

**NEAC International Subcommittee**  
***August 2023 Amended Report***  
***Updated Report Presented During April 2024 Meeting***  
***Ready for Public Release***

**Initial Report (Minor Update from that presented at the previous meeting)**

The Subcommittee launched its considerations by first attempting to clearly define what issues should be addressed. The members acknowledged and appreciated that the Office of Nuclear Energy has developed an active and productive international affairs program and that it coordinates with key players across the Federal government. It was not clear, however, what served as the U.S. Government's driving objectives and how these were articulated and managed.

To understand this matter more completely, the Subcommittee met with a range of senior officials to hear their perspectives and dialogue about the U.S.'s key policy objectives. These included the Undersecretary of State Arms Control and International Security, the DOE Assistant Secretary for International Affairs, the Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration, and the Assistant Secretary of Commerce for Industry and Analysis.

The Subcommittee was very appreciative of the time and insights it received from these senior officials and was impressed with the common understanding they represented regarding the importance of nuclear energy to U.S. foreign policy. Collectively, they clearly understood that the relationships established when one country exports nuclear energy technologies to another are broad, deep, and enduring. In most cases, such an export creates ties of foreign policy, security policy, nuclear regulation, industries and finance that can persist for up to a century. This understanding provides an important perspective in the current global context when Russia and China are both aggressively seeking to export nuclear energy technologies around the world and have gained significant ground in many parts of the world, including South America, Africa, Asia and the Middle East.

We also found a strong appreciation for the domestic benefits of a strong nuclear industry and the jobs and economic activity it can generate at home, as well as supporting U.S. climate goals. This common understanding across so many agencies should be highlighted and applauded; this has not always been the case. Nor has it always been the case that DOE assumed an active role in supporting U.S. nuclear energy exports. It is also important to note the bipartisan nature of these policies; some of these developments initiated in the previous Administration but have been enhanced and accelerated in the current Administration.

The Subcommittee observes that global energy security concerns and climate commitments have thrust nuclear energy to center stage in many countries around the globe. We are at a unique moment for the United States to help partners develop nuclear energy in place of either Russia (currently the dominant global supplier) or China (an

emerging rival). Major opportunities are at hand to advance U.S. national interests in tandem with expanding U.S. exports and American jobs. U.S. competitiveness in nuclear energy markets, from new reactors and advanced technologies to supporting operating reactors to decommissioning and used fuel services, needs enhanced coordination, expanded cooperation and improved trade support from the U.S. Government.

The Subcommittee believes there is an important weakness in the U.S. Government's current framework. While the various agencies are doing quality, important work, they largely operate in their existing lanes. While it would be overstating the matter to say they are "stovepiped", the Subcommittee does not see a clear organizing mechanism or strategic focus and vision with respect to U.S. efforts. There are gaps in the policy framework that are not well-addressed by any of the agencies despite concerted efforts by some.

For example, agencies struggle with the fact that when it comes to financing projects overseas, the U.S. is largely overmatched by the competition. While in at least one case, heroic efforts have dealt with the financing issue, the officials with which we met noted it was highly complex and time-consuming and not likely to be repeated multiple times. This has been a well-known issue for many years and there is no clear path for the future.

A recently published study from the National Academy of Engineering also identified this issue of competition with state owned or sponsored entities and recommended that the Executive Branch work with the private sector to build an effective and competitive financing package for U.S. exporters.<sup>1</sup>

Another gap is the lack of a long-term view in developing relationships with potential partners. When an African country which has had scores of young people educated in the best Russian universities issues a bid package, it is probably too late for the U.S. to show its interest.

The Subcommittee plans to explore the following themes as it proceeds:

- 1) **Strategic Vision**—The White House should appoint a senior official to direct nuclear energy policy within the Executive Office of the President in order to provide strategic vision and oversight. To be effective, this would need to be an official with cabinet-level access and visibility. (It is interesting to note that earlier this year, President Macron of France activated a Nuclear Policy Council that he will chair that will lead that country's efforts in the nuclear energy arena. It is also important to recognize the role competing nuclear suppliers play in supporting the foreign policy goals of other countries and thus the close relationships they enjoy with national leadership—for example, there are very close ties between ROSATOM and the Russian president.)

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<sup>1</sup> National Academies of Sciences, Engineering, and Medicine. 2023. *Laying the Foundation for New and Advanced Nuclear Reactors in the United States*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26630>.

- 2) **Long-Term Investment in Overseas Relationships**—The US should provide enhanced support (through Commerce, DOE and DoS) to identify and develop potential customer nations. Many countries that have the highest future energy demand growth are also less capable institutionally to support deployment and regulation of nuclear technologies. More should be done to develop programs with the appropriate scope and scale (with international partners and agencies) that can build capacity (governance and workforce—including the training of government officials and the education of young people) as help build the capabilities of nuclear safety regulators (through the well-funded engagement of the US Nuclear Regulatory Commission). Additionally, much more should be done to leverage U.S. capacities in research, development and demonstration to build and enhance overseas partnerships in joint exploration of longer-term technologies.
- 3) **Financing of Overseas Projects**— Financing is critical to U.S. nuclear competitiveness abroad. Congress and the Administration should ensure that the Export-Import Bank, the U.S. International Development Finance Corporation and the U.S. Trade and Development Agency have the necessary authorities, resources and mandate to enable competitive U.S. nuclear energy exports. Change is needed; the lending authority of EXIM and DFC and the budget at USTDA should be increased to meet the demand of the growing global market. Moreover, to be competitive with suppliers from China and Russia, these entities should be empowered to provide equity investments or insure private investment in overseas nuclear projects, as equity is increasingly a requirement for international customers.
- 4) **Export Policies**—As the global market for nuclear exports rapidly expands and new countries work to develop nuclear energy programs, framework agreements for nuclear cooperation (Section 123 Agreements) will be needed with many more partner countries. Without a Section 123 Agreement in place, potential partner countries cannot rely on U.S. suppliers to provide nuclear reactors and fuel. Further, the lack of a Section 123 agreement requires U.S. exporters to undergo a time-consuming process of specific authorization from the Secretary of Energy to engage in many activities typical in the early stages of the development of a nuclear energy program or project. In parallel, the Department of Energy must achieve further efficiencies in the approval processes for specific authorizations under 10 CFR 810. There is also a need to reassess the general approach taken by the U.S. with regard to how fuel cycle technologies are viewed within the nonproliferation establishment. Particularly in an era of heightened concern over energy security, there is a need to articulate a much more refined position of how we can manage rapid expansion of nuclear energy usage in parallel to strategies to minimize proliferation risk. Renewed interest in nuclear energy in non-weapon states like Japan and South Korea, which have urgent concerns over energy security, makes it vital to address this issue sooner rather than later. Finally, there are a range of important specific issues that the Subcommittee will further explore:

- Ensure a U.S. solution for fuel supply, including LEU and HALEU. This is a threshold issue for both the near term and the long term and is essential in building the confidence of potential partners.
- Consideration of back-end fuel leasing or take-back strategies to reduce nonproliferation concerns and improve economic competitiveness.
- Provide more comprehensive assistance to partner countries' training and development, including regulatory support. Russia, China, and other supplier nations offer more substantial capacity building linked to exports.

### **Update and Recommendations**

After further deliberation, the subcommittee concluded that while its considerations reflect issues of high significance to the Office of Nuclear Energy and the Department as a whole, they cannot be resolved by those entities alone.

Most of the areas discussed above are subsidiary to the Subcommittee's theme of "Strategic Vision" and must be reviewed in that context. (Our proposal to address this area is provided later in this Update.) Two important, time-sensitive areas can be advanced substantively outside of the larger concerns about "Strategic Vision":

1. Addressing the very near-term issue of the supply of LEU and HALEU and
2. Financing of Overseas projects.

Regarding the first issue, the Subcommittee notes with approval that the NEAC Infrastructure Subcommittee has also raised the LEU/HALEU matter as a high concern. This matter is a multifaceted challenge that is both a threshold issue for several SMR technologies that are receiving substantial support from the Department and for the longer-term energy security of the United States. To fully capture this challenge, it may be most useful for **interested members of both subcommittees to form a short-term task group to explore the issue in greater detail and propose actions for the consideration of the overall NEAC.** We look forward to discussing this in session with all NEAC members.

The second issue, Financing of Overseas Projects, while related to the financing of domestic projects involve different considerations and different players. **The Subcommittee, therefore, plans to make this a key focus area for the coming months and will investigate the views of the involved organizations, both in the US Government and in international financial institutions. The Subcommittee will also maintain awareness of relevant legislation pending in Congress.**

Finally, regarding the larger issue of “Strategic Vision”, the Subcommittee proposes that the entities—and preferably the individuals—we have interviewed previously (i.e., Undersecretary of State Arms Control and International Security, the DOE Assistant Secretary for International Affairs, the Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration, and the Assistant Secretary of Commerce for Industry and Analysis) along with the Assistant Secretary for Nuclear Energy and, potentially, the Chairman of the Nuclear Regulatory Commission participate in a special strategic meeting to discuss the issue of Strategic Vision. To be most impactful, such a meeting should include an appropriate representative of the White House staff to assess and consider the discussion and its conclusions.

Such a meeting could be framed as follows:

- The NEAC is concerned that the U.S. is falling behind the primary competitors such as Russia and China. While the different arms of the USG appear, for the most part, to have a common high-level understanding with regard to US goals, it is our observation that these elements have relatively parochial views of what it means to re-establish U.S. leadership, with exclusive focus on the mission of the specific agency or office.
- As a result, it is not clear if there is a comprehensive definition of what “U.S. leadership” means including all the contributing elements such as commercial, technological, intellectual, diplomatic, and policy regarding the safety and security protocols. We believe it would be tremendously beneficial to develop a comprehensive definition—and to clearly define and understand where well-informed differences exist. We believe these understandings can be achieved through a policy-level deliberation among the relevant government agencies aimed at addressing these specific questions:
  1. What is the comprehensive definition of U.S. leadership in nuclear energy technologies and what is the role of each agency in achieving the overarching leadership goals? How are/should success and progress be coordinated and evaluated across agencies?
  2. How is “U.S. leadership” articulated to our allies/like-minded countries (such as France, U.K., Japan, S. Korea) and how is progress coordinated in collaboration with these countries? What is the role of fair and friendly competition in our posture?
  3. The approach by government-backed enterprises from Russia and China provide significant advantages in achieving overseas sales compared to US private sector companies. While recognizing the important progress made by the USG in advancing one recent overseas project in Central Europe, it is apparent that this example was a challenging exception rather than a clear pattern for the future.

- a. What steps can be taken to enable US industry to compete comprehensively in the future?
  - b. What actions have been taken to force change in institutions like the World Bank, which could do more to level the playing field? Should the US lead a revision of OECD guidelines for export financing arrangements?
  - c. Can the USG be more aggressive in establishing programs to educate and train young people from new-comer countries at US universities (an area in which Russia and China excel)?
- 4. US leadership is a factor in considering our engagement with allies on advanced technologies and trade with new-comer countries. Particularly when a new-comer country engages in nuclear energy deployment, the question of proliferation risk emerges. While LWRs operated under international safeguards are viewed as an acceptable risk in that context, questions persist about US engagement with other advanced technologies.
  - a. What is the U.S. position in terms of acceptable risk with respect to advanced reactor and being developed—such as liquid metal fast reactors, molten salt (liquid fueled) reactors? Do agencies have a common view on what technologies should or should not be viewed as fair game in international trade?
  - b. Is there a common understanding of these technologies and their risks and benefits across the different agencies?
  - c. Should, if it is to be a leader, the US collaborate with allied countries that plan to deploy such technologies? How are advanced recycling technologies such as pyroprocessing seen in this context?
  - d. What incentives could be made especially to nuclear newcomer states with a clear strategy toward reducing, not increasing, the threat of proliferation when (re-)establishing or deepening nuclear cooperation?
  - e. Is the USG confident that US industry acts sufficiently to honor and protect the nonproliferation regime? If not, what might be done to provide clearer guidance or incentives?