

Iran's Uranium Enrichment Program: March 2022 Update

The information provided by the IAEA's March 2022 update demonstrates that Iran is continuing to make significant advances toward producing the 90% enriched uranium needed for nuclear weapons.² The key components of Iran's uranium stockpile are its stocks of 60% enriched uranium, 20% enriched uranium and uranium enriched between 3.5% and 5%.

The IAEA's latest update stated that as of February 19, 2022, Iran had 33.3 kilograms of 60% enriched uranium. During the latest IAEA reporting period, November 6, 2021 to February 19, 2022, Iran was producing 60% enriched uranium at a rate of about 4.5 kilograms per month.³ This is an increase from 3.5 kilograms per month from the previous IAEA reporting period.

As of February 19, 2022, Iran had 182.1 kilograms of 20% enriched uranium. During the current reporting period, it was producing this enriched uranium at a rate of 19.6 kilograms per month, which is an increase from 13.4 kilograms per month from the previous IAEA reporting period.

During the current reporting period, Iran's production rate of uranium enriched between 3.5% and 5% increased to 171.3 kilograms per month up from 149.5 kilograms per month from the previous reporting period. Despite the increased production, Iran's stockpile of this enriched uranium declined to 1,277.9 kilograms from the 1,622.3 kilograms it had in November 2021. The reason for the decline is two-fold. Iran sent about 140 kilograms to be converted into fuel for the modified Khondab (Arak) Heavy Water Research Reactor. In addition, Iran is producing so much 60% and 20% enriched uranium using this enriched uranium as feed that Iran's production of 3.5% to 5% enriched uranium cannot keep up.

Iran's stockpiles of 20% and 60% enriched uranium have grown so large that using just this higher enriched material alone, Iran can now produce the 20 kilograms of 90% enriched uranium needed to manufacture a nuclear weapon in one week. Using its remaining 20% enriched uranium, plus some of its 3.5-5% enriched uranium stockpile, it would take Iran an additional two weeks to produce a second weapon's worth of 90% enriched uranium. At about four week intervals, using its remaining 3.5% to 5% enriched uranium stockpile, Iran could produce a third and a fourth weapon's worth of 90% enriched uranium. Currently, then, Iran could produce sufficient 90% enriched uranium for four nuclear weapons (80 kilograms) in the period of about two-and-one-half months.

¹ This paper is the product of the author's personal research and the analysis and views contained in it are solely his responsibility. Though the author is also a part-time adjunct staff member at the RAND Corporation, this paper is not related to any RAND project and therefore RAND should not be mentioned in relation to this paper. I can be reached at GregJones@proliferationmatters.com

² Verification and monitoring in the Islamic Republic of Iran in light of United Nations Security Council resolution 2231 (2015)," GOV/2022/4, International Atomic Energy Agency, March 3, 2022. <https://www.iaea.org/sites/default/files/22/03/gov2022-4.pdf>

³ To account for the fact that months have different numbers of days, I use a uniform month length of 30.44 days.

Iran appears to be determined to use its supposedly peaceful nuclear facilities to acquire nuclear weapons, despite the heavy economic costs imposed by U.S. sanctions. Even if the Iran nuclear deal (Joint Comprehensive Plan of Action) is revived, its restrictions will soon start to expire. In January 2024, which is less than two years from now, some of the restrictions on Iran's centrifuge manufacturing and testing will be lifted. In January 2026, less than four years from now, there will no longer be any restrictions on the number or types of centrifuges that Iran is allowed to deploy. Once Iran is operating a large number of advanced centrifuges, the time required for Iran to produce HEU for nuclear weapons would become quite short, as President Obama admitted in 2015.⁴ As I have written previously, there appears to be no satisfactory way to prevent Iran from acquiring the 90% enriched uranium required to produce nuclear weapons.⁵

⁴ He said "...at that point the breakout times would have shrunk almost down to zero." See: "Transcript: President Obama's Full NPR Interview On Iran Nuclear Deal," April 7, 2015.

<https://www.npr.org/2015/04/07/397933577/transcript-president-obamas-full-npr-interview-on-iran-nuclear-deal>

⁵ Gregory S. Jones, "Iran's Uranium Enrichment Program: June 2021 Update," July 8, 2021.

<https://nebula.wsimg.com/a4d47d173c6d3280f919d00997eaccb4?AccessKeyId=40C80D0B51471CD86975&disposition=0&alloworigin=1>