

“Iran has not addressed the long outstanding verification issues or provided the necessary transparency to remove uncertainties associated with some of its activities. Iran has not suspended its enrichment related activities; nor has Iran acted in accordance with the provisions of the Additional Protocol... [T]he agency remains unable to make further progress in its efforts to verify the correctness and completeness of Iran’s declarations with a view to confirming the peaceful nature of Iran’s nuclear program.”

IAEA DIRECTOR GENERAL MOHAMMED ELBARADEI, AUGUST 31, 2006



Toward a Nuclear Iran

The History, the Threat, and the International Response

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Introduction

Since August 2002, when an Iranian opposition group revealed the existence of two undeclared nuclear facilities in Iran, international focus has intensified on the country's nuclear ambitions. As a signatory to the Nuclear Non-Proliferation Treaty (NPT), Iran has insisted—pursuant to its NPT obligations—that it maintains only a civil nuclear program. However, Iran's revealed clandestine nuclear activity, the sophisticated nature of its known nuclear program, its barely disguised regional ambitions, and its repeated call to “wipe Israel off the map,” have led the world's major powers to suspect that, in fact, Iran seeks to develop a nuclear weapons capability.

The International Atomic Energy Agency (IAEA), the United Nations nuclear energy watchdog, is the central interface on nuclear activity between Iran and the international community. It is this organization that monitors whether countries that are party to the NPT, including Iran, uphold the treaty, particularly the restriction on military nuclear programs. As we will discuss, after Iran frustrated the agency's previous efforts to verify a peaceful nuclear program, the IAEA referred the Iran dossier to the UN Security Council in February 2006.

The first section of this pamphlet reviews the history of Iran's nuclear program, noting Iran's obfuscation of its intentions and violations of agreements related to its nuclear program. The second deals with the potential regional implications of Iran acquiring nuclear weapons. The third section reviews the four main international schools of thinking, not necessarily all mutually exclusive, toward dealing with Iran's nuclear aspirations. The fourth section consists of two appendices: the first, a technical guide to Iran's nuclear program, and the second, a timeline of the program's benchmarks and violations.

Iran's Nuclear Program: A History

Iran's nuclear program began in 1957 when the U.S. signed a civil nuclear cooperation agreement with Iran as part of the Atoms for Peace program.

In the belief that the spread of nuclear technology would create stronger economic, technological, and scientific bonds between the United States and its allies, President Dwight D. Eisenhower signed the first civil nuclear cooperation agreement in 1957 with the shah of Iran, a U.S. ally during the Cold War. Despite the risks of spreading nuclear know-how, Eisenhower believed that the potential benefits, including enhanced relations with Iran, justified them.¹

This cooperation agreement was followed, in 1959, by the creation of the Tehran Nuclear Research Center (TNRC), run by the Atomic Energy Organization of Iran (AEOI).²

In 1968, Iran signed the Nuclear Non-Proliferation Treaty (NPT). With this safeguard in place, plans were drawn by the shah to construct, together with the U.S., up to twenty-three nuclear power stations across the country by the year 2000.³



President Eisenhower with the Shah of Iran

[1] Jack M. Holl and Roger M. Anders, "Atoms for Peace," Dwight D. Eisenhower Library Web Site, www.eisenhower.archives.gov/atom1.htm.

[2] "Iran Profile: Nuclear Chronology," Nuclear Threat Initiative, www.nti.org/e_research/profiles/1825_1826.html.

[3] "Iran's Nuclear Program," Aljazeera.com, www.aljazeera.com/me.asp?service_ID=10023, January 1, 2003.

Iran's Nuclear Program: A History

Much of Iran's nuclear infrastructure was developed during the 1970s, under the rule of the shah and in partnership with Western allies.



President Gerald Ford holding a press conference with the Shah of Iran

In 1975, a German firm, Kraftwerk Union AG, signed a contract to build a pressurized water nuclear reactor, a type of light water reactor, so called because its water component, under high pressure, acts as a coolant and neutron moderator. This was slated to be the first nuclear plant in Iran for the purpose of producing peaceful nuclear energy.

The U.S. benefited from the sale of nuclear energy equipment to Iran, which at the time was projected to bring U.S. corporations more than \$6 billion in revenue.¹

In 1976, President Gerald Ford signed an agreement offering Tehran the opportunity to buy and operate a U.S.-built reprocessing facility. The deal was to include a full “nuclear fuel cycle.”² Ford also endorsed Iranian plans to develop a massive nuclear energy industry, which included acquiring large quantities of plutonium and enriched uranium—both of which could be used to construct a nuclear bomb.

[1] “Iran’s Nuclear Program,” Aljazeera.com.

[2] Ibid.

Iran's Nuclear Program: A History

The 1979 Iranian Revolution brought an end to U.S. cooperation with Iran's nuclear program, ushering in a period of clandestine activity.

The populist revolution transformed Iran from a pro-Western constitutional monarchy, under Shah Mohammad Reza Pahlavi, to a theocratic Islamic republic, under the rule of Ayatollah Ruhollah Khomeini, the so-called "Supreme Leader." The revolution also brought an abrupt end to Western-backed nuclear projects.

Due to Tehran's nonpayment, work on the reactor at Bushehr was halted by the German contractor Kraftwerk Union AG with the fall of the shah.¹ And until 2002, Iran was thought by many in the West to have abandoned its pursuit of nuclear weapons.

However, beginning in the early 1980s, as it was later revealed, Iran engaged in clandestine domestic and foreign efforts to restart its nuclear program. This secret activity included collusion with the A.Q. Khan network, which spearheaded the proliferation of Pakistani nuclear weapons technology to other countries, including Iran.

In 1995, Russia agreed to resume construction of the Bushehr plant. Although this alarmed the West, particularly the U.S., Iran's secret nuclear activity was unknown at this time, making the Bushehr project more plausibly peaceful in nature. Moreover, Russia insisted it would employ strict safeguards to ensure that the Bushehr facility would provide strictly peaceful nuclear energy.



Ayatollah Ruhollah Khomeini led the Iranian Revolution of 1979 and declared Iran's quest for nuclear weapons "anti-Islamic."

[1] "Bushehr – Background," GlobalSecurity.org, www.globalsecurity.org/wmd/world/iran/bushehr-intro.htm.

Iran's Nuclear Program: A History

In 2002, dissidents revealed Iran's clandestine nuclear activity, raising fears in the international community that Iran was pursuing the capability for nuclear weapons.



Maryam Rajavi, president-elect of the NCRI. The group's umbrella organization, the MEK, has carried out multiple attacks against the regime. The U.S. has designated the MEK a terrorist organization.

In 2002, the National Council of Resistance of Iran (NCRI), the political wing of a dissident Iranian group known as Mujahedin-e Khalq (MEK), revealed that Natanz was the site of two nuclear plants: a pilot enrichment plant and a massive fuel enrichment plant.¹ Upon completion, the pilot plant is expected to produce between 10-12 kilograms of weapons-grade uranium annually.² The large-scale commercial facility could produce approximately 400-500 kilograms of weapons-grade material annually, enough for 15-20 nuclear weapons a year.³

The NCRI also disclosed the existence of a heavy-water production facility under construction in Arak. In a nuclear chain reaction, heavy water allows a nuclear reactor to bypass the enriched uranium stage to produce energy. Weapons-grade plutonium can then be extracted from the reactor's spent fuel. Iran initially told the IAEA the plant would produce heavy water for export, but later admitted that the heavy water would be used as a coolant and moderator for a planned research reactor in Arak.⁴

At the time, the IAEA did not have the legal authority to monitor these plants. Without further mechanisms in place, the agency was limited to monitoring only the locations declared by Iran as having nuclear material.⁵

[1] MEK is responsible for attacks both on American nationals and the Iranian regime. Consequently, the U.S. has designated it a terrorist group.

[2] "Iran's Programs to Produce Plutonium and Enriched Uranium," Carnegie Endowment, www.carnegieendowment.org/npp/iransnuclearprogram.cfm, 2004.

[3] Ibid. [4] Ibid.

[5] Theodore Hirsch, "The IAEA Additional Protocol: What It Is and Why It Matters," *Nonproliferation Review*, Fall-Winter 2004.

Iran's Nuclear Program: A History

After much political jockeying, Iran signed the IAEA's Additional Protocol, which was to give much greater security assurances to the international community.

Following the 2002 revelation of nuclear facilities in Natanz and Arak, and the further discovery of highly enriched uranium at Natanz in early 2003, Iran agreed, in October 2003, to suspend uranium enrichment as a "gesture of goodwill."¹

Moreover, on December 18, 2003, after much U.S. pressure, Iran signed the Additional Protocol to the 1968 NPT. This provision allows tougher IAEA supervision, including the right of access to undeclared locations to carry out location-specific environmental sampling.² It also calls on signatories to declare any material that could be used in a nuclear program.

These moves were heralded as a major diplomatic victory and, at the time, there was hope that this activity marked the end of Iran's clandestine activity. (See headline on the right.)



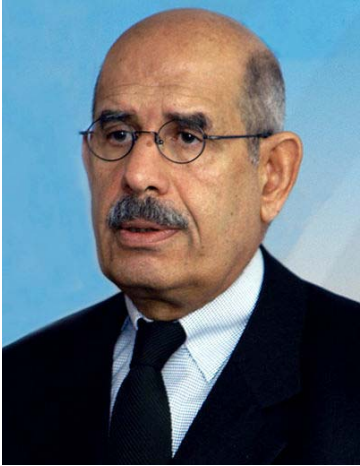
[1] Mohsen Asgari and Mark Huband, "Iran to Suspend Uranium Enrichment Programme," *Financial Times*, October 21, 2003.

[2] "Iran Signs Additional Protocol on Nuclear Safeguards," IAEA, December 18, 2003.

[3] "EU Minister Strike Deal: Diplomatic Coup on Nuclear Programme Averts Crisis," *Guardian*, October 22, 2003.

Iran's Nuclear Program: A History

Despite signing the Additional Protocol and agreeing to confidence-building provisions, Iran continued to defy the IAEA.



Mohamed ElBaradei,
Secretary-General of the IAEA

Just a few months after Iran signed the Additional Protocol, IAEA inspectors in Iran found traces of polonium, a radioactive element that can help trigger a nuclear chain reaction, which were not previously declared to the watchdog agency.

According to the IAEA, the traces of the isotope polonium-210 “could be used for military purposes ... specifically as a neutron initiator in some designs of nuclear weapons.”¹

The IAEA's report also expressed concern over the discovery of an advanced P-2 centrifuge system that could enrich uranium for weapons use. In violation of the Additional Protocol, this system had not been reported to the agency.

“The omission ... of any reference to its possession of the P-2 centrifuge design drawings and associated research, manufacturing and mechanical testing activities is a matter of serious concern, particularly in view of the importance and sensitivity of those activities.”²

-- IAEA report, February 27, 2004

[1] “Nuclear Watchdog Asks Iran to Come Clean,” Al Jazeera.net, February 25, 2004.

[2] “Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran,” resolution adopted by the Board of Governors of the IAEA, www.iaea.org/Publications/Documents/Board/2003/gov2003-81.pdf, November 26, 2003.

Iran's Nuclear Program: A History

Iran's deception continued throughout 2004, making it difficult for the IAEA to confirm that Iran's nuclear program was purely civil in nature.

In 2004, Pakistani investigators exposed black market activities by two senior nuclear scientists to supply nuclear weapons technology to Iran and Libya. The scientists, A.Q. Khan, considered the father of Pakistan's nuclear bomb, and Mohammed Farooq, provided blueprints for equipment used to enrich uranium, names of clandestine suppliers for centrifuge parts, and technological assistance in return for millions of dollars channeled to foreign bank accounts by Iran.¹

That same year, Iran's Foreign Ministry publicly acknowledged that Iran had previously purchased secret components for its nuclear program from international suppliers, thought to include Khan's network.²



Board of Governors

Derestricted 26 November 2004
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(GOV/2004/83)

"Based on all information currently available to the Agency, it is clear Iran has failed in a number of instances over an extended period of time to meet its obligations under its Safeguards Agreement with respect to the reporting of nuclear material and its processing and use, as well as the declaration of facilities where such material has been processed and stored."³

-- IAEA Board Report, November 15, 2004

GOV/2004/11, DATED 24 FEBRUARY 2004; GOV/2004/24, DATED 1 JUNE 2004; IAEA/CN.1, DATED 15 JUNE 2004; IAEA GOV/2004/80, DATED 1 SEPTEMBER 2004.

[1] Kamran Khan, "Pakistanis Exploited Nuclear Network. Iran, Libya Aided Via Black Market, Investigation Finds," *Washington Post*, January 28, 2004.

[2] "In Face of Report, Iran Acknowledges Buying Nuclear Components," *New York Times*, February 22, 2004.

[3] "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," IAEA, www.iaea.org/Publications/Documents/Board/2004/gov2004-83.pdf, November 15, 2004.

Iran's Nuclear Program: A History

Mahmoud Ahmadinejad's August 2005 election as Iran's president increased fears in the West that Iran was more serious than ever about pursuing nuclear weapons.



President Mahmoud
Ahmadinejad

Ahmadinejad's strong anti-Western rhetoric and his repeated calls to destroy Israel, combined with Iran's continued antagonism towards the IAEA, brought increased concern within the international community.

*"There is no doubt that the new wave [of attacks] in Palestine will wipe off this stigma [Israel] from the face of the Islamic world."*¹

*"As the imam [Ayatollah Ruhollah Khomeini] said, Israel must be wiped off the map."*²

-- President Ahmadinejad of Iran

Reflecting Western concerns, Martin Indyk, former U.S. Assistant Secretary of State and currently with the Brookings Institution, asserted, "Notwithstanding protestations to the contrary, the Iranian regime has a clear and intense interest in acquiring nuclear weapons.... Added to this is the danger of Iranian miscalculation borne of a cockiness that manifests itself in the outrageous behavior of President Ahmadinejad."³

[1] Nasser Karimi, "Iran Leader Calls for Israel's Destruction," Associated Press, October 26, 2005.

[2] Ibid.

[3] Testimony before the Senate Foreign Relations Committee, www.senate.gov/~foreign/testimony/2006/IndykTestimony060919.pdf, September 19, 2006.

Iran's Nuclear Program: A History

Following Ahmadinejad's election, Iran resumed uranium conversion. The IAEA then found Iran to be in noncompliance with its NPT safeguards in September 2005.

On August 9, 2005, Iran removed the IAEA seals—the plastic safeguards that demonstrate whether activity has been resumed or not—from a plant in Isfahan.¹ This was in breach of an agreement with the European Union reached in Paris in 2004 to halt all uranium enrichment and conversion activities.

As a result of this breach and the numerous other violations, the IAEA passed a resolution stating that Iran's actions were in noncompliance with the NPT safeguards.

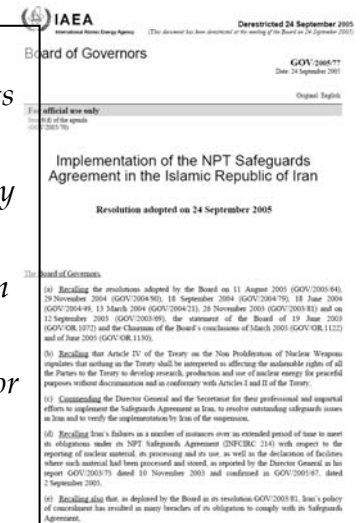
"Recalling Iran's failure in a number of instances over an extended period of time to meet its obligations under its NPT Safeguards Agreements with respect to the reporting of nuclear material, its processing and its use, as well as the declaration of facilities where such material has been processed and stored....

"Recalling also that ... Iran's policy of concealment has resulted in many breaches of its obligations to comply with its Safeguard Agreement....

"Uncertain of Iran's motives in failing to make important declarations over an extended period of time and in pursuing a policy of concealment....

"Noting that the Agency is still not in a position to conclude that there are no undeclared nuclear materials or activities in Iran....

"[The Board of Governors] Finds that Iran's many failures and breaches of its obligations to comply with its NPT Safeguards Agreements ... constitute noncompliance."²



[1] Brian Knowlton, "Tehran Ends Freeze on Nuclear Program," *International Herald Tribune*, August 9, 2005.

[2] "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," IAEA, www.iaea.org/Publications/Documents/Board/2005/gov2005-77.pdf, September 24, 2005.

Iran's Nuclear Program: A History

In January 2006, Iran further increased tensions, resuming nuclear research and development, which it voluntarily suspended during Iran-EU negotiations in 2003.

In January 2006, Iran broke the seals placed by the International Atomic Energy Agency at the Natanz nuclear enrichment facility, the site that had been kept secret from the IAEA and discovered by inspectors in February 2003.¹ In addition, seals were broken at two other nuclear-related testing and storage locations, Pars Trash, near Isfahan, and Farayand Technique.²

Iran has defended its right to develop nuclear research for peaceful purposes. Yet, particularly when addressing internal audiences, the regime hints strongly that its nuclear program could serve more than just a civilian purpose.

*"If one day, the Islamic world is also equipped with weapons like those that Israel possesses now, then the imperialists' strategy will reach a standstill because the use of even one nuclear bomb inside Israel will destroy everything. However, it will only harm the Islamic world."*³

-- Hashemi Rafsanjani, former president of Iran, at a Qods (Jerusalem) Day rally

*"If Iran becomes a nuclear Iran, no one will any longer dare to challenge it, because they would have to pay a high price for it."*⁴

-- Iran Supreme National Security Council Secretary and chief nuclear negotiator, Ali Larijani, at an Islamic Revolutionary Guard Corps conference



Iran's chief nuclear negotiator
Ali Larijani

[1] "U.S. Says Iran Nuclear Move Marks 'Serious Escalation,'" Agence France-Presse, January 10, 2006.

[2] Steven R. Weisman and Nazila Fathi, "Iranians Reopen Nuclear Centers," *New York Times*, January 11, 2006.

[3] "Qods Day Speech (Jerusalem Day)," GlobalSecurity.org, www.globalsecurity.org/wmd/library/news/iran/2001/011214-text.html.

[4] "Why the World Community Is Concerned About Iran," U.S. Mission to International Organizations in Vienna, <http://vienna.usmission.gov/>.

Iran's Nuclear Program: A History

Unable to secure the necessary assurances to ensure that Iran's nuclear program was purely civil, the IAEA reported Iran to the UN Security Council in February 2006.

The move to the UN Security Council, which has the power to apply legally enforceable sanctions, was a shift away from the largely technical atmosphere at the International Atomic Energy Agency in Vienna to the diplomatic arena.

*"[The IAEA] requests Iran to extend full and prompt cooperation to the Agency, which the Director General deems indispensable and overdue, and in particular to help the Agency clarify possible activities which could have a military nuclear dimension."*¹

-- IAEA Director General Mohammed ElBaradei

The IAEA action was prompted in part by the disclosure of an intelligence document detailing a secret Iranian "Green Salt Project," which involved uranium processing, high explosives and a missile warhead design. An IAEA report said that the activities suggested a "military-nuclear dimension."²

*"The obvious technical connection is that these [Iran's fuel program and studies of explosives and missile warheads] are all central elements of a program to develop nuclear weapons and delivery capability."*³

-- Per F. Peterson, professor of nuclear engineering, University of California at Berkeley

[1] "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," IAEA, <http://www.iaea.org/Publications/Documents/Board/2006/gov2006-14.pdf>, February 4, 2006.

[2] Elaine Sciolino and William J. Broad, "Atomic Agency Sees Possible Link of Military to Iran Nuclear Work," *New York Times*, February 1, 2006.

[3] Ibid.

Iran's Nuclear Program: A History

United Nations Security Council Resolution 1696, adopted on July 31, 2006, set a one-month deadline for Iran to halt its nuclear program. Iran ignored this deadline and continues to move forward with its nuclear program.

In defiance of the IAEA and the Security Council, Iran initiated a new round of enrichment on August 24, 2006.¹ Iran also inaugurated in Arak, on August 26, 2006, its newest heavy water plant, which can produce plutonium, an essential ingredient for a nuclear weapon.²

In an attempt to keep the diplomatic track alive, the European Union's Javier Solana has continued to try to negotiate with Iran to end its nuclear enrichment program, despite the expired deadline. This strategy, however, has yet to produce results.

*"This dialogue I am maintaining cannot last forever. It is up to the Iranians now to decide whether this time has come to an end."*³

-- European Union's High Representative Javier Solana to European Parliament

As this publication goes to print, the Security Council continues to consider the possibility of a sanctions resolution, but there is no agreement among the five permanent members on the provisions, largely because of Russian objections. Meanwhile, it is abundantly clear that Iran is moving ever closer to completing the nuclear fuel cycle and, therefore, having the potential to manufacture nuclear weapons.

[1] "Iran Ignores Nuclear Deadline," www.bbc.co.uk, August 31, 2006.

[2] "Iran Nuclear Project Forges Ahead," www.bbc.co.uk, August 26, 2006.

[3] Ibid.

The Ability to Deliver a Nuclear Warhead

Iran's Shahab-3 missile can reportedly be fitted to carry a nuclear warhead. The Shahab-3's 1,200-mile range puts the entire Middle East, U.S. military bases, and many European, Asian, and African countries at risk of attack.

As Iran progresses in its efforts to achieve the capacity for nuclear weapons, it has simultaneously progressed in developing ballistic missiles.

"[Iran] already has the largest inventory of ballistic missiles in the Middle East, and Tehran views its ballistic missiles as an integral part of its strategy to deter, and if necessary retaliate against, forces in the region, including U.S. forces."¹

-- John Negroponte, Director of National Intelligence, United States

Moreover, a primary Western concern is that a nuclear-armed Iran could use its ballistic missiles—namely, the Shahab-3—to deliver nuclear warheads. The Shahab-3 is believed to have a range of 1,200 miles, putting many countries within range and subjecting them to the risk of nuclear blackmail, if not the danger of outright attack.²



This map depicts the Shahab-3's approximate current missile range (the inner radius), as well as its projected range (the outer radius).

[1] Kenneth Katzman, "Iran: U.S. Concerns and Policy Responses," Congressional Research Service, April 6, 2006.

[2] "Recognizing Iran as a Strategic Threat: An Intelligence Challenge for the United States," House Permanent Select Committee on Intelligence, <http://intelligence.house.gov/Media/PDFS/IranReport082206v2.pdf>, August 23, 2006.

A Nuclear Iran: The Threat Realized

Iran's possession of nuclear weapons would threaten the region in a number of ways, including the following possible scenarios.

- 1. Firing a Nuclear Warhead**—Currently, Iran is attempting to become a regional superpower. However, the regime, although a keen political actor, also is motivated by other considerations. While there are believed to be nuanced differences within the regime about Iran's political direction, Tehran's ruling elite embraces a Shiite fundamentalism that is acutely eschatological in nature, and harbors a bitter enmity towards the West, particularly the U.S. and Israel. It is believed that Ahmadinejad and other officials seek the return of the so-called "hidden" 12th imam, whose arrival on earth is supposed to be preceded by global chaos, war and bloodshed. Against such a backdrop, not least the regime's desire to hasten the "end of days," an Ahmadinejad-led Iran could use nuclear weapons against multiple regional targets.
- 2. Political Blackmail**—Iran could use its nuclear deterrent as economic and political leverage. A nuclear-armed Iran, for example, could wield tremendous influence over the region's vital energy resources, manipulating energy prices to exorbitant levels with the knowledge that regional governments would be intimidated into acquiescence, or shape the political behavior of neighboring countries.
- 3. Transfer of WMD to Terrorists**—Iran could pass nuclear weapons to a terrorist proxy, such as Hezbollah, Hamas, or Islamic Jihad, groups with which it already has active ties, for use against moderate Arab and Muslim states or Western targets.
- 4. A Nuclear Arms Race**—A nuclear Iran will almost certainly inspire an arms race in the region, which could include countries such as Turkey, Egypt, and Saudi Arabia, nations with Sunni majorities that fear an ascendant Shiite Iran. More countries with nuclear weapons in a volatile region increase the chances of a catastrophic event occurring—intentional or otherwise.

The Response to Iran's Nuclear Aims

Over the last four years, Iran has maintained an unwavering stance with regard to its nuclear program. Temporary suspensions of enrichment and reprocessing activities have been just that—temporary. Iran appears determined to achieve its stated goal of becoming a nuclear power.

Yet, the international community, led by the EU-3 (Britain, France, and Germany), often consulting with the U.S., China, and Russia, has offered Iran the opportunity to acquire peaceful nuclear energy for civilian purposes—to no avail. Iran rejected a far-reaching Western package of incentives that would not only have provided Iran with fuel guarantees, but also with civil nuclear reactors for peaceful nuclear energy.

Iran's refusal to adopt a strictly civil nuclear program underscores a central, lurking question: Why does Iran need nuclear energy at all, when it possesses large natural gas (the second largest in the world) and oil reserves?

In the face of Iran's resolute determination to become a military nuclear power, four principal approaches toward dealing with Iran have emerged in the international community: the sticks-and-carrots approach, the regime change approach, the military strike approach, and the fatalistic approach, which will be discussed in the following pages.

At the same time, the U.S. has attempted to persuade a number of international banks to stop financial dealings with Iranian banks and businesses tied to the regime.¹ To date, four major banks, Credit Suisse, UBS, HSBC, and ABN Amro, have announced curbs on dealings with Iranian banks and businesses.² Japan has also recently halted financing its \$10 billion worth of projects in Iran, mostly in the petrochemicals and gas industries.³

[1] Steven R. Weisman, "U.S. Pursues Tactic of Financial Isolation," *New York Times*, October 16, 2006.

[2] *Ibid.*

[3] Andy Critchlow and Will McSheehy, "Japan Freezes \$10 Billion Iran Loans on Nuclear Row," *Bloomberg.com*, www.bloomberg.com/apps/news?pid=20601101&sid=aozvxxZcaNSsg&refer=japan, November 22, 2006.

Sticks-and-Carrots Approach

The five permanent members of the UN Security Council and Germany have attempted to prevent Iran from obtaining the capacity to produce nuclear weapons by offering it a package of incentives for cooperation and penalties for intransigence.

The so-called stick-and-carrots approach combines the use of incentives for diplomatic cooperation with penalties for intransigence. “Sticks” in this case refer to economic and political sanctions; “carrots” refer to economic and political rewards and security guarantees.

As the IAEA has worked to verify Iran’s claims that its nuclear program is strictly civil in nature, this has been the primary approach used by leading world powers to persuade Iran to permanently freeze uranium enrichment. That diplomacy has taken on a sense of greater urgency over the last two years in light of alarming reports by the IAEA stating that it cannot rule out the possibility that Iran may be hiding a nuclear weapons program. While the specter of punitive sanctions against Iran has pervaded the talks since 2003, it was not until February 2006 and the IAEA’s referral of the Iran dossier to the UN Security Council that sanctions became a real possibility.

In June 2006, the U.S., China, Russia, France, U.K., and Germany offered Iran a comprehensive set of political and economic rewards in exchange for a freeze on enrichment and processing-related activities, a resumption of its responsibilities under the NPT’s Additional Protocol, and full cooperation with the IAEA.¹

[1] Sharon Squassoni, “Iran’s Nuclear Program: Recent Developments,” Congressional Research Service, www.fas.org/sgp/crs/nuke/RS21592.pdf, September 6, 2006.

Sticks-and-Carrots Approach

The political and economic incentives offered to Iran included building civil nuclear reactors, fuel supply guarantees, and membership in the World Trade Organization.¹ The proposal also included a breakthrough U.S. offer for direct participation in talks with Iran, reversing a nearly three-decades-old policy. Iran rejected the offer, refusing to accede to the enrichment clause.²

Without a means of guaranteeing that Iran would freeze enrichment, the Security Council passed Resolution 1696 on July 31, 2006, which demanded that Iran halt enrichment and reprocessing work within a month or face possible sanctions thereafter.³ On August 31, 2006, IAEA Director General Mohamed ElBaradei issued a report stating that Iran had neither “provided the necessary transparency” to clarify some of its activities nor had it suspended uranium enrichment.⁴ Since then, further negotiations, led by the EU’s Solana, have continued. Meanwhile, as mentioned previously, Iran continues its enrichment activities, getting ever closer to obtaining a nuclear weapons capability.

Permanent members of the Security Council have also failed to agree on a menu of political and economic sanctions for a variety of reasons, principally Russia’s objections, motivated by a combination of political and economic factors.



“The negative choice is for the regime to maintain its current course, pursuing nuclear weapons in defiance of the international community and its international obligations. The positive and constructive choice is for the Iranian regime to alter its present course and cooperate in resolving the nuclear issue.... The benefits of this second path for the Iranian people would go beyond civil nuclear energy, and could include progressively greater economic cooperation.”⁵

-- Condoleezza Rice, U.S. Secretary of State.

[1] Squassoni, “Iran’s Nuclear Program: Recent Developments.”

[2] Benny Avni, “Iran’s Rejection of Nuclear Offer Sets Stage for New Sanctions Push,” *New York Sun*, August 23, 2006.

[3] Warren Hoge, “U.N. Sets Aug. 31 Deadline for Iran to End Uranium Work,” *New York Times*, July 31, 2006.

[4] “Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran,” IAEA, August 31, 2006.

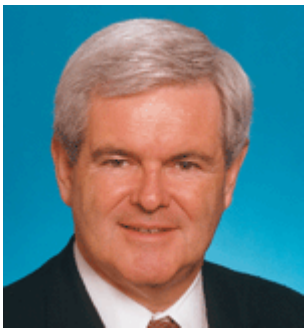
[5] Condoleezza Rice, Statement to the media, www.state.gov/secretary/rm/2006/67103.htm, May 31, 2006.

Regime Change Approach

Some observers see the overthrow of the current Iranian regime as the only way to prevent Iran from acquiring nuclear weapons. They are calling for the U.S. to hasten regime change through democracy promotion.

U.S. advocates of regime change in Iran advocate the use of U.S. resources to promote democracy in Iran, with the ultimate goal of creating a political alternative to the present regime. This approach is guided by the belief that the majority of the Iranian people are not loyal to Tehran, and would therefore be receptive to alternative political representation.

Newt Gingrich, former speaker of the House, supports this option, “democracy promotion,” albeit with much greater resources than the U.S. currently employs toward that end.¹ Amir Taheri, an Iranian-born journalist and prominent regime critic, made this same argument recently, calling for a “more robust American posture” so as to inspire regime change.²



“Our goal has to be to replace the current dictatorship. We should begin with a Reaganite strategy of helping organize every dissident group in Iran, dramatically expanding our information campaign into the country, applying diplomatic and economic pressure, but we cannot stop there. We certainly have to be prepared to use military force if necessary but only if these earlier efforts fail.”³

-- Newt Gingrich, former Speaker of the U.S. House of Representatives

[1] Newt Gingrich, “Lessons from the First Five Years of the War,” American Enterprise Institute, October 11, 2006.

[2] Amir Taheri, “Getting Serious About Iran: For Regime Change,” *Commentary*, November 2006.

[3] Gingrich, “Lessons from the First Five Years of the War.”

Regime Change Approach

The U.S. does not have an official policy of regime change toward Iran. However, the U.S. has taken a number of financial steps toward democracy promotion in the country, including aid packages for political party development, media development, labor rights, civil society promotion, and promotion of respect for human rights.¹ To that end, in 2006, the State Department asked Congress to allocate an additional \$75 million on top of the \$10 million already spent for democracy promotion in Iran, the bulk of which would fund U.S. broadcasting there.² Similarly, the Iran Freedom Support Act of 2006 states that U.S. policy should be to support the Iranian peoples' efforts to exercise self-determination, authorizing assistance for pro-democracy forces.³

*"Congress declares that it should be the policy of the United States to support efforts by the people of Iran to exercise self-determination over the form of government of their country, and to support independent human rights and peaceful pro-democracy forces in Iran."*⁴

-- H.R. 6198, Iran Freedom Support Act



*"We believe most Iranians are sympathetic to democratic values. They believe in respect for human rights. Many have taken courageous steps to advocate for freedom and justice. Still, it may be years before the Iranian people achieve the changes they want and deserve. Against this backdrop, the United States—through these [democracy promotion] programs, and through our diplomatic efforts—stands with the Iranian people."*⁵

-- Nicholas Burns, Under Secretary of State for Political Affairs

[1] Kenneth Katzman, "Iran: U.S. Concerns and Policy Responses," Congressional Research Service, <http://fpc.state.gov/documents/organization/67845.pdf>, June 2, 2006.

[2] Ibid.

[3] H.R. 6198, Iran Freedom Support Act, www.govtrack.us/data/us/bills.text/109/h/h6198.pdf. [4] Ibid.

[5] Nicholas Burns, "Responding to Iran's Nuclear Ambitions: Next Steps," Testimony to Senate Foreign Relations Committee, www.senate.gov/~foreign/testimony/2006/BurnsTestimony060919.pdf, September 19, 2006.

Military Strike Approach

In the event that diplomacy does not prevent Iran from gaining nuclear weapons, some see a bombing campaign against Iran's nuclear facilities as a last resort.

The military strike approach entails aerial sorties against Iranian nuclear facilities. The goal of such a strike would be to severely damage Iran's nuclear program, thus delaying the completion of the nuclear fuel cycle and giving the regime pause about rebuilding the program. Some commentators have also called for coupling a military strike on Iran with regime change.

Whereas a full-scale military assault on Iran is unlikely, due to the difficulty of executing the mission, the potential collateral consequences of attacking Iran, and a dearth of available troops, U.S. war planners have considered a major air campaign on Iranian nuclear facilities, according to multiple published reports. Critics, however, have pointed to the fact that Iran has scattered its nuclear installations across the country, sometimes building heavily-fortified facilities deep underground. Some analysts say that not only could these targets not be fully destroyed, but that there may be other hidden, undiscovered sites. One leading Iranian expert, Kenneth Pollack, has suggested considering a bombing campaign—*but* only in the event that extended diplomacy and sanctions do not deter Iran from acquiring nuclear weapons.¹

*"Finally, and only as part of a new containment of Iran, the United States should look hard at the possibility of waging a targeted air campaign intended to destroy Iran's nuclear facilities and so set back the entire program."*²

-- Kenneth Pollack, Director of Research, Saban Center for Middle East Policy at the Brookings Institution

[1] Kenneth Pollack, "The Threat from Iran," Testimony to the House Armed Services Committee, www.brook.edu/views/testimony/pollack/20050929.pdf, September 29, 2006.

[2] Ibid.

Military Strike Approach

Other experts, like Joshua Muravchik of the American Enterprise Institute, see a bombing campaign against Iran's nuclear facilities as inevitable.¹ Michael Oren of the Shalem Center argues that, in the absence of an "international commitment" to stop Iran from acquiring nuclear weapons, Israel has "no choice but to consider striking pre-emptively."²

Some European officials, including EU foreign policy chief Javier Solana and former UK Foreign Secretary Jack Straw, have publicly opposed a military strike on Iran.³ The U.S., on the other hand, has asserted that, while it is committed to diplomacy, all options—including the military one—are on the table.

In light of Ahmadinejad's threat to destroy Israel, which Israel views as existential in nature, and Israel's past success in destroying the Iraqi nuclear reactor in Osirak, some have speculated that Israel might take preemptive action against Iran's nuclear program. For its part, Israel has said throughout the standoff that Iran threatens not only Israel but the entire world, necessitating a collaborative, diplomatic response by the international community. Still, Israel has not taken the military option off the table. Some experts question, however, whether Israel has the capability of launching strikes against Iran given the enormous military and logistical obstacles involved in such strikes.



*"I am not advocating an Israeli preemptive military action against Iran, and I am aware of all of its possible repercussions. I consider it a last resort. But even the last resort is sometimes the only resort."*⁴

-- Ephraim Sneh, Israeli Deputy Defense Minister

[1] Joshua Muravchik, "Operation Comeback," *Foreign Policy*, November/December 2006.

[2] Michael Oren, "Abba Olmert," *Wall Street Journal*, November 16, 2006.

[3] "Talk of Military Action in Iran Standoff," Associated Press, January 21, 2006.

[4] Gil Hoffman and Sheera Claire Frenkel, "Sneh: IDF Must Be Ready to Stop Iran," *Jerusalem Post*, November 10, 2006.

Fatalistic Approach

A minority view holds that the West should allow Iran to acquire nuclear weapons.

The fatalistic approach holds that when a country's leadership is so committed to a stated goal, the international community cannot or should not intervene. To date, no Western governments have expressed support for Iran acquiring a nuclear weapon. However, that sentiment has found expression in some quarters, on the grounds that Iran has the right to self-defense, or, alternatively, that the price of trying to stop the program would be too high or unpredictable in its consequences. Others assert that it would be foolish for Iran to use a nuclear weapon, because of the likely devastating retaliatory strikes that would occur as a result.

For example, former *Nightline* host Ted Koppel argued in a *New York Times* op-ed that the U.S. should not try to stop Iran from acquiring a nuclear weapon; only the use of a nuclear weapon by Iran, according to Koppel, would warrant a U.S. military response.¹ In an April 5, 2006 speech on the House floor, Representative Ron Paul (R-TX) appeared to support the fatalistic approach when he questioned the wisdom of the U.S. intervening to stop Iran from acquiring nuclear weapons.² MIT professor Barry Posen extends this argument, asserting that because geostrategic choices will almost certainly prevent Iranian nuclear aggression, the West can "readily mangle" a nuclear-armed Iran.³



"What, then, can the United States do to prevent Iran from developing nuclear technology? Little or nothing. Washington should instead bow to the inevitable....If Iran is bound and determined to have nuclear weapons, let it."⁴

-- Ted Koppel, former *Nightline* host



"If Iran had a nuclear weapon, why would this be different from Pakistan, India, and North Korea having one? Why does Iran have less right to a defensive weapon than these other countries?"⁵

-- Congressman Ron Paul (R-TX)

[1] Ted Koppel, "An Offer Tehran Can't Refuse," *New York Times*, October 2, 2006.

[2] Ron Paul, "Iran: The Next Neocon Target," <http://www.house.gov/paul/congrec/congrec2006/cr040506.htm>, April 5, 2006.

[3] Barry R. Posen, "We Can Live with a Nuclear Iran," *New York Times*, February 27, 2006.

[4] Koppel, "An Offer Tehran Can't Refuse."

[5] Paul, "Iran, The Next Neo-Con Target."

A Technical Guide to Iran's Nuclear Program

Iran's reported nuclear weapons program involves the use of two naturally occurring elements, uranium and plutonium. In terms of infrastructure, Iran's program is largely uranium-based, but the regime does appear to be pursuing a second, plutonium-based track. In fact, as we will discuss, both tracks are likely related.

The process of converting uranium for both civil and military purposes is nearly identical—a façade that Iran has used to hide its true intentions. There are seven stages before uranium can be transformed into the fissile material necessary for a nuclear weapon; Iran is believed to be more than halfway through these stages.

First, uranium ore is mined from soil. Iran mines uranium ore at sites in Anarak, Saghand, and Gchine. Uranium is then separated from other materials present in uranium ore with sulphuric acid, and dried out to produce solid “yellowcake.” Iran has both imported yellowcake, as well as produced it in its own mining facilities.¹ Next the yellowcake is converted into a gas that can be enriched. At a plant in Isfahan, there is reportedly enough uranium for a dozen or more nuclear weapons.² This enrichment, conducted with fast-spinning centrifuges, is necessary to increase the fraction of isotope U-235, which is collected and made into nuclear fuel. Weapons-grade uranium requires a concentration of about 90 percent U-235. Low levels of enriched uranium are used to manufacture nuclear energy for peaceful purposes. At a facility in Natanz, Iran currently has a 164-centrifuge cascade, but has plans to install a 54,000-centrifuge cascade.³

Iran's centrifuge technology is of the P-1 variety, but Iran is conducting research on the P-2 model, up to four times as fast.⁴

[1] “Nuclear Status: Iran's Path to the Bomb,” AIPAC, www.aipac.org/iran/nuclear_status/nuclear_sites.html.

[2] Ibid.

[3] “Recognizing Iran as a Strategic Threat: An Intelligence Challenge for the United States,” House Permanent Select Committee on Intelligence, <http://intelligence.house.gov/Media/PDFS/IranReport082206v2.pdf>, August 23, 2006.

[4] Ibid.

A Technical Guide To Iran's Nuclear Program

Iran is currently at the enrichment stage, presenting the West and moderate Arab and Muslim states with a daunting dilemma. Once Iran has completed the fuel cycle—the ability to enrich weapons-grade uranium—it has two options for developing nuclear weapons.

It can convert the highly enriched uranium gas into a solid and mold the uranium into a spherical nuclear warhead to be delivered on a ballistic missile. Iran can also use uranium in the form of uranium-filled fuel rods to operate a nuclear reactor to produce peaceful energy, producing plutonium in the process. The plutonium can then be extracted from the spent fuel rods, and used to form the core of a nuclear warhead in a process called reprocessing spent fuel. Thus uranium is both the means to a nuclear warhead on its own, as well as the means to producing a plutonium-based warhead. At its light-water plant under construction in Bushehr, Iran apparently has the plutonium warhead track in mind, and may eventually be able to produce enough weapons-grade plutonium for 30 nuclear bombs.¹ At its planned heavy-water reactor in Arak, Iran hopes to bypass the enrichment step and simply extract plutonium from the spent fuel rods.²

The timetable for Iran producing nuclear weapons is debated by different intelligence agencies, with ranges varying from 2008 through the middle of the next decade, but what is not in dispute among these agencies is Iran's intentions.³



*"The estimate that we have made is that somewhere between 2010 and 2015 is when we judge Iran is likely to have a nuclear weapon if it continues on its current course."*⁴

--John Negroponte, Director of National Intelligence

[1] "Recognizing Iran as a Strategic Threat: An Intelligence Challenge for the United States," House Permanent Select Committee on Intelligence.

[2] "Nuclear Status: Iran's Path to the Bomb," AIPAC.

[3] "Nuclear Weapons- Western Assessments," GlobalSecurity.org, www.globalsecurity.org/wmd/world/iran/nuke3.htm.

[4] John Negroponte, Interview with Voice of America, www.dni.gov/interviews/20061003_interview.pdf, October 3, 2006.

Timeline of Iran's Nuclear Development

1957: Iran and the U.S. sign a civil nuclear cooperation agreement as part of the Atoms for Peace program, launching Iran's nuclear energy program.

1975: A German firm signs a contract with Iran to build a pressurized water nuclear reactor, the first nuclear plant in Iran.

1979: The Iranian Revolution brings an end to U.S. cooperation with Iran over its nuclear program, ushering in a period of clandestine activity.

2002: The National Council of Resistance of Iran, an Iranian dissident group, reveals the existence of the nuclear program; Natanz is the site of two nuclear plants: a pilot enrichment plant and a massive fuel enrichment plant.

December 2003: After much U.S. pressure, Iran signs the Additional Protocol to the Nuclear Non-Proliferation Treaty, allowing for tougher IAEA oversight of its nuclear program.

January 2004: Pakistani investigators expose black market activities by two senior nuclear scientists to supply nuclear weapons technology to Iran.

February 2004: The IAEA finds that Iran has experimented with the use of polonium, a radioactive metallic substance that can be used to trigger a nuclear blast.

August 2005: Ahmadinejad becomes president of Iran, and announces plans to resume nuclear enrichment. In breach of an agreement with the European Union, Iran resumes uranium conversion.

Timeline of Iran's Nuclear Development

September 2005: At the UN General Assembly, Ahmadinejad threatens to share nuclear technology with other Muslim and Arab states.

January 2006: Iran breaks IAEA seals at three nuclear facilities, ending a voluntary suspension of activities reached with the EU-3 in 2003.

February 2006: After repeated violations of agreements and obfuscation of its nuclear dealings, the IAEA reports Iran to the UN Security Council.

March 2006: On the heels of an IAEA report stating that aspects of Iran's nuclear program could have a military dimension, the UN Security Council approves a presidential statement demanding Iran suspend enrichment-related and reprocessing activities.

April 2006: After foreswearing such activity in 2003, Ahmadinejad announces that Iran is conducting research on P-2 centrifuges, a faster model than its operating P-1 centrifuges.

July 2006: The Security Council adopts Resolution 1696, setting a one-month deadline for Iran to halt its nuclear program.

August 2006: Defying Resolution 1696, Iran, according to an IAEA report, continues to enrich uranium.

November 2006: An IAEA report finds unexplained and unreported traces of plutonium in a nuclear waste facility.

November 2006: The permanent members of the Security Council are locked in a stalemate over the passage of a sanctions resolution against Tehran.

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