

# CINTAC

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## Civil Nuclear Trade Advisory Committee

April 21, 2022

The Honorable Gina Raimondo  
Secretary  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

**Subject:** Imperative Support Needed for Domestic Production of High-Assay Low Enriched Uranium (HALEU) While Expanding Low Enriched Uranium (LEU) Capacity for Domestic and Foreign Nuclear Power Programs

Dear Madame Secretary:

The Civil Nuclear Trade Advisory Committee (CINTAC) serves as an advisor to you on the promotion of nuclear energy exports, and we recommend that the U.S. Government (USG) commence an aggressive program to substantially increase domestic uranium enrichment and conversion capabilities needed to support: 1) the operation and expansion of the U.S. nuclear power program and 2) deployment of advanced nuclear reactors using HALEU in the U.S. and abroad. The only existing commercial supplier is Russia, and while there is currently no legal ban on importing HALEU from Russia, purchasing HALEU from Russia is unacceptable for national security reasons and no longer a viable commercial option.

Specifically, we kindly request:

- 1) your vocal and aggressive support on Capitol Hill to help appropriators understand the imperative to fully fund – at least \$300 million annually through 2028 – the HALEU development programs through DOE initiatives already authorized through the Energy Act of 2020. The investment in HALEU is an investment in U.S. energy security.
- 2) The Department of Commerce work directly with DOE and the Department of State to create a HALEU “fuel bank” or similar idea by December 31, 2022, that can act as a reliable demand signal to the market. This concept, using funds from \$3.5 billion proposed from FY2023-2031 in the International Nuclear Energy Act of 2022<sup>1</sup>, could guarantee a certain minimum HALEU level to support advanced reactor deployments and domestic and international HALEU demand while enabling potential HALEU suppliers secure favorable financing terms.

Efforts to establish domestic HALEU production with Uranium-235 enrichment levels up to 19.75% are essential to our energy, climate, nonproliferation, and national security objectives while also creating thousands of American jobs.

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<sup>1</sup> <https://www.energy.senate.gov/services/files/35C3C5BF-0D81-4D23-B661-38C03218C402>

The lack of sufficient quantities of HALEU to support commercial operations is a crucial concern constraining American companies' ability to develop and deploy advanced reactors both domestically and internationally, especially when competing against large state-owned enterprises that offer advanced designs that also include fuel. Current estimates of the advanced reactor market conservatively suggest annual global sales exceeding \$10B by 2030 with over 50% of the expected designs to use HALEU fuel. U.S. vendors will aggressively compete for those sales and must have the supporting infrastructure which will lead to thousands of American jobs and long-term relationships extending into the 2100's.

The Department of Energy's (DOE) Advanced Reactor Demonstration Program (ARDP) continues to stimulate demand for advanced reactors, but availability of commercial quantities of HALEU, which is a requirement for the viability of many advanced reactor designs is uncertain today. DOE solicited public input in December 2021 with a request for information regarding its plans to create a new program in the U.S. to ensure the availability of HALEU. We firmly believe that the USG must invest significant resources towards domestic HALEU production guided by the following three principles:

- 1) **Timely:** DOE moved with remarkable speed to establish the ARDP with the first awards announced within ten months of the program's creation. We must have a similar sense of urgency from all relevant elements of the USG. Without certainty of a U.S. HALEU supply, both near-term and longer-term advanced reactor deployments could be delayed or abandoned and U.S. leadership in this evolving sector ceded to foreign competitors. Given that it could take up to four years to establish new enrichment capacity and there is a 2026 statutory deadline for HALEU availability set by the Energy Act of 2020, the USG and industry must begin commercial HALEU deployment immediately.
- 2) **Robust:** USG's investment must match the difficulty and importance of the challenge. A single HALEU production facility with deconversion capacity could cost \$500 million to \$1 billion, depending on the scale of production and other factors. And given the potential market size both domestically and internationally, sufficient capacity to meet burgeoning demand will provide the certainty of fuel availability that reactor owners need to invest in a HALEU-fueled design. DOE's commitment to the ARDP will be seriously undermined if there is not a similarly robust commercial effort to establish the domestic fuel supply chain these reactors require.
- 3) **Strategic:** A domestic supply of HALEU is important to a broad range of U.S. strategic interests, from ARDP demonstration awardees to other commercial reactor developers, to use in research reactors and space propulsion and extra-terrestrial power applications. By domesticating the HALEU supply chain, including the production of unobligated uranium, the USG and the U.S. nuclear industry simultaneously provide options for possible microreactor deployments by entities such as the Department of Defense and the National Aeronautics and Space Administration (NASA).

Over the last 30 years, the U.S. has ceded their historical enrichment leadership to others. Currently, domestic nuclear plants import 99% of natural uranium and roughly two-thirds of the LEU used in current nuclear plants is from outside the U.S. . The immediate development of a domestic HALEU supply chain will address needs for both HALEU and LEU.

Russia now plays the dominant role in two key steps in nuclear fuel supply, with over 20% of the world's uranium conversion capacity and 45% of global uranium enrichment capacity. We must


restore America's domestic nuclear fuel supply chain so that we can once again meet our own needs and contribute to the energy security of our allies, with no reliance on Russia. This initiative includes establishing a domestic capability to produce HALEU for advanced reactors while also providing LEU supply to the existing fleet of reactors. Achieving this goal requires large-scale public and private investment.

Trade restrictions can supplement this effort, but not substitute for it. The Russian Suspension Agreement provides a mechanism for the Department of Commerce to gradually reduce our reliance on imports of Russian uranium, conversion, and enrichment services but this can only be successful if done in concert with a robust and urgent investment in domestic capacity to produce HALEU and LEU.

Commercial attachés in U.S. embassies are already seeing expanded and vibrant interests in U.S. nuclear fuel supply and new reactor deployments from countries reacting to Russia's invasion of Ukraine. **However, in order to compete in the international market, the U.S. must be able to offer a complete package including the HALEU fuel for the U.S. advanced reactors under development.**

Thank you for your support of CINTAC. We look forward to working with you and supporting your team on the challenges associated with HALEU development and other issues of mutual concern.

Sincerely and on behalf of the members of CINTAC,

  
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Jeff Harper, Chairman

  
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Ralph Hunter, Vice Chairman

cc: U.S. Secretary of State  
U.S. Secretary of Energy  
U.S. Secretary of Treasury  
U.S. Secretary of Defense  
National Security Advisor  
Chairman, U.S. Nuclear Regulatory Commission  
Director, Office of Management and Budget  
Director, National Economic Council  
Director, National Security Council  
Chairman, Senate Energy and Natural Resources Committee  
Chief Executive Officer, U.S. International Development Finance Corporation  
Chairman, Export-Import Bank of the United States  
Director, U.S. Trade and Development Agency  
Administrator, National Aeronautics and Space Administration

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