

# Iran’s Nuclear Advances While U.S. Diplomacy Dithers

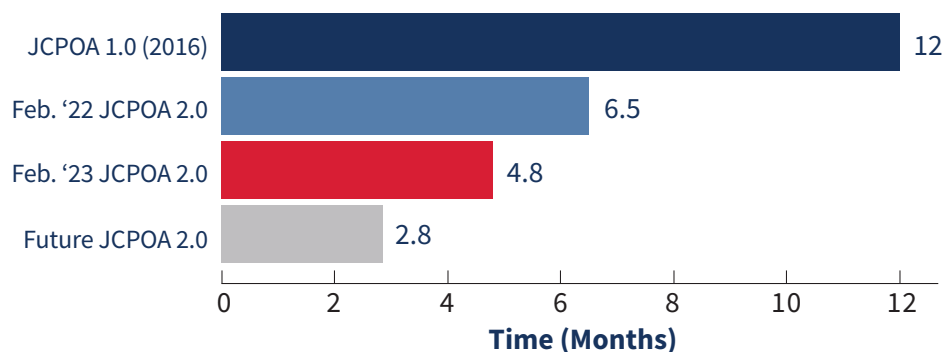
Jonathan Ruhe  
Director of Foreign Policy

*Iran has tiptoed to the very edge of a nuclear weapons capability: according to the International Atomic Energy Agency (IAEA), Tehran has now enriched uranium to 84 percent, its highest level ever and just shy of weapons-grade (90 percent). Meanwhile, the Biden administration is engaged in a months-long public debate with itself about whether to continue negotiating a nuclear deal with Iran, as shown in a [new JINSA infographic](#). President Biden has admitted the deal is dead, while other officials repeatedly insist diplomacy must continue. Yet, Iran’s nuclear advances continue to shorten and weaken what was already an unacceptable JCPOA nuclear deal to the point of insignificance.*

*In the year since American officials first idly warned they would walk away from talks, Iran’s nuclear advances have cut the efficacy of a revived JCPOA roughly in half. If the terms of that 2015 nuclear deal were reimposed today, due to Iran’s installation of large numbers of advanced centrifuges, its estimated breakout time would be a mere 3.7 months, compared to 6.5 months if the deal had been restored a year ago and 12 months when the deal originally went into effect.*

*There should be no question at this point, however, of returning to the JCPOA. Nor can more time be wasted waiting for Iran to return to the negotiating table. Tehran will continue barreling toward nuclear weapons capability unless the administration both declares publicly that Tehran’s intransigence killed the talks and finally pivots to an overdue “Plan B” of comprehensive pressure to prevent a nuclear Iran.*

## Iran Breakout Estimates



## What Happened?

- On February 19, international inspectors at Iran’s deeply-buried Fordo facility reportedly discovered uranium enriched to [84 percent](#), above the 60 percent enriched uranium Tehran has been producing since April 2021 and just short of the 90 percent threshold for weapons-grade fissile material.
- In the year since the Biden administration [first warned](#) that mere days remained to revive the JCPOA nuclear agreement, and that the United States was ready to walk away if no deal was reached, Tehran’s nuclear advances have reduced its estimated “breakout time” under a renewed accord appreciably, from **6.5 months** in [February 2022](#) to the **current 3.7 months**.
  - » By deploying evermore advanced centrifuges over the past year, Iran has steadily cut this window for producing a bomb’s worth of fissile material well below the year-plus breakout timeframe [touted](#) by the JCPOA’s authors and supporters.
- Tehran also [indicated](#) it plans to significantly expand this enrichment capacity further by installing thousands of additional advanced centrifuges – [possibly](#) this year – which would cut its estimated breakout time to **2.8 months or less** under a future JCPOA revival.

## Why Is It Important?

- Though it remains unclear if this 84 percent enrichment was intentional, these reports come on the heels of several Iranian moves that will significantly expand its ability to produce weapons-grade fissile material at Fordo:
  - » Last November, Tehran began [enriching](#) 60 percent uranium at Fordo using its most advanced centrifuges, the IR-6, and announced plans to [octuple](#) the number of these machines at the facility;
  - » In January, IAEA inspectors [discovered](#) unannounced changes to the pipes interconnecting cascades of these advanced IR-6 centrifuges at Fordo, a change which gives Iran valuable experience for more [efficiently](#) enriching uranium near weapons-grade with “tandem cascades” – something it did at much lower levels pre-JCPOA.
- These starkly diminishing returns of nuclear diplomacy, in which a renewed deal now would delay Iran’s nuclear program less than half as much and less than half as long as the already-weak JCPOA, stems from the Biden administration’s [empty threats](#) since July 2021 to abandon talks in response to Tehran’s consistent intransigence and bad-faith negotiating.
- Since Iran’s stonewalling [collapsed](#) the latest indirect U.S.-Iran talks in September, the Biden administration’s shift – from its prior [urgency](#) to its current ambivalence toward nuclear diplomacy – has further eroded U.S. leverage and credibility, in turn giving Tehran valuable time and incentive to continue advancing its nuclear program, in many ways irreversibly.
  - » JINSA’s accompanying [infographic](#) provides an in-depth timeline of these statements.

- » Both [President Biden](#) and [Secretary Blinken](#) admitted privately in recent months that the JCPOA is dead, an assessment echoed publicly both by Secretary Blinken last month when he [said](#) that “the Iranians killed the opportunity to come back to that agreement swiftly many months ago,” and by U.S. Special Envoy for Iran Robert Malley’s December [comments](#) that “Iran has rejected countless opportunities to come back into the deal” and that “the JCPOA is not on the agenda because of Iran’s position.”
  - In late February, Secretary Blinken [again said](#) the JCPOA “is not now on the table.”
- » Yet on February 21 Secretary Blinken also said “the door is always open to diplomacy going forward,” which [reiterated](#) his own and Malley’s public [statements](#) from January that “diplomacy is never off the table,” “[diplomacy](#) never ends,” and “we’re prepared to continue indirect talks” on a possible revival of the JCPOA.
  - This followed Malley’s November [statement](#) that the Biden administration is “keeping the door open for a return to diplomacy” unless Iran crosses “a new threshold in its nuclear program” – comments that came just as Tehran crossed a new nuclear [threshold](#) by enriching uranium to 60 percent for the first time at its deeply-buried Fordo facility.
  - Secretary Blinken’s assertion in late February that “a lot depends on what Iran says and does, and whether or not it engages,” also [contradicts](#) recent administration statements that Tehran already “killed the opportunity” to revive the JCPOA.
- Under a JCPOA that would be reconstituted today, Iran’s breakout time would be only roughly 3.7 months – and only for three years, after which this window would steadily shrink further until the agreement expires in January 2031.
- Continuing open-ended diplomatic outreach and avoiding a Plan B only will make matters worse as U.S. credibility continues eroding and the JCPOA’s [sunsets](#) loom ever closer, and as Tehran [notches](#) additional [nuclear](#) advances, blocks international inspectors, and [ramps up](#) other aggressions against the United States, its partners, and the Iranian people.
- This untenable situation stems from two of the JCPOA’s most glaring defects, namely:
  - » Iran is [permitted](#) to mothball, rather than destroy or ship out, all its deployed centrifuges in excess of 5,060 first-generation IR-1 machines for the duration of the deal – a number which has grown appreciably since [the eve](#) of the Biden administration;
  - » Starting [in 2024-26](#), Iran can steadily replace its operational IR-1 machines by building and deploying hundreds of advanced IR-2m, IR-4, and IR-6 centrifuges, which are estimated to [enrich](#) uranium roughly three to five times more efficiently than the IR-1.
- Moreover, by operating these advanced centrifuges in full-scale cascades since late 2020, Tehran is steadily accumulating invaluable [know-how](#) than cannot be unlearned under a deal, and which would help expedite any future breakout under a renewed JCPOA.
  - » Making matters worse, because these advanced centrifuges are so much more efficient, it is simpler and faster for Iran to reinstall them than to put in place the number of IR-1 centrifuges necessary to achieve the same overall enrichment capacity.

## JCPOA 2.0 with Iran's February 2022 Centrifuge Fleet

Type	Est. February 2022 Infrastructure			Under February 2022 JCPOA 2.0		
	Operational	Installed	IR-1 Equiv.	Operational	Stored	Stored IR-1 Equiv.
IR-1	5,766	506	6,272	≤ 5,060	≥ 1,212	≥ 1,212
IR-2m	1,024	0	4,198	0	1,024	4,198
IR-4	502	0	1,857	0	502	1,857
IR-6	330	0	1,914	0	330	1,914
<b>Total</b>	<b>7,622</b>	<b>506</b>	<b>14,241</b>	<b>≤ 5,060</b>	<b>≥ 3,068</b>	<b>≥ 9,181</b>

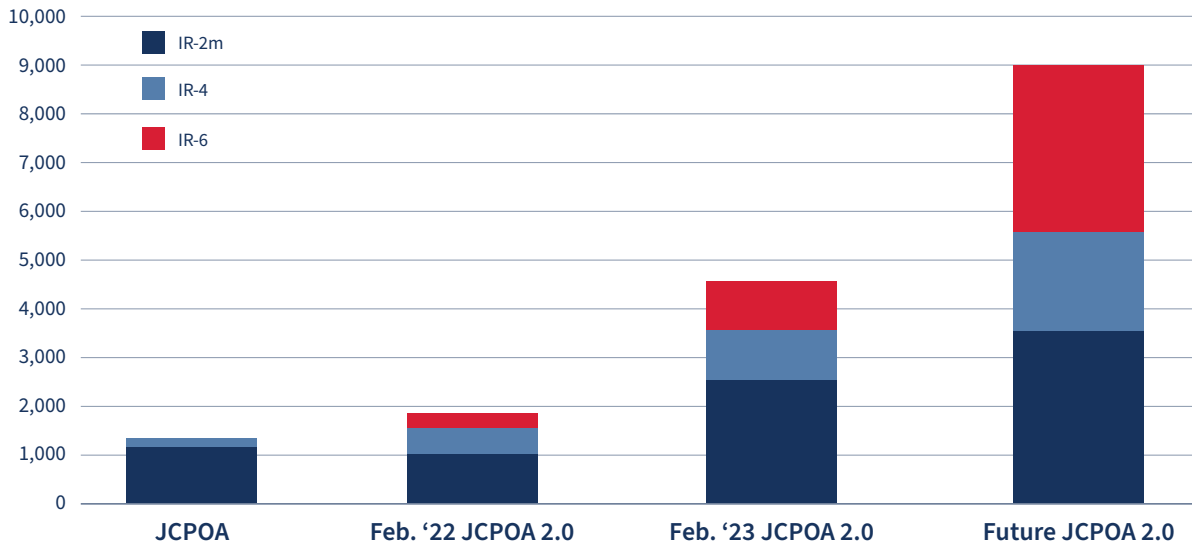
## JCPOA 2.0 with Iran's Current Centrifuge Fleet

Type	Est. February 2023 Infrastructure			Under February 2023 JCPOA 2.0		
	Operational	Installed	IR-1 Equiv.	Operational	Stored	Stored IR-1 Equiv.
IR-1	6,824	340	7,164	≤ 5,060	≥ 2,104	≥ 2,104
IR-2m	1,020	1,530	9,358	0	2,550	9,358
IR-4	510	510	3,366	0	1,020	3,366
IR-6	1,020	0	5,355	0	1,020	5,355
<b>Total</b>	<b>9,374</b>	<b>2,380</b>	<b>25,243</b>	<b>≤ 5,060</b>	<b>≥ 5,650</b>	<b>≥ 20,183</b>

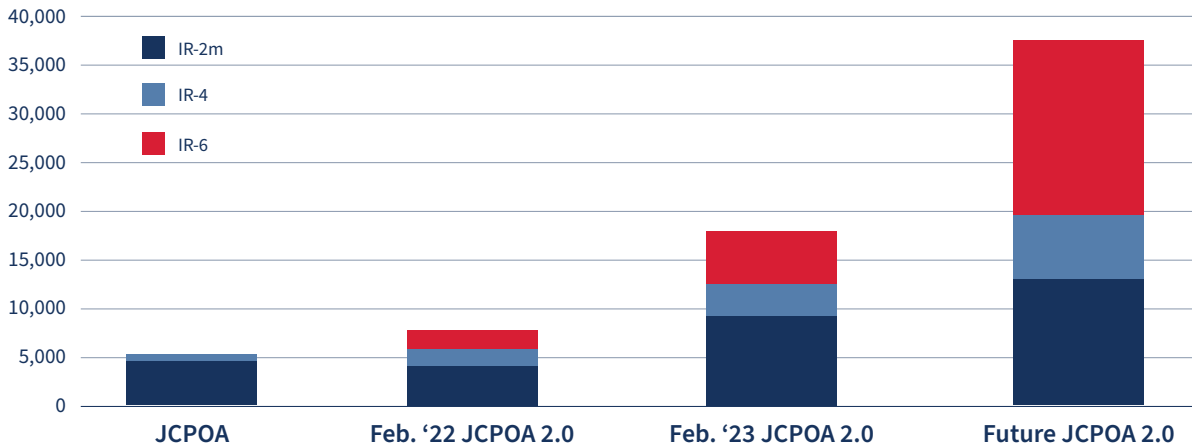
## JCPOA 2.0 with Iran's Future Centrifuge Fleet

Type	Projected Future Infrastructure		IR-1 Equiv.	Under Future JCPOA 2.0		
	Operational + Installed			Operational	Stored	Stored IR-1 Equiv.
IR-1	5,100		5,100	≤ 5,060	≥ 40	≥ 40
IR-2m	3,570		13,102	0	3,570	13,102
IR-4	2,040		6,732	0	2,040	6,732
IR-6	3,400		17,850	0	3,400	17,850
<b>Total</b>	<b>14,110</b>		<b>42,784</b>	<b>≤ 5,060</b>	<b>≥ 9,050</b>	<b>≥ 37,724</b>

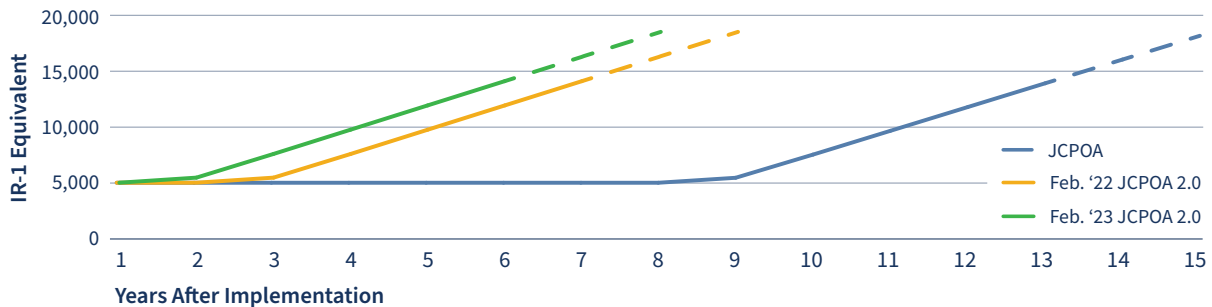
## Advanced Centrifuges in Storage



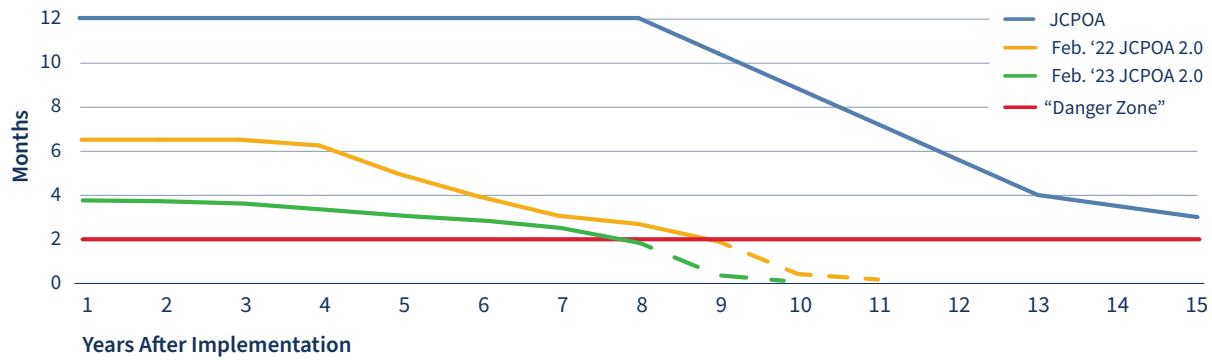
## Advanced Centrifuges in Storage (IR-1 Equiv.)



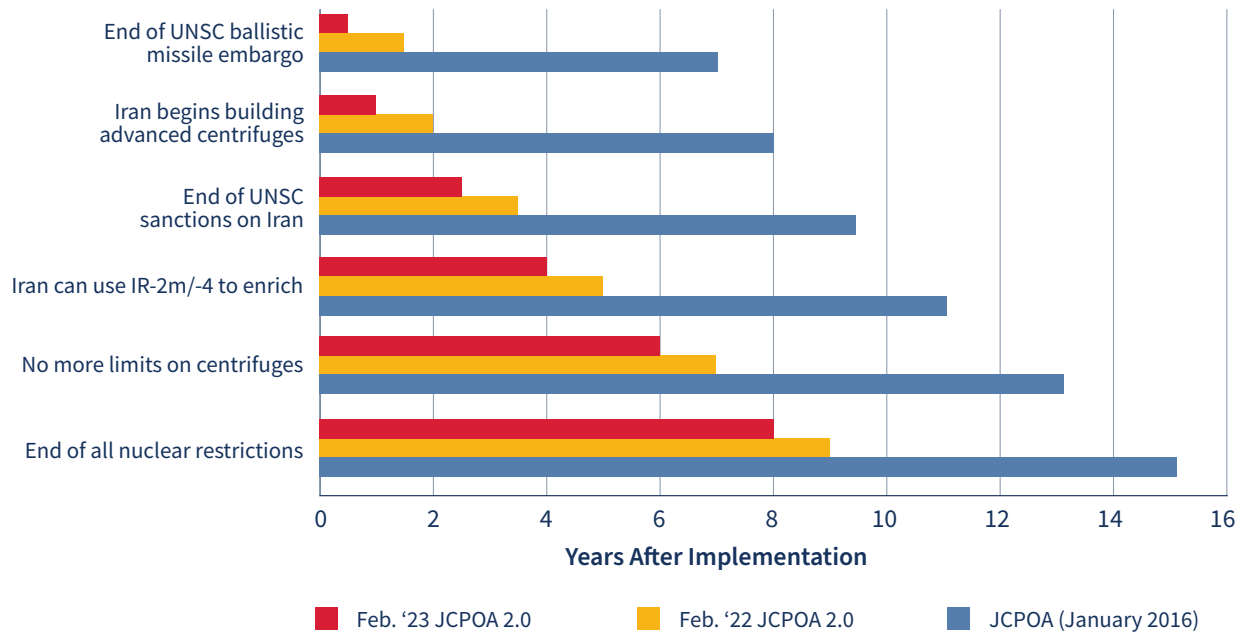
## Iran Enrichment Capacity



## Iran Est. Breakout Time

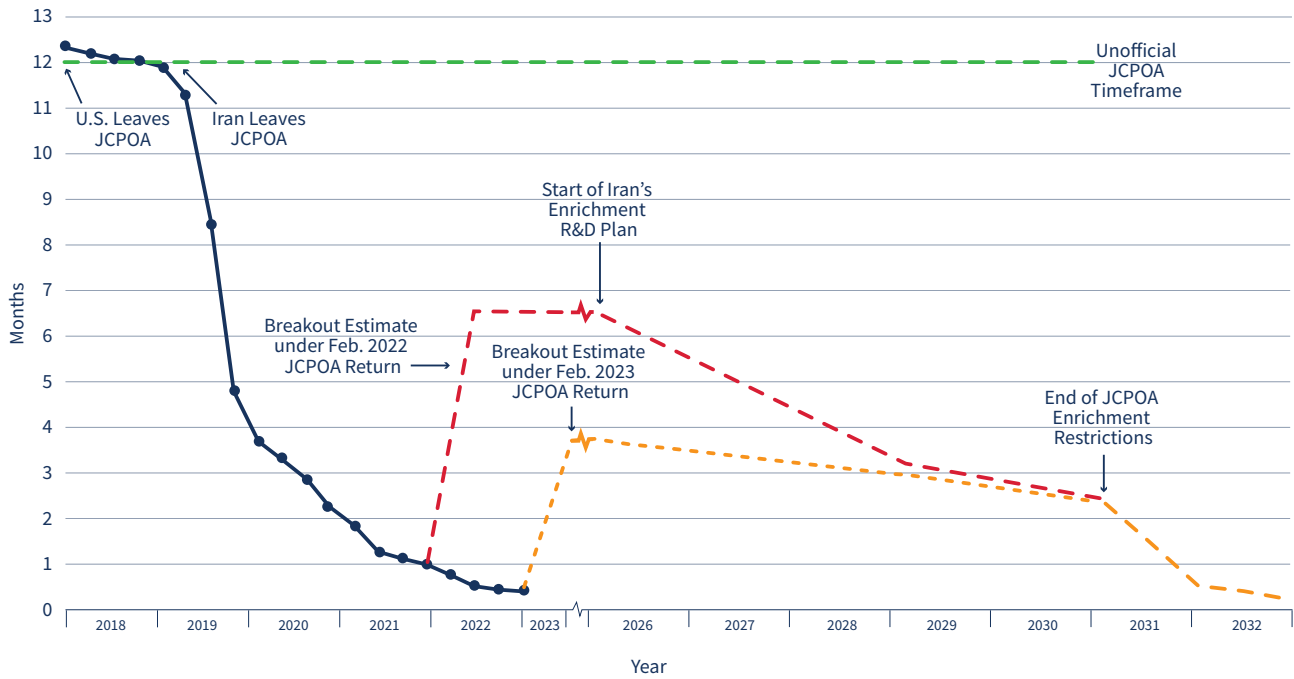


## Sunsets on Iran's Nuclear Program



Step	Iran Breakout Estimate Under Feb. '22 JCPOA 2.0	Iran Breakout Estimate Under Feb. '23 JCPOA 2.0	Iran Breakout Estimate Under Future JCPOA 2.0
	Time (weeks)	Time (weeks)	Time (weeks)
Remove infrastructure from storage and reinstall	3	3	3
Produce ~590 kg 3.67 percent	15	7.5	5
Reconfigure centrifuge cascades	2	2	2
Produce ~140 kg 20 percent	4.7	2.5	1.6
Produce ~28 kg 90 percent	1.5	1	0.5
<b>Total</b>	<b>6.5 months</b>	<b>3.7 months</b>	<b>2.8 months</b>

# Iran Breakout Times Under JCPOA 2.0



## What Should the United States Do Next?

- The Biden administration cannot afford continued indifference or ambivalence toward the fate of the JCPOA, and must instead declare immediately and publicly that the deal indeed is dead and that diplomacy is off the table, due to Tehran’s repeated rejections of good-faith U.S. outreach that were noted in Secretary Blinken’s and Malley’s recent comments.
- With diplomacy dead, the United States concomitantly must pivot to a long-delayed [Plan B strategy](#) of comprehensive pressure on Tehran, focused on unmistakable redlines for further Iranian nuclear advancements and regional aggression, as well as visible increases in U.S. military readiness in the Middle East to rebuild deterrence and underscore the seriousness of President Biden’s [oft-repeated](#) “unshakeable commitment to prevent Iran from acquiring a nuclear weapon” – [including](#) being “prepared to use all elements of U.S. national power.”
  - » Given the current lack of credibility of its own military options, the United States must work [earnestly](#) and expeditiously with regional partners – foremost Israel – to [boost](#) their military capabilities and [deterrent](#) effects [against](#) Iran.