

Geopolitics of the Iranian Nuclear Energy Program

But Oil and Gas Still Matter

A Report of the CSIS Energy and National Security Program

AUTHOR
Robert E. Ebel

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ABOUT THE GEOPOLITICS OF ENERGY SERIES

In November of 2000, CSIS published *The Geopolitics of Energy into the 21st Century*. The report was the culmination of a two-year effort conducted under the auspices of the Strategic Energy Initiative (SEI), designed to identify and examine significant geopolitical shifts that could impact future global energy security, supply, and demand. The effort, which was cochaired by Senator Sam Nunn and Dr. James Schlesinger, was undertaken on the premise that the relatively “benign” global energy situation that had persisted for the previous 15 years was masking emerging changes in both markets and international realignments and consequently allowing policymakers and the public at large to become complacent about making hard choices with respect to energy, foreign and security policy, the economy, and the environment.

The time horizon for the SEI report was the first two decades of the twenty-first century. Many of its conclusions, in hindsight, look remarkably prophetic and remain critically relevant almost a decade later, though events of the past several years also point to some clear omissions. Central to our (and a variety of other) forecasts at the time, the SEI report projected that energy demand over the time period would be met in essentially the same ways as it was at the turn of the century, but in increasingly larger quantities.

For example, the report concluded that fossil fuels would continue to provide the overwhelming majority (in excess of 85 percent) of global energy needs for the next several years; that the Persian Gulf would remain the key marginal supplier of oil to the world (cautioning, however, that massive investment would be needed to realize increases in future production output); that the anticipated growth in energy, especially natural gas, use would both tax the delivery system and raise a new series of geopolitical issues that could lead to new political alignments; that production from the Caspian would be important at the margin, but not (in this time frame) a pivotal source of global supply; that Asian demand would increasingly look to the Persian Gulf for energy; that Europe’s overreliance on Russian natural gas would become a “worrisome” dependency; and that U.S. oil imports would continue to grow.

Three broad conclusions were drawn from the SEI analysis—namely, that as the world’s only superpower, the United States must accept its special responsibilities for preserving worldwide energy supply; that ensuring adequate and reliable energy supplies would require enormous investments that needed to be made “immediately”; and that decisionmakers in this century would face the special challenge of balancing the objectives of sustained economic growth with concerns about the environment. The 2000 report even identified Osama bin Laden by name in a discussion of terrorism and the rise of dangerous nonstate actors.

Missing from the analysis, however, was the recognition of how quickly China’s energy demand would grow, how dramatically prices would change over a relatively short time period, or how precipitously climate change, carbon constraints, and renewable fuels initiatives would move to center stage.

Nonetheless, the SEI report emphasized the concerns surrounding the political fragility in key energy-producing countries and regions, predicted an increase in resource competition, and articulated how weakened U.S. alliance relationships with Europe, the Persian Gulf, and Asia, coupled with a resurgence of conflict and power politics, could adversely affect global energy security and promote geopolitical realignment.

At the time of its publication, portions of the SEI assessment were characterized as unduly pessimistic. Events of the last eight years suggest that they were anything but.

The intent of the Geopolitics of Energy series is not to assess the accuracy or shortcomings of our previous report or to develop a new bottom-up projection of supply and demand forecasts from now to 2030. Rather, our current work is designed to focus on relevant drivers that will dictate future trends in energy consumption, supply sources, geopolitical relations, foreign policy, and environmental choices.

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1

IRAN, SANCTIONS, AND
DAILY LIFE

“The policies of Iran constitute perhaps the single greatest challenge for American security interests in the Middle East, and possibly around the world. . . .” So said Secretary of State Condoleezza Rice in testimony before the House Foreign Affairs Committee on October 24, 2007.¹ What policies did Secretary Rice have in mind? The combination of terrorism, repression at home, and the pursuit of nuclear weapons technology.² Opposition comes from former administration officials as well, who are equally convinced that Iran’s desire for nuclear weapons is one of the most urgent issues facing the United States today.³ And in a report released by the U.S. Department of State on April 30, 2009, Iran was characterized as the “most active state sponsor of terrorism” in the world.⁴

Today, however, as months have passed, the administration of President Barack Obama would likely substitute Afghanistan for Iran although the intransigence of Iran relative to the intent of its nuclear program remains not far behind. Secretary of Defense Robert M. Gates confirmed that substitution of Afghanistan for Iran when, during testimony before the Senate Armed Services Committee, he stated that Afghanistan is the greatest U.S. military challenge.⁵ Then, in late summer 2009 the chairman of the Joint Chiefs of Staff, Admiral Michael G. Mullen, provided a more blunt assessment: the situation in Afghanistan is “serious and deteriorating.”⁶

As the United States prepares to withdraw all of its troops from Iraq by the end of 2011, does meeting this “greatest military challenge” require simply reassigning those troops to Afghanistan? President Barack Obama on December 1, 2009, laid out his plan to have an additional 30,000 troops in Afghanistan by summer 2010, with withdrawal to begin by summer 2011, a plan that was attacked by both sides of the aisle, especially the withdrawal date. And what about Iran? That country cannot be expected to sit quietly while attention may be diverted elsewhere.

In response to the comments by Secretary of State Rice, the George W. Bush administration rolled out on the following day a new set of unilateral financial sanctions targeting funding to Iran as well as defining the military as a terrorist organization, the first time the United States had ever done so. These new sanctions were seen as the toughest since 1979, when the U.S. embassy in

1. Robin Wright, “U.S. to Impose New Sanctions Targeting Iran’s Military,” *Washington Post*, October 25, 2007.

2. The five Caspian states—Russia, Kazakhstan, Turkmenistan, Iran, and Azerbaijan—have acknowledged the rights of all signatories to the Nuclear Non-Proliferation Treaty to develop peaceful nuclear power. See Isabel Gorst, “Caspian States Back Iran’s Right to Nuclear Power,” *Financial Times*, October 16, 2007.

3. Richard Holbrooke et al., “Everyone Needs to Worry about Iran,” *Wall Street Journal*, September 22, 2008.

4. “Chapter 3: State Sponsors of Terrorism,” U.S. Department of State, Office of the Coordinator for Counterterrorism, April 30, 2009, <http://www.state.gov/s/ct/rls/crt/2008/122436.htm>.

5. Heather Maher, “Defense Chief Calls Afghanistan ‘Greatest Military Challenge’ For U.S.,” Radio Free Europe/Radio Liberty, January 28, 2009.

6. Karen DeYoung, “War Conditions ‘Deteriorating,’ Mullen Says,” *Washington Post*, August 24, 2009.

Tehran was seized and the staff held hostage for more than a year. Yet, as tough as they may seem, the Government Accountability Office, in its report on Iran sanctions, questioned whether these sanctions actually furthered U.S. objectives.⁷ The answer was rather obvious. With the exception of the U.S. Department of the Treasury, there was little coordinated effort to collect data demonstrating the direct results of sanctioning and enforcement efforts. In sum, U.S. agencies do not assess the overall impact of sanctions.⁸

Although these new sanctions targeted lending institutions, banks may have been only secondary in importance. Administration officials noted that the real target of these measures was the top 60 to 80 members of Iran's ruling elite, who could put pressure on the country's leadership to change course in the nuclear dispute.⁹ Others saw much broader implications and, probably anticipating the impact of funds denied, viewed the new sanctions as a shot across the bow of the entire energy sector.¹⁰

Reaction was swift. China and Russia announced opposition to these tightened sanctions, and some analysts cited damage to Iran's oil and gas sectors while others thought the current high oil prices would help Iran weather any impact.

In retrospect, those sanctions that have been in place for some time now have discouraged Western oil companies from signing contracts with Iran.¹¹ Royal Dutch Shell and Spain's Repsol pulled out of one of Iran's largest gas projects, that is, development of phase 13 of the South Pars gas field.¹² Italy's Total withdrew from Iran in July 2008, noting that it had become politically too risky to stay.¹³ Then, some two weeks later, Norway's national oil company, StatoilHydro, responding to U.S. pressure, indicated it would not make any new investments in Iran at this time.¹⁴

Although the companies would not comment, the general reaction held that these corporate withdrawals reflected U.S. and international sanctions. Indeed, there had not been a single major oil or gas deal concluded by Iran with a foreign oil company in more than five years.¹⁵ Cutting off investments holds implications for both the present and the future of oil and gas. Yet, existing sanctions legislation—the Iran Sanctions Act, the purpose of which is to punish those non-U.S. companies that would invest more than \$20 million in the Iranian oil and gas sector—has never been implemented. Moral suasion by the U.S. government has so far sufficed, but international oil companies are finding it difficult to ignore opportunities in Iran at a time when such opportunities are increasingly difficult to come by worldwide.

7. "Iran Sanctions: Impact in Furthering U.S. Objectives Is Unclear and Should Be Reviewed," Report no. GAO-08-58 (Washington, D.C.: U.S. Government Accountability Office, December 2007).

8. Ibid.

9. Daniel Dombey et al., "And Then What? A Strike on Iran May Be One Problem Too Many for Bush," *Financial Times*, November 11, 2007.

10. Jay Solomon and Glenn R. Simpson, "U.S. Turns Up the Heat on Iran," *Wall Street Journal*, October 26, 2007.

11. This was due in considerable part to continued U.S. pressure.

12. Anna Fifield and Javier Blas, "Shell Quits Iran Gas Project," *Financial Times*, May 12, 2008.

13. Javad Kooroshy and Farangis Najibullah, "Total Deals Fresh Blow to Iranian Economy," Radio Free Europe/Radio Liberty, July 10, 2008.

14. Ed Crooks, "Oil Group Ends Iran Investments," *Financial Times*, May 31, 2008.

15. Kate Dourian, "U.S. Adds Sanctions on Iran's Revolutionary Guard, Defense Ministry," *Oilgram News*, October 26, 2007.

At the same time, oil companies must consider whether it is financially and politically wise to invest in Iran. Aside from the prospect of war, the terms under the buyback model offered by the government to companies interested in oil- and gas-field exploration and development are not at all attractive,¹⁶ and that fact, combined with sanctions and the continuing threat of military action against Iran, helps keep them away.

Still, the Iranian government continues to profess that U.S. companies are welcome to do business in Iran if they accept Tehran's conditions for cooperation. Iran knows full well that U.S. unilateral sanctions prohibit U.S. companies from investing in the energy sector, and those sanctions, plus those imposed by the United Nations against Iran, have helped deter foreign investment to the detriment of the oil and gas sectors.

China, unlike others, has not been hesitant to strike oil-related deals with Iran, first involving the Yadavaran oil field in December 2007 and then in January 2009 covering the Azadegan oil field.¹⁷ These are so-called buyback contracts, where terms are viewed as not particularly attractive by the international oil companies. China views its presence in Iran as strictly business and unrelated to politics, but any immediate development from these fields should not be expected.

Although the presence of deep-seated corruption and a suffocating bureaucracy impart their own negative influences, Iran is confronted by other domestic issues as well. Industry is reported to be operating at only 40 percent of capacity because of policies put in place by the president.¹⁸ Iranian refineries have been capable of meeting barely 58 percent of local gasoline demand, in turn stimulated by heavy state subsidies. Gasoline and gasoil imports cost the government more than \$6 billion in 2007, with such costs now hitting \$5 to \$7 billion annually.¹⁹ Rationing was imposed in late June 2007 as a way of controlling demand and imports, and each private automobile was allocated 100 liters per month.

Imports were indeed cut, to about 25 million liters per day, potentially saving the country about \$3 billion annually in avoided subsidy costs. Still, prices per gallon then averaged a bare one-seventh of what most Americans had been paying. New refinery construction and upgrading of old facilities should allow ample gasoline supplies for the country in about five years or less, but only if construction deadlines can be met, and strong doubts persist.

Electricity has been in short supply, especially during the hot summer months, and power cuts of two hours or so every day have become the norm.²⁰ These cuts have impacted virtually all segments of Iranian society. Electricity prices were frozen five years ago, and, as all nations have learned, when prices are capped, demand rises. With inflation currently running about 26 percent per year, the government would be reluctant to free electricity prices any time soon.

16. Under buybacks, foreign companies are repaid for their investment with an agreed share of proceeds from a finished project rather than with an equity share. See Kate Dourian, "Iran's Expansion Stymied by Sanctions, Internal Politics," *Oilgram News*, September 28, 2007.

17. Alexis Aik, "Iran Update: CNPC Inks Lucrative Deal with Iran for Development of Azadegan," *Energy Insights*, FACTS Global Energy, January 2009.

18. Monavar Khalaj and Najmeh Bozorgmehr, "Iran's Business Leaders Hit at Populist Policies," *Financial Times*, December 15, 2009.

19. Spencer Swartz, "Big Oil Traders Cut Shipments to Tehran amid Sanctions Talk," *Wall Street Journal*, September 24, 2009.

20. Najmeh Bozorgmehr, "Iranians Facing Power Cuts Wonder Where the Money Went," *Financial Times*, August 11, 2008.

Finally, there is the matter of high unemployment and underemployment rates. In Iran, more than two-thirds of the population is younger than the age of 30, and a reported 750,000 people enter the labor market each year.²¹ It is not the high unemployment rate that is of particular concern to the West, but, instead, what happens to those young people who become discouraged after months of unsuccessful attempts to find work. Unfortunately, many are susceptible to proselytization and turn to what could be politely described as anti-Western activities.

Conditions in neighboring Iraq continue to be unsettling. It would be naive not to believe that Iran has taken advantage of the opportunities offered to provide military equipment and training to those groups in Iraq where such support would be in the Iranian national interests. Iraq equally fears the excessive economic influence Iran holds over that country.²²

Still, the U.S. public is in no mood for a military action against Iran. Iran recognizes that, and so did President George W. Bush, but others may make that decision for the United States. It will be up to President Obama to decide how best to confront Iran.

Now, as the year 2009 has ended, Iran must consider, among other pressing issues, how to weather the world financial crisis and the very likelihood of forthcoming sanctions more punitive than those currently in place. Officials could reduce the income expected for the budget, beginning in March 2009, from oil exports, and that has been done by estimating the oil price for one barrel of crude oil at under US\$40. Still, the budget will be in deficit for the year.

Costly energy subsidies covering electricity, water, gasoline, and natural gas could be removed, and Iran's president, Mahmoud Ahmadinejad, has proposed that such steps be taken.²³ Other subsidies, such as those on everyday goods, would be removed as well, saving the government in total some \$100 billion annually. These actions if taken would be extremely unpopular, particularly in view of rising unemployment and high inflation rates.

But removal is a necessary step, given that subsidies of all kinds cost the government a reported \$1,380 per person.²⁴ Unfortunately for the president and for Iran, the Iranian parliament rejected his proposal. President Ahmadinejad nevertheless is trying again to remove these subsidies, and, to make the program more palatable, he has indicated that half the monetary savings will be directed to helping poorer Iranians adjust to the resulting higher prices. The "sell" will not be easy, and many obstacles remain.

President Obama has been convinced that engagement is the key to progress on the many issues that divide the United States and Iran. In the early going, no deadline had been handed down nor had any preconditions been set out. Progress would be measured in months, and there would be events along the way that would disturb or distract the two countries. Whatever has transpired in the 30 years since the 1979 Iranian revolution could not be expected to quietly disappear.

The end-of-year deadline ultimately set during 2009 has now passed, and the question of new sanctions comes into play. Who inside Iran will be targeted, and will these new sanctions have

21. Anna Fifield, "Iran Suffers as a Generation Goes in Search of a Job," *Financial Times*, January 30, 2008.

22. Michael Hastings, "Dispute over Oil Well Worsens Fears about Iran's Sway in Iraq," *Washington Post*, January 9, 2010.

23. Nazila Fathi, "Iranian President Proposes Ending Energy Subsidies," *New York Times*, December 31, 2008.

24. Ayesha Daya, "Iran May Scrap Subsidies on Fuel as Oil Income Drops," *Bloomberg*, December 31, 2008.

any measurable effect? More recently, there has been growing evidence that the United States is moving to direct support to the so-called Green Movement, the name given to the government's opposition, and is focusing this shift on Iran's Revolutionary Guard Corps (IRGC). The IRGC now is regarded as the economic and military power behind President Ahmadinejad.²⁵ It is quite evident that the new sanctions will in part be directed against the interests of the IRGC. If those interests were to be significantly damaged, would the government also suffer to the point where its legitimacy would be tested and perhaps lost?

25. Jay Solomon, "U.S. Shifts Iran Focus to Support Opposition," *Wall Street Journal*, January 9–10, 2010.

2

PRESIDENTIAL ELECTION AND ITS AFTERMATH

The Iranian presidential election took place on June 12, 2009. Mahmoud Ahmadinejad was returned to office as president, overwhelming Mir Hussein Moussavi, who immediately declared the vote to be a fraud. Using the Internet to communicate in order to develop plans to demonstrate—in effect replacing the historic role of the mosque¹—Iranians took to the street. The government responded by clamping down on reporting and trying to minimize the role of the Internet, but without full success. In addition, fingers were pointed westward, especially toward Britain and the BBC, as being behind the unrest.

The supreme leader of Iran, Ayatollah Ali Khamenei, later attempted to play down those accusations of foreign interference, saying he had no proof of such.² But he did state that the rioting had been planned in advance from the outside, whether local opposition leaders were aware of that or not.

The violence that engulfed Tehran in the days and weeks following the election has been described as the worst in the 30 years following the revolution of 1979. Iran did recognize that there had been a number of irregularities in the voting process but, following a partial recount, at the same time insisted that the overall vote was valid.³ Protestors were eventually overwhelmed by the sheer number of police, militia, and the IRGC. Hundreds were rounded up and incarcerated while use of the Internet was turned around to now support the administration.

At the same time, divisions appeared among the elites of the country, leading some observers to speculate that this might mark the beginning of the end of the Islamic Republic of Iran as it is today.⁴ This speculation is perhaps an overstatement, caught up in the emotions of the day and unlikely in the absence of a revolution comparable to that of 1979.

Those thrown in jail were forced to publicly “confess,” and actions were advocated against political parties, all to eliminate current and future opposition. Indeed, as one Iranian writer noted, an Iranian may be a merchant this year, a minister next year, and a prisoner the year after.⁵ The writer, Homa Katouzian, added that these words were close to the Iranian experience throughout its long history. In other words, what was true up to a century ago is equally true today.

1. Thomas L. Friedman, “The Virtual Mosque,” *New York Times*, June 17, 2009.

2. “Iran’s Supreme Leader Says No Foreign Link to Leaders of Unrest,” Radio Free Europe/Radio Liberty, August 27, 2009.

3. Michael Blackman, “Iran Announces Election Errors Amid Crackdown,” *New York Times*, June 23, 2009.

4. Nicholas Burns et al., “Iran’s Clenched Fist Election: What Next for U.S. Policy?” <http://carnegieendowment.org/events/?fa=eventDetail&id=1360>.

5. Homa Katouzian, “Whither Iran,” MEC Analytic Group, August 12, 2009.

The rift between the hard-liners (although there are some hard-liners who are also pragmatists) and the moderates continues to widen, as the media have reported.⁶ While not naming names, President Ahmadinejad called for the prosecution of opposition leaders. More than 100 were put in jail. Reports underscore an increasingly bitter fight between political and clerical factions.⁷ In a more worrisome development, the Basij militia warned in mid-November 2009 that its forces will confront any further street riots.⁸

But then, who today really knows where Iran is going and what the future holds for the country? Meanwhile, it is all about the struggle for power and control. Iran appears to have added to its efforts to control the opposition and now has moved to controlling the media as well as the means of communication. This new approach may not yield the desired results and could even be counterproductive.⁹

Some six months later protests still continued, this time on the occasion of National Students Day. The protests were not limited to Tehran but encompassed campuses in cities across the country.¹⁰ More important, there were direct attacks on the country's religious leadership. It is worrisome that the opposition is becoming much more radical in its demands, much more confrontational vis-à-vis the government and less confrontational about the disputed presidential election.

Calls for replacing the regime were becoming more common while the exodus from Iran to more secure countries was picking up steam. As one observer put it in early December, the regime is plagued by double-digit inflation, massive flight of capital, and unprecedented levels of unemployment.¹¹

6. Golnaz Esfandiari, "Iran's Ahmadinejad Calls for Prosecution of Opposition Leaders," Radio Free Europe/Radio Liberty, August 28, 2009.

7. Michael Blackman, "Iran's Factional Disputes Grow Increasingly Bitter," *New York Times*, August 27, 2009.

8. "Iran's Islamic Militia Says It Will Confront 'Riots,'" Radio Free Europe/Radio Liberty, November 12, 2009.

9. Robert F. Worth, "Iran Expanding Effort to Stifle the Opposition," *New York Times*, November 24, 2009.

10. Robert F. Worth, "Violent Protests in Iran Carry into Second Day," *New York Times*, December 9, 2009.

11. Amir Taheri, "Iran's Democratic Moment," *Wall Street Journal*, December 10, 2009.

3

THE NUCLEAR PROGRAM

In Iran, the geopolitics of energy does not center on crude oil or natural gas as it does in, for example, Russia. Rather, it is the development of nuclear energy, whether for peaceful or military purposes, that continues to transfix the eyes of the world.

It was in 1975, some 34 years ago, that construction began on a nuclear power plant in Bushehr, Iran, by a German firm although, in reality, the nuclear program had actually started some 20 years earlier. Consisting of two 1,196-megawatt (MW) pressurized water reactors, the plant was scheduled for completion in 1981. The German firm withdrew in 1979, in part because of the deteriorating political situation in the country. At that time work on one reactor was 50 percent completed; the second reactor was 85 percent complete.¹

Iran in 1975 was a leader in world oil production, approaching 6 million barrels per day (b/d). Because domestic oil consumption averaged barely 500,000 b/d, that meant the country could be, and was, a major contributor to world oil trade. Iran also held world-class reserves of natural gas, with output supplying electric power-generating facilities.

Why then had Iran decided to develop a nuclear power sector? Electricity supplies were ample at that time although losses in transmission were quite high, and there was little reason to be concerned about supply and demand. Did forecasts of the future foretell the prospect of shortages, especially if Iran wished to begin exports of natural gas? Perhaps more and more of annual natural gas supply would be required for reinjection at the oil fields for the purpose of maintaining crude oil production and export levels, thus creating the need to develop an alternative source of electricity supply. This latter consideration would seem to have been more reasonable at the time the decision was taken. Indeed, Iranian officials have spoken of nuclear power development as a way of supporting exports.

As questions continue to arise about the status and real purpose of Iran's nuclear program, it might be well to review the three key parts of an effective nuclear weapons capability:²

- Production of fissile material,
- Effective means for weapon delivery, and
- Design, weaponization, and testing of the warhead itself.

Does that mean that the second of the three requisites noted above has now been met? Not yet, but Iran is getting close. A senior U.S. Department of State official, speaking on November

1. "Iran's First Bushehr Reactor to Be Launched This Year—Russian Nuclear Chief," *Moscow Times*, June 18, 2009.

2. "Annual Threat Assessment of the Intelligence Community for the Senate Select Committee on Intelligence," Unclassified, Statement for the Record (Washington, D.C.: Office of the Director of National Intelligence, February 12, 2009).

10, 2009, said there is strong evidence that Iran had sought to develop the means to put a nuclear weapon on a missile, but prior to 2003.³ He could not categorically say that such efforts were continuing. Nuclear missiles can be directed against foreign enemies, but the more immediate question relates to controlling domestic opposition.

The December 2007 National Intelligence Estimate

A major surprise came on December 3, 2007, with the release of a new National Intelligence Estimate (NIE) on Iran. This NIE noted that such design and weaponization work had been halted in 2003 and had not been resumed as of at least mid-2007.⁴ Uranium enrichment efforts were also halted in the fall 2003 but resumed in January 2006. That effort allows Iran to produce fissile material if it so chooses, while development of weapons delivery means continued without a break. Less than one month before the June 2009 presidential election, Iran successfully launched a two-stage solid fuel missile, and President Ahmadinejad linked that success with the country's nuclear program.⁵ The public was given only a short declassified summary of the NIE, but that was sufficient to cause interested observers worldwide to revisit their past conclusions, with the thought that a sea change was perhaps in order.

As noted, the NIE found that in the fall of 2003 Tehran had halted its nuclear weapons program. Equally important, a high degree of confidence was attached to that assessment. But it was the sharp reversal of what had been underscored in an NIE released in 2005, that is, stating Iran had an active weapons program, that had caught one's eye.

But all was not lost. Great Britain and Germany took issue with the 2007 NIE, noting from its language that the outside world could not be certain Iran had stopped work on a nuclear weapon.⁶

President Ahmadinejad not surprisingly took the 2007 NIE as a final shot to those who spread a sense of concern in the world through lies about nuclear power, while President Bush commented that the NIE didn't do anything to change his opinion about the danger Iran posed to the world.⁷

Of considerable interest to all, the NIE did not revise earlier predictions that Iran could have a nuclear weapon by sometime during the 2010–2015 time frame. Iran continues to enrich uranium to produce nuclear fuel for its civilian energy program, or so it said. But if the uranium is highly enriched, it can fuel a nuclear bomb. Crossing the line into nuclear weapons is relatively easy if the civil nuclear program is sufficiently advanced.⁸

The director of national intelligence, J. Michael McConnell, presented his annual threat assessment to the Senate Select Committee on Intelligence on February 5, 2008. Media coverage viewed him as backing away from his agency's late-2007 assessment that Iran had halted its nuclear

3. Janine Zacharia, "U.S. Official Says IAEA Has Evidence Iran Sought Atomic Warhead, Bloomberg, November 10, 2009.

4. Ibid.

5. Thomas Erdbrink, "Iranian Missile Launch Confirmed," *Washington Post*, May 21, 2009.

6. James Blitz and Tony Barber, "US under Fire over Iran N-Plan Report," *Financial Times*, March 6, 2008.

7. Tim Timiraos, "Behind the Iran-Intelligence Reversal," *Wall Street Journal*, December 8–9, 2007.

8. William J. Broad, "The Thin Line between Civilian and Military Nuclear Programs," *New York Times*, December 5, 2007.

program, quoting the director as saying, “I would change the way we describe the Iranian nuclear program. I would have included that . . . the portion of it, maybe the least significant, had halted.”⁹

Later that month, in a radio interview, McConnell is reported to have said, “Our estimate is they intend to have a nuclear weapon.”¹⁰

Thomas Fingar, chairman of the National Intelligence Council, was quoted as saying, “If we had thought that this was going to be released, we would have written the key judgments differently than we did.”¹¹ Others, including the president and vice president, would have agreed. Consideration is apparently now being given to a rewrite of the 2007 NIE that had become rather controversial.¹²

Release of the 2007 NIE was taken to mean that support for even more stringent sanctions on Iran would be difficult to come by.¹³ China, whose support for additional sanctions has been sought, was quick to indicate how it believed the political landscape had changed; it showed this by signing on December 9, 2007, a contract to develop the huge Yadavaran oil field located in Iran, viewing the agreement as strictly a business undertaking. In late December 2007 Iran signed a \$16 billion gas field development and liquefied natural gas (LNG) import contract with a Malaysian company.¹⁴

Russia followed China’s move by deciding to deliver nuclear fuel to the Bushehr reactor, a decision taken after consultations with the United States.¹⁵ President Bush had no objections. The UN Security Council in March 2008 had authorized inspections of cargo to and from Iran suspected of carrying prohibited equipment¹⁶ and passed additional financial sanctions against Iran, but these sanctions require countries only to monitor financial transactions with two Iranian banks—Bank Saderat and Bank Melli.

The larger, domestic question relates to the pressures on Iran by the West to give up its nuclear program. How have these pressures impacted upon daily Iranian life? A show of defiance has been demonstrated—part delusional, part national pride. External pressures, which in a way support opposition forces, lead to more restrictive internal measures.

Internal opposition to Iranian policies is fed by President Ahmadinejad’s uncompromising attitude, which Iranian opponents of the government believe is fueling Western opposition to Iran’s nuclear program. The president, in a speech on November 12, 2007, called these internal critics

9. “Proliferation News,” Carnegie Endowment for International Peace, February 7, 2008, quoting from the *New York Sun* of February 6.

10. William J. Broad and David E. Sanger, “Meeting on Arms Data Reignites Iran Nuclear Debate,” *New York Times*, March 3, 2008.

11. “In the Loop,” *Washington Post*, March 24, 2008.

12. Siobhan Gorman and Jay Solomon, “U.S. Considers a New Assessment of Iran Threat,” *Wall Street Journal*, October 16, 2009.

13. A third draft UN resolution, though somewhat weaker than what the United States might have wanted in a new set of resolutions against Iran, nevertheless has been supported by Britain, France, Germany, China, Russia, and the United States. Support reflected a desire to show a united international community. See Hugh Williamson, “Draft Deal on Fresh Iran Sanctions Agreed,” *Financial Times*, January 23, 2008.

14. Najmeh Bozorgmehr, “Iran Aims to Thwart US Pressure with \$16 billion Malaysian Gas Deal,” *Financial Times*, December 27, 2007.

15. James Blitz, “Bush Backs Russia on Iran Uranium,” *Financial Times*, December 18, 2007.

16. Warren Hoge and Elaine Sciolino, “Security Council Imposes More Sanctions on Iran,” *New York Times*, March 4, 2008.

“traitors,” a very serious accusation, particularly in that part of the world. Is that a true reflection of the seriousness of the opposition, or did President Ahmadinejad make just another one of those provocative statements for which he has become famous—or infamous?

The country’s supreme leader, Ayatollah Ali Khamenei, put his own stamp on how he took on the opposition, noting that questioning Iran’s disputed presidential election is the “biggest crime.”¹⁷

International Atomic Energy Agency Reports

The International Atomic Energy Agency (IAEA), located in Vienna, Austria, has responsibility for tracking day-to-day developments in the Iranian nuclear sector and providing quarterly reports on its findings. The IAEA had released in mid-November 2007 a report concerning the degree of cooperation by Iran in responding to concerns about the true nature of its nuclear program. In sum, the report noted the IAEA had not been satisfied although a number of questions were answered,¹⁸ with Iran probably hoping to circumvent the imposition of any more sanctions. That hope will not be answered, for the report stated that the agency’s knowledge about Iran’s current nuclear program is “diminishing” because of limited access to Iranian sites.¹⁹

A CSIS report noted that the evidence presented by the IAEA provided strong indications that Iran is pursuing a nuclear weapons program.²⁰ This report shows that the IAEA has traced a pattern of Iranian efforts that fit a coherent and consistent nuclear weapons program and is difficult to explain in any other way, yet no certainties are involved. The unknowns are several: What kind of program does Iran have in mind? When will Iran be able to acquire a stock of weapons? How would Iran intend to use these weapons?

The U.S. government response to the IAEA report was immediate: the Iranian failure to respond was grounds for the United Nations to proceed on a long-delayed resolution imposing new sanctions on the Islamic republic.²¹ However, the support of China and Russia is needed at the UN, and both countries have been reluctant to impose any new sanctions on Iran. In the interim U.S. nuclear officials calculated that, based on information contained in the IAEA report, Iran could reach its nuclear goal in a year, the key being whether all 3,000 referenced centrifuges were working properly.²² But does that goal have both civilian nuclear power and military power as its real aim?

There can be no doubt that President Bush would have liked to bring about an acceptable resolution to the Iranian problem during the remaining few months of his administration. With that perhaps in mind, another package, containing more incentives for Iran to suspend its enrichment efforts, was delivered to Iran in June 2008 by the six nations—United States, Russia, China, France,

17. Golnaz Esfandiari, “Supreme Leader Warns Opposition Leaders against Questioning Presidential Vote,” Radio Free Europe/Radio Liberty, October 29, 2009.

18. “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006) and 1747 (2007) in the Islamic Republic of Iran,” Report no. GOV/2007/58 (Vienna: International Atomic Energy Agency, November 15, 2007).

19. Ibid.

20. Anthony H. Cordesman, “Iran as a Nuclear Weapons Power” (Washington, D.C.: CSIS, December 17, 2009).

21. Robin Wright, “U.S. to Seek New Sanctions against Iran,” *Washington Post*, November 16, 2007.

22. Daniel Dombey and James Blitz, “Tehran Could Reach Nuclear Goal ‘in a year,’” *Financial Times*, November 17, 2007.

Germany, and Great Britain—that have been working together to thwart Iran’s nuclear program. A deadline of two weeks for an Iranian response was laid down.

Iran did not accept the incentives package, and its response appeared to be little more than stalling, in effect, buying time while continuing its enrichment efforts. Russia not surprisingly supported the Iranian desire for more time.

On November 19, 2008, the director general of the IAEA reported to the Board of Governors that no progress had been made in securing a verifiable agreement by Iran to suspend its uranium enrichment program.²³ Indeed, a senior UN official underscored the disappointment, noting that “we seem to be at a dead end.”²⁴ Further UN sanctions evidently were out, given the unwillingness of Russia to support the United States on this issue.

Does this game continue until Iran has reached its unvoiced goal of building and setting off a nuclear bomb? Life in Iran goes on, as does the uranium enrichment program.

A December 2008 NIE concluded that Iran probably could not produce a nuclear bomb until 2010. In that regard, U.S. officials in mid-January 2009 indicated that recently obtained evidence indicated efforts by Iran to evade sanctions and to acquire from China metals used in long-range nuclear missiles.²⁵ But these metals also have broad commercial applications, thus complicating any intelligence assessment.

Iran continued to hold to its contention that it had a right to have a nuclear program and the administration of President Barack Obama must accept that right.²⁶ U.S. policy, to engage Iran, continued to concentrate on convincing that country to halt its uranium enrichment program.

In the meantime, progress was reported on the Bushehr nuclear electric power plant now being built by Russia, with the hope that it would begin full-scale operations, with one reactor, later in 2009.²⁷ Under the arrangement between Iran and Russia, Russia will supply low-enriched uranium (LEU) for the plant’s operation, and the spent uranium has to be returned to Russia. Enriching low-enriched or reactor-grade nuclear fuel to a higher level would be required if Iran was planning to produce a nuclear bomb.

Mohamed ElBaradei, having led the IAEA for 12 years, stepped down at the end of November 2009. In a presentation before the Council on Foreign Relations in early November he voiced the opinion that there is no indication and no concrete proof that Iran has an active nuclear weapons program.²⁸ Why is Iran pursuing a nuclear program at all, he posed? He answered his own question: It is about prestige and gaining respect.

23. “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran,” Report no. GOV/2008/59 (Vienna: International Atomic Energy Agency, November 19, 2008).

24. Joby Warrick and Thomas Erdbrink, “U.N. Agency at ‘Dead End’ as Iran Rejects Queries on Nuclear Research,” *Washington Post*, September 16, 2008.

25. Glen R. Simpson and Jay Solomon, “Fresh Clues of Iranian Nuclear Intrigue,” *Wall Street Journal*, January 16, 2009.

26. Roula Khalaf and Najmeh Bozorgmehr, “Iran Says US Must Accept Nuclear Programme,” *Financial Times*, February 4, 2009.

27. Thomas Erdbrink, “Iran’s First Nuclear Power Plant Set for Tests before Launch,” *Washington Post*, February 23, 2009.

28. Nikola Krastev, “IAEA Chief: Iran’s Nuclear Program about Winning Recognition, Prestige,” *Radio Free Europe/Radio Liberty*, November 5, 2009.

What Does All This Mean?

What does all this mean? The U.S. intelligence community, at least as of February 12, 2009, believed that Iran did not currently have a nuclear weapon but that Iran could produce enough highly enriched uranium (HEU) for a weapon sometime during the 2010–2015 time frame.²⁹

The IAEA had released its regular quarterly report on Iranian nuclear activities in mid-February 2009. UN officials concluded that Iran now had sufficient enriched uranium for one nuclear bomb. That is, Iran had accumulated more than one ton of low-enriched uranium hexafluoride, and, if that quantity were further enriched, more than 20 kilograms of fissile material could be produced, or enough for one bomb, and Iran could do so within months.³⁰ Not an easy step, to say the least, and one that could be monitored, but the existence of a secret site had at least to be considered—a consideration that was soon to become a reality.

In its next report, dated June 5, 2009, the IAEA noted a number of outstanding issues and stated that it would not be in a position to provide assurance about the absence of undeclared nuclear material and activities in Iran.³¹ Among these issues was the failure of Iran to reply to requests for access to relevant information, documentation, locations, or individuals.

The IAEA did note in that report that loading of fuel into the Bushehr nuclear power plant was now scheduled to take place in September–October 2009, with deliveries of fuel rods having begun in 2007. Later, however, Russia’s energy minister, Sergei Shmatko, said that because of technical problems the plant would not go on line in 2009.³² Newspaper reports³³ subsequently had Shmatko saying that the launch date would depend on security guarantees at the facility. The delay may have come about as a way of Russia putting pressure on Iran to be more cooperative.

No country is more interested in day-to-day developments in the Iranian nuclear sector than Israel. Iran has stated that the Holocaust was a lie, a position unacceptable to Israel. Iran has also declared that Israel should be wiped off the map. That statement alone could be cause for Israeli military action against Iranian nuclear facilities. At what point in the Iranian nuclear program do developments cross the line that Israel has drawn, reasoning that the only thing worse than bombing Iran is Iran having a nuclear weapon?³⁴ In fact, Israel has concluded that Iran has already crossed the threshold and has the expertise and materials needed to produce a nuclear weapon.³⁵

Nevertheless, for a variety of reasons, the United States and others continue to counsel Israel not to attack Iran. Most convincing of all perhaps is the belief that an attack on Iranian nuclear facilities would only delay, not irreparably damage, the nuclear program.

29. Dennis C. Blair, “Annual Threat Assessment of the Intelligence Community for the Senate Select Committee on Intelligence,” February 12, 2009.

30. Daniel Dombey, “Iran Holds Enough Uranium for Bomb,” *Financial Times*, February 2009.

31. “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran,” Report no. GOV/2009/35 (Vienna: International Atomic Energy Agency, June 5, 2009).

32. “Nuclear Power: Technical Problems Delay Russian-Built Plant in Iran,” *Greenwire*, November 16, 2009.

33. Michael Schwartz, “Nuclear Plant Built for Iran Is Delayed, Russia Says,” *New York Times*, November 17, 2009.

34. Elliott Abrams, “Why Israel Is Nervous,” *Wall Street Journal*, August 1–2, 2009.

35. “Sorting through More Official Statements on Iran’s Nuclear Capability,” ISIS Issue Brief (Washington, D.C.: Institute for Science and International Security, March 12, 2009).

The summer of 2009 again tested electricity and found it in short supply. The only long-term solution, voiced by Iranians affected by the heat, is to be found in nuclear power. The Iranian stand is simple: Why should we give up uranium enrichment when others have not? And Iran points to India, having tested a bomb 35 years ago, as a prime example of a country that did what it considered best in its national interests and was successful.

The quarterly IAEA report on Iran, released on August 28, 2009, did little to calm concerns regarding the nuclear program, other than noting that inspectors had been granted access to the Arak heavy-water reactor following repeated requests from the IAEA³⁶ and found that the reactor vessel was not yet present. The point was made that, although the IAEA has repeatedly informed Iran it must provide more substantive responses to questions posed, its performance has been more of style and form of presentation.³⁷

The Arak heavy-water reactor is of more than passing interest. Although Iran has stated that its intended function is to produce medical isotopes, analysts pointed out that its spent fuel will contain plutonium. The spent fuel can then be processed, separating out the plutonium that becomes available for nuclear weaponry. Iranian officials have stated that the Arak reactor would replace the Tehran research reactor, now the center of discussions.

It would appear, from available evidence, that Iran has not yet made the final decision to move forward to build a nuclear bomb. After that decision is made, however, success likely would not be far away.

Conversely, according to the IAEA, Iran has apparently slowed its uranium enrichment program, although not much significance has been attached to that action. Some observers took the opposite position, arguing that, on the basis of limited information, it would be a mistake to assume the enrichment program had been slowed.³⁸ Indeed, the United States, through its envoy to the IAEA, said in a speech to the board of governors on September 9 that Iran's nuclear work is nearing a "dangerous and destabilizing" point at which the country could build a bomb. The envoy, Glyn Davies, was quoted as having also warned that Iran "is now either very near or in possession" of enough LEU to produce one nuclear weapon.³⁹

Iran came forward that same day with a set of proposals described as a "new opportunity for talks and consideration."⁴⁰ Copies were passed out in Tehran to representatives from Switzerland (representing the United States), Russia, Germany, Great Britain, France, and China. None was made public. In a way, the proposals lived up to the expectations expressed: they did not address the Western demand that Iran suspend its uranium enrichment program. No one should have been surprised.

36. David Albright et al., "IAEA Report on Iran," ISIS Report (Washington, D.C.: Institute for Science and International Security, August 28, 2009).

37. "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran," Report no. GOV/2009/55 (Vienna: International Atomic Energy Agency, August 28, 2009).

38. David Albright et al., "Natanz Enrichment Plant: How to Measure Progress," ISIS Report (Washington, D.C.: Institute for Science and International Security, September 1, 2009).

39. Glenn Kessler and Thomas Erdbrink, "Iran 'Closer' to Nuclear Weapon," *Washington Post*, September 10, 2009.

40. "Iranian Nuclear Programme" (London: MEC Analytical Group, September 10, 2009).

Now, will agreement be reached by the UN to impose new sanctions on Iran, possibly denying imports of gasoline and diesel? It takes only one veto, from China or Russia, to halt such actions. The Russian foreign minister, Sergei Lavrov, quickly ruled out the possibility of new sanctions, and China has said that it will not back sanctions. Prime Minister Vladimir Putin joined in, arguing that sanctions would not have the desired effect. Others conversely spotted a vulnerability because of Iran's heavy dependence on gasoline imports and thought that this vulnerability could be exploited.

Iran agreed to meet with the five permanent members of the UN Security Council (the P5: the United States, the United Kingdom, France, Russia, and China) plus Germany on October 1, 2009, following the UN General Assembly meeting the previous week. Although Iran had insisted that discussion of its nuclear program would be off the table, Secretary of State Hillary Rodham Clinton affirmed that the subject would be at the top of the list, and Iranian officials indicated they would be willing to discuss elements of their nuclear program. After the UN Security Council meeting had been concluded, the participants would move on to Pittsburgh where the Group of 20 (G-20) would gather.⁴¹

The Fordo (Qom) Surprise

News broke before the start of the G-20 meeting that Iran had been manufacturing nuclear fuel at a secret underground facility named Fordo, outside the city of Qom. Intelligence officials were quoted as saying additional enrichment efforts had been noted on the base (the once secret enrichment facility).⁴² The underground facility with its capacity for 3,000 centrifuges was considered too small for the supply of fuel for nuclear electric power. This information had not been initially shared with Russia or China, much to their unhappiness.

Iran essentially attested to this new development in a letter to the IAEA on September 21, 2009, in which it was stated that a new pilot nuclear fuel enrichment plant was under construction. That acknowledgement was made only because Iran had just learned Western intelligence agencies had become aware of the facility. Iran sent the letter as proof it was abiding by IAEA obligations, but the IAEA, drawing on the IAEA statute modified in 1992 that requires states to notify inspectors as soon as a decision to build a nuclear plant is taken, said “no, you are not.” Iran unilaterally had withdrawn from that obligation several years before, the only country to have done so.

Ali Akbar Salehi, the head of the Atomic Energy Organization of Iran, rationalized that the facility was being built in reaction to a threat against the enrichment plant at Natanz. Nonetheless, agreement to negotiate was made, and the date of October 1 was set.

The discovery of this once-secret base has led to the question: How many more might there be? That question gained weight following publication of an article in the January 6, 2010, *New York Times* that raised the prospect that an increasingly large part of Iran's atomic complex has

41. The Group of 20 finance ministers and central bank governors is known as the G-20. Membership is drawn from 20 countries plus the European Union. Its purpose is to provide a forum for cooperation and consultation on matters pertaining to the international financial system. As announced on September 25, 2009, the group will replace the Group of Eight as the main economic council of wealthy nations. As of that date, the G-20 had met three times..

42. Karen DeYoung and Michael D. Shear, “U.S., Allies Say Iran Has Secret Nuclear Facility,” *Washington Post*, September 25, 2009.

been hidden in a series of tunnels and bunkers around the country.⁴³ The purpose of doing so was dual: shielding facilities from attack and hiding the scale of the country's nuclear efforts. All this seems to point to a nuclear program that has a strong military aspect to it. In response, the U.S. military is devising a weapon capable of penetrating the massive overburden of rock and concrete.

Western intelligence has known about the Fordo facility (the IAEA calls the site "Fordow") for some time, in fact since long before 2007⁴⁴ although satellite photography seemed to confirm that Iran had begun construction of the facility after January 2006 but before June 2007.⁴⁵

How good is that intelligence? The simple press statement that the Qom facility has 3,000 centrifuges⁴⁶ implies that these centrifuges are in place and that knowledge could have come only from someone who had access to the facility. Or, was that number induced from the size of the facility calculated from satellite photography?

Perhaps so. The U.S. Department of State had prepared a document, "Public Points for Qom Disclosure," that noted that the Qom site was intended to hold approximately 3,000 centrifuges but that the type was not known. Later the media reported that the number of centrifuge machines to be placed in the plant—3,000—was revealed through intercepted communications.⁴⁷ Further, Western intelligence agencies had been following the site since at least 2004 and were reasonably convinced that the plant was designed to support a military nuclear program.

At the same time, if Iran does have other secret facilities, have they been discovered just as Fordo was? That would be worrisome indeed for Ahmadinejad.

Members of the UN Security Council were briefed by the United States on the heretofore secret activity of Iran and were prepared to demand that the IAEA be allowed to inspect the facility. The president of France wanted to go public with the information the day before the G-20 was to meet in Pittsburgh, but he reportedly was convinced to allow President Obama to make the announcement preceding the opening session.

While all this is playing out, foreign negotiators should watch the disruptive Iranian political climate closely. Should President Ahmadinejad come to believe domestic opposition is closing in on him, he just might conclude that building and exploding a nuclear bomb could restore his lost support. Having a nuclear capability is perhaps key to Iran's greatest desire: to be recognized as a great power, at least within the Middle East. That would play well on the home front.

Nonetheless, all is not well on the home front, and public support, both inside Iran and outside as well, appears to be deserting the president. Supreme leader Ayatollah Ali Khamenei made it very clear in early November that he was against negotiating with the United States, that to do so would be "naive and perverted."⁴⁸

43. William J. Broad, "Iran Shielding Its Nuclear Efforts in Maze of Tunnels," *New York Times*, January 6, 2010.

44. Glenn Kessler, "Iran Pressured over New Plant," *Washington Post*, September 27, 2007.

45. Paul Brannan, "Satellite Imagery Narrows Qom Enrichment Facility Construction Start Date," ISIS Report (Washington, D.C.: Institute for Science and International Security, November 5, 2009).

46. Krastev, "IAEA Chief: Iran's Nuclear Program about Winning Recognition, Prestige."

47. Joby Warrick, "Iranian Site Prompts U.S. to Rethink Assessment," *Washington Post*, October 24, 2009.

48. Thomas Erdbrink and William Branigin, "Iran's Khamenei Rejects U.S. Outreach," *Washington Post*, November 4, 2009.

If that loss of support continues, if there is undeniable evidence that jailed protesters have been abused or killed (the prosecutor judged guilty of causing the deaths of three prisoners was removed from office but given a promotion), and if the split between the administration and clerics widens, would Ahmadinejad be more willing to accommodate the West? It is possible but doubtful. Will he continue to hold to the position that Iran has the right to a nuclear program? Yes, he will.

Some observers, while giving a nod to these factors, attach more importance to the possibility that Iran may now be ready to make a deal.⁴⁹ Their reasoning reflects acceptance that Iran has for the most part achieved what it set out to accomplish. But what is that? Simply, that Iran is allowed to keep its enrichment program, and the United States becomes convinced that Iran has not produced any nuclear weapons, nor does it have any desire to do so. If it were to cut a deal acceptable to the P5 + 1 (the 1 is Germany), what would that mean for the opposition Green Movement in Iran?

This is a dangerous game to play. Underestimating Iranian intent and capabilities carries too high a price. Would an overestimation carry an equally high price? More certainties are required if the P5 + 1 is to be satisfied. To illustrate, how decisive is the hold by the hard-liners on Iranian policies? The answer to that question could well set the stage for some time to come.

Thousands took to the street on November 4, 2009, a day that had been set aside to celebrate the 30th anniversary of the seizure of the U.S. embassy in Tehran. Protestors used the occasion to vent their anger over the fraudulent June presidential election. Although the number of protestors was smaller than usual, the message was still clear: we want a more open society and more international engagement.⁵⁰ Yet there is no unity among the protestors as to how they get there.

The passing of Grand Ayatollah Hossein Ali Montazeri on December 20, 2009, and his funeral the next day provided a natural opportunity for the opposition to once again take to the streets, which they did in full force. From his position as the most senior cleric, Ayatollah Montazeri had become a sharp critic of the Iranian government, but it was his position that caused the government to generally hold back on efforts to control the crowds. These crowds became the largest antiregime protests that the city of Qom, where the funeral was held, had seen in three decades.⁵¹ The government forbade foreign correspondents and political activists to travel to Qom, it jammed the BBC Persian service, and it cautioned the Iranian media about what could and could not be said.

September 25, 2009–October 1, 2009

Before the P5 + 1 gathered on October 1, 2009, Iran had placed on the table two items: One stated that Iran was willing to have its nuclear experts meet with scientists to work toward resolving concerns about the country's nuclear program.⁵² The second item was a request to buy from the

49. Michael Blackman, "Some See Iran as Ready to Strike a Nuclear Deal," *New York Times*, October 15, 2009.

50. Thomas Redbrick and William Branigin, "In Iran, Rival Rallies Show Draft Endures," *Washington Post*, November 5, 2009.

51. Farnaz Fassihi, "Clashes Erupt at Reformist Cleric's Funeral," *Wall Street Journal*, December 22, 2009.

52. Glenn Kessler, "Iranian Leader Offers U.S. Access to the Country's Nuclear Scientists," *Washington Post*, September 24, 2009.

United States enriched uranium needed for a research reactor in Tehran that makes isotopes for medical purposes.⁵³

The material in question is 19.75 percent enriched; the material now being produced by Iran is 3.5 percent enriched. Weapons-grade materials are more than 90 percent enriched. But the request was couched in language that in effect said: sell us what we want or, if not, we will continue our enrichment program.

Then came the disclosure that Iran had a secret enrichment facility at Fordo. At the time Russia appeared ready to accept additional sanctions against Iran if that country did not agree to a freezing of its nuclear fuels production, a proposal first submitted to Iran in June 2008. But shortly thereafter Russia seemingly recalculated its national interests and found new sanctions to be unworkable. China remained silent but subsequently let it be known that it would continue to seek close coordination in international affairs with Iran.⁵⁴

President Ahmadinejad had spoken at the annual meeting of the United Nations General Assembly on September 23.⁵⁵ Iran has not responded to any unilaterally set deadlines in the past and did not respond this time.

Ali Akbar Salehi took a hard line as the October 1 meeting approached, signifying that what the other participants wanted and what they were going to get were likely far apart: “We will never bargain about our sovereign rights. If we have the right to enrich uranium . . . convert uranium . . . have fuel fabrication . . . design reactors and manufacture reactors, we will do them and will not freeze them.”⁵⁶

Salehi later added that the site at Qom (Fordo) was one of those subjects that could not be discussed, but that a visit to the facility could be arranged in the not too distant future, which could be a matter of months.⁵⁷

Several days after the Pittsburgh meeting, Iran fired three short-range missiles; one day after that it fired two medium-range missiles capable of reaching Israel as well as U.S. military bases in the region. These firings provided confirmation to the U.S. intelligence community assessment disclosed on September 17 that Iranian development of its short- and medium-range missiles had grown more rapidly than previously projected.⁵⁸

What was the purpose of these exercises? Were they part of a long-planned exercise or drill? Yes, they were. Were they designed to deliver a message to those who would think about attacking Iran? Yes, they were.

53. Glenn Kessler, “Iran Seeks Deal for Reactor,” *Washington Post*, October 11, 2009. This reactor had been given to Iran by the United States and has been in operation for more than 40 years; The United States built this reactor, gave it to Iran in 1967, and supplied fuel for the reactor until the Islamic Revolution. The Arak reactor eventually was to take its place. Argentina sold fuel for the reactor in the late 1980s, but no other country has followed Argentina’s example.

54. Jay Solomon, “U.S. Enlists Oil to Sway Beijing’s Stance on Tehran,” *Wall Street Journal*, October 19, 2009.

55. “UN Security Council Discusses ‘Serious Response’ to Iran,” *Moscow Times*, 24 September 2009.

56. Najmeh Bozorgmehr, “Refusal to bargain about our sovereign rights fuels pessimism,” *Financial Times*, September 30, 2009.

57. *Ibid.*

58. Walter Pincus and Karen DeYoung, “Iran Tests Missiles on Eve of Talks,” *Washington Post*, September 28, 2009.

The prospects for any progress at the October 1 meeting appeared very dim indeed.

In the run-up to October 1, the P5 + 1 indicated that if Iran by the end of the year did not respond seriously to demands placed upon them, then crippling sanctions were likely.⁵⁹ That again raised the question of the position of Russia and China. It would appear, based on current evidence, that their support is not at all a given, as national interests may well prevail.

Unfortunately, that is not all the United States must worry about.

France and Great Britain have not been hiding their concerns over the lack of progress being made in talks with Iran. As the result, France may push for swift and punitive sanctions if Iran is not more forthcoming. France has already shown its displeasure with the current state of affairs, while Britain's intelligence services say that Iran has been secretly designing a nuclear warhead since late 2004 or early 2005, quite different from the position of the United States taken in the 2007 NIE.⁶⁰ In the end it is perhaps no more than disagreement on what tactics should be employed.

October 1, 2009: The Pressure Mounts

Lower-level representatives of the P5 + 1 met in Geneva on October 1 with representatives of Iran in order to continue discussions begun on September 23–25, but this time they believed themselves to be in a stronger position. Two important agreements were reached:⁶¹

- The uranium enrichment facility at Fordo, near Qom, would be opened for inspection by the IAEA, and
- Most (75 to 80 percent of 3,300 pounds) of Iran's enriched uranium stockpile would be sent outside the country where it would be further enriched for use by the research reactor in Tehran, which was now running out of fuel.

Iran's enriched uranium would be shipped to Russia and France for further reprocessing and conversion to fuel rods, which would then be returned to Iran for use at the research reactor.

Further, inspectors would visit Fordo on October 25. The next meeting of negotiators, to deal with details of the enriched uranium transfer, would take place on October 19.

Were the concessions granted by Iran merely viewed as a means of reducing pressure calling for the implementation of new sanctions while allowing Iran to continue with its enrichment program?⁶² These possibilities ran through the minds of the representatives of the P5 + 1 as they left the meeting. France in particular was concerned that Iran had to pledge by December to freeze its enrichment program. If not, new sanctions should be imposed.⁶³

59. Glenn Kessler, "Iran Pressured Over New Plant," *Washington Post*, September 27, 2009.

60. James Bliz et al., "Iran 'Has Secret Nuclear Arms Plan,'" *Financial Times*, September 29, 2009.

61. Steven Erlanger and Mark Landler, "Iran Agrees to Key Concessions on Uranium, but Doubts Linger," *New York Times*, October 2, 2009.

62. Marc Champion and Jay Solomon, "Iran Agrees to Transfer Uranium Abroad," *Wall Street Journal*, October 2, 2009.

63. James Bliz et al., "France Warns US on Deal with Iran," *Financial Times*, October 3, 2009.

October 19, 2009

Representatives gathered in Vienna on October 19, 2009, to follow up on commitments (perhaps viewed as debatable by Iran) coming out of the October 1 session. The U.S. delegation was led by the deputy secretary of energy; the Iranian delegation was led by its ambassador to the IAEA. The other participants included Russia and France. Would Iran follow through with the desire of the P5 + 1 to move the enriched uranium out of the country by the end of the year, or would Iran find reason to delay or slow the transfer?

Little transpired during the first day; the head of the IAEA, Mohamed ElBaradei, termed the talks “constructive,” meaning no agreements were reached.

Temperatures rose a bit on Tuesday, October 20, as Iran stated it did not want France to be part of any deal on uranium enrichment.⁶⁴ Close observers chalked that up to political jockeying for position. Others, including Ahmadinejad, thought otherwise, explaining that France had earlier reneged on a contract to provide nuclear assistance, for which \$1 billion had been paid.⁶⁵

The IAEA prepared a draft compromise among the United States, France, Russia, and Iran, reflecting in substance what had earlier been agreed on October 1. There had been one minor change: Russia would be the primary contact for Iran and would farm out some of the uranium processing to France and perhaps other countries.⁶⁶ The four parties were given until October 23 to inform the IAEA whether they could accept the proposal, with this final decision to be made in the four capitals. The draft advocated a reduction in the Iranian stockpile of LEU by 80 percent, an amount that would be transferred to Russia and France for ultimate conversion into fuel rods for use in the Tehran reactor.

What if Iran says no, or at least demands changes in volumes transferred and in the speed of such transfers? Most opinions hold that the proposal will likely be rejected by Iran. Whatever the result, the questions of whether Iran is developing a nuclear weapon and whether there are any more undiscovered “Qoms” remain unanswered.

To perhaps the surprise of no one, Iran responded that its answer could come the following week. Iran simply could not be seen as agreeing to a date put forward by the “arrogant powers.” Both sides were worried that the outcome would be unacceptable.⁶⁷ While the United States and its supporters feared getting caught in a trap of endless negotiations, a number of Iranian officials simply did not trust the West to return any LEU that might be sent out of the country.

Meanwhile, a four-member team of inspectors from the IAEA began a visit to Fordo on Sunday, October 25. It was now three weeks since the obligation to open Fordo to the West had been taken. Had Fordo been altered during that time so as to eliminate embarrassing evidence? The inspectors had a number of detailed questions and requests, and how Iran responded would determine in large part whether Iran was still playing games with the P5 + 1. The team departed Tehran on Thursday morning, keeping their thoughts and findings to themselves.

64. Simon Morgan, “Nuclear Talks Delayed as Iran Objects to France,” *Agence France-Presse*, October 20, 2009.

65. David E. Singer et al., “Tehran Rejects Nuclear Accord, Officials Report,” *New York Times*, October 30, 2009.

66. David Crawford, “Iran Uranium Deal Appears Close,” *Wall Street Journal*, October 22, 2009.

67. David Sanger, “Both Iran and West Fear Trap on Uranium,” *New York Times*, October 26, 2009.

The Iranian ambassador to the UN delivered an informal oral counteroffer to the IAEA on Thursday, October 29, an offer that, as constructed, would not be acceptable.⁶⁸ The United States, the UK, and France were then waiting for a formal, written reply expected to be delivered on Friday, October 30. The informal offer contained little that would make it seem Iran was seriously trying to be accommodating.

While the world waited and pondered what Iran might offer as its formal reply, one scenario repeatedly came to mind. The Iranian ambassador had suggested that Iran would ship out its uranium in batches, swapping it for new material on a continuous basis,⁶⁹ essentially negating the IAEA proposal. In other words, Iran would be provided with more HEU from France and Russia and only then would a batch of LEU be transferred out of the country.⁷⁰

If this scenario had come about, Iran would be able to declare itself a winner in the confrontation with the United States and its supporters. Inside Iran, the hard-liners would have been congratulating themselves.

Then in early November word leaked, via a European diplomat, that Iran was demanding full delivery of reactor fuel before yielding its supply of LEU.⁷¹ The prospect of reaching any kind of acceptable agreement with Iran was quickly vanishing while production of LEU continued unabated.

On several occasions senior Iranian officials, most recently a hard-line cleric, have stated that the IAEA is legally obliged to provide Iran with nuclear fuel for its Tehran research reactor.⁷² Further, Iran believed the IAEA must do so without any conditions attached. Under the Nuclear Non-Proliferation Treaty, to which Iran is a signatory, it is entitled to buy medium-enriched uranium on the world market.⁷³

Nonetheless, Foreign Minister Manouchehr Mottaki said on November 6, 2009, that Iran is preparing to provide the IAEA with more details to the proposal the IAEA had put forward some time ago.⁷⁴ Mottaki then repeated the three options available to Iran: enrich the fuel itself, buy it directly, or exchange its uranium for fuel (but with the necessary guarantees).

What Did the Inspectors Find at Fordo?

The report of the inspectors' visit to Fordo was referenced in an IAEA report of November 16, 2009;⁷⁵ this report contained the following important findings:

68. Glen Kessler and Thomas Erdbrink, "Iran Counters U.N. on Uranium Plan," *Washington Post*, October 30, 2009.

69. Ibid.

70. James Blitz et al., "Iran Seeks Big Changes to Nuclear Deal," *Financial Times*, October 29, 2009.

71. Glenn Kessler, "Iran Holding Up Nuclear Deal with Demand for Nuclear Fuel, Diplomat Says," *Washington Post*, November 6, 2009.

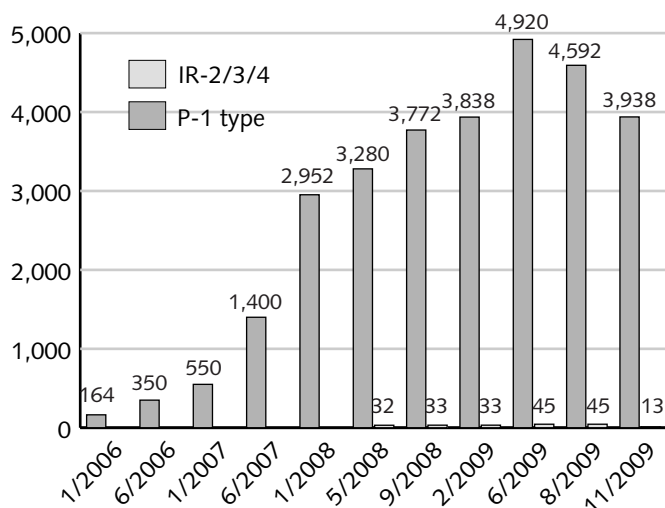
72. "Iran Cleric Says Conditions Unacceptable on Nuclear Deal," Radio Free Europe/Radio Liberty, November 6, 2009.

73. Thomas Erdbrink, "Clinton Tells Iran to Adhere to Plan," *Washington Post*, November 3, 2009.

74. "Iran to Give UN Watchdog More Details on Nuclear Fuel Plan," Radio Free Europe/Radio Liberty, November 6, 2009.

75. "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran," Report no. GOV/2009/74 (Vienna: International Atomic Energy Agency, November 16, 2009).

Figure 3.1. Number of Centrifuges Enriching at Natanz Fuel Enrichment Plant in November 2009



Source: David Albright and Jacqueline Shire, "IAEA Report on Iran: Fordow Enrichment Plant at 'Advanced Stage of Construction': Decline in Number of P1 Centrifuges Enriching but P1 Centrifuge Efficiency Increases; Discovery of Previously Unknown Stock of Heavy Water," ISIS Report (Washington, D.C.: Institute for Science and International Security, November 16, 2009).

Note: P-1 refers to first-generation centrifuges; IR-2/3/4 refers to later generations.

- Inspectors verified that the facility was being built to hold approximately 3,000 centrifuges; no centrifuges were yet in place;
- Inspectors were advised that construction had begun at Fordo during the second half of 2007 and that the facility would become operational in 2011;⁷⁶ and
- Iran stated it did not have any other nuclear facilities that were currently under construction or in operation that had not yet been declared to the IAEA.

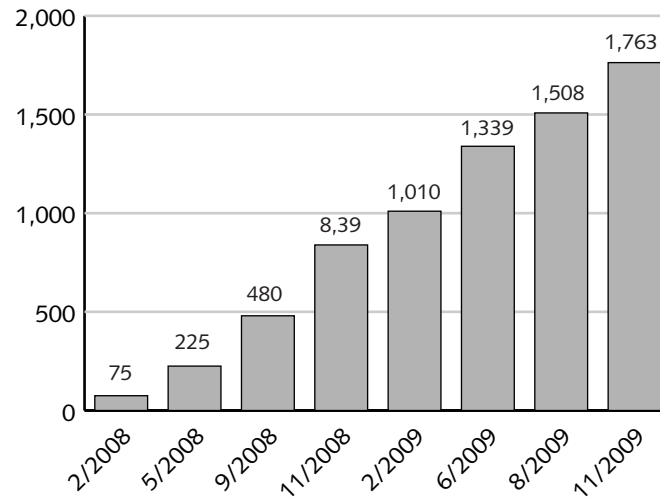
What can be deduced from the IAEA report? First, Fordo is too small for the production of LEU to be used in the generation of electric power. Moreover, having just one "Fordo" would serve as the false rationale for acceptance of threats to the Natanz facility. There would have to be other secret sites, and Iran was asked to declare in writing that there were no other hidden nuclear facilities.

The *Bulletin of the Atomic Scientists* weighed in with its own technical evaluation of Fordo and found the facility to be ideal for neither commercial nor military purposes and that Iran's contingency and deterrence arguments were weak.⁷⁷ The Institute for Science and International

76. Subsequent investigation by the Institute for Science and International Security narrowed the construction start date to between June 20, 2006, and June 17, 2007; see Paul Brannan, "New Satellite Image Further Narrows Fordow Construction Date," ISIS Report (Washington, D.C.: Institute for Science and International Security, November 18, 2009).

77. Ivan Oelrich and Ivanka Barzashka, "A Technical Evaluation of the Fordow Fuel Enrichment Plant," *Bulletin of the Atomic Scientists*, November 23, 2009.

Figure 3.2. Low-Enriched Uranium Hexafluoride Product at Natanz Fuel Enrichment Plant, February 2008–November 2009 (cumulative, in kilograms)



Source: David Albright and Jacqueline Shire, “IAEA Report on Iran: Fordow Enrichment Plant at ‘Advanced Stage of Construction’: Decline in Number of P1 Centrifuges Enriching but P1 Centrifuge Efficiency Increases; Discovery of Previously Unknown Stock of Heavy Water,” ISIS Report (Washington, D.C.: Institute for Science and International Security, November 16, 2009).

Security (ISIS) found this assessment to be faulty; in particular, ISIS believed that the *Bulletin* significantly underestimated the performance of the Natanz facility.⁷⁸

There was a decline to 3,936 in the number of centrifuges enriching uranium at the Natanz facility (figure 3.1) in early November 2009, a level equal to operating centrifuges in February 2009. Nonetheless, the output of LEU continued to rise steadily, presumably reflecting an increase in centrifuge operating efficiency (figure 3.2).

The IAEA report also stated that Iran had been asked in December 2007 to provide preliminary design information on the nuclear power plant to be built in Darkhovin. The response, dated September 21, 2009, described this facility as a 360 MW pressurized light-water reactor where construction was scheduled to start in 2011 and commissioning to take place in 2015. Darkhovin is supposed to be fueled with domestically produced LEU. The country’s principal source of uranium is the mine at Saghand. Since early 2008 the IAEA has requested that Iran provide access to additional locations, including uranium mining and milling, but access has not yet been granted.⁷⁹

Foreign Minister Manouchehr Mottaki on November 19, 2009, raised the stakes by stating that Iran would not let any of its LEU leave the country but would instead consider simultaneous exchange on its own soil for the fuel rods being sought. Iran has seemingly called the bluff of the

78. See, in particular, David Albright and Paul Brannan, “Further Comments Regarding the BAS Article on Fordow” (Washington, D.C.: Institute for Science and International Security, December 4, 2009).

79. “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran,” Report no. GOV/2010/10 (Vienna: International Atomic Energy Agency, February 18, 2010).

P5 + 1 once again. And the year-end deadline for acceptable progress on negotiations was rapidly approaching.

Faced with the prospect of either more restrictive sanctions or military attack on nuclear facilities, Iran took the approach of testing its air defense system and its ability to protect these facilities, with such tests presumably closely watched and evaluated by the West. These tests, initiated on November 22, 2009, were to last five days and were conceived in part to send a message to those (Israel) who would consider attacking Iran.

It is difficult to anticipate what it is that Iran has precisely in mind. When senior officials speak, are they reflecting the government position or merely their own views? Do they make comments in the hopes of drawing out a reaction from the United States and its allies? Are they simply out to buy time during which the stock of LEU can be expanded? Or has the leadership become so divided that the deal offered by the IAEA cannot be accepted?⁸⁰

President Ahmadinejad had further confused the issue when, during a visit to Brazil in late November, he said that the proposal to give part of Iran's HEU to Russia and France in ultimate exchange for fuel rods for the Tehran research reactor had come not from the West but from his country.⁸¹ Western powers, recognizing the circumstances under which his statement was made, quietly ignored it.

Iran continued to make counteroffers, including demands for "selective guarantees" on the fuel exchange, or that the swap must take place on Iranian soil, or that it could buy the fuel from other suppliers. In the interim, information had become available through leaks that seemed to indicate Iran was further along with its nuclear weapons program than previously supported by the United States and others. Showing such information to Iran might buttress the West's position, but it could result in the loss of valuable sources.⁸²

Beginning of the End, or End of the Beginning?

The board of directors of the IAEA met on November 27, 2009, and passed a resolution:

- Rebuking Iran for its failure to comply with its international obligations;
- Censuring Iran for concealing the Fordo enrichment plant;
- Calling for construction on the plant to be suspended;
- Calling for Tehran to suspend nuclear activities; and
- Calling on Tehran to cooperate more fully with investigators.⁸³

80. Chip Cummins and Jay Solomon, "Iran Imperils Western Nuclear Deal," *Wall Street Journal*, November 19, 2009.

81. "Iran Makes Uranium-Swap Proposal, Not West: Ahmadinejad," Chinese Economic Net, November 24, 2009.

82. David Sanger and William J. Broad, "Iran Inquiry Is at 'a Dead End,' U.N. Nuclear Investigator Says," *New York Times*, November 27, 2009.

83. Jonathan Tirone, "UN's Atomic Agency Censures Iran Over Nuclear Plant," Bloomberg, November 27, 2009.

The media immediately posed the question of whether the censure of Iran marked the beginning of a more confrontational phase between Iran and the West. Iran added validity to that question by revealing on November 29 that its nuclear program would be dramatically expanded, with construction of five new enrichment facilities to be started within the next two months, and that locations for five more such facilities would be found; it later added that this action was in response to the IAEA rebuke. All these facilities would be the size of Natanz, which Iran says has the capacity for 50,000 centrifuges.⁸⁴ Ahmadinejad explained that these new facilities, all together to be equipped with 500,000 centrifuges, were needed to produce 250 to 300 tons of LEU for use as fuel in the generation of electricity. Nuclear power stations, he added, would be generating 20,000 MW, but no date was given.

Analysts closely following Iran were more puzzled and far less impressed by these nuclear expansion plans. In sum, most took it as political posturing at its very best. Whatever the purpose, the confrontation with Iran just took on a darker image. When one looks back on the history of the Iranian nuclear program, it is easy to see why. Only half of the centrifuges at Natanz are operational, and Natanz itself has been under construction for eight years. The facility at Fordo still lacks centrifuges. Foreign suppliers would have to provide considerable tonnages of uranium ore. It would perhaps take years for Iran to reach this new goal, suggesting that it is more symbolic than realistic.⁸⁵ At the same time, those who believe that Iran's intent is to acquire nuclear weaponry found support in Iran's latest declaration.

Several days later Ahmadinejad vowed that Iran would produce a higher grade of nuclear fuel on its own.⁸⁶ He presumably had in mind enrichment to 19.75 percent, needed for the Tehran research reactor. What concerns Western experts is that enrichment to the indicated percentage marks the dividing line between LEU and HEU. Yes, a nuclear weapon can be made with uranium enriched to 19.5 percent, but it would be impractical to do so.

Can a logical explanation be offered for Iran's actions? One answer holds that the country is not interested in finding a negotiated solution to its problems—what it really wants to do is acquire a nuclear bomb, and to do that more time is needed. How to acquire that time becomes the task for the Iranian administration, and officials have chosen to offer a series of mixed and often contradictory statements, all to keep the other side off balance.

The IAEA resolution will next be submitted to the UN Security Council, where the prospect of more strict sanctions will be taken up. Although both Russia and China voted in favor of the resolution, there is no assurance that China will support any additional, meaningful sanctions. China's vote was secured after heavy lobbying by officials of the U.S. National Security Council. But that vote did not cost China anything for the resolution was devoid of substance. China opposes sanctions against Iran, and its "no" vote at the Security Council would cause any move toward new UN sanctions to fail.

84. Daniel Dombey et al., "Iran Plans to Build 10 Enrichment Plants," *Financial Times*, November 29, 2009.

85. Thomas Erdbrink, "Iranian Official Says Decision to Expand Nuclear Program Is Response to IAEA Rebuke," *Washington Post*, November 30, 2009.

86. William J. Broad, "President of Iran Vows to Make Higher Grade of Nuclear Fuel without West," *New York Times*, December 3, 2009.

A Secret Document Made Public

Much has been made of a secret Iranian technical document that appears to lend confirmation of a clandestine effort to build nuclear weapons.⁸⁷ Does this document unreservedly support that claim? Not quite. The document, first reported by the *Times* of London on Sunday, December 13, 2009, is undated (although the *Times* quoted foreign intelligence sources as saying it was written in 2007) and, more important, cannot be taken as absolute proof of Iranian intentions but can be regarded as a strong indicator. It was later stated that headings from the original Farsi-language document had been removed and the original text had been retyped to protect intelligence-sensitive information.⁸⁸ All of this of course complicates the authentication process.

These questions remain: Who provided that document? Is it authentic or a forgery? What was the rationale behind the decision to make it available to Western sources?

Unfortunately, even if answers to these three questions were available, would it make any difference? The United States and other members of the P5 + 1 still need irrefutable proof that Iran seeks a nuclear bomb, that proof is not yet in hand, and the search for evidence continues.

Subsequent reporting made the interesting point that the two-page document had been making the rounds of intelligence circles for many months previous, and, even during that extended time period, these organizations had not been able to reach a fully agreed conclusion as to its authenticity.

The document can be distilled into several findings.⁸⁹ First, it describes a plan for measuring the output of a device called a neutron initiator, which has no known use other than as triggering a nuclear explosion. Second, the document detailed a plan to test whether the trigger device containing titanium deuteride instead of uranium deuteride would work without leaving traces of uranium.⁹⁰ If so, then the test presumably could go undetected.

What can be said, after reviewing all the evidence, is that Iran apparently has chosen to manufacture in Iran those items critical to a nuclear weapon, thus reducing Iran's reliance on imported technologies.⁹¹ That finding can be of little comfort to the P5 + 1, but it lends greater support for imposing more punishing sanctions at the beginning of 2010.

Then, three days following the release of the once-secret document, Iran successfully fired (so it reported) a medium-range, upgraded Sejil-2 surface-to-surface missile.⁹² The missile burns a

87. Joby Warrick, "Western, U.N. Officials Assess Secret Iranian Document," *Washington Post*, December 14, 2009.

88. "Questions and Answers Regarding Iranian Neutron Document: Outlook for Special Neutron-Related Activities over the Next 4 Years," ISIS Report (Washington, D.C.: Institute for Science and International Security, January 5, 2010).

89. William J. Broad and David E. Sanger, "Nuclear Memo in Persian Puzzles Spy Agencies," *New York Times*, December 16, 2009.

90. Tim Reid, "U.S. Investigates Nuclear Trigger as Tehran Damns 'Bomb' Scenario," *Times* (London), December 16, 2009, www.timesonline.co.uk/tol/news/world/middle_east/article6958217.ece?print=yes; see also Catherine Philp, "Discovery of UD3 Raises Fears over Iran's Nuclear Intentions," *Times* (London), December 14, 2009, www.timesonline.co.uk/tol/news/world/middle_east/article6955238.ece?print=yes.

91. Joby Warrick, "Evidence of Iran's Nuclear Arms Expertise Mounts," *Washington Post*, December 15, 2009.

92. Thomas Penny and Ali Sheikholeslami, "Iran Missile Test May Increase Sanctions, Brown Says," *Bloomberg*, December 16, 2009.

solid fuel, making it more accurate than a liquid-fueled model. Israel and southeastern Europe fall within its range, which is placed at 1,240 miles.

Why did Iran seem to select an inappropriate time to conduct missile firings? Perhaps that is just what they do to keep tensions from abating, to keep at least the P5 + 1 off guard. Should the brief Iranian incursion into Iraqi territory on December 18, 2009, capturing an idle oil well ostensibly located on Iranian territory, be viewed in the same light? Or was Iran simply demonstrating that it has options as well?⁹³

The combination of these events hardened the attitude toward the application of more restrictive sanctions against Iran, especially given the view that the outreach process supported by President Obama has little to show for its efforts.⁹⁴ The U.S. House of Representatives passed on December 15 the so-called Iran Refined Petroleum Sanctions Act, giving power to President Obama to sanction companies that would defy such constraints. Similar legislation is before the U.S. Senate, but there is no guarantee that President Obama would sign it if an agreed version arrived on his desk.

Protests Catch the Headlines; Year-end Deadline Arrives

As Western sources continue to debate the implications of the document in question, Iran continues to enrich uranium, the ultimate key to a nuclear weapon and the center of U.S. worries.

At the same time, the Iranian domestic scene was becoming a battleground involving protestors and the regime. It has been at least six months since the much-debated presidential victory of Ahmadinejad, and the temperatures of both sides have been steadily rising. Protestor attention has turned away from the rigged presidential election that had first brought them onto the streets with calls of “down with the regime” and “death to Khamenei” that underscored it was regime change that was now desired. Protests were invigorated, first, by mourning for the cleric, Ayatollah Hossein Ali Montazeri, a leading dissident who died on December 20 and, then, by a mourning period honoring the third Shiite imam, Hussein, grandson of Prophet Muhammad.

The opposition, reportedly numbering in the hundreds of thousands, became more confrontational, more daring in their exploits and attacking the police directly. Security forces responded and arrests multiplied, prominent members of the opposition were thrown in jail, with the death toll rose to a reported eight. It appeared that leading opposition figures have been singled out for arrest. Iran is probably thinking that without leadership the protestors will fade away. The violence became so threatening that President Obama, vacationing in Hawaii, spoke out in support of those who opposed Ahmadinejad.⁹⁵

President Ahmadinejad was quick to lay blame for the December 27 antigovernment protests in Tehran on the United States and Israel, calling the protest a “nauseating play.”⁹⁶ It is easy to

93. George Friedman, “The Iranian Incursion in Context,” Stratfor, December 21, 2009, www.stratfor.com/weekly/20091221_iranian_incursion_context?utm_source=GWe.

94. Daniel Bombay et al., “Iran Faces Global Push towards More Sanctions,” *Financial Times*, December 15, 2009.

95. Thomas Erdbrink and William Branigin, “Iranian Security Forces Raid Opposition Offices, Arrest Key Dissidents,” *Washington Post*, December 29, 2009.

96. “Iran: Sunday Protests Staged by Israel, U.S.,” China Economic Net, December 30, 2009.

blame your problems on others, which Ahmadinejad has done repeatedly, but to do so does not solve them. Iran state television, for example, showed a documentary film that claimed that the death of Neda Agha-Soltan, whose photographs had been circulated worldwide and who had become a symbol of the resistance, had been faked.⁹⁷ The documentary suggested that she had been an agent of the United States and Britain.

The problems Ahmadinejad faces can only magnify over time. The next challenge to the regime—the commemoration of the Iranian revolution of 1979—began on February 1, 2010, and will continue for 11 days. Those 11 days provided a major test for both the regime and the protesters. Will the government take the necessary steps to prevail against the essentially youth-driven but generally leaderless opposition?

To lend support to the accusations that the United States and Israel were behind the December 27 demonstrations, Iran on January 4, 2010, said that several foreigners were among the protest detainees and that they had entered the country just two days before.⁹⁸ But others can play the provocation game as well. The IAEA confirmed on December 29 that it had received an intelligence report that said Iran was planning to covertly import 1,350 tons of purified uranium from Kazakhstan, possibly within the next few weeks.⁹⁹ The authenticity of the report has not been confirmed, which makes the contents and the timing of its release equally suspect. Kazakhstan immediately rejected the report, finding its contents untrue and unfounded.

Several days later progovernment activists mounted a show of their own, with the full support of state organizations.¹⁰⁰ These activists were just as vociferous as the protesters, shouting “Mousavi, Karrube should be executed!” The government is becoming rather frustrated by the protesters seizing every official political and religious occasion to rally, knowing that a permit is not needed, and it wanted to demonstrate that it too could mount equally fierce supporters.

The regime supporters, backed by the government and armed with riot equipment, do not hesitate to resort to the use of batons, tear gas, and gunfire if that is what it takes to control and disperse the crowds of protesters. Arrests, imprisonment, false accusations, and denials also take their toll. Control of the media and the Internet and constraints on the presence of foreign correspondents help ensure that the true scale of antigovernment rallies and the violence of the government’s response is kept hidden from foreign view.

Now that the United States has chosen sides, as the remarks of President Obama clearly underscored, what should it do? The end-of-year deadline, set months ago by the United States, has come and gone. The prospects of new sanctions on Iran have become very real, as Iran has not been forthcoming about its nuclear program and continues to enrich uranium.

The question is how to devise sanctions that would be meaningful, supported by key world powers, and acceptable to the Iranian public while also forcing the Iranian government to the negotiating table? Sanctions undertaken by the UN Security Council are the more desirable, but that process takes time, and there is always the probability that either China or Russia, both members of the Security Council where a unanimous vote is required, would withhold support. The support

97. Golnaz Esfandiari, “Iran State TV Suggests Neda’s Iconic Death Was Faked,” Radio Free Europe/ Radio Liberty, January 7, 2010.

98. “Iran Says Foreigners among Protest Detainees,” China Economic Net, January 5, 2010.

99. “IAEA: Iran Plans to Import Purified Uranium,” China Economic Net, December 31, 2009.

100. Monavar Khalaj, “Iran Responds with Pro-Government Rallies,” *Financial Times*, December 30, 2009.

of China will not be forthcoming; China's Ministry of Foreign Affairs said near the end of December 2009 that the Iranian nuclear issue should be solved through dialogue and negotiations.¹⁰¹

Absent UN-originated sanctions, the United States would have to move ahead unilaterally, probably targeting those Iranian organizations, such as the IRGC, that have taken the lead in efforts to quell the protestors.¹⁰²

An equally important question would be: What is Iran going to do? Faced with the year-end deadline, Iran must first address the IAEA-brokered deal under which the bulk of Iran's LEU would be shipped out to Russia for further enrichment and then transferred to France for the manufacture of fuel rods for use in the Tehran medical reactor. Iran's response in the past has been to come forward with a variety of proposals, none of which has been even close to meeting the IAEA proposal.

Iran knows what it must do but, unfortunately, the domestic crisis has empowered the hard-liners in the government who may believe—and perhaps rightly so—that the future of Iran, as they see it, is at stake. If it takes brute force to overcome the demonstrators, then so be it. Yet the demonstrators have been emboldened by events of recent days and are not likely to turn and run if confronted.

A late December editorial in the *Washington Post* called the uprising in Iran the most momentous international event of 2009, and it noted that, although the regime's collapse is not imminent, it is hardly unthinkable.¹⁰³ Of more importance, would a new leadership in Iran accept or reject the nuclear program as it now stands? Based on the current understanding held by the West, Iran might turn away from nuclear weaponry while continuing to embrace nuclear electric power as its right. Others caution that another Iranian revolution, similar to the one that shook the world in 1979, might seem enticing, but it lacks the broad domestic support that would be required.¹⁰⁴

Iran delivered its response to the year-end deadline by setting out on January 2, 2010, its own ultimatum: accept Iran's counterproposal to the UN-drafted plan on a nuclear exchange or the country will start producing nuclear fuel on its own,¹⁰⁵ that is, enriching uranium to 20 percent. Iran's oft-repeated proposals of swapping nuclear fuel in small amounts and doing so in Iran have been continually rejected by the West.

The West was given until the end of January to respond, in effect turning the tables and seemingly putting Iran in the lead. Although the ultimatum may play well with the Iranian hard-liners, the West will now be seeking supporters of the more narrowly defined, more punitive sanctions that will be forthcoming.

101. "China: Sanctions Not Key to Iran Nuclear Issue," China Economic Net, December 25, 2009.

102. Glenn Kessler, "As Standoff with Iran Continues, U.S. Prepares Targeted Sanctions," *Washington Post*, December 30, 2009.

103. "Bombast in Iran," *Washington Post* (editorial), December 23, 2009.

104. Flynt Leverett and Hillary Mann Leverett, "Another Iranian Revolution? Not Likely," *New York Times*, January 6, 2010.

105. "Iran Gives West 'Ultimatum' for Fuel Deal," China Economic Net, January 4, 2010.

4

DO SANCTIONS WORK?

The U.S. proclivity for imposing sanctions on a particular nation perceived to have been misbehaving naturally leads observers to ask: Do sanctions really work? The answer was provided in the subtitle of a December 2007 report on Iran sanctions prepared by the U.S. Government Accountability Office (GAO) for the ranking member of the Subcommittee on National Security and Foreign Affairs, House Committee on Oversight and Government Reform. The subtitle of the report read: “Impact in Furthering U.S. Objectives Is Unclear and Should Be Reviewed.”¹

The GAO in its summary listed three specific impacts brought about by the imposition of sanctions on Iran:

- U.S. sanctions may have slowed foreign investment in the petroleum sector;
- Financial sanctions deny parties involved in Iran’s proliferation and terrorism activities access to the U.S. financial system; and
- There are broad impacts of sanctions, such as providing a clear statement of U.S. concerns about Iran.

But, the GAO found that, except for the Department of the Treasury, U.S. agencies do not collect data demonstrating the direct results of their sanctioning and enforcement actions. Given the lack of data, the GAO had no course of action other than to find that the overall impact of sanctions is unclear.

An American, employed during the summer of 2009 in Tehran and writing in the *New York Times*, offered a personal insight into the apparent ease with which those sanctions on Iran can be circumvented.² Imports arriving in Iran via Dubai, for example, range from consumer goods to financial transactions to electronic equipment. The American added that the only people hurt by the prospective denial of gasoline and diesel fuel imports would be the poor. But he concluded that the brutal response to protests against the apparently fraudulent presidential election could be Iran’s greatest undoing.

The first U.S. sanction imposed on Iran was taken in 1987, beginning with a ban on imports by Iran; this was followed eight years later by a ban on exports to and investments in Iran (known then as the Iran-Libya Sanctions Act, or ILSA; sanctions on Libya were later removed). Other sanctions are designed to keep foreign parties from carrying out proliferation- or terrorism-related activities with Iran. The Iran Sanctions Act was passed to deny Iran financial resources to find, develop, and transport oil; however, it has never been applied.

1. “Iran Sanctions: Impact in Furthering U.S. Objectives Is Unclear and Should Be Reviewed,” Report no. GAO-08-58 (Washington, D.C.: U.S. Government Accountability Office, December 2007).

2. Jerry Guo, “Buying American in Tehran,” *New York Times*, September 2, 2009.

What about sanctions imposed internationally, through the UN Security Council? The first UN-imposed sanction was taken in 2006, and it targeted the uranium enrichment program. Have that and two subsequent UN sanctions been successful? Unfortunately, not to the extent desired, if the quarterly reports of the IAEA are accepted and used as basis for judgment.

Mention has not been made of the fact that sanctions also create opportunities for entrepreneurs who are willing to breach sanctions for economic gain, whether it is smuggling petroleum products out of Iran to willing buyers or jet engines and parts out of the United States to Iran.³ Unfortunately, if a case involving dual-use items should go to trial, it would be very difficult to prove the trader guilty in the absence of proof that Iran was working on developing a nuclear device.⁴

In the interim Iran continues to lash out against its perceived enemies, threatening “an unimaginably fierce response” to those who would presumably attack its nuclear facilities.⁵

The U.S. administration had looked forward to beginning talks with Iran by the opening of the UN session in September 2009. If Iran rejected that opportunity, then the United States would consider, together with selected allies, cutting off Iran’s imports of gasoline and other petroleum products.⁶ The deadline set by the White House for Iran to respond to an offer to begin talks on the nuclear issue was the end of September.

Iran announced on September 1, 2009, that it would present updated proposals aimed at resolving the dispute over its nuclear program.⁷ No details were offered. The world waited, but with considerable doubt, reflecting past similar approaches that were little more than efforts to buy additional time.

True to form, Ahmadinejad on September 7 stated that Iran would neither halt uranium enrichment nor negotiate over its nuclear rights.⁸ That now left it up to the United States, Germany, the UK, and France to follow through with the threat to cut off Iranian imports of gasoline and diesel. Or, alternatively, would these countries be willing to sit down with Iran and discuss those issues Iran is willing to talk about, while giving way to Iran’s position on enrichment, and allow Iran more time to produce a bomb, if that is what Iran wants to do?

When Ahmadinejad spoke at the annual meeting of the United Nations General Assembly on September 23, he held firm to past positions.⁹

On several occasions President Obama communicated with Iran in writing, even proposing that its stockpile of enriched uranium could be sent to any of several countries for safekeeping,

3. Spencer S. Hsu, “Man Indicted in Plot to Ship Jet Parts to Iran,” *Washington Post*, September 3, 2009.

4. For example, see David Albright and Christina Walrond, “The Trials of the German-Iranian Trader Mohsen Vanaki: The German Federal Intelligence Service Assesses that Iran Likely Has a Nuclear Weapons Program (Updated for December 15, 2009),” ISIS Report (Washington, D.C.: Institute for Science and International Security, December 15, 2009).

5. Kate Dourian and Lies Sahar, “Iran Warns of ‘Fierce’ Response to Any Attack,” *Oilgram News*, July 8, 2008.

6. David Sanger, “U.S. Weighs Cutting Off Iran’s Gasoline Imports If Nuclear Talks Are Rejected,” *New York Times*, August 3, 2009.

7. Ali Sheikholeslami, “Iran Plans to Offer New Nuclear Package to Spur Talks,” Bloomberg, September 1, 2009.

8. See “Ahmadinejad: Iran Won’t Halt Nuclear Work,” China Economic Net, September 8, 2009, http://en.ce.cn/World/Middleeast/200909/08/t20090908_19963032.shtml.

9. Sarah Wheaton, “A More Conciliatory Ahmadinejad at the U.N.,” *New York Times*, September 23, 2009.

but to no avail.¹⁰ Why is it that Iran cannot agree to the proposal put forward? It now seems likely that the country has become so divided politically that it simply cannot come to a decision on the nuclear issue.

What should the United States and its partners do now? Work to widen the political gap that now appears in Iran, continue to appeal to President Ahmadinejad, or press on with the policy of engagement? Unfortunately, none of these three options carries a guarantee of success. This formula has been tried throughout all of 2009, with little to show for the effort.

Iran is sufficiently sophisticated to recognize that it has little to fear from sanctions and can continue to bluff. Tighter sanctions may be imposed, but they would be absent support from Russia and China. To impose such sanctions would likely accomplish little more than buy time for Iran, and would allow Iran to blame the West for whatever economic difficulties might arise while permitting the government to strengthen its punitive measures against the domestic opposition.

Is the Iranian bravado against such damaging sanctions well-placed? Certainly, Iran must have vulnerabilities that could be exploited by sanctions. The Iran Refined Petroleum Sanctions Act awaits congressional action but may not be enough. How about the financial route, where a number of options are available?¹¹ Reports mention the prospect of sanctions targeting Iran's oil and gas industries and the economic assets of the IRGC.¹²

Still, the attitude of Iran toward sanctions should be recalled: "We should thank the Americans for sanctions, because they have united our country."¹³ So said Ali Soltanieh, Iranian ambassador to the IAEA.

10. David Sanger, "Iran Is Said to Have Ignored Obama's Attempts to Salvage a Nuclear Deal," *New York Times*, November 9, 2009.

11. Danielle Pletka, "The Right Sanctions Can Still Stop Iran," *Wall Street Journal*, December 11, 2009.

12. Jay Solomon, "U.S. Freezes \$2 billion in Iran Case," *Wall Street Journal*, December 12–13, 2009.

13. Joby Warrick, "Evidence of Iran's Nuclear Arms Expertise Mounts," *Washington Post*, December 15, 2009.

5

A POLICY CHANGE
REFLECTING REALITY

A plan devised by the Bush administration calling for the installation of a missile defense shield, assumed to be directed against Iran, was to be scrapped and replaced by missiles initially located offshore and later possibly in eastern Europe. Why? The rationale was simple. The U.S. perception of the threat had changed, that there was a more immediate threat from short- and medium-range missiles while Iranian efforts to develop long-range missiles were encountering problems. Costs were also a consideration, and protection could be offered under the new approach at half the cost of the original plan.¹

Reaction to this September 17, 2009, announcement was immediate, and, as might be expected, not all was positive. One nonprofit, nonpartisan public policy research institute saw the United States deprioritizing relations with central Europe in favor of closer relations with Russia. Russia smiled; but Poland and the Czech Republic were visibly chagrined. U.S. conservatives were equally unhappy, charging that the Obama administration was giving in to Russia.

Was any political gain to be realized from this policy shift? Perhaps so, coming as it did just a few days before the UN meeting in New York City. The U.S. administration hoped it would help ease relations with Russia while adding pressure on Iran. Russia welcomed the decision but called for more gestures on the part of the United States. Iran not surprisingly continued to insist that it was not prepared to give up its basic right to pursue peaceful nuclear energy.² Again, the United States acknowledged that Iran had a right to the peaceful use of nuclear energy. It is the prospect of a nuclear weapons program that the United States finds unacceptable.

1. Jonathan Weisman and Peter Spiegel, "Cost Concerns Propelled U.S. Missile Pivot," *Wall Street Journal*, September 19–20, 2009.

2. Joby Warrick, "Iran's Envoy Sees Upcoming Talks as an Opening," *Washington Post*, September 18, 2009.

6

OIL AND NATURAL GAS DO MATTER

Crude Oil

The high price for a barrel of oil enjoyed by Iran during much of 2008 suited Iranian purposes, and the income from exports helped the government carry the day despite the imposed external constraints. Income from oil sales accounted for 70 percent of total government revenues. How that revenue is spent becomes particularly important for almost every segment of the economy.

Yet, what about tomorrow? How long can Iran go it alone? The answer is again to be found in the price of oil and in the prospect of producing a nuclear bomb, all against the background of a suffocating bureaucracy, corruption, a lack of access to project financing,¹ the impact of the world financial crisis, and a take-it-or-leave-it attitude toward the foreign investor although there is evidence that production-sharing agreements may be considered, if only for deep offshore areas in the Caspian Sea.

The latest NIE, however, seemingly has encouraged countries and companies to move closer to Iran through oil and gas contracts, despite continued U.S. opposition.

The prospect of war with the United States has not yet provoked alarm bells in Tehran. Might another state attack Iran for the purpose of taking out its nuclear facilities? Possibly, if that state (read Israel) thought itself to be directly threatened by Iranian advances in the development of nuclear weapons, and if that state had the will and the capability to carry out such an attack. If such an attack were to take place, the world oil market would register the first aftershock, oil prices would rise dramatically and trigger economic losses worldwide, especially among the poorer developing countries.

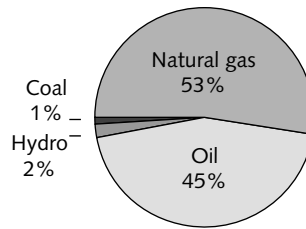
Would that be too stiff a price to pay? Miscalculations behind the incursion into Iraq still play heavily on people's minds and may shape decisions taken toward Iran.

Time is also a factor—for example, the amount of time that remained in 2008 for the Bush administration to act, diplomatically or militarily. Wise counsel argued against military action and in favor of working to give the incoming administration the best possible prospects for resolving the Iranian stand-off. The position of the Bush administration did not change during its final months nor should it have been expected to do so.

The consumption of energy in Iran holds no surprises (see figure 6.1). Natural gas leads the way, followed closely by oil. Coal holds a bare 1 percent share of the total; hydropower's share is double that of coal, but still only 2 percent.

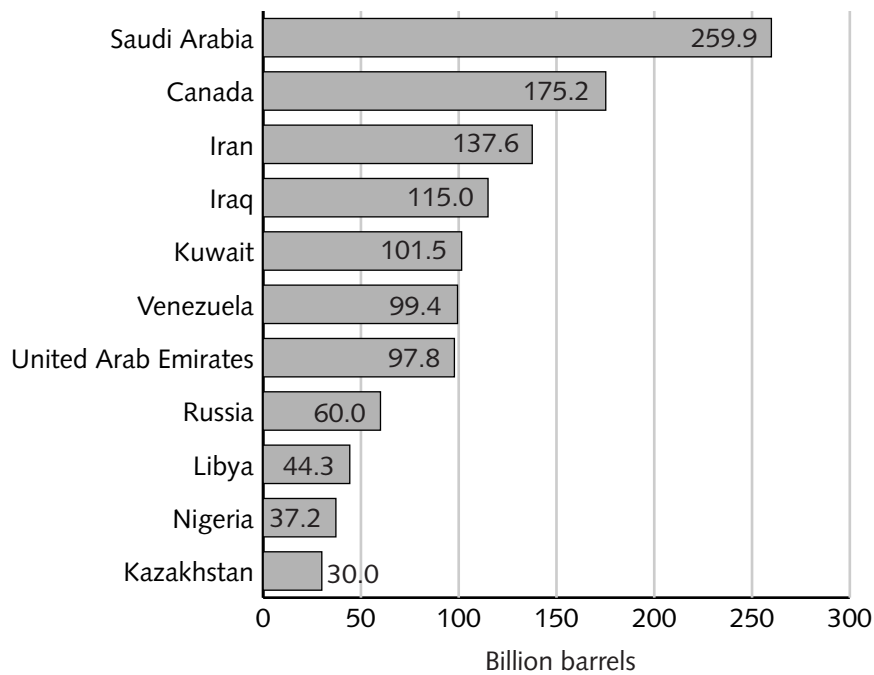
1. Foreign direct investment totaled less than \$30 million in 2005, the last year for which data were available. See Andrew Higgins, "Iran Studies China Model to Craft Economic Map," *Wall Street Journal*, May 28, 2007.

Figure 6.1. Total Energy Consumption by Iran, 2006 (by type of energy)



Source: International Energy Annual (Washington, D.C.: U.S. Energy Information Administration, 2006).

Figure 6.2. Top Proven World Oil Reserves, January 1, 2010



Source: "Iran, Oil," U.S. Energy Information Administration, Washington, D.C., using data from *Oil & Gas Journal*, January 1, 2010, www.eia.doe.gov/cabs/Iran/Oil.html.

Note: The estimate for Canada includes unconventional crude oil, that is, to be produced from oil sands.

Iran has a substantial oil sector, supported by proven reserves estimated at 138 billion barrels (figure 6.2), producing about 3.8 million barrels per day (b/d; excluding condensates) in December 2008, with plans to raise output capacity to 4.5 million b/d by 2010² and further to 5.3 million b/d by 2014.³ Iran continues to list production at 4.145 million b/d, with the difference being the referenced condensates.

2. Geoff King et al., "Iran output to hit 4.5 million b/d by 2010," *Oilgram News*, November 19, 2007. Iran now states that it will raise production capacity to 5 million b/d over the next seven years. See Kate Dourian, "Iran Says Crude Oil Production Stable Despite Gas Shortage," *Oilgram News*, February 6, 2008.

3. Aresu Eqbali, "Despite Investor Reluctance, Iran to Launch Tender in September," *Oilgram News*, August 5, 2008.

Table 6.1. Iranian Crude Oil Production vs. OPEC Target, 2009 (million barrels per day)

Date	Crude oil production
December 2008	3.840
January	3.700
February	3.650
March	3.650
April	3.700
May	3.675
June (est.)	3.750
July (est.)	3.790
August (est.)	3.760
September (est.)	3.760
October	3.774
November	3.795
December (est.)	3.795

Source: Margaret McQuaile et al., "OPEC March Output at 27.98 million b/d," Oilgram News, April 13, 2009. For November and December, see Mark Shenk, "OPEC December Crude Output Up 65,000 Bbl/Day to 28.295 mln," Bloomberg, December 31, 2009. For other months, various sources.

Note: January 1, 2009, Organization of the Petroleum Exporting Countries (OPEC) target was 3.334 barrels per day.

A major force in the world oil market during those years preceding the Iranian revolution, Iran has never been able to regain its past glory. Given continuing shortages of investment, those goals as well as the plan for 2010 now appear very unlikely.

The crash in the oil price, from \$147 per barrel in July 2008 to less than \$40 five months later, was sufficient cause for the Organization of the Petroleum Exporting Countries (OPEC) to meet and consider what steps should be taken to prevent oil prices from falling even further and to create conditions for regaining what had been lost. The meeting in December 2008 called for a total OPEC cut of 4.2 million b/d.

Iran has not done well in meeting the revised production target set by OPEC. The January 1, 2009, target for Iran was set at 3.334 million b/d but estimates indicate a production level of 3.760 million b/d and higher for much of 2009 (table 6.1). Iran was exceeding its OPEC goal by 426,000 b/d by August, and by October was averaging 440,000 b/d above quota, whereas it should have cut production by a comparable volume.

As 2009 came to a close, Iran continued to hold its crude oil output constant at 3.795 million b/d and 461,000 b/d above the annual target. OPEC members were exceeding their quotas, with compliance at about 60 percent for the group as a whole.

It should be assumed that countries will always be driven by their national interests, and Iranian national interests can be found in maximizing income from oil exports. Nonetheless, observers see a difficult year for Iran, largely because the anticipated budget would be in the red. A balanced budget would require an oil price of \$90 per barrel, and no one is yet willing to think in those terms.

Table 6.2. Top Iranian Crude Oil Export Destinations, 2008 (million barrels per day)

Destination countries	Amount of crude oil exported
Japan	480
China	430
India	410
South Korea	210
Italy	160
Spain	130
France	100
South Africa	90
Netherlands	90
Greece	80
Other	380
Total exports	2,560

Source: "Iran, Oil," U.S. Energy Information Administration (EIA), using data from Global Trade Atlas, FACTS, EIA; www.eia.doe.gov/cabs/Iran/Oil.html.

Oil exports reached 2.5 million b/d in 2008 (table 6.2). None of the oil finds its way to U.S. markets because of restrictions imposed by sanctions. Although Iran has a reasonably developed system of oil pipelines, there are no oil export pipelines that cross the Iranian border to link up with consumers outside the country. Oil exports move for the most part through Kharg Island, with lesser volumes through Lavan Island. A number of smaller terminals, including Kish Island, Abadan, Bandar Mahshar, and Neka, handle imports from the Caspian region.⁴

Low investments, low recovery rates, and high oil field decline rates have come up against rising domestic demand (figure 6.3). Demand was expected to decline in 2009 but rise again in 2010. One report presented a dismal outlook for Iranian oil; it stressed aging oil fields and a lack of infrastructure, both of which contribute to reduced production levels and raise the possibility of no exports at all by 2015.⁵

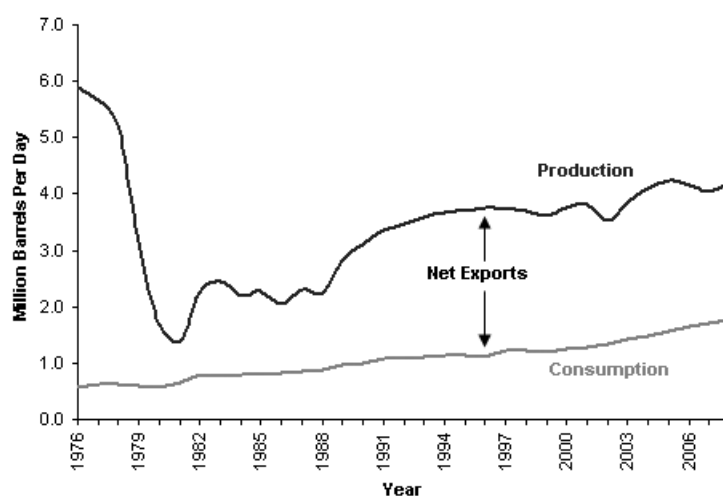
Others believe it is not too difficult to construct a scenario that would eliminate Iranian oil exports by 2020. For Iran, if that were to happen, the political and economic implications would be devastating. In the interim, there is little support for such a scenario, but the status of the oil sector is continuing cause for concern.

Then China came knocking on the door in mid-2009 with an offer to invest \$43 billion in Iran's oil sector. The size of the offer is not particularly surprising, and it is slightly exceeded by loans extended to other producing and exporting countries during the first half of 2009. China, confronted by the growing need to import crude oil and natural gas, would naturally look to Iran with its world-class reserves. It is argued, however, that China's national interest would be better

4. "Iran, Oil," U.S. Energy Information Administration (EIA), 2010, www.eia.doe.gov/emeu/cabs/Iran/Oil.html.

5. "Iran Crisis: Aging Oil Infrastructure Could Cripple Its Economy," WorldTribune.com, December 12, 2008.

Figure 6.3. Petroleum Production and Consumption in Iran, 1976–2008



Source: "Iran, Oil," U.S. Energy Information Administration, Washington, D.C., www.eia.doe.gov/cabs/Iran/Oil.html.

served if such a major commitment were held off until the Iranian nuclear issue has been successfully resolved.⁶

Oil output plans for the coming years are optimistic, with production capacity expanding from 4.379 million b/d in 2009 to 5.316 million b/d by 2015.⁷ Much of the gain is to come from improving recovery rates at existing fields and continued high rates of gas reinjection.

As figure 6.3 shows, domestic consumption of petroleum in Iran has been increasing slowly but steadily, rising during the 1980s and 1990s. It averaged 1.7 million b/d during 2007.

Iran badly needs to embark on a very substantial oil exploration and development program, for the country faces a severe natural decline at its mature fields.⁸ Offshore decline rates could be as high as 13 percent per year, while onshore rates are somewhat less, at about 8 percent per year. Together this means that perhaps as much as 400,000 b/d of new capacity are needed every year just to maintain current production levels.

There is evidence that costs of producing crude oil have been above the selling price. Oil Minister Golam Hossein Nozari has confirmed that, although some fields were still profitable at then-current prices, others had to be subsidized to maintain production in excess of 4 million b/d.⁹ These subsidies in turn meant that funds had to be diverted from other parts of the national budget to support the oil sector.

6. Erica S. Downs, "Beijing's Tehran Temptation," Brookings Institution, July 30, 2009, www.brookings.edu/opinions/2009/0730_iran_china_downs.aspx?p=1.

7. Kate Dourian, "Iran to Focus on Increasing Crude Recovery," *Oilgram News*, April 17 2007.

8. "Iran's Oil and Gas Sector: Key Insights," FACTS Global Energy, July 2007.

9. "Iran Diverting Funds into Oil Production," Associated Press, March 18, 2009.

Table 6.3. Crude Oil Refining Capacity in Iran, 2009 (thousand barrels per day)

Refinery	Amount
Abadan	350
Isfahan	280
Bandar Abbas	230
Tehran	220
Arak	170
Tabriz	100
Shiraz	40
Kermanshah	30
Lavan Island	30
Total existing	1,450

Source: "Iran, Oil," U.S. Energy Information Administration (EIA), using data from *Oil & Gas Journal*, January 1, 2010; www.eia.doe.gov/cabs/Iran/Oil.html.

Refining

For a major oil-producing and -exporting country, refining capacity of less than 1.5 million b/d (table 6.3) would appear to be a shortcoming that would have to be resolved. This shortcoming is clearly reflected in the need to import large volumes of gasoline, with such reliance on imports averaging around 40 percent. That is, the demand for gasoline currently averages around 400,000 b/d, and imports of gasoline had been reaching 160,000 b/d or so. China has been supplying as much as one-third of that volume through third parties.¹⁰ These exports began in September 2009 and will complicate the task of securing Chinese support for new sanctions.

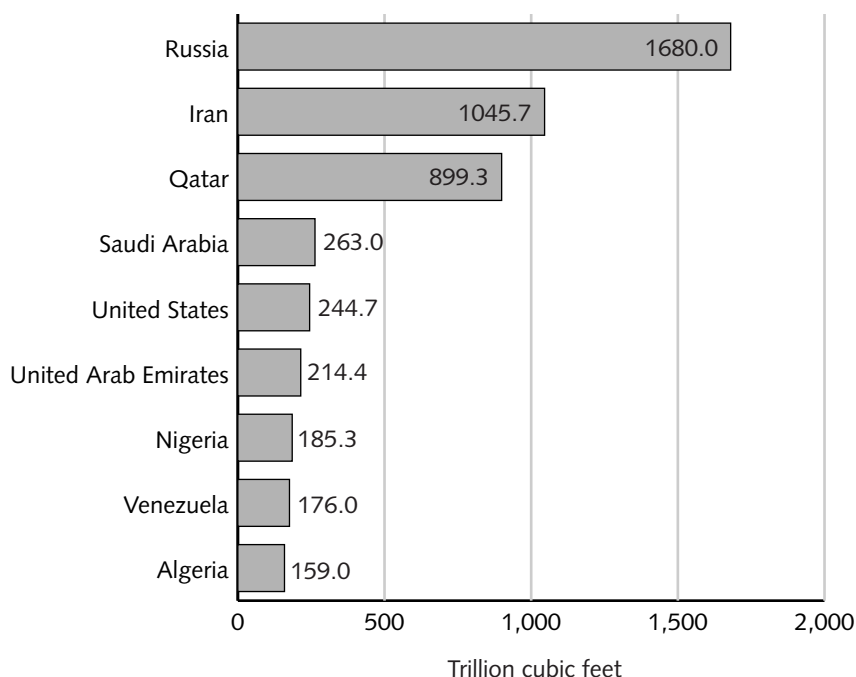
Similarly, the United Arab Emirates is a major re-exporter of gasoline to Iran, handling a reported three-quarters of Iranian imports.¹¹ Although these percentages do not correlate with those referenced above, they can be accepted as indicating how gasoline supplies make it to the Iranian market.

The Iranian government, responding to the need to make petroleum product prices more realistic by targeting subsidies, announced in early January 2009 that a three-step deregulation would be imposed starting in March. This program specifically targeted gasoline, to do away with subsidies and reduce consumption. Iranian refineries have not been able to meet domestic gasoline demand because of the subsidized prices, and imports have to be relied on to cover the difference. It was hoped that such subsidies would be eliminated by 2011. Imports of gasoline averaged roughly 110,000 b/d during 2008, down noticeably from 2007. Gasoline rationing, plus the use of smart cards, helped considerably to bring about that reduction, as did the elimination of gasoline smuggling out of Iran to neighboring countries.

10. Javier Blas et al., "Chinese Begin Petrol Supplies to Iran," *Financial Times*, September 22, 2009.

11. Henry Meyer and Anthony DiPaola, "Iran May Evade U.S. Sanctions as U.A.E. Delivers Fuel," *Bloomberg*, October 29, 2009.

Figure 6.4. World Reserves of Natural Gas, January 1, 2010 (trillion cubic feet)



Source: "Iran, Natural Gas," U.S. Energy Information Administration (EIA), using data from *Oil & Gas Journal*, January 1, 2010; www.eia.doe.gov/cabs/Iran/NaturalGas.html.

Yet, when the new budget was presented to the Iranian parliament for approval, the proposal to raise energy prices was eliminated following objections that such a step would raise the inflation rate, now around 26 percent.¹² At that time gasoline was selling at 36 cents per gallon.

Iran has indicated its intent to try again: not to raise energy prices this time but rather to cut subsidies on oil, gasoline, natural gas, electricity, water, bread, transport, and telephone services.¹³ Parliament has already given its approval. The result would be same, that is, a reduction in consumption levels. The need to do so is understandable; subsidies of all kinds cost the economy almost \$100 billion each year, or about one-third of the national income in direct and indirect costs.¹⁴

The idea is to raise prices over a five-year period to international levels while providing a cushion for the more needy consumers. Will this step be accepted quietly by the population, or will there be protests as before? Although the government motivation may be honorable, the public may care more about its pocketbook and take to the streets again.

Several companies have cut back on sales of gasoline to Iran because sanctions on gasoline imports might soon be imposed. Total SA, a French company, said it would adhere to sanctions if they were imposed. Glencore International, a Swiss firm, acknowledged that it had halted gasoline

12. Hiedeh Farmani, "Iran MPs Scrap Fuel Price Hike in Budget: Report," Agence France-Presse, March 9, 2009.

13. Najmeh Bozorgmehr, "Iran Parliament Backs Move to Slash Subsidies," *Financial Times*, October 12, 2009.

14. *Ibid.*

Table 6.4. Natural Gas Consumption in Iran, 1998, 2006–2008 (billion cubic meters)

Year	Amount
1998	51
2006	108
2007	113
2008	117

Source: “Nabucco Can Do Well without Iranian Gas: Expert,” *Today.az*, September 16, 2009, www.today.az/print/news/business/55652.html.

supplies to Iran around October–November 2009.¹⁵ China noted that it doesn’t directly sell gasoline to Iran but that volumes move through third parties, while Venezuela said it would be initiating deliveries in October.¹⁶

Iranian authorities, anticipating possible new sanctions impacting gasoline imports, plan to reduce the gasoline quota for private cars by 20 percent, to 80 liters per month.¹⁷

Completion of refinery expansion and upgrading projects already under way will allow the domestic demand for gasoline to be fully covered by the time frame 2012–2013¹⁸ and, thus, obviate the need for imports perhaps even before 2012. Considerable monetary savings should result. If sanctions on gasoline imports were to be imposed in early 2010, would the political cost be seen as justified for such a comparatively short period?

Natural Gas

Iran possesses natural gas reserves of 992 trillion cubic feet (tcf) or about 26.4 trillion cubic meters (tcm), second only to Russia (figure 6.4). About two-thirds of these reserves are found in non-associated natural gas fields, that is, not associated with crude oil. It is these reserves that have not been developed. Domestic consumption of 3.9 tcf roughly matches production; small volumes are imported from Turkmenistan and even smaller volumes are exported to Turkey and Armenia, with deliveries to Armenia having begun in May 2009. Imports and exports of natural gas roughly balance out, leaving net natural gas supply unchanged.

High losses in flaring, the need to inject natural gas at oil fields to maintain crude oil production levels, plus subsidized prices stimulating domestic consumption (table 6.4)—all come together to currently eliminate Iran as a prospective major exporter. Consumption has been leveling off, presumably because of limited supply plus the financial crisis. Will that change in the future?

Nonetheless, the limited export capability is a poor measure of Iran’s future, given the natural gas reserve base at its disposal (table 6.5). It foretells an undesirable future if domestic demand continues to roughly parallel production.

15. Spencer Swartz, “Swiss Firm Halts Its Sales of Gas to Iran,” *Wall Street Journal*, January 9–10, 2010.

16. Spencer Swartz, “Big Oil Traders Cut Shipments to Tehran Amid Sanctions Talk,” *Wall Street Journal*, September 24, 2009.

17. *Middle East Oil Monthly*, December 23, 2009.

18. “Report Updates Iran’s Refinery Project Status,” *Oil & Gas Journal*, January 19, 2009.

Table 6.5. Six Largest Nonassociated Natural Gas Fields in Iran, 2000 (trillion cubic feet)

Name of field	Gas in place	Recoverable reserves
South Pars	500	360
North Pars	60	47
Kish	60–45	45–35
Golshan	55	45–25
Tabnak	NA	21.2
Kangan	NA	16.9

Source: "Natural Gas Reserves in Iran," Wikipedia, http://wikipedia.org/wiki/Iran_Natural_Gas_Reserves.

There are other complications as well. It seems that Russia is not the only exporter of natural gas to use supply cutoffs for political purposes, as it did in January 2006 and again in January 2009, with both instances directed against Ukraine. Some European importers were caught short and suffered as much if not more than Ukraine.

Iran imports about 8 to 9 billion cubic meters (bcm) of natural gas from Turkmenistan annually, through a pipeline extending into northeastern Iran. Imports account for 5 percent of Iran's daily supply. Turkmenistan, following the example of Russia, cut off deliveries to Iran in 2008, creating a shortage of natural gas in the middle of winter. What did Turkmenistan want? Nothing more than a higher price for the natural gas it would sell to Iran. The cutoff was successful; Iran agreed to a higher price as it had no choice. Some supplies were temporarily secured from Azerbaijan but again at a comparatively high price.

A small-diameter pipeline from Iran is used to supply natural gas to Turkey. Volumes delivered are less than those imported from Turkmenistan. When Turkmenistan cut off the gas supply to Iran, Iran felt it had no alternative but to halt deliveries to Turkey.

Nonetheless, a second Turkmenistan-Iran gas pipeline (the Dovletabat-Sarakhs-Khangiran pipeline), capable of delivering 12.5 bcm annually, has been laid. Iran now has the prospect of building up to importing some 20 bcm of natural gas from Turkmenistan each year. This line is short in length, only 19 miles long, and was finished on schedule in December 2009.

Iran also swaps natural gas with Azerbaijan. Iran imports natural gas (volumes not indicated) and exports comparable volumes to Nakhichevan, with no influence on Iranian gas supplies.

Azerbaijan will initiate exports of natural gas to Iran in 2010, in annual volumes of not less than 500 hundred million cubic meters (mcm).¹⁹ This arrangement will be separate from the swap referenced above. An export contract, involving the comparable volume of gas moving from Azerbaijan to Russia, is also to begin in 2010.²⁰

Finally, a small-diameter gas export pipeline to Armenia was completed in 2009. This line currently carries 1 mcm per day and supplies fuel to a power plant that in turn exports electricity to Iran.²¹

19. Vladimir Socor, "Azerbaijan Accelerates Gas Export Diversification Efforts," *Eurasia Daily Monitor*, November 18, 2009.

20. *Ibid.*

21. "Iran-Armenia Gas Pipeline Inaugurated," *Tehran Times*, December 4, 2009.

The unfortunate part is that Iran will be dependent on natural gas from Turkmenistan for some time. The producing gas fields of Iran do not have appropriate linkage to the northern and northeastern parts of the country where demand is concentrated. Yet, natural gas prices continue to be heavily subsidized. Although officials may understand and have taken steps to do away with these subsidies, higher prices are not popular with the consumer.

In Iran subsidies cover not only petroleum products and natural gas; they extend also to electric power rates. Relatively cheap rates support economic growth and contribute to expansion in the consumption of electric power. To keep up, new generating plants must be built, but this is costly for three reasons: the world financial crisis has greatly limited funding, the sharp drop in crude oil prices has damaged the Iranian financial position, and sanctions have raised the price of equipment from those suppliers willing to sell to Iran.

Iran is working to maximize the monetary value of its natural gas resources through future exports westward to Turkey and Syria and ultimately to Europe, and eastward to Pakistan and India, although India's position regarding the proposed pipeline has been unclear.²²

The offshore South Pars gas field will feed LNG to world markets at some point in the future although financing delays caused by existing sanctions and the general financial crisis may well intrude.²³

Indeed, Iran has somewhat grandiose plans for the export of LNG. These plans involve three LNG projects having a total capacity of 17.26 million tons, all presumably based on the Pars natural gas field, and all will be put into operation by the end of 2014.²⁴ But that is not all. Iran intends to initiate other LNG projects based on the Golshan, Ferdowsi, North Pars, and Qeshm gas fields. It remains to be seen how many of these plans reflect reality and how many represent little more than wishful thinking.

Others caution that domestic needs, including gas reinjection at the oil fields, will intrude upon plans for Iran to become a major net exporter of gas. Development of South Pars is lagging badly, largely because of financing constraints imposed for a variety of reasons. Although three phases of South Pars were to have been completed by mid-2009, most of the gas will be used for maintaining oil field pressure, with little available for satisfying domestic demand. Needs imposed by domestic demand usually outstrip supply in the winter.

What if natural gas supplies are thought by Iran to be constrained if plans to become a major exporter while still meeting domestic requirements, including gas reinjection, were allowed to go forward? Would substituting nuclear electric power for gas-powered plants free up sufficient natural gas to cover all forms of requirements?

If that would be Iran's rationale, why not admit it? Are the gas-related supply issues perhaps too worrisome to go public? Or is all this a ruse to provide more cover for the nuclear weapons effort? Arguments about the adequacy of natural gas supplies would certainly serve to keep potential importers at bay.

22. Iran takes a very expansive view toward future natural gas exports; exports of natural gas to China, Oman, Qatar, Iraq, Afghanistan, Armenia, and Europe are also envisioned.

23. Aresu Egbali, "Iran Targets First LNG Exports for 2012 from Iran LNG," *Oilgram News*, October 7, 2008.

24. "Iran's First LNG Product to Enter Market in 2012," *Mojnews Agency*, October 5, 2008.

Table 6.6. Production and Reinjection of Natural Gas in Iran, 2006 (actual), 2010 and 2020 (est.) (billion cubic feet per day)

Year	Production	Reinjection
2006	16.3	3.0
2010 (plan)	24.8	7.8
2020 (plan)	50.7	10.4

Source: "Iran's Oil and Gas Sector: Key Insights," FACTS Global Energy, July 2007.

Based on past experiences, winter gas shortages could total 14 bcm in just three months.²⁵ Having advance notice of a coming gas deficit would be helpful, but can anything really be done to overcome it? Natural gas is sold on the cheap in Iran. Power plants pay just 11.5 U.S. cents per million Btu, while residential consumers pay 31.4 cents.²⁶ These prices have, of course, resulted in very high rates of growth in the use of natural gas and electric power. Electric power consumption has been rising 8 to 10 percent per year for the past 15 years.²⁷ Generating needs for 2008 had been calculated as 37,000 MW, and shortfalls of 2,000 or 3,000 MW were anticipated during peak demand periods.

Growth is likely to continue out to 2020, when consumption could reach to approximately 29 billion cubic feet per day (bcf/d). Although cheap gas is beneficial for economic growth, cheap gas also means reduced volumes for export. That situation may not be as troubling as it sounds, however, because gas exports are not politically popular owing to supply shortages for the domestic sector.

Natural gas reinjection is essential, and the National Iranian Oil Company recognizes those needs. Reinjection in 2007 likely exceeded 3 bcf/day and could rise by 2014 to 10–11 bcf/day (table 6.6). What does that mean in terms of daily gas production? Nothing more than substantial inroads into the volumes of natural gas available for export to foreign markets.

It has been noted that Iranian domestic consumption of natural gas may total 29 bcf/day by 2020.²⁸ If the gas extraction plan for that year is met, then 21 bcf/day will remain for other purposes. Gas reinjection could claim the dominant share of that volume, leaving much smaller amounts available for exports. Will those amounts be sufficient to support exports both by pipeline and in the form of LNG? No, because although gas fields are dedicated to LNG exports, there is no dedication of gas fields to export pipelines.

25. Aresu Eqbali and Kate Dourian, "Iranian Official Sounds Warning on Gas Supply Deficit," *Oilgram News*, May 20, 2008.

26. Fereidun Feshakeri, chairman and chief executive officer, FACTS Global Energy (presentation given at the Center for Strategic and International Studies, June 12, 2007). Prices are for 2005.

27. Scott Peterson, "For Iran, Energy Woes Justify Nuclear Push," *Christian Science Monitor*, September 9, 2008.

28. *Ibid.*

7

STRAIT OF HORMUZ: A CHOKE POINT

Contemplation of any military act against Iran must always consider that retribution, in the form of closure of the Strait of Hormuz or attempts to do so, would be taken. The importance of the strait to world oil flows is unquestioned. Oil flows through the strait account for roughly 40 percent of all globally traded oil supply. Iran recognizes that dependence, as does every oil-importing country. Looking ahead, the International Energy Agency predicts that oil supplies moving through the strait will reach between 30 to 34 million b/d by 2020.

But dependence works both ways. Just as importers depend on unrestricted oil movements through the strait, the oil-exporting countries of the Gulf are dependent on the strait to an even higher degree. As much as 90 percent of the oil exported from the Gulf passes through the strait. At times national interests may prevail, as they did during the Iran-Iraq war. Both nations attacked tankers heading for their respective ports.

The navigable channels are quite narrow and thus lend themselves to mining and perhaps to military attack from the shore. Interruption of tanker traffic could occur, but only temporarily. World opinion would be quick to support clearing the strait for safe tanker passage and punishing Iran for such actions.

8

FUTURE MAJOR OIL AND
GAS EXPORT PIPELINES

The future of Iran as a producer and exporter of natural gas will be determined to a considerable degree by the availability of new pipeline capacity to carry natural gas to consumers outside the country. But pipeline capacity still lags domestic demand, and unilateral U.S. sanctions have kept most foreign companies away. Iran has a producing capacity in excess of 180 bcm annually, but high domestic demand, because of subsidies and the urgent need to reinject gas for oil field repressuring, minimizes prospects for exports.

One such export pipeline has been under discussion for 15 years: the line proposed to supply Iranian gas to Pakistan and India. The pipeline would be 1,724 miles in length and would carry 60 mcm per day, to be split equally between Pakistan and India.¹

Questions arise immediately. Will Iran have sufficient volumes of gas to meet those requirements levied by a long-distance, large-diameter pipeline? Can it be safely assumed that cordial relations, presently absent between Pakistan and India, might return and prevail over the life of the proposed pipeline?

The United States argues against the pipeline on the grounds that earnings from the export of natural gas could assist Iran's nuclear weapons program. Pakistan has indicated it does not wish to wait for India to commit to the pipeline and instead wants to sign a bilateral deal.

U.S. sanctions seem to be effective mainly against U.S. companies. For example, Iran and Russia in mid-March 2009 entered a swap arrangement with a third country—Turkmenistan—supplying the natural gas to make the swap work. The swap has Russia buying Turkmen natural gas and providing that gas to northern Iran, via Azerbaijan. In return, Russia gains access to Iran's South Pars gas field.²

Who wins and who loses in this swap arrangement? Russia gains geopolitical influence and moves closer to Iran, making Iran a winner, in effect. Iran loses a portion of its unsatisfactory dependence on Turkmen gas. On the losing side stands the Nabucco gas pipeline. If and when Russia gets access to South Pars, that gas possibly would be denied to Nabucco.

Reasonable success in keeping its position in the world oil market is assumed by Iran, as it continues to work on the basic design of a pipeline with a capacity of one million b/d that would help move additional oil from the giant Kashagan oil field, located in the Kazakh sector of the Caspian Sea, across Iran to a port of export on the Gulf.³ Additional volumes of crude oil for the pipeline would also originate from Russia, Turkmenistan, and Azerbaijan. Iranian oil is notable for its exclusion. It is likely, however, that plans for this line will remain just that—plans—as long as sanctions are in place.

1. "Pakistan to Move on Iran Gas Pipeline Deal without India," *Oilgram News*, March 12, 2009.

2. "Is Iran Using Russia as Insurance against Tougher Sanctions?" *Eurasia Insight*, March 17, 2009.

3. Geoff King et al., "Iran Continues Work on Kazakh Crude Link," *Oilgram News*, November 20, 2007.

9

EPILOGUE

The research and writing of the preceding chapters were completed on January 11, 2010. This epilogue serves to bring the reader up-to-date on significant developments between that time and February 20, 2010.

The P5 + 1 met at United Nations offices in New York City on January 16, 2010, to discuss the imposition of possible new sanctions on Iran. How did the meeting go? In the words of the Russian delegate, the meeting had been inconclusive, no decisions had been made. Others suggested that, because China had sent only a low-ranking representative, there was little hope of reaching an agreement and that China's move was deliberate because of its opposition to any new sanctions.

Meanwhile, the protest movement in Iran continued. A remote-controlled bomb had killed an Iranian nuclear scientist outside his home in early January. Later information suggested that the scientist had no involvement in the nuclear energy program. Government authorities were quick to blame the United States, Israel, and "anti-revolutionary" agents. Both the Iranian government and the opposition claimed the scientist as a supporter.

Iran has kept alive its plan for a swap of nuclear fuel, with the Foreign Ministry repeating in early January its proposal to carry out the proposal on a stage-by-stage basis, or, Iran suggested, the West could sell to Iran the fuel it needed. Iran set the end of January for a response from the West. The West in the past had been quick to reject these approaches. President Ahmadinejad in late January intimated that Iran would pursue uranium enrichment on its own, to 20 percent, if the offer of a phased fuel swap were rejected.

China continued to confirm that another round of sanctions would likely not be approved as long as negotiations were still possible. The United States and the European Union vowed continued pressure on Iran, stressing that the offer for engagement would not be on the table forever. In the meantime, relations between the United States and China unfortunately are moving in the wrong direction because of actions on both sides.

The U.S. Senate on January 28, 2010, passed its own energy sanctions bill—the Comprehensive Iran Sanctions, Accountability, and Divestment Act—centering on the oil sector while strengthening existing sanctions. The U.S. House of Representatives had passed a comparable measure some six weeks previously. The next move will be for the House and Senate to meet in conference and work out language acceptable to both sides of the aisle.

At the same time, the Iranian government faces continuing domestic opposition, to the point where it seemingly does not know quite what to do or what decisions to make. In that regard, Western observers have suggested that Iran is conducting negotiations with the P5 + 1 as if it were in a bazaar, and it continues to walk away if the offer on the table does not meet the then current demands.

If Iran cannot make a decision, how then can the disinterested analyst correctly judge what the future holds? The opposition has made several conciliatory approaches during the past weeks, all aimed presumably at Ayatollah Khamenei, offering him an opportunity to reciprocate. There has been no public response to date. In the interim, Secretary of State Hillary Clinton continues to press for more punitive sanctions on Iran and to outline the negative implications for China should it not support actions to curb the Iranian nuclear program.

The 31st anniversary of the Islamic revolution on February 11, 2010, passed by relatively quietly, with the protestors successfully controlled by members of the Islamic Revolutionary Guard Corps (IRGC) who made adroit use of paint guns, tear gas, batons, arrests, and jailings plus blocked the Internet. The protest movement must rethink its purpose. What does it want to accomplish? Does it really want to bring down the entire system or would other goals—respect for civil rights, for example—suffice?

Four days earlier, on February 7, Iran had announced it would begin enriching uranium to 20 percent (actually 19.5 percent) on February 9 and that IAEA inspectors would be invited to monitor the process. The rationale given for the change in the enrichment policy was Iran's need to power the Tehran research reactor. The process will begin using the Natanz Pilot Fuel Enrichment Plant (PFEP) currently being employed to test more advanced centrifuges. The PFEP is a small facility containing only several cascades but, according to the IAEA, there is only one cascade capable of enriching the low-enriched uranium (LEU) to 20 percent.

Foreign reaction was immediate, and negative, with Russia weighing in that such action raised doubts about the purpose of Iran's nuclear program. Others questioned whether Iran had the ability to produce the fuel rods needed by the reactor. Still others noted that, if uranium is enriched above 20 percent, it then becomes highly enriched uranium and a major step toward a nuclear weapon. President Ahmadinejad's oft-stated remark that Iran had become a "nuclear state" did little to calm the concerns of the United States and others.

The following quotation is excerpted from a February 18, 2010, report by the IAEA director general to the IAEA Board of Governors. It is the first such report issued under the new IAEA director general, Yukiya Amano, and unquestionably represents the strongest statement made to date by the IAEA regarding the Iranian nuclear program. It also contradicts the findings of the 2007 U.S. National Intelligence Estimate (see chapter 3). The U.S. intelligence community is currently preparing a new assessment of Iran's nuclear program.

The information available to the Agency . . . is extensive and has been collected from a variety of sources over time. It is also broadly consistent and credible in terms of the technical detail, the time frame in which the activities were conducted and the people and organizations involved. Altogether, this raises concerns about the possible existence in Iran of past or current undisclosed activities related to the development of a nuclear payload for a missile.¹

When IAEA inspectors responded to the Iranian invitation and arrived at the PFEP on Wednesday, February 10, 2010, they found that Iran had transferred LEU from Natanz and learned that Iran had already begun feeding the LEU into centrifuges the preceding evening, in apparent disregard of pertaining rules. On February 14, Iran moved approximately 1,950 kilograms

1. "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran," Report no. GOV/2010/10 (Vienna: International Atomic Energy Agency, February 18, 2010).

of LEU to the PFEP, according to the IAEA. Nonetheless, enrichment of the 1,950 kilograms to 20 percent would yield fuel far in excess of what the Tehran research reactor would need.

How did Iran respond to this latest IAEA report? By coming forward with a far-fetched assessment of what was being reported, noting that Iran's actions were consistent with its responsibilities.

The United States is now focusing on the IRGC, publicly making the case that this militant organization, among its other responsibilities, takes the lead in controlling the opposition and in commanding the nuclear program. Not surprisingly, the IRGC is also active in Iraq, where it works to influence political events, including Iraq's upcoming election. The United States on February 10 imposed new sanctions directed against several affiliates of the IRGC, including the freezing of U.S. assets of four companies.

It is not particularly difficult to conclude that Iran is moving toward a military dictatorship, as Western media have suggested, and that the broadening powers of the IRGC reflect recognition by the government's leadership that this is the only way to stay in power. At the same time, given the IRGC control of the nuclear program, would any outcome other than development of a nuclear weapon be acceptable?



ABOUT THE AUTHOR

Robert E. Ebel is senior adviser in the Energy and National Security Program at the Center for Strategic and International Studies, where he offers his views on world oil and energy issues, with particular emphasis on the former Soviet Union and the Persian Gulf. He was project director for a number of nuclear-related reports, including the Global Nuclear Materials Management project, and for the three-volume report, *The Geopolitics of Energy into the 21st Century*, cochaired by Senator Sam Nunn and Dr. James Schlesinger. At CSIS he is also codirector of the Caspian Sea Oil Study Group and of the Oil Markets Study Group.

Previously, Ebel served with the Central Intelligence Agency for 11 years and spent more than 7 years with the staff of the Office of Oil and Gas in the Department of the Interior. For the Federal Energy Office, he worked in the international energy area. In March 1974 he joined ENSERCH Corporation as vice president, international affairs, and for some 14 years advised the corporation and its subsidiaries on international issues relevant to day-to-day operations.

Ebel, who has traveled widely in the former Soviet Union, was a member of the first U.S. oil delegation to visit that country in 1960 and in 1970 was in the first group of Americans to inspect the new oil fields of Western Siberia. In November 1997 he led an International Energy Agency team examining the oil and gas sector of Turkmenistan and Uzbekistan.

In August 2002, Ebel participated in the Sudanese peace talks, held in Machakos, Kenya, and from December 2002 through April 2003, worked with a group of former Iraqi oil officials, under the Department of State “Future of Iraq” project, to produce an assessment of the Iraqi oil sector. Again at the request of the Department of State, he traveled throughout Canada in September 2003 to speak to interested groups on U.S.-Canada energy relations.

Ebel is a past chairman of the Washington Export Council and past member of the board, American Near East Refugee Aid. He received the Department of State’s Distinguished Public Service Award in April 2002. He is the author of a number of books and reports, including *Energy and Geopolitics in China* (CSIS, 2009), *The Geopolitics of Russian Energy* (CSIS, 2009), and *China’s Energy Future* (CSIS, 2006). He was coeditor, with Rajan Menon, of *Energy and Conflict in Central Asia and the Caucasus* (Rowman & Littlefield, 2000) and edited *Caspian Oil Windfalls: Who Will Benefit?* (Open Society Institute, 2003). His earlier books include *The Petroleum Industry of the Soviet Union* (American Petroleum Institute, 1961) and *Communist Trade in Oil and Gas* (Praeger, 1970).

Ebel holds an M.A. in international relations from the Maxwell School at Syracuse University and a B.S. in petroleum geology from Texas Tech. A graduate of the United States Air Force Russian language program, he served in Air Force intelligence during the Korean War. A widely acclaimed speaker, Ebel is a frequent commentator on national and international radio and television, and his views on energy issues appear regularly in U.S. newspapers and abroad.