab States*, ed. Joseph Kechichian (New York: Palgrave, 2001).

- Lijesen, Mark G. "The real-time price elasticity of electricity," *Energy Economics* Vol.29, Issue 2 (March 2007), pp. 249-258.
- Luke Pachymuthu and Nidhi Verma, "Iran, India's Essar Refinery JV to Start Work in '08," *Reuters*, October 24, 2007.
- Dr. Manouchehr Takin, "Iran's Energy Crisis," *Centre for Global Energy Studies*, May 2007, p. 50.
- Mohammad Sahimi, Pirouz Mojtahed-Zadeh and Kaveh L. Afrasiabi, "Energy: Iran Needs Nuclear Power," *International Herald Tribune*, October 14, 2003.
- Nadia El-Sayyed El-Shazly, *The Gulf Tanker War: Iran and Iraq's Maritime Swordplay* (London: Macmillan Press, 1997).
- Najmeh Bozorgmehr, "Ahmad-Nejad Labels Nuclear Critics as 'Traitors,'" *Financial Times*, November 12, 2007.
- Nasser Karimi, "Gasoline Black Market Thrives in Iran, Spurred by Fuel Rationing," *The Associated Press*, January 28, 2008.
- Nazila Fathi, March 14, 2008, "In This Election, Ahmadinejad Ally Is Now a Critic," <http://www.nytimes.com/2008/03/14/world/middleeast/14iran.html?fta=y>. Accessed April 18, 2008.
- Pirouz Motahed, "Iran Needs Nuclear Energy for its Economic Survival," *Tehran Times*, July 12, 2007. <http://www.tehrantimes.com/NCms/2007.asp?code=3144> Accessed April 28, 2008.
- Qasem Ravanbaksh, "The Government's Nuclear Diplomacy is Active, Dignified," *Partow-e Sokhan*, January 18, 2007, and "Commentary," *Kargorzaran*, December 28, 2006.
- Robert Tait, "Iran's Supreme Leader Rebuffs Ahmadinejad in Gas Row," *The Guardian*, Monday, January 21, 2008. <http://www.guardian.co.uk/world/2008/jan/21/iran.roberttait3>. Accessed April 20, 2008.
- Robin Wright, "Iranian Boats May Not Have Made Radio Threat, Pentagon Says," *The Washington Post*, January 11, 2008. www.washingtonpost.com/wp-dyn/content/article/2008/01/10/AR2008011000692_pf.html.
- Roger Stern, "The Iranian Petroleum Crisis and United States National Security," *Proceedings of the National Academy of Sciences (PNAS)* 104, no. 1 (2007): 377-382.
- Rosemarie Said Zahlan, "The Impact of US Policy on the Stability of the Gulf States: A Historian's View" in *Iran, Iraq and the Gulf Arab States*, ed. Joseph Kechichian (New York: Palgrave, 2001).
- Safa Haeri, "Mr. Rafsanjani's Victory Is A Crushing Defeat For Ahmadi Nezhad," *Iran Press Service*, September 5, 2007. http://www.iran-press-service.com/ips/articles-2007/september-2007/rafsanjani_victory_6907.shtml. Accessed April 30, 2008.
- Simon Webb, "Iran Falling Short of Oil Refining Ambitions," *Reuters*, June 19, 2007.
- Somini Sengupta and Heather Timmons, "Visit by Iranian Leader Offers Bonus for India," *International Herald Tribune*, April 30, 2008, p. 5.
- Simon Henderson, "Saudi Arabia: The Nightmare of Iraq," *Policy Focus* 70, June 2007.
- Thom Shanker, "Iran Encounter Grimly Echoes 02 War Game," *The New York Times*, January 12, 2008.

- Vahid Sepehri, RFL/RI Iran Report, "Radical Right Renews Attacks on Moderate Clerics," 10, no. 27 (2007).
<http://www.rferl.org/reports/Print.aspx?report=71&id=2007/08/571-10-27>.
- Vali Nasr and Ray Tayeyh, "The Costs of Containing Iran," *Foreign Affairs* 81, no. 1 (2008): 85-94.
- Yousefi, Hossein, Sachio Ehara, and Younes Noorollahi, "Geothermal Potential Site Selection Using GIS in Iran," *Proceedings, Thirty-Second Workshop on Geothermal Reservoir Engineering*, Stanford University (January 22-24, 2007).
- Department of Energy: Energy Information Administration website, Country Analysis Briefs: Iran. <http://www.eia.doe.gov/emeu/cabs/Iran/Oil.html>
- James A. Baker III Institute for Public Policy. Transcript of Lecture Address, 2005. Available at: www.bakerinstitute.org/events_sept_26_transcript.pdf.
- Saudi Aramco: National Flagship with International Responsibilities*, James A. Baker III Institute for Public Policy. Available at: www.rice.edu/energy
- World Energy Outlook* (Paris: International Energy Agency, 2005)
- http://www.janes.com/security/international_security/news/fr/fr040630_1_n.shtml;
- <http://www.nydailynews.com/front/story/119482p-107611c.html>
- http://www.nti.org/e_research/profiles/Iran/Missile/3876_4086.html
- <http://www.converger.com/eiacab/chron.htm>
- www.eia.doe.gov/emeu/cabs/pgulf.html
- <http://www.reuters.com/article/companyNewsAndPR/idUSSP9583420071024?pageNumber=3&virtualBrandChannel=0>
- http://www.iht.com/articles/2003/10/14/edsahimi_ed3_.php