



Reflections on Iran's Production of 60% Enriched Uranium¹

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As of about June 14, Iran had reportedly produced 6.5 kg 60% enriched uranium (hexafluoride mass) or 4.4 kg uranium mass only.² Iran's IR-6 production-scale cascade has produced 60% enriched uranium at an average daily rate of 0.126 kg/day since May 22, using less than 5% LEU as feed, skipping the intermediate step of producing 20% material.

Of course, the operation of the IR-6 cascade and the production of 60% is banned by the JCPOA. Returning to the JCPOA requires the destruction of this IR-6 cascade and the removal of the 60%. Failing to do either, such as by mothballing the IR-6's, would represent in effect a renegotiated JCPOA; one that is weaker than the original.

Iran's activity must be viewed as practicing breakout to make enriched uranium for use in nuclear weapons. It is learning to make such material more quickly and developing valuable experience in doing so.

This experience also complicates returning to the JCPOA, since that experience cannot be destroyed. As a result, some compensating actions are needed or a number of sanctions should be left in place to compensate for this irreversible gain in violation of the JCPOA.

Often lost in the debate is that 60% enriched uranium can be used directly in a nuclear explosive, although 90% is preferred. Iran now has about 10 percent of what it would need for one nuclear explosive fashioned from 60% enriched uranium.

At current rates, Iran would need about 1.3 years to make enough 60% for a nuclear explosive. Two of these IR-6 cascades could make enough in less than 8 months; four could do so in four months.

See also: <https://isis-online.org/isis-reports/detail/analysis-of-iaea-iran-verification-and-monitoring-report-may-2021> ; <https://www.iaea.org/sites/default/files/21/06/gov2021-28.pdf>

¹ This report originated as a series of tweets.

² "Iran says it produced 6.5 kg of uranium enriched to 60%," Reuters, June 15, 2021, <https://www.reuters.com/world/middle-east/iran-says-it-produced-65-kg-uranium-enriched-60-2021-06-15/>