



Statement by the Institute for Science and International Security on Sanctions, the Coronavirus, and the Need to Verifiably Dismantle Iran's Uranium Enrichment Program

by David Albright, President

Iran's uranium enrichment program provides, by itself, a major justification for continued U.S. and international sanctions. A snapback of sanctions under the Joint Comprehensive Plan of Action is fully justified today.

April 27, 2020

If Iran today wants a serious discussion about sanctions relief, it should start by abandoning the key threat Tehran poses to international peace and security: its uranium enrichment program. Instead, Iran holds its own people hostage over the deadly coronavirus outbreak in a cynical campaign for wholesale sanctions relief. Pakistan's leader Zulfikar Ali Bhutto famously said, "We will eat grass, even go hungry," to get an atomic bomb; Iran's leaders appear similarly willing to sacrifice their own people, to let them die of a virus in unnecessarily high and shocking numbers, to refuse offered medical aid, to suffer immense economic deprivation, to grow an economically nonviable, menacing uranium enrichment program. That alone should lead all to consider just what is the real purpose of Iran's enrichment program.

Coronavirus Aid Not the Issue

Iran should certainly receive international medical aid and humanitarian assistance to fight the coronavirus, particularly given the immense suffering caused by the coronavirus and the Iranian government's botched handling of the outbreak. However, because U.S. sanctions allow for such assistance, these sanctions should not be suspended or removed. The sanctions are tied to Iran's past and present deceit about its nuclear program, its clandestine efforts to develop nuclear weapons, its on-going development of missiles, and its on-going odious, destabilizing behavior in the region.

The United States should make clear that sanctions will continue in their present form absent the verifiable dismantlement of Iran's centrifuge uranium enrichment program; they will grow as Iran continues to expand its enrichment program beyond that allowed under the Joint Comprehensive Plan of Action (JCPOA). Iran's enrichment program is in equal measure uneconomic, unnecessary for Iran's civilian nuclear program, and unusually threatening to regional and international security.

Iran's Uranium Enrichment Program--Pathway to Nuclear Weapons

Today, the threat posed by Iran's centrifuge program can be seen by the decrease in the time Iran needs to "break out" and produce enough weapon-grade uranium for a nuclear weapon.¹ As of late last year, it was about six to ten months. Now, following an expansion, it is three to four months. Despite the coronavirus, Iran is still expanding its centrifuge program, decreasing breakout times further, by the month.

When Washington announced its decision in May 2018 to stop participating in the JCPOA and reimpose U.S. sanctions, the State Department issued a series of demands on Iran, covering everything from its nuclear program to missiles and regional aggression.^{2,3} One condition for future respite was the verifiable zeroing out of Iran's uranium enrichment program. Typically, such a request has been seen as beyond what Tehran would accept, and we at the Institute initially joined in that skepticism. After all, the Iran nuclear accord was designed at Iran's insistence, and the West's begrudging acceptance, to provide a path for the international legitimization of this enrichment capability.

At the core of the JCPOA was an agreement to reduce, temporarily, Iran's gas centrifuge program and enriched uranium stocks for eight to ten years. Afterwards, the deal would allow Iran to build up its centrifuge program again, this time with more advanced centrifuges, ultimately accepting breakout times of weeks or even days, a status that would require great faith in Iran not breaking out and dashing to nuclear weapons.⁴

Based on its past behavior, who can really place such faith in Iran? The administration certainly does not, believing that Iran likely harbors ulterior motives, or at least the desire to maintain the option, to misuse its enrichment program to produce weapon-grade uranium for nuclear weapons. The nuclear conditions in the JCPOA, if allowed to run out, simply become a roadmap for Iran to choose its own breakout time, when there is little chance of being detected while producing enough weapon-grade uranium for nuclear weapons.

Undermining any such faith further, revelations in a vast "Nuclear Archive," seized by Israel from a warehouse in Tehran in early 2018 show that Iran has a substantial leg up if it wants to build missile-deliverable nuclear warheads. This archive makes clear that before 2004 Iran had a substantial nuclear weapons program, instituting plans to build five nuclear weapons and an

¹ David Albright and Sarah Burkhard, "Iranian Breakout Estimates and Enriched Uranium Stocks," *Institute for Science and International Security*, April 21, 2020, <https://isis-online.org/isis-reports/detail/iranian-breakout-estimates-and-enriched-uranium-stocks>

² Mark Landler, "Trump Abandons Iran Nuclear Deal He Long Scorned," *The New York Times*, May 8, 2018, <https://www.nytimes.com/2018/05/08/world/middleeast/trump-iran-nuclear-deal.html>

³ Michael R. Pompeo, Secretary of State, "After the Deal: A New Iran Strategy" (speech, Washington, DC.: The Heritage Foundation, May 21, 2018). <https://www.state.gov/after-the-deal-a-new-iran-strategy/>

⁴ "Iran's Long-Term Centrifuge Enrichment Plan: Providing Needed Transparency," *Institute for Science and International Security*, August 2, 2016, <https://isis-online.org/isis-reports/detail/irans-long-term-centrifuge-enrichment-plan-providing-needed-transparency/8>

underground nuclear test site.⁵ As part of its effort, it was building the deeply buried Fordow enrichment plant to make weapon-grade uranium for its nuclear weapons.⁶ Iran reduced its nuclear weapon program only because of outside pressure, including the threat of a U.S. military strike, not because it came to oppose nuclear weapons. To the contrary, memoranda of secret meetings among senior Iranian officials in late 2003 indicate a plan to continue and better hide key aspects of the nuclear weapons program.⁷

Iran has never come clean about that program, nor has evidence emerged that the program ever was abandoned. Instead, Tehran resists pressure to open its past to international inspections.⁸ Today, Iran is simply refusing to allow the International Atomic Energy Agency (IAEA) to inspect key sites, facilities that the IAEA found held undeclared uranium and were part of its nuclear weapons program, all spelled out in detail in the Nuclear Archives and confirmed by IAEA environmental sampling and its own investigations.⁹ As a result, despite several years of the JCPOA, international inspectors have reported quarterly that they still cannot determine whether Iran's nuclear program is peaceful.¹⁰ It is now clear to all, despite IAEA access to any site in Iran being a necessity, even an IAEA right and mandate, unimpeded IAEA inspections of key military sites have never been achieved, with or without the JCPOA.

With Iran refusing inspections critical to the IAEA answering questions concerning the intent and extent of Iran's capabilities to build nuclear weapons, it is long past time to end this charade that somehow Iran's centrifuge program is justified, or somehow legitimized by the JCPOA.

Setting aside the military risk, Iran's commercial centrifuge program is a failure; any other country would have cancelled it by now if it were judged solely on economic, civilian grounds.

⁵ David Albright, Olli Heinonen, and Andrea Stricker, "The Plan: Iran's Nuclear Archive Shows it Planned to Build Five Nuclear Weapons by mid-2003," *Institute for Science and International Security*, November 20, 2018, <https://isis-online.org/isis-reports/detail/the-plan-irans-nuclear-archive-shows-it-originally-planned-to-build-five-nu/8>

⁶ David Albright, Frank Pabian, and Andrea Stricker, "The Fordow Enrichment Plant, aka Al Ghadir - Iran's Nuclear Archive reveals Fordow was built originally to make weapon- grade uranium for 1-2 nuclear weapons per year," *Institute for Science and International Security*, April 25, 2019, <https://isis-online.org/isis-reports/detail/summary-of-report-the-fordow-enrichment-plant-aka-al-ghadir-1/8>

⁷ David Albright, Olli Heinonen, and Andrea Stricker, "Breaking Up and Reorienting Iran's Nuclear Weapons Program - Iran's Nuclear Archive Shows the 2003 Restructuring of its Nuclear Weapons Program, then called the AMAD Program, into Covert and Overt Parts," *Institute for Science and International Security*, October 29, 2018, <https://isis-online.org/isis-reports/detail/breaking-up-and-reorienting-irans-nuclear-weapons-program/8>

⁸ Parisa Hafezi, "Iran rejects U.S. demand for U.N. visit to military sites," Reuters, August 29, 2017, <https://www.reuters.com/article/us-iran-nuclear-usa/iran-rejects-u-s-demand-for-u-n-visit-to-military-sites-idUSKCN1B918E>

⁹ IAEA Director General, *NPT Safeguards Agreement with the Islamic Republic of Iran*, GOV/ 2020/15, March 3, 2020, <https://int.nyt.com/data/documenthelper/6800-iaea-iran-report-march-2020/c7701091b024ea8f773a/optimized/full.pdf#page=1>

¹⁰ IAEA Director General, *Verification and monitoring in the Islamic Republic of Iran in light of United Nations Security Council resolution 2231 (2015)*, GOV/2020/5, March 3, 2020, https://isis-online.org/uploads/iaea-reports/documents/IAEA_quarterly_Iran_report_February_2020.pdf

Implicit in the JCPOA was that Iran's enrichment program, by the time of the sunsets in the deal's nuclear limitations, would make economic sense, namely fueling nuclear power reactors such as the Bushehr reactor with sufficient enriched uranium at a competitive cost. But several years of close observation of Iran's centrifuge effort under the JCPOA leads to the inescapable conclusion that Iran will be unable for the foreseeable future, or more likely indefinitely, to produce enriched uranium at less cost than simply buying it abroad.^{11,12} That conclusion is strengthened by Iran's recent pronouncements about its advanced centrifuges, including multiple models of centrifuges, such as the IR-6, IR-7, IR-8, and IR-9, to name just a few. Then there are the IR-2m, IR-4, IR-5, and an alphabet soup of other IR-6 centrifuge variants. There are also several different subvariants of the IR-8 centrifuge, which IAEA inspectors have reported is a failure. Even when Iran's other centrifuges actually enrich, breakage rates of 20 percent per year are reported by the IAEA, way beyond the failure rates of successful programs, which are typically well below one percent per year. The overall impression is an unfocused program, way behind even its own expectations, with far too many models, a program at odds with the development of other successful, economically competitive centrifuge programs in Russia and Europe -- a program in fact ripe for cancellation.

Evading Sanctions at Core of Expanding Enrichment Program

Then there is the dirty little secret: Iran is dependent on sanctions-busting and other illicit procurement schemes to order goods necessary for building and operating its centrifuges, focusing its efforts on illegally ordering these goods in Europe, China, and the United States, financing them illicitly, and secretly moving the goods through a host of transshipment routes through Malaysia, the United Arab Emirates and Turkey, to name a few.¹³ Iranian President Hassan Rouhani on August 30, 2014 put it succinctly: "Of course we bypass sanctions. We are proud that we bypass sanctions."¹⁴ Maintaining Iranian pride and legitimizing a centrifuge program require the rest of us to implicitly support or turn a blind eye to Iran's criminal behavior.

Even Small Uranium Enrichment Programs Are Sufficient for Nuclear Weapons

With such poor performance and the need to act as international criminals, why does Tehran continue its centrifuge program? Ironically, a failed commercial centrifuge program can still excel as part of a nuclear weapons program, requiring only a small fraction of the centrifuges

¹¹ David Albright, "Update on Iran's Compliance with the JCPOA Nuclear Limits- Iran's Centrifuge Breakage Problem: Accidental Compliance," *Institute for Science and International Security*, September 21, 2017, <https://isis-online.org/isis-reports/detail/update-on-irans-compliance-with-the-jcpoa-nuclear-limits/8>

¹² David Albright, "Technical Note: Making Sense out of the IR-8 Centrifuge," *Institute for Science and International Security*, September 23, 2014, <https://isis-online.org/isis-reports/detail/technical-note-making-sense-out-of-the-ir-8-centrifuge/8>

¹³ David Albright, Sarah Burkhard, Spencer Faragasso, Linda Keenan, and Andrea Stricker, *Illicit Trade Networks - Connecting the Dots, Volume 1* (Washington, DC.: Institute for Science and International Security, February 2020), <https://isis-online.org/books/detail/illicit-trade-networks-connecting-the-dots-volume-1>

¹⁴ "Iran President Rouhani Hits Out at U.S. Sanctions," *BBC News*, August 30, 2014, <https://www.bbc.com/news/world-middle-east-28997452>

required in a commercial program to make enriched uranium for nuclear power reactors. The difference in scale of these programs can be seen by considering Iran's nuclear weapons program in the early 2000s, when it was building the Fordow enrichment plant to make weapon-grade uranium for nuclear weapons, and the Natanz enrichment plant, designed mainly to make enriched uranium for one nuclear power plant.¹⁵ The numbers of centrifuges planned at the Natanz and Fordow enrichment plants were 50,000 vs 3,000 centrifuges, respectively. The more than ten-fold difference shows the value of a relatively small number of centrifuges, even inefficient ones, in making nuclear weapons.

A smaller enrichment program would also allow Iran to build military reactors. For several years, it has notified the IAEA about constructing naval propulsion reactors under IAEA safeguards. Such reactors can be used to justify enrichment even to weapon-grade levels under the guise of peaceful uses. Recently, the head of the Iranian Navy, Rear Admiral Hossein Khanzadi reportedly said that developing submarines equipped with nuclear propulsion systems is on the country's agenda. He said, "None of the international pacts ban using peaceful nuclear energy but the peace we are talking about doesn't find meaning without maintaining defense readiness."¹⁶ This is a surprisingly frank statement, likely more bluster than imminent threat, yet one that un masks the Iranian military's view of the meaning of a "peaceful nuclear program." Unlikely to come to fruition for decades while wasting funds and resources, an Iranian nuclear-powered submarine program would serve as an excuse to enrich uranium to higher levels, complicate safeguards, and further inflame international and regional security and stability -- even more reasons to oppose enrichment in Iran.

Benefits to Iran for Ending the Program

What would Iran get in return for zero enrichment? First, it would stop wasting money for a doomed commercial program and acquire its enriched uranium fuel abroad at competitive costs, a decision made by almost all countries with nuclear reactors. For those in Iran and elsewhere who believe that its nuclear program is peaceful, abandoning enrichment voluntarily is the only sensible economic course of action, an act that would also be an important step in ending Iran's current economic and political isolation.

An end of the centrifuge program would not end U.S. sanctions, but dismantling this key nuclear threat would open the door to solving many other contentious issues involving IAEA inspections and access, ballistic and cruise missiles, and regional conflicts, which collectively could end those sanctions.

¹⁵ David Albright, Frank Pabian, and Andrea Stricker, "The Fordow Enrichment Plant, aka Al Ghadir: Iran's Nuclear Archive Reveals Site Originally Purposed to Produce Weapon-Grade Uranium for 1-2 Nuclear Weapons per Year," *Institute for Science and International Security*, March 13, 2019, <https://isis-online.org/isis-reports/detail/the-fordow-enrichment-plant-aka-al-ghadir/8>

¹⁶ "Developing nuclear submarine on agenda of Iran's Navy: cmdr," *Mehr News Agency*, April 16, 2020, <https://en.mehrnews.com/news/157673/Developing-nuclear-submarine-on-agenda-of-Iran-s-Navy-cmdr>

Another win for both sides is ending a dangerous catalyst to Iran's neighbors building nuclear weapons capabilities. Saudi Arabia could finally commit to forgoing uranium enrichment and reprocessing indefinitely. Saudi Arabia has already stated it will match Iran's nuclear weapons capabilities, and it certainly has the resources to do so.¹⁷ Starting by verifiably ending Iran's centrifuge program is the easiest way to head off a dangerous, costly nuclear arms race that Iran cannot win but would forever enshrine it as an international pariah subject to a growing number of sanctions and likely enemies.

Given Iran's hugely uneconomic centrifuge enrichment program, one posing an unacceptable security risk to the region and the world and spurring other countries to proliferate, the international community's most sensible option is to collectively insist on its end.

¹⁷ David E. Sanger, "Saudi Arabia Promises to Match Iran in Nuclear Capability," *The New York Times*, May 13, 2015, <https://www.nytimes.com/2015/05/14/world/middleeast/saudi-arabia-promises-to-match-iran-in-nuclear-capability.html?searchResultPosition=5>