

Scorecard for the Final Deal with Iran

JINSA's Gemunder Center Iran Task Force

Co-Chairs Ambassador Eric Edelman and Ambassador Dennis Ross
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Overview

On April 2 the United States and its international partners (known as the “P5+1”) and Iran announced a framework agreement in Lausanne, Switzerland, on Iran’s nuclear program. That same day, the White House released a public factsheet on the parameters of this agreement.¹ Based on this factsheet, JINSA’s Gemunder Center Iran Task Force released a brief report raising over 40 questions on important issues that needed to be addressed in a final deal, including: stockpiles, enrichment capacity, research and development (R&D) activities, verification, sanctions relief, possible military dimensions (PMD) of Iran’s nuclear program and the timeline for the deal’s sunset.

In Vienna on July 14, the P5+1 and Iran agreed on a final deal, formally known as the Joint Comprehensive Plan of Action (JCPA). This report analyzes whether the JCPA addresses the Task Force’s questions and concerns about the framework agreement. Overall, the JCPA rolls back Iran’s breakout time and allows for broader verification, but only in exchange for: key restrictions being removed in 5-15 years; R&D on advanced centrifuges; front-loaded sanctions relief – including up to \$150 billion in unfrozen assets – with no automatic “snapback” mechanism; an end to the U.N. arms embargo against Iran; and no anytime, anywhere inspections.

Sunset

What justifies the expiration of a comprehensive agreement, absent proof Iran has abandoned its illegal nuclear weapons program and its role as a driving force for international terrorism and instability?

- White House Factsheet: Beyond the 10-year sunset on enrichment, Iran would abide by a plan “resulting in certain limitations on enrichment capacity,” and “non-nuclear” U.S. sanctions would remain in place.

Joint Comprehensive Plan of Action (JCPA)

- Iran could begin ramping up latent enrichment capacity after 8.5 years, and limitations on enrichment capacity would expire after 15 years.
- Termination of existing UNSCRs would lift the embargo on transfers of arms and sensitive technology to and from Iran.
 - o The arms embargo on conventional weaponry expires after 5 years.
 - o Restrictions on the transfer of ballistic missile technology expire after 8 years.

Analysis

- The deal would essentially legitimize Iran as a threshold nuclear state after the sunset.
- There are no clear mechanisms that would remain after the sunset to ensure Iran adheres to its NPT obligations and is unable to develop nuclear weapons capability.

Pathway to a Bomb: Uranium

What happens to Iran's low-enriched uranium (LEU) stockpiles, and what are the implications?

- White House April Factsheet: Iran's stockpile would not exceed 300 kilograms (kg) of 3.67 percent LEU for 15 years.

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- Iran's 300 kg working stockpile would be kept at Natanz.
- Excess LEU stockpiles would be transferred abroad, diluted to no more than 3.67 percent LEU or fabricated into fuel plates for the Tehran Research Reactor (TRR).
 - Any stockpiles transferred abroad would be exchanged for equivalent amounts of natural (0.7 percent unenriched) uranium, which could be enriched to LEU.
- Iran will not maintain LEU in oxidized form beyond this limit, which could be reconverted relatively easily for further enrichment.

Analysis

- Stockpile size and enrichment level are major determinants of breakout time, so reducing this from the current 10,000 kg to 300 kg of 3.67 percent LEU – less than enough, with further enrichment, for a bomb – could increase Iran's breakout time well beyond one year.
- The 300 kg limit does not include 3.67 and 20 percent oxide stockpiles Iran is allowed as fuel for its Arak heavy water reactor and for the TRR, respectively.
 - Iran already has a facility that can reconvert oxide for further enrichment, which would reduce its breakout time.
 - Iran would be on the working group monitoring its own 3.67 percent oxide stockpiles.
- Iran's large and growing natural uranium stockpiles could grow even further.
 - It already possesses multiple nuclear weapons' worth of this material.
 - Iran is permitted to build additional yellowcake production and uranium conversion facilities, even though its existing natural uranium stockpiles already exceed the amount required for its enrichment plan under the JCPA.
 - This would not affect breakout time, yet would enlarge Iran's enrichment capacity at the sunset of a deal – when its centrifuges could be much more efficient – and/or if it chose to cheat.
- There is no explanation how any 3.67 percent LEU over the 300 kg limit produced during the deal will be promptly rendered unsuitable for further enrichment.
- After 15 years, Iran would have no limits on stockpile size or enrichment level.

Would Iran be allowed R&D activities on centrifuges?

- President Obama said on December 7, 2013, "They don't need some of the advanced centrifuges that they currently possess in order to have a limited, peaceful nuclear program."²

- White House April Factsheet: For 10 years, Iran will engage in “limited” R&D on advanced centrifuges to ensure a breakout time of one year.

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- Iran can conduct enrichment R&D with uranium in advanced centrifuges at Natanz.
 - It can test a 10-machine IR-4 cascade and one IR-5 centrifuge from the start of the deal.
 - After 8.5 years, it can begin testing IR-6 and IR-8 cascades, and can begin mass-producing parts for these machines.
 - After 10 years, it can mass-produce any centrifuges it chooses.
- Iran is also permitted R&D at Fordow, using elements other than uranium.

Analysis

- There is no parameter for R&D on IR-2m centrifuges.
 - Iran has already installed over 1,000 of these machines in cascades, which could be five times as productive as the IR-1.
- R&D, in particular on advanced centrifuges in cascades using uranium, could allow Iran to significantly improve centrifuge efficiency, thereby underscoring the fear recognized by President Obama “that in year 13, 14, 15, they have advanced centrifuges that enrich uranium fairly rapidly, and at that point the breakout times would have shrunk almost down to zero.”³

Would Iran close its illegal Fordow enrichment facility?

- President Obama said on December 7, 2013, “We know that they don’t need to have an underground, fortified facility like Fordow in order to have peaceful nuclear program.”
- White House April Factsheet: Fordow would remain open as an R&D facility with 1,044 IR-1 centrifuges, but no uranium enrichment for 15 years.

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- Ten of the existing cascades and their centrifuges will be disassembled and stored at Natanz; of the other six cascades (1,044 IR-1 centrifuges):
 - Two (348 IR-1 centrifuges) will be modified for non-radioactive medical or industrial isotope production, with cascade tubing disassembled.
 - Four will remain assembled *in situ* as replacement parts for the two in operation.
- No fissile material will be allowed at Fordow for 15 years.

Analysis

- It is unclear if the modifications to produce “stable isotopes” would prevent these centrifuges from being converted back to uranium enrichment.
- Even by the JCPA’s parameters, Iran does not need to retain four fully-assembled cascades.

- o The tubes interconnecting centrifuges would not be used as spare parts for the operating centrifuges, whose cascade tubing must be disassembled.
- o This would allow Iran to retain unnecessary latent enrichment capacity.
- After 15 years, Iran would have no limits on enrichment at Fordow.

What other restrictions would be placed on Iran’s enrichment capacity?

- Secretary of State John Kerry said on December 7, 2013, “There is no right to enrich. We do not recognize a right to enrich. It is clear, in the NPT [Non-Proliferation Treaty], it’s very, very [clear] that there is no right to enrich. [...] a peaceful nuclear program does not mean you have the right to enrich.”⁴
- White House April Factsheet: For 10 years, enrichment will be limited to ensure breakout time of at least one year.

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- For 10 years, 30 cascades (5,060 IR-1 centrifuges) will operate at Natanz.
- All remaining cascades will be disassembled and placed under on-site IAEA continuous monitoring:
 - o 24 cascades (4,096 IR-1 centrifuges) currently operating;
 - o 36 additional IR-1 (6,264 centrifuges) and six IR-2m (1,008 centrifuges) cascades, none of which were operating.
 - o Iran can replace broken centrifuges with IR-1 machines in IAEA storage.
- No new enrichment facilities for 15 years.

Analysis

- Uninstalled enrichment infrastructure would not be under physically remote IAEA lock and key, but rather remain in Iranian nuclear facilities with IAEA oversight.
- Iran would not be required to destroy any excess infrastructure, including IR-2m centrifuges whose installation is prohibited under a comprehensive agreement.
- After 10 years, Iran will be able to begin installing and operating up to approximately 50,000 centrifuges at Natanz – more than five times the current amount – including advanced machines made far more efficient by the enrichment R&D and centrifuge manufacturing plans permitted under the JCPA.
- After 15 years, Iran is permitted to build as large an industrial nuclear program as it chooses.

Pathway to a Bomb: Plutonium

Would Iran shut down permanently its heavy water reactor at Arak and end all fuel production?

- President Obama said on December 7, 2013, “They certainly don’t need a heavy-water reactor at Arak in order to have a peaceful nuclear program.”⁵
- Secretary Kerry said on December 10, 2013: “From our point of view, Arak is unacceptable. You can’t have a heavy water reactor.”⁶

- White House April Factsheet:
 - The existing Arak reactor core would be destroyed or removed from Iran, and replaced according to a design “agreed to by Iran and the P5+1.”
 - Iran would “indefinitely” ship out all spent fuel, and would commit to no spent-fuel reprocessing or reprocessing R&D.
 - No new heavy water reactors for 15 years.

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- Arak will remain a heavy water reactor, with the power output halved from that of the existing design (on which construction was paused by the interim agreement).
 - The existing reactor core will be destroyed, and the reactor redesigned and rebuilt by Iran.
 - The redesigned reactor “will be such as to minimize the production of plutonium and not to produce weapon-grade plutonium in normal operation.”
 - After the initial core load, Iran will produce all fuel for the reactor.
- All spent fuel will be shipped out for the lifetime of the redesigned Arak reactor, and for all present and future nuclear power and research reactors.
- For 15 years, no spent fuel reprocessing.
 - However, reprocessing R&D is permitted for medical and industrial purposes.
- For 15 years, no new heavy water reactors or accumulation of heavy water stocks.

Analysis

- The reactor is not being converted to use light water.
 - Though the reactor redesign is not yet agreed, the JCPA does not stipulate how this reactor would be unable to produce weapon-grade plutonium.
 - The JCPA does not define the reactor’s “normal operation,” nor how the IAEA will verify such operation does not produce weapon-grade plutonium.
 - A light water reactor – the type Iran says it needs for medical isotopes – would produce far less fissile material.
- Iran will be permitted to produce fuel for the reactor using LEU, but this will not count against its 300 kg LEU stockpile limit.
 - Iran obtains fuel for its existing light water reactor at Bushehr from Russia.
 - Safeguards are needed against Iran stockpiling LEU as “reactor fuel.”
- Iran is also permitted to conduct reprocessing R&D.
 - The IAEA must be able to verify these activities would not contribute to the ability to reprocess spent fuel for a nuclear device after the sunset.
 - The justification for these activities is unclear, since the TRR was already built for such purposes and the P5+1 agreed to supply Iran the necessary fuel.
- Iran’s Heavy Water Production Plant will remain open, even though – according to the agreement – Iran will export its existing excess heavy water stocks for 15 years.
- After 15 years, Iran can build new heavy water reactors capable of producing multiple weapons’ worth of fissile material annually.
 - Heavy water reactors are not included in the provision for shipping out spent fuel from “all future and present nuclear power and research reactors.”

PMD and Ballistic Missiles

Would a comprehensive agreement be predicated on resolving all current PMD issues to the IAEA's satisfaction, and on halting work on delivery vehicles?

- Under Secretary of State and U.S. negotiator Wendy Sherman said on February 4, 2014, "...we have not shut down all of their production of any ballistic missile that could have anything to do with delivery of a nuclear weapon, but that is, indeed, going to be part of something that has to be addressed as part of a comprehensive agreement."⁷
- Secretary Kerry said on April 8, 2015, "They have to do it [disclose past military-related nuclear activities]. It will be done. If there's going to be a deal; it will be done."⁸
- White House April Factsheet: Iran would implement an agreed set of measures to address PMD concerns.

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- Iran will fully implement the "Roadmap for Clarification of Past and Present Outstanding Issues" agreed with the IAEA.
 - Implementation will be complete by October 15, 2015.
 - The IAEA will issue its assessment of Iran's implementation by December 15, 2015, after which the P5+1 will move to close the issue.
- No weaponization activities, including R&D.
- All relevant U.N. Security Council resolutions (UNSCR) will be terminated on implementation of the deal.
 - This includes legally-binding UNSCR 1929 (2010) prohibiting Iran from undertaking activities related to nuclear-capable ballistic missiles, including launches using ballistic missile technology.

Analysis

- The IAEA's verification of the Roadmap could be limited by the fact its requests for access "will not be aimed at interfering with Iranian military or other national security activities."
 - Among other sites, inspectors would need access to the Parchin military site where Iran is believed to have conducted testing on how to detonate a nuclear weapon (despite this location not being mentioned in the JCPA).
 - This will also be a concern for detecting possible future weaponization activities.
- The JCPA's verification and monitoring regime would need to be updated to reflect the IAEA's assessment of the extent of Iran's weaponization activities.
 - The IAEA's ambit under the JCPA was devised prior to resolving the PMD portfolio, and thus without complete knowledge of Iran's nuclear-related activities.

Verification

Would inspectors be able to detect any possible violations promptly and indisputably?

- Deputy National Security Adviser Ben Rhodes said on April 6, 2015, “In the first place we will have anytime, anywhere access [to] the nuclear facilities ... the whole supply chain.”⁹
- Secretary of Energy Ernest Moniz said on April 20, 2015, “We expect to have anywhere, anytime access.”¹⁰
- White House April Factsheet: Iran would implement the IAEA Additional Protocol, as well as the Modified Code 3.1 (supplement to its original IAEA Safeguards Agreement).

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- Iran will ratify the Additional Protocol and implement Modified Code 3.1 permanently.
 - For 20 years, containment and surveillance of centrifuge components.
 - For 25 years, monitoring of uranium ore concentrate plants.
- Disassembled excess enrichment infrastructure will be stored under IAEA surveillance at Iran’s declared nuclear facilities.
- For 15 years, “a reliable mechanism to ensure speedy resolution of IAEA access concerns” will be put in place.

Analysis

- Iran apparently will not be required to submit a complete declaration of its nuclear program, past and present.
- The Additional Protocol and JCPA would require Iran to declare much more of its past and present nuclear program, but do not grant anytime/anywhere inspections for the IAEA to verify even this limited declaration.
 - The IAEA “will provide Iran the basis for concerns” regarding undeclared activities or activities inconsistent with the JCPA, to which Iran may propose “alternative means” to allowing access.
 - This could initiate a weeks-long dispute resolution process under the JCPA, during which Iran could potentially conceal evidence of undeclared activities.
- Inspectors would not have unrestricted access to suspected nuclear-related military sites, including IRGC and IRGC-Quds Force installations, nor to all relevant Iranian documentation or personnel and decision-makers with knowledge of or involvement in developing Iran’s nuclear program.
 - This is interrelated to remaining concerns about PMD.
 - Access to relevant military sites would be paramount after the termination of all U.N. sanctions against Iran’s ballistic missile program.
- It is unclear how containment and surveillance measures at Natanz and Fordow would assure the IAEA that Iran was not accumulating excess LEU stockpiles or using R&D activities to enrich uranium.

Enforcement

What would be the extent and timing of sanctions relief, and could they be re-imposed?

- Obama said on October 22, 2012, “Our goal is to get Iran to recognize it needs to give up its nuclear program and abide by the U.N. resolutions that have been in place.”¹¹
- Sherman said on December 12, 2013, “We have said that this agreement pertains only to new nuclear-related sanctions in terms of what we, the European Union and the UNSC will forego.”¹²
- Kerry said on March 3, 2014, “Iran is not open for business until Iran is closed for nuclear bombs.”¹³
- White House April Factsheet: U.S., E.U. and U.N. sanctions would be lifted in exchange for Iranian compliance with the provisions of a comprehensive agreement.
 - The architecture of U.S. nuclear-related sanctions on Iran will be retained for much of the deal and allow for snapback.
 - U.S. sanctions on Iran for terrorism, human rights abuses and ballistic missiles will remain in place.

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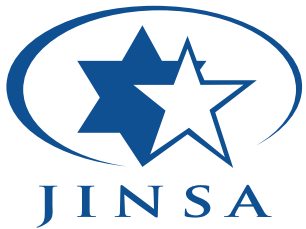
- Once the IAEA verifies Iran has implemented its JCPA obligations:
 - The United States and European Union will terminate “nuclear-related” sanctions.
 - A new UNSCR endorsing the JCPA terminates existing U.N. sanctions.
- The UNSC, United States and European Union will not re-impose existing or pass new nuclear-related sanctions, otherwise Iran may “cease performing its JCPA commitments in whole or in part.”

Analysis

- The difference between “nuclear-related” and other sanctions is unclear, since the JCPA entails the termination of existing sanctions against Iran.
 - Almost all U.S. sanctions are tied to Iran’s human rights abuses, ballistic missile program and support for terrorism, in addition to its nuclear program.
 - Similarly, U.N. sanctions target Iran’s conventional military and WMD programs and proliferation, not just its nuclear program.
- The P5+1’s leverage to compel Iranian compliance with the JCPA will diminish drastically if all sanctions – especially those against Iran’s energy, industrial and financial sectors – are terminated upon implementation of the deal.
- Iranian assets currently frozen in overseas escrow accounts – an estimated \$100-\$150 billion – would be repatriated.
- Iran’s ability to cease its compliance with the JCPA in response to the re-imposition of sanctions negates the agreement’s “snapback” mechanism.
- The JCPA’s lengthy dispute-resolution mechanism could allow Iran to delay timely and effective detection and response to any non-compliance.
- The superseding UNSCR does not give legal authority under Chapter VII for enforcement action against any material breach by Iran of the JCPA.

Endnotes

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