THIRD WAY

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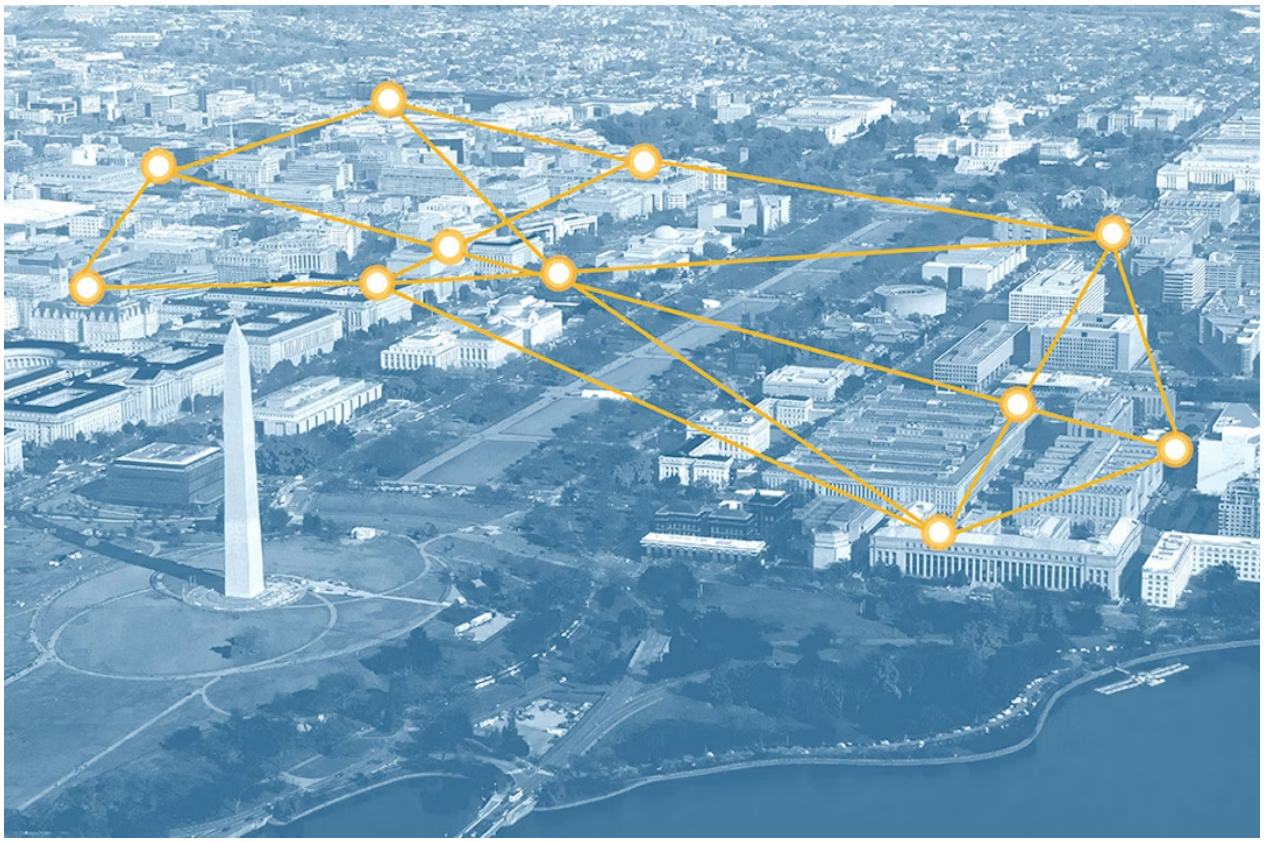
Implementing a Whole-of-Government Nuclear Fuel Strategy



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Takeaways

- In a time of growing energy insecurity, a stable US nuclear industry is a national security imperative that requires decisive and unified effort across federal agencies to strengthen supply chains.
- The Biden Administration has fostered a massive increase in US nuclear fuel supply development opportunities via the Inflation Reduction Act and Emergency Appropriations requests.
- However, a coordinated US interagency effort must take place to align priorities across the federal government to demonstrate our commitment to nuclear energy, increase confidence in the US nuclear industry, and strengthen US global nuclear leadership.
- Establishing mechanisms to facilitate coordination across the government, industry, and international partners is key to enhancing interagency effectiveness in meeting our long-term nuclear energy goals.

The Biden Administration is committed to establishing a resilient, dynamic, and robust US nuclear fuel supply chain. Moving forward, the Administration will need strong interagency collaboration to support the Department of Energy's (DOE) implementation of this commitment. DOE has already launched several solicitations for awards for deconversion and uranium enrichment using funds passed in the Inflation Reduction Act (IRA) and annual appropriations. These efforts will address current US industry's demand for low-enriched uranium (LEU), as well as growing demand for the high-assay low-enriched uranium (HALEU) needed for new advanced reactors. As efforts to develop advanced reactors lead to commercialization of new technologies, HALEU demand is projected to jump to hundreds of tons of annually through 2035.

However, the US isn't going it alone. As allies grapple with their energy security needs and dependence on Russia, some of our allies are enhancing their fuel cycle capabilities. At COP28, the US, UK, Canada, France, and Japan—collectively called the "Sapporo Five"—committed to investing $4.2B into nuclear fuel supply to increase national security. US investments, combined with $1.8B investment in French enrichment capacity expansion and the UK's announced investment of £300M into HALEU infrastructure, are propelling the coalition towards nuclear energy independence. To maximize the government investments made in Western nuclear fuel supply, it's

essential to align the US federal agencies around shared implementation strategies to reach our energy independence goals. Such action must include substantial, sustained external engagement with industry and international partners, or US stakeholders risk missing a valuable opportunity to optimize nuclear fuel supply chain expansion.

Legislation to Reassert Our Energy Security and Global Leadership

Urgent commercial and national security interests in nuclear energy have precipitated bipartisan legislative support for the Biden Administration's efforts. The biggest choke point for US and allied nuclear fuel supply chains is uranium enrichment. Russia dominates the global enrichment market, controlling a third of global LEU production, and is also the only commercial supplier of HALEU. Russia and China's collective LEU production capacity accounts for over 50 percent of global enrichment capacity.

Meanwhile, current US enrichment capacity can only meet a third of domestic needs. Beyond the western enrichers Urenco's and Orano's announced capacity expansions, additional federal support is necessary to overcome this enrichment bottleneck. Urgently extricating the US industry from Putin's influence has gained significant traction among policymakers, resulting in a bipartisan push for action in Congress and substantive Administration steps forward.

Congressional Legislation

Years' worth of effort have culminated in a multi-pronged fuel legislation package with three important components designed to free the United States—and our allies—from reliance on unpredictable authoritarian regimes for nuclear fuel. The legislative packages are:

- **The Nuclear Fuel Security Act (FY24 NDAA)**: The NFSA authorizes the Department of Energy (DOE) to implement programs securing HALEU supply and increasing domestic LEU production. NFSA had substantial bipartisan support, passing the Senate with 96 votes.

- **$2.72 Billion of Funding (FY24 Appropriations)**: FY24 appropriations included nearly $3B for DOE to implement the programming authorized in the NFSA. This funding originated in a $2.2B Presidential Budget Request for a supplemental appropriations package in 2023, and the national security imperative of securing US fuel quickly led to widespread bipartisan support in Congress.

- **Prohibition on Russian Uranium Imports (H.R. 1042)**: This legislation bans US entities from importing Russian enriched uranium, and outlines a waiver process over the next few years to support market certainty. This ban increases opportunities for Western enrichment companies to capture more market share, and swiftly reduces reliance on Russia.

But the work isn't over. Now, these investments need to be deployed and US stakeholders must swiftly collaborate to fulfill these national and international commitments.

Why a Whole-of-Government Approach?

Many federal agencies work on nuclear energy development and deployment, including: the Departments of Energy (DOE), State, and Commerce; the National Nuclear Security Administration (NNSA); Nuclear Regulatory Commission; and White House offices and National Security Council. DOE is acting quickly to implement the Russian uranium ban and establish sufficient LEU stockpiles for the transition to a Western-controlled supply chain. During this phase, the US interagency must work closely and consistently to deploy these new resources in support of a robust fuel supply chain that can compete with state-affiliated nuclear enterprises like Rosatom.

Demonstrating Commitment

Alignment across agencies on our national nuclear fuel policy approach demonstrates the Administration's commitment to successfully achieving a Western-controlled fuel supply chain. The rigid statutory deadlines in place to end reliance on Russian fuel limit schedule flexibility for implementing federal programs. DOE's activities may be focused on domestic fuel availability, but early collaboration with the NNSA, the State Department, and other relevant authorities can help inform a strategy that views domestic fuel availability as part of a broader fuel ecosystem among allies, and bolster DOE's capacity to respond quickly to fuel infrastructure demands.

Spurring Global Leadership

The Administration and a bipartisan Congress have stressed the need for the US to regain global nuclear leadership to increase economic competitiveness and overcome Russia's and China's risky influences. Nuclear fuel supply is an essential step towards securing reliable clean energy for the West. The US must serve as the tip of the spear in establishing a reliable and resilient Western nuclear fuel strategy. To do so, the US interagency must commit to sustained, effective collaboration with partner countries looking to the US for leadership.

Promoting Confidence in US Nuclear Industry

A whole-of-government approach can lay the foundation for long-term stability and reliability in US fuel cycle support. This posture would create a more competitive US industry among

competitors that control large fuel enterprises and encourage deeper partnerships. Increasing mission alignment across federal agencies will ensure the US government's strategy can better withstand changes in leadership, thereby fostering reliability among US industry actors, clean energy investors, and overseas energy partners.

Conclusion and Recommendations

The Biden Administration has the opportunity to assert US global nuclear energy leadership by ushering in the development of a large-scale US-led nuclear fuel supply chain. The following considerations for interagency engagement can set the scene for continued US nuclear fuel enterprise strength.

- **Enhancing Central Coordination:** Strengthening interagency coordination could be addressed by establishing a central coordinator principally responsible for developing and implementing US civil nuclear strategy. This principal would direct the interagency approach to foster consistent coordination and streamline bureaucratic hurdles. The International Nuclear Energy Act (INEA) moving through Congress could establish such a role statutorily. Whether through statute or Administration decision, a central hub with deep connections to the rest of the interagency would strengthen alignment.

- **Maximize Tools for International Engagement:** Included in INEA are provisions to enhance the interagency's tools and capabilities to cooperate internationally with nuclear energy partners. The interagency should continue to offer technical assistance and feedback on the bill as it moves forward to ensure statutory mandates for engagement are as clear as possible. INEA's proposed nuclear export working group could also be a model or component for interagency fuel engagement.

- **Deepen Working-level Interagency Collaboration:** The National Security Council's Interagency Policy Committee (IPC) process offers a vector for interagency engagement among all relevant agencies on national security issues and has previously been used as a tool for developing nuclear energy policy. DOE should convene a meeting of the IPC to present its approach and encourage alignment on nuclear fuel policy moving forward as the leader of a robust Western-controlled fuel supply chain.

- **Frequent Engagement with Industry:** The interagency must continue engaging closely with industry to create reliable public-private partnerships and strengthen the network of stakeholders working towards the goal of a robust nuclear fuel supply. The interagency should leverage the various industry fuel working groups hosted by NGOs and trade associations in the nuclear space to receive frequent updates on industry's progress towards developing a robust Western fuel supply and discuss ways to maximize the federal-industry nexus.

- **Efficient Coordination with Allies:** Coordination goes beyond the US interagency itself. Players within the Administration must also consider how to best use the resources available to them *and* their allies to avoid duplicative investments and encourage diverse leadership of different parts of the fuel cycle. Both the multilateral cooperative regulatory agreement between the US, Canada, and now UK and the US-Canada Energy Transition Task Force provide potential models for practical working-level groups to implement Sapporo 5 commitments. Therefore, the interagency should seek to replicate or expand these initiatives as appropriate to include all Sapporo 5 actors and offer a constant line of communication and cooperation among Western fuel partners.

The Prohibition on Russian Uranium Imports Act set a clear timeline to develop Western fuel supply so as to avoid significant gaps in US nuclear energy capacity. As such, the US interagency must continue to press forward on these efforts with urgency. The Biden Administration's strong leadership has acknowledged nuclear fuel policy as critical to US national security, clean energy, and economic competitiveness priorities. Implementing this fuel cycle strategy with a whole-of-government approach will support these priorities by reducing institutional redundancies, identifying interagency obstacles, and significantly boosting coordination among allies to establish a robust and secure fuel supply chain.