



March 1st, 2023

U.S. Department of Energy – Office of Clean Energy Demonstrations
Washington, DC 20585

Subject: Request for Information Regarding on the Department of Energy’s Use of Demand-side Support for Clean Energy Technologies. (OCED-RFI-23-1).

Dear Office of Clean Energy Demonstration Staff,

The Nuclear Innovation Alliance (NIA) is a non-profit “think-and-do” tank working to enable advanced nuclear energy as a solution to mitigate climate change. Through policy analysis, research, outreach, and education, NIA is catalyzing the next era of nuclear energy. We focus on federal policy and regulatory reform to support advanced reactor development and deployment while meeting national environmental and energy security goals. Achieving the benefits that advanced reactors promise is a core goal of NIA and we recognize that the Office of Clean Energy Demonstrations (OCED) will play a critical role in making this goal a reality.

NIA supports OCED in your effort to identify demand-side support measures that would be useful in scaling up clean energy technologies, including advanced nuclear energy technologies, and in your effort to determine the best way for DOE to implement these demand-side support measures. Advanced nuclear energy can be a key component of 21st century decarbonization. It can help the United States and high-emitting countries meet their 2050 climate and energy security goals while also sustainably powering emerging economies alongside other clean energy sources. In order for advanced nuclear energy to play this role, private industries and governments must work together to research, develop, demonstrate, and deploy new technologies, and these efforts can include demand-side support measures.

Below, we provide our input on this [request for information](#) (RFI) recently released by OCED, and have structured our input in parallel to the structure presented in the RFI.¹

¹ The numbering of questions in the RFI included an error, where question 5 was numbered question 2, and so on. In this response to the RFI, we have numbered the RFI questions sequentially.

Category A: Most effective demand-side support measure for given technologies

1. What are the potential benefits and drawbacks of DOE implementing demand-side support measures in a given industry (e.g., carbon dioxide removal, hydrogen, low carbon cement and concrete, low-carbon steel, sustainable aviation fuels)? (Please specify the technology or technologies in question.) In this question, DOE is not seeking input on the implementation approach.

Response: The substantial benefit of DOE implementing demand-side support measures for advanced nuclear energy would be to greatly accelerate deployment of this firm clean energy source by supporting advanced nuclear reactor demonstrations. Once these first- or second-of-a-kind reactors have been deployed, commercial entities such as investor-owned utilities and independent generation owners will perceive less risk in subsequent deployments and will be more inclined to pursue advanced nuclear energy projects due to the advantages of zero-carbon firm, dispatchable energy. As a result, the commercial viability of advanced nuclear reactors will rise, sending stronger signals to commercial entities looking to build advanced nuclear reactors, or invest in the advanced nuclear energy supply chain (e.g., fuel fabrication, conversion, enrichment, recycling, etc.).

DOE's Office of Nuclear Energy is currently structuring their High-Assay Low-Enriched Uranium (HALEU) fuel availability program, which will likely capitalize on the benefits of demand-side support measures. This program, which was appropriated \$700 million in the Inflation Reduction Act and \$100 million in the December 2022 Omnibus spending package, is intended to assist private industry in increasing supply of HALEU for civilian domestic research, development, demonstration, and commercial use. It is expected that this program, once implemented, will be an example of DOE recognizing the benefits of demand-side support for the advanced nuclear energy industry. DOE will be issuing a request for proposal soon, a step that will eventually lead to cooperative agreements between DOE and private companies to meet the goals of the HALEU fuel availability program. OCED should monitor this process to learn what aspects and lessons learned could be applied to an OCED lead demand-side support measure.

2. What would be the most effective demand-side support measure DOE could use to support commercial scale-up of a given technology (e.g., reverse auctions, advanced market commitments, contracts-for-difference, direct procurement, pooled offtake vehicles)? (Please specify the technology or technologies in question.) In this question, DOE is not seeking input on the implementation approach.

Response: One of the most effective demand-side measure for advanced nuclear energy is direct offtake under a long-term contract. Such a contract will provide the assured revenue stream that is essential for financing a capital-intensive technology such as advanced nuclear energy. Under direct procurement, DOE could use the power for DOE or other U.S. government entities (e.g., Bonneville Power Administration or the Tennessee Valley Authority), or resell the power to commercial entities including load-

serving entities and industrial or commercial buyers. In regions where U.S. government power entities do not exist, DOE could enter agreements to sell the power directly to a load-serving entity or to a power marketer. In restructured markets, contracts for differences could be used; however, by using contracts for differences it may be more challenging for DOE to benefit from the hourly zero-carbon attributes of the power when it is resold.

Category B: Implementation of demand-side support measures

3. What are the benefits and drawbacks of DOE partnering with an independent entity to implement demand-side support measures?

Response: It would be beneficial for DOE to partner with entities that are already participants in the power markets, either as DOE power marketing administrations² such as Bonneville Power Administration, load-serving entities, or commercial power marketers. DOE could purchase the power directly from an advanced nuclear energy project or participate in a multiparty purchase. The utilities or power marketing entities would be able to resell the zero-carbon, firm power to customers in the relevant regions.

4. If DOE were to partner with an independent entity to implement demand-side support measures, what might a partnership arrangement look like between DOE and an independent entity responsible for facilitating purchasing of clean energy technologies and services? What would be the best way to structure the agreement between DOE and the entity? What would be the best way to structure agreements between the not-for-profit and commercial entities involved in purchasing or producing clean energy products? What organizational structure would be best for the entity in question? What capabilities would the entity require to effectively provide demand-side support measures? How would a partnership ensure that federal requirements (e.g., the National Environmental Policy Act) and national policies (e.g., Justice40) are met with respect to federal funding of demand-side support?

Response: See our response for questions 1 and 2.

5. What are the benefits and drawbacks of DOE directly executing demand-side support measures?

Response: See response to question number 1. Additionally, some may assert that direct involvement by DOE in executing demand-side support measures would interfere with free market operation. However, the public benefits of accelerating the deployment of advanced nuclear energy, including the creation of high paying jobs and the generation of clean reliable energy, justify public support. Nuclear reactors in particular are generally

² [DOE Power Marketing Administrations](#)

capital-intensive projects, which make them good candidates for demand-side support to de-risk initial investment.

6. What are the benefits and drawbacks of DOE working with a government-sponsored enterprise or government corporation to execute demand-side support measures?

Response: No response.

7. Do particular implementation approaches (e.g., partnership with an independent entity, direct government execution, quasi-governmental entity) lend themselves particularly well to specific technologies and/or demand-side support measures?

Response: No response.

Category C: Other questions for entities potentially interested in providing demand-side support measures in partnership with DOE

8. Are there other approaches DOE should consider to execute demand-side support measures?

Response: NIA has not identified other approaches.

9. Does your organization have the capacity to implement demand-side support measures for critical clean energy technologies?

Response: No.

10. What qualifications does your organization have to implement demand-side support measures?

Response: n/a

11. Which technology or technologies could your organization best support?

Response: Advanced nuclear energy

12. What interests your organization about the opportunity to provide demand-side support measures in partnership with DOE?

Response: n/a

Thank you for considering NIA's comments on how demand-side support could significantly accelerate the deployment of advanced nuclear energy. The commercialization of advanced nuclear energy is critical for meeting our domestic energy goals, and demand-side support can play a large role in developing advanced nuclear energy technologies.

NIA would like to thank DOE for the opportunity to comment in on this request for information. If you have any questions, please contact us at ecothron@nuclearinnovationalliance.org.

Sincerely,

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