

Iran's Nuclear Weapons Fuel Production Capability

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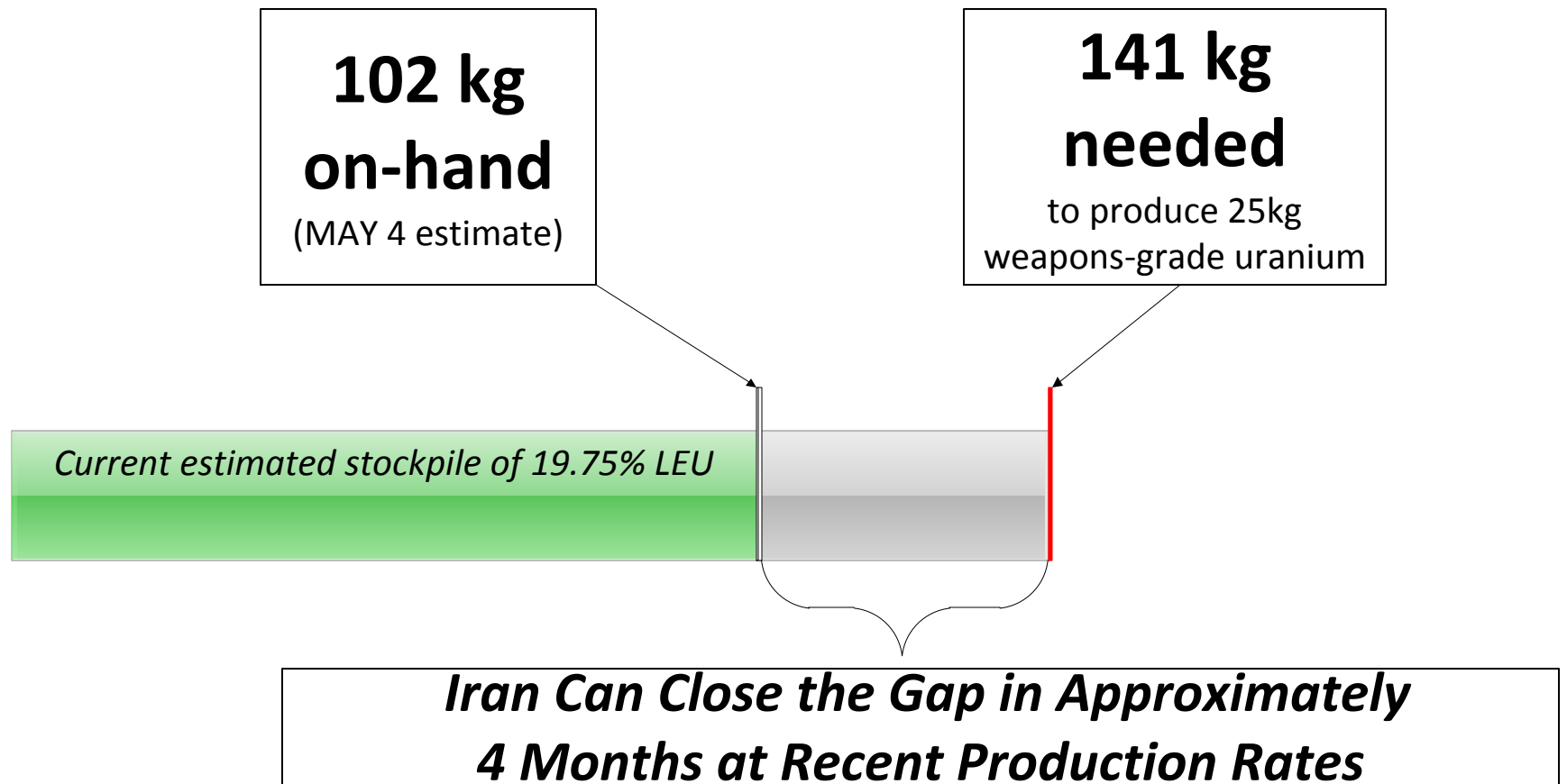
AEI Critical Threats Project

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SUMMARY

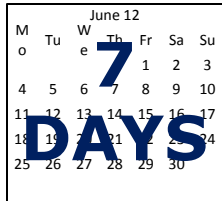
- Iran could offer to halt production of 20% enriched uranium in upcoming negotiations. This “concession” would have limited impact on Iran’s ability to quickly produce weapons-grade uranium for one nuclear warhead, however. Iran would still retain the ability to resume 20% enrichment and to produce weapons-grade uranium at a time of its choosing.
- In a worst-case dash scenario Iran could produce 25 kg weapons-grade uranium by resuming 20% enrichment at its two declared enrichment sites, then proceed to enrich to 90% weapons-grade uranium at Fordow in about 42 days total; a best-case dash scenario using limited capacity would extend the timeline to only about 8 months.
- Any outcome that does not include the verifiable dismantling of Iran’s nuclear program and the removal of all nuclear material—at any level—will allow Iran to retain the ability to acquire nuclear weapons fuel in short order.

APPROACHING THE THRESHOLD: GROWING 20% STOCKPILE

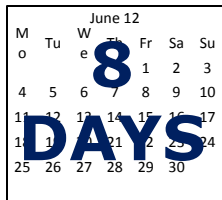


HOW QUICKLY COULD IRAN GET TO 20% THRESHOLD FOR BREAKOUT?

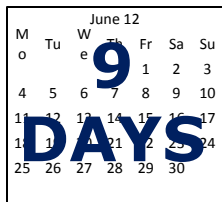
TIME NEEDED TO PRODUCE ADDITIONAL 39 KG 19.75% LEU (141 KG TOTAL) NEEDED TO PRODUCE 25 KG OF WEAPONS-GRADE URANIUM



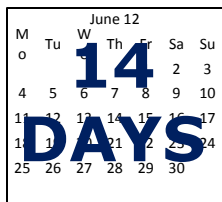
WORST CASE: USING ALL CENTRIFUGES AT NATANZ AND FULL PLANNED CAPACITY AT FORDOW (a)



USING ALL CENTRIFUGES AT NATANZ AND HALF PLANNED CAPACITY AT FORDOW (b)



USING ALL CENTRIFUGES AT NATANZ AND FORDOW CAPACITY AS OF FEBRUARY 2012 (c)



USING HALF OF THE CENTRIFUGES AT NATANZ AND FORDOW CAPACITY AS OF FEBRUARY 2012 (d)

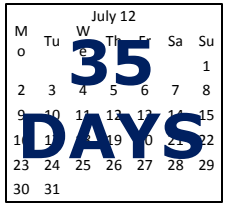


BEST CASE: USING ONLY CENTRIFUGES ENRICHING TO 20% AS OF FEBRUARY 2012 (e)

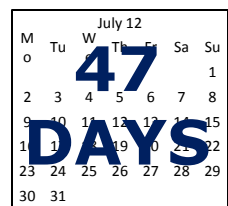
- a) 54 cascades with 9156 centrifuges at Natanz FEP and 16 cascades with 2784 centrifuges at Fordow
- b) 54 cascades with 9156 centrifuges at Natanz FEP and 16 cascades with 1392 centrifuges at Fordow
- c) 52 cascades with 8808 centrifuges at Natanz FEP and 4 cascades with 696 centrifuges at Fordow
- d) 30 cascades with 5100 centrifuges at Natanz FEP and 4 cascades with 696 centrifuges at Fordow
- e) 2 cascades with 328 centrifuges at Natanz PFEP and 4 cascades with 696 centrifuges at Fordow

RACE TO ONE WARHEAD'S WORTH WEAPONS-GRADE URANIUM

TIME NEEDED TO CONVERT 141 KG 19.75% LEU TO 25 KG 90% URANIUM



WORST CASE: Fordow facility at full capacity (a)



Fordow facility at 75% capacity (b)



Fordow facility at 50% capacity (c)

- a) 16 cascades with 2784 centrifuges
- b) 12 cascades with 2088 centrifuges
- c) 8 cascades with 1392 centrifuges
- d) 4 cascades with 696 centrifuges



BEST CASE: Fordow facility operating as of February 2012 (d)

WORST CASE



TOTAL TIME REQUIRED FOR ALL ENRICHMENT TO PRODUCE ONE WARHEAD'S WORTH OF WEAPONS-GRADE URANIUM

BEST CASE

