The clerical regime in Iran is approaching the point at which no outside power could prevent it from building nuclear weapons. Iran would then be a nuclear threshold state. As Tehran approaches that threshold, the United States will face an increasingly difficult choice between allowing the regime to cross over it or taking assertive measures — including potential military strikes — to stop Iran from going nuclear.

In an effort to revive a watered-down version of the 2015 nuclear deal with Iran, formally known as the Joint Comprehensive Plan of Action (JCPOA), the Biden administration has relaxed pressure on the Islamic Republic and fully committed itself to negotiations. Senior U.S. officials have criticized Iranian negotiators for obstructionism and delay, but the administration does not acknowledge that by drawing out the talks, Tehran can position itself to reach the nuclear threshold. At present, if the regime decides to make its first nuclear weapon, it may need as little as three weeks to produce enough fissile material.

This memorandum documents the acceleration of Tehran’s nuclear program since Joe Biden’s election. The clerical regime understands that it can provoke the United States at minimal cost, since Biden is committed to a conciliatory policy that relies on goodwill, not leverage, to advance negotiations. To reverse this dynamic, the United States and its European partners will have to discard the JCPOA framework and implement a full-spectrum pressure campaign that confronts Tehran with the prospect of bankruptcy and isolation unless it relinquishes all pathways to a nuclear weapons capability.


Defining Threshold Status

To reach the nuclear threshold, a state requires fissile material and the ability to weaponize it. In addition, a threshold state must be able to dash to nuclear weapons quickly enough that foreign powers would not be able to disrupt its breakout efforts.5

The Islamic Republic has already enriched enough uranium that it could produce weapons-grade uranium (WGU) for at least four bombs. The short dash to producing WGU shows that Tehran has overcome the most difficult challenge that faces an aspiring threshold state. If Iran decided to produce WGU, the clerical regime would likely need additional time to build a functional warhead, but the technical challenges are not prohibitive given the regime's past and possibly ongoing weaponization work. Iran is also expanding its ballistic missile program, which it could adapt for use as delivery vehicles.

Behavior and intentions often distinguish aspiring threshold states from latent powers. Several states, like Germany, Brazil, and the Netherlands, produce fissile material and could launch a nuclear weapons program, but have chosen instead to adhere firmly to their non-proliferation commitments. Scholars refer to this group as latent nuclear states.6 Tehran, by contrast, has pursued clandestine enrichment and weaponization programs, indicating a lack of peaceful intent.7 The Iranian program is also the subject of an ongoing investigation by the International Atomic Energy Agency (IAEA), which Tehran persistently obstructs.

Iran is currently the only state actively advancing toward threshold status.8 The IAEA has investigated Tehran's nuclear activities since 2002 but has never been able to assure the international community of the absence of undeclared nuclear material and activities in Iran. The Islamic Republic had a nuclear weapons program known as the Amad Plan until 2003, after which the clerical regime planned to downsize and disperse parts of the program to better camouflage it.9 Tehran likely continued weaponization activities at both civilian and military institutions.


8. Numerous states with peaceful nuclear programs previously considered the pursuit of nuclear weapons or had an active program. The list includes Algeria, Egypt, Italy, Iraq, Libya, South Korea, Sweden, Switzerland, Taiwan, and Yugoslavia (Serbia). Belarus, Kazakhstan, and Ukraine inherited Soviet nuclear weapons but gave them up. Israel destroyed a Syrian covert nuclear reactor at al-Kibar in 2007, which North Korea helped build. Damascus has outstanding IAEA safeguards issues but does not have a known fissile material production capability.

The entity reportedly in charge of such efforts is the U.S.-sanctioned Organization of Defense Innovation and Research, whose Persian acronym is SPND. Given the regime’s obstruction of IAEA inspections, it is not known how close Iran has come to weaponization.

Determining the point at which a state reaches the threshold is not a purely technical exercise, since it also depends on the intent of a government — specifically, whether it has decided to pursue a weapons program or whether ambiguity offers the government better advantages. Another factor is the defensive measures in place to protect the program and the offensive capabilities of those who wish to disrupt it. U.S. military leaders have expressed readiness to destroy the clerical regime’s nuclear capabilities if the president directed them to do so, but the estimated time necessary to carry out such a mission remains classified.

Additional uncertainty stems from the potential for incomplete intelligence reporting about a potential decision by Tehran to pursue a breakout. States may gather information indicating that Iran has begun producing WGU, yet the intelligence may be vague or unreliable overall, including key details about timing and the facilities that Tehran would use. In such a scenario, Iran may restrict IAEA monitoring or delay IAEA access to declared nuclear sites in order to divert fissile material for further enrichment at a clandestine plant. The regime could also pursue enrichment and weaponization at highly fortified military sites. For example, it could make WGU at its underground Fordow enrichment plant.

**The JCPOA: Iran’s Patient Pathway to the Nuclear Threshold**

The imperative of keeping Tehran away from the nuclear threshold drove the Obama administration’s negotiation of the JCPOA, even though the administration’s efforts were ultimately insufficient. U.S. negotiators sought to ensure that Iran would remain at least 12 months away from producing enough fissile material for a nuclear weapon. Independent calculations put Iran’s breakout time under the JCPOA closer to seven months. Yet even this achievement would be temporary; the scheduled expiration (or “sunset”) of the JCPOA’s key restrictions would eventually bring Tehran’s breakout time close to zero.

Details aside, the JCPOA legitimized Iran’s advance toward the nuclear threshold despite the regime’s extensive record of illicit nuclear activities. Previously, there had been an international consensus enshrined in UN Security Council resolutions that Iran should stop enriching uranium completely. The JCPOA not only allowed the Islamic Republic to maintain an enrichment program with a breakout time of 12 months or less, but also paved the way toward a breakout time of zero, since restrictions on enrichment would gradually phase out from 2024 to 2031. Nor did the JCPOA prohibit Iran from carrying out research and development on advanced centrifuges.
stockpiling materiel and equipment for advanced machine production, and, in 2027, enriching uranium in large numbers of advanced centrifuges.14

Under the terms of the JCPOA, Iran could also manufacture up to 2,400 of its fastest advanced centrifuges — the IR-6 and IR-8 — by 2029. In 2025, the “snapback” mechanism that permits JCPOA member states to reimpose prior UN Security Council sanctions on Iran is slated to terminate; Iran would be freed from international oversight of its nuclear-related imports. All told, the nuclear accord ensures that by 2031, when the last of its sunsets takes effect, Iran would have a massive enrichment capability and an unstoppable ability to break out of its nonproliferation commitments or even sneak out by using nuclear assets at covert facilities, undetected by international monitors.15

The JCPOA prohibited weaponization activities, but the deal’s weak monitoring and verification provisions made this irrelevant. The Islamic Republic insisted it would never allow inspections of its military facilities, regardless of what the deal stated. Neither the IAEA nor other parties to the deal challenged this assertion. The Obama administration and its JCPOA partners also quashed the IAEA’s ongoing investigation of Tehran’s previous nuclear weapons activities. The deal even left intact the fortified underground enrichment facility at Fordow, designed to protect Iran’s nuclear program during a potential dash toward the threshold and beyond. Under the JCPOA, Tehran’s economic and military power was set to grow in the absence of sanctions, further adding to the difficulty of keeping it away from the nuclear threshold.

**Iran’s Muted Response to Trump, Escalation of Pressure on Biden**

In May 2018, citing, among other objections, the JCPOA’s failure to stop Iran’s nuclear research and development, President Donald Trump withdrew from the deal. Tehran responded with graduated, incremental nuclear advances.16 In May 2019, the regime announced a plan to incrementally surpass JCPOA limits on a range of nuclear activities, with new advances every 90 days. The clerical regime began installing more and different types of centrifuges than permitted by the JCPOA, gradually increased its stockpile of low-enriched uranium, and increased uranium enrichment to 4.5 percent purity — exceeding the deal’s cap of 3.67 percent. These incremental steps continued through the U.S. presidential election in November 2020.17

The regime likely refrained from major advances to preserve the option of reviving the nuclear deal under a future administration. Tehran may also have wanted to avoid provoking a crisis during Trump’s tenure, given his unpredictability and his readiness to impose harsh economic sanctions.18 The value of patience also became clear

---


17. The JCPOA, reached by the United States, France, the United Kingdom, Germany, Russia, and China, temporarily restricted Tehran’s fissile material production, but did not compel the IAEA to investigate the absence of military nuclear activities. Since 2018, the IAEA has investigated new information relating to undeclared nuclear material and activities in Iran, but Tehran is not cooperating. See: IAEA Director General, “NPT Safeguards Agreement with the Islamic Republic of Iran,” GOV/2021/52, November 17, 2021. (https://www.iaea.org/sites/default/files/21/12/gov2021-52.pdf)

when Biden pledged as a presidential candidate to reverse Trump's Iran policy, which Biden characterized as a “dangerous failure.” Instead, Biden proposed that both Washington and Tehran return to the JCPOA, a move that would yield relief for Tehran from the most punishing U.S. sanctions.19

The clerical regime began testing Biden even before he formally took office. In January 2021, Iran began enriching uranium to 20 percent purity at the Fordow enrichment plant. Enrichment to 20 percent requires 90 percent of the effort to reach weapons-grade purity. In February, Tehran began producing uranium metal, a material used in the cores of nuclear weapons. That same month, the Islamic Republic stopped implementing the IAEA's Additional Protocol (AP), a set of enhanced verification measures integral to the agency’s monitoring of nuclear programs. Tehran had agreed to implement the AP as part of the JCPOA. The regime also halted most JCPOA monitoring measures. In April, Iran started enriching uranium to the highest level ever achieved by the regime: 60 percent. This level constitutes 99 percent of the effort necessary to produce WGU.20

These unmistakable moves toward a nuclear weapons capability should have provoked a strong reaction from the Biden administration and the IAEA’s Board of Governors, which has responsibility for holding member states accountable to their nuclear nonproliferation obligations. The United States and its key allies hold seats on the board. Yet the Biden administration made sure the board would not punish or even censure Iran at any of its quarterly meetings in 2021.21 Tehran saw that it could advance with impunity toward threshold status.

In November 2021, the Institute for Science and International Security assessed that following a decision to produce enough WGU for one nuclear weapon, Iran could do so within three weeks by further enriching — using currently operating centrifuges — its stockpile of near-20 percent and 60 percent enriched uranium. Within three-and-a-half months, the institute found, Iran could produce enough material for three weapons, and after six months, it would have enough WGU for a fourth.22 By prolonging negotiations in Vienna, the Islamic Republic brought its breakout time close to zero while earning billions of dollars from oil exports thanks to Biden’s relaxation of sanctions as a goodwill gesture.

The U.S. negotiating team now acknowledges that restoring the JCPOA’s breakout time of 7-12 months is no longer feasible, given Iran’s advances.23 Washington reportedly estimates a breakout time of six-to-nine months under a


20. While Tehran is not yet producing WGU, it appears to be enriching uranium in cascade arrangements, or steps, that provide useful knowledge for higher levels of enrichment. Iran has also deployed hundreds of advanced centrifuges that enrich uranium at quicker speeds and are prohibited under the JCPOA. See: David Albright, Sarah Burkhard, and Andrea Stricker, "Analysis of IAEA Iran Verification and Monitoring Report - November 2021," Institute for Science and International Security, November 19, 2021. (https://isis-online.org/isis-reports/detail/analysis-of-iaea-iran-verification-and-monitoring-report-november-2021)


revived accord, while Israel's estimate is reportedly four-to-six months. These lower estimates are likely based on Tehran's production and operation of hundreds of advanced centrifuge machines in violation of the JCPOA.

Tehran reportedly refuses to destroy these advanced centrifuges as part of a new agreement, instead proposing their retention in storage, from which the regime could remove them at any time. If the Biden administration accepts that demand as part of its bid to revive a watered-down JCPOA, the administration would solidify a shorter breakout time for Tehran. This timeline could shorten further as Iran, per the JCPOA's terms, manufactures and operates additional advanced centrifuges.

In fact, the administration's reason for not demanding that Iran destroy advanced centrifuges likely stems from the fact that the JCPOA permits their redeployment in just a few years. Moreover, because of Iran's reduction of the IAEA's monitoring, the Biden administration cannot assert with confidence that Tehran does not have clandestine stockpiles of advanced centrifuges that it could deploy to a covert enrichment facility. With its deficient monitoring and verification protocols, the JCPOA or an even weaker version is unlikely to facilitate the IAEA's detection of such activity.

Becoming a nuclear threshold state requires weaponization capabilities in addition to fissile material. Iran's stonewalling of the IAEA has ensured there are no reliable estimates of its weaponization timeline. David Albright of the Institute for Science and International Security calculates that Tehran could explode its first crude nuclear test device within six months. The Islamic Republic has also continued to develop potentially nuclear-capable missiles, since the JCPOA imposes no restrictions on its missile program. According to Israeli estimates, Iran may be able to field a missile-deliverable nuclear weapon in one to two years.

**Policy Recommendations**

Policy options narrow considerably when responding to a state that is advancing rapidly toward the nuclear threshold. Only senior officials in the U.S. government know how much time the Pentagon needs to prepare and carry out sufficient military strikes to prevent Iran from successfully sprinting toward a nuclear weapon. If the Islamic Republic chooses to move closer to threshold status — or dash to nuclear weapons — there would likely be substantial uncertainty surrounding its precise intentions and activities. In such a scenario, Tehran may not withdraw from the Nuclear Non-Proliferation Treaty, a move that could solidify Western resolve against the regime. Amid this uncertainty, President Biden might have to choose between carrying out military strikes based on incomplete or conflicting information or acquiescing to Iran's development of nuclear weapons. It would be preferable to keep Tehran far away from the threshold so that an American president never reaches this wrenching decision point.

---

The Israeli response to the Vienna negotiations is revealing, given Tehran’s professed interest in destroying the Jewish state. Jerusalem has at least as strong an interest as Washington has in extending Iran’s nuclear breakout timeline. Yet even as Tehran approaches the nuclear threshold, Israeli Prime Minister Naftali Bennett reportedly told President Biden in February that Israel prefers a no-deal scenario and a campaign of multilateral pressure on Tehran. Bennett almost certainly wants to avoid a rift in U.S.-Israel relations like the one that emerged in 2015 when Israel opposed the JCPOA. Yet Bennett would still reject a deal that temporarily increased Iran’s breakout time, only to let it approach zero once again after a few years, which would be all but inevitable with the deal’s expiring provisions.

The flawed premise of the JCPOA and of the Biden administration’s Iran policy is that Iran can both keep its uranium enrichment program — which the JCPOA allows to expand again starting in 2024 and to grow substantially from 2027 to 2031 — and be kept away from the nuclear weapons threshold. Instead of pursuing a defective and temporary accord, the United States should seek to restore the international consensus — embodied in successive UN Security Council resolutions from 2006 to 2010 — that the world cannot trust the Islamic Republic with an enrichment program. The regime’s relentless stonewalling of IAEA investigations demonstrates its bad faith. Furthermore, an energy-rich country like Iran has no economic need for an enrichment program. The purpose of Iran’s enrichment program has always been to build nuclear weapons.

If and when the United States and the E3 (Britain, France, and Germany) recognize the need for a fundamental rethinking of their Iran policy, they should relaunch the kind of comprehensive economic, financial, and political pressure campaign that forced Iran back to the negotiating table during Barack Obama’s tenure. This time, however, the campaign should persist until Tehran accepts the dismantling of its enrichment program and related measures to permanently cut off all pathways to a nuclear weapon. The Iranian economy has begun a tentative recovery thanks to Biden’s relaxation of sanctions, but it remains vulnerable after a deep multi-year recession. The United States and the E3 should invite Russia and China to support their efforts, but only if they accept the premise of a permanent end to the Iranian nuclear threat and do not act as spoilers.

---

Even without Russian and Chinese support, the United States and the E3 can restore prior UN sanctions by invoking the snapback clause of UN Security Council Resolution 2231. Doing so would also restore all prior UN resolutions against Iran, which codify the principle of zero enrichment. Restoring multilateral sanctions would present Russia and China with a fait accompli regarding sanctions enforcement and provide a basis for further action by the United States and E3 to penalize non-compliance.

Congress can play an important role in encouraging the Biden administration to support a renewed pressure campaign. From 2009 through 2012, a bipartisan coalition in Congress played an indispensable role in creating the statutory framework for the pressure campaign that forced Iran back to the negotiating table. If there is renewed bipartisanship, Congress can prove similarly effective once again.

The most potent tool currently at the disposal of Congress is the Iran Nuclear Agreement Review Act of 2015, or INARA, which gives Congress statutory review authority over any deal. Specifically, INARA requires the president to submit to Congress within five days any agreement with Iran and “all related materials and annexes.” There is then a 90-day review period during which the House and Senate hold hearings on the agreement and then debate it. Finally, INARA ensures a vote on whether to lift sanctions. Since the president can veto a resolution prohibiting him from lifting sanctions, a two-thirds majority in both chambers can block a deal. Thus, bipartisanship is essential. Even so, significant opposition sends a clear message to Tehran that a deal may last only as long as Biden remains in the White House. If the administration prefers an enduring agreement, it should stop relying on a partisan minority and submit a stronger accord to the Senate for ratification as a formal treaty. Ratification by the Senate would necessitate a bipartisan consensus on the merits of an accord and render it far less susceptible to cancellation by the next president.

Finally, the United States should continue — on its own and together with Israel — to increase the credible threat of military action should Iran move closer to the nuclear threshold or sprint to nuclear weapons. Specifically, Washington and Jerusalem should continue U.S.-Israeli military exercises practicing the destruction of Iran’s nuclear facilities. The United States and Israel should also consider actions short of military strikes, such as cyber-attacks and sabotage of nuclear or nuclear-related sites, to delay the Islamic Republic’s progress and remind the regime that its malign activity will not come without cost.

Still, it would be far better to avoid the risk war of war by discarding the JCPOA framework and implementing a comprehensive pressure campaign that confronts Tehran with the prospect of bankruptcy and isolation unless it dismantles its enrichment program. The Biden administration should take all related measures necessary to ensure that the world’s most prolific state sponsor of terrorism can never reach the nuclear weapons threshold.

37. Even if Congress is unable to mount votes required to stop sanctions lifting under Biden, a vote would have important implications for deterring business investment in Iran. See: Gabriel Noronha, Andrea Stricker, and Matthew Zweig, “If Biden Won’t Stand Up to Iran, Congress Should Stand Up to Biden,” The Dispatch, September 28, 2021. (https://thedispatch.com/p/if-biden-wont-stand-up-to-iran-congress)
Foundation for Defense of Democracies (FDD)
FDD is a Washington, DC-based nonpartisan research institute focusing on national security and foreign policy.

FDD’s Iran Program
To address the threat posed by the Islamic Republic of Iran to America and its allies, FDD’s Iran Program conducts detailed research, develops actionable and comprehensive policy options, and appears regularly in media. FDD’s Iran team covers every angle of the Iran portfolio and includes some of Washington’s top experts on sanctions, illicit finance, nonproliferation, terrorism, human rights, and the Islamic Regime of Iran’s domestic power apparatus. The topics FDD has examined include Iran’s potential pathways to a nuclear weapon, ballistic missile program, support for terrorism and terrorist proxies, illicit financial activities, worldwide media operations, and domestic repression.

FDD’s Center on Military and Political Power
FDD’s Center on Military and Political Power promotes understanding of the defense strategies, policies, and capabilities necessary to deter and defeat threats to the freedom, security, and prosperity of Americans and our allies, by providing rigorous, timely, and relevant research and analysis.

Andrea Stricker is a research fellow at the Foundation for Defense of Democracies, where she conducts research on nonproliferation, Iran, North Korea, and other security policy topics. She is an expert on nuclear weapons proliferation and illicit procurement networks.

Anthony Ruggiero is a senior fellow at the Foundation for Defense of Democracies, where he focuses on nonproliferation and biodefense issues. He has almost two decades of experience serving in the U.S. government in both Democratic and Republican administrations. Most recently, he was deputy assistant to the president and National Security Council senior director for counterproliferation and biodefense (2019-2021).

FDD values diversity of opinion and the independent views of its scholars, fellows, and board members. The views of the authors do not necessarily reflect the views of FDD, its staff, or its advisors.