

DEPARTMENT OF ENERGY**Notice of Availability of a Notice of Intent and Request for Information Regarding the Establishment of a Program To Use the Defense Production Act**

AGENCY: Office of Manufacturing and Energy Supply Chains, Department of Energy.

ACTION: Notice of availability of a notice of intent (NOI) and request for information (RFI).

SUMMARY: The U.S. Department of Energy (DOE) announces the notice of availability (NOA) of a notice of intent and request for information on DOE's support of domestic manufacturing of electric heat pumps using Title III of the Defense Production Act (DPA). DOE invites public comment on the RFI regarding the application process, examples of eligible projects, potential funding sizes required, and criteria for qualification and selection of eligible projects to participate in the electric heat pumps DPA program.

DATES: Responses will be reviewed and considered on a rolling basis but are due no later than 5 p.m. (ET) on December 2nd, 2022.

ADDRESSES: Interested parties are to submit comments electronically to dpaheatpump@energy.gov and include "NOI/RFI: Heat Pump Defense Production Act" in the subject line. Email attachments can be provided as a Microsoft Word (.docx) file or an Adobe PDF (.pdf) file, prepared in accordance with the instructions in the RFI. Attachments with file sizes exceeding 25MB should be compressed (*i.e.*, zipped) to ensure message delivery; however, no email shall exceed a total of 45MB, including all attachments. The complete RFI document is located at <https://www.energy.gov/mesc/defense-production-act-request-information>. Please refer to the Disclaimer and Important Note section at the end of the RFI on how to submit business sensitive and/or confidential information.

FOR FURTHER INFORMATION CONTACT: Requests for additional information and questions about the NOI and RFI may be addressed to Tsisilile Igogo at (240) 278-5471 or dpaheatpump@energy.gov.

SUPPLEMENTARY INFORMATION: In June 2022, President Biden issued five determinations under the DPA, including a presidential determination to allow DOE to use its delegated DPA authorities to expand the domestic production capability for electric heat

pumps.¹ In early October 2022, DOE issued a RFI to determine how best to leverage the authority invoked by President Biden to accelerate domestic production of four of the five technologies that received Presidential Determinations under title III of DPA.² This joint NOI and RFI focuses on electric heat pumps, the fifth technology that received a Presidential Determination.

U.S. manufacturing output of electric heat pumps, which include ground-source and air-source heat pumps as well as both space heating and water heating equipment, is not yet at the rate or volume needed to fully achieve U.S. climate and energy security goals. Buildings, homes, offices, schools, hospitals, military bases, and other critical facilities drive more than 40% of all U.S. energy consumption. U.S. energy supplies are largely dependent on fossil fuels that remain susceptible to geopolitical impacts from nations that are not U.S. strategic partners or allies.

Section 30001 of the Inflation Reduction Act (IRA) appropriated \$500 million to carry out the DPA, and \$250 million of that amount was allocated to the Department of Energy for title III of the DPA to support the growth of manufacturing needed to meet the anticipated growing demand for electric heat pumps. DPA resources could help scale up U.S. heating, ventilation, and air conditioning (HVAC) and water heating (WH) manufacturing, accelerate installation of high-efficiency electric heat pumps in homes, qualified buildings, and industrial settings, and complement investment coming through other BIL and IRA provisions.

This NOI describes the proposed funding approach to eligible entities in the electric heat pump industry, including the proposed electric heat pump solicitation process, program structure and criteria. Through this RFI, DOE seeks comment on the application process, examples of eligible projects, potential funding sizes required, and criteria for qualification and selection of eligible projects to participate in the electric heat pumps DPA program. This NOI and RFI are available at: <https://www.energy.gov/mesc/defense-production-act-request-information>.

Confidential Business Information: Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt

¹ www.whitehouse.gov/briefing-room/presidential-actions/2022/06/06/memorandum-on-presidential-determination-pursuant-to-section-303-of-the-defense-production-act-of-1950-as-amended-on-electric-heat-pumps/.

² www.energy.gov/mesc/defense-production-act-request-information.

by law from public disclosure should submit via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Signing Authority: This document of the Department of Energy was signed on November 1, 2022, by Kathleen Hogan, Principal Deputy Under Secretary for Infrastructure, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on November 2, 2022.

Treena V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

[FR Doc. 2022-24291 Filed 11-7-22; 8:45 am]

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DEPARTMENT OF ENERGY**Accelerating Innovations in Emerging Technologies**

AGENCY: Office of Science, Department of Energy.

ACTION: Request for information (RFI).

SUMMARY: The Office of Science in the Department of Energy (DOE) invites interested parties to provide input relevant to developing approaches for accelerating innovations in emerging technologies to drive scientific discovery to sustainable production of new technologies across the innovation continuum; train a science, technology, engineering, and mathematics (STEM) workforce to support 21st century industries; and meet the nation's needs for abundant clean energy, a sustainable environment, and national security.

DATES: Responses to the RFI must be received by December 23, 2022.

ADDRESSES: DOE is using the www.regulations.gov system for the

submission and posting of public comments in this proceeding. All comments in response to this RFI are, therefore, to be submitted electronically through *www.regulations.gov* via the web form accessed by following the "Submit a Formal Comment" link.

FOR FURTHER INFORMATION CONTACT:

Questions may be submitted to *accelerate@science.doe.gov* or Natalia Melcer at (301) 903-0821.

SUPPLEMENTARY INFORMATION:

Background

Research drives innovations in technologies that ensure a vibrant economy and secure the future of the nation. The United States is a global leader in research and development (R&D), with activities generally focused on two areas. Federally-funded scientific research focuses on discovery and use-inspired research, which is commonly conducted at universities and national/federal laboratories. Applied research, development, and technology demonstration activities are funded by both federal sources and industry and are conducted in university, national laboratory, and industry settings, focusing on demonstrating the application of an innovation to yield a product that can be prototyped, scaled up, and deployed in the marketplace. The gap between these two areas of R&D is often referred to as the "valley of death" because science-driven research often does not consider the factors required to drive innovations to sustainable production, and applied R&D and industry often find it difficult to transform early-stage discoveries to mature, deployable technologies. As a result, transitioning fundamental discoveries to new technologies in the marketplace has traditionally been challenging. Further, the innovation process is not linear, and technical bottlenecks arising on the technology demonstration side often require fundamental science breakthroughs ("technology pull"); conversely, fundamental science breakthroughs can drive new technologies ("science push"). Closely coupling these research, development, demonstration, and deployment (RDD&D) processes in a more circular manner will optimize and expedite the development and deployment of next generation technologies.

Bridging these gaps requires a holistic, "end to end" approach that closely integrates basic scientific and engineering research across multiple disciplines with applied and industrial activities to ensure that innovations reach the marketplace. Long-term

success in driving the innovation continuum of research, development, demonstration, and deployment (RDD&D) will also require STEM workers who are trained broadly across the spectrum of science and engineering to propel discovery, innovation, scale-up, and production of new technologies for the future.

Beyond accelerating innovations in emerging technologies, these research activities have the potential to contribute to local and regional ecosystems to catalyze more innovation, workforce development, entrepreneurship, and economic growth in these regions. This "place-based innovation" will leverage partnerships with local or regional private and public organizations that can further lead to a vibrant culture to support innovation and industries of the future.

The DOE Office of Science (SC) seeks input on research approaches that have the potential to push the discovery and creation of innovations towards the production/commercialization of future technologies that will have important public and commercial impact. These approaches would necessarily bring together trans-disciplinary teams of scientists and engineers in diverse fields, taking advantage of talent from national laboratories, regional universities, and industry. These teams will combine key technology focus areas (described later) to achieve the overarching goal of accelerating place-based innovation with an "end to end" approach that fully integrates "science push" and "technology pull" processes to guide the S&T research. Further, to emphasize place-based research growth, approaches should be considered that draw on regional resources and expertise to support the innovation process and allow wholly new concepts and processes to thrive.

Breakthrough scientific discoveries and technological innovation are needed in areas vital to building an innovation economy for the 21st century. As the nation's lead federal agency supporting fundamental scientific research related to energy, SC seeks to drive scientific discovery in ten key areas to yield sustainable production of new technologies and meet the nation's needs for abundant clean energy, a sustainable environment, and national security. These ten key technology focus areas include:

- Artificial intelligence, machine learning, autonomy, and related advances;
- High performance computing, microelectronics, and advanced computer hardware and software;

- Quantum information science and technology;
- Advanced manufacturing and automation;
- Biopreparedness;
- Advanced communications technology and immersive technology;
- Biotechnology, medical technology, genomics, and synthetic biology;
- Data storage, data management, distributed ledger technologies, and cybersecurity, including biometrics;
- Advanced energy and industrial efficiency technologies, such as batteries and advanced nuclear technologies, including but not limited to for the purposes of electric generation; and
- Advanced materials science, including composites, 2D materials, other next-generation materials, and related manufacturing technologies.

The SC mission is to deliver scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States. Within this mission, SC supports fundamental research in applied mathematics, biology, chemistry, computer science, engineering, isotope R&D, materials science, and physics that catalyze technical breakthroughs and innovations across these ten key technology focus areas. For example, fundamental advances in materials and chemical processes are required to achieve goals for clean, affordable, and abundant energy generation, storage, and use. Breakthroughs in 2D materials and new electrolytes could enhance ion transport in next-generation batteries to achieve fast-charging, high-power, and high-energy-density requirements needed to power the nation's transportation fleet. Similarly, new materials that can withstand extremes of radiation and temperature could support the development of future fission and fusion reactors with high efficiencies and long lifetimes. To minimize energy costs and wastes and meet demanding design requirements, new approaches will be needed for the manufacturing of next-generation energy technologies, requiring control of materials and chemical processes from the atomic and molecular levels. Revealing the rules of nature could produce breakthroughs in biotechnology, medical technology, and biopreparedness by tailoring biological processes to produce new chemicals, materials, or medical therapeutics. To enable continued advances in computing and power technologies, a fundamental rethinking is needed of the science behind the materials and chemistry, physics, synthesis and fabrication technologies, architectures,

algorithms, and software for microelectronics. Computational modeling could enable the design of highly selective separation media to increase the efficiency of isotope production approaches. Finally, to realize a next-generation technology may require advances in multiple key technology areas, such as combining advances in new manufacturing, materials, artificial intelligence, and machine learning to produce next-generation batteries.

Questions for Input

This RFI is an initial step in improving SC's understanding of the challenges and opportunities associated with transitioning new discoveries to high-value technologies to drive the economy of the future. The RFI is a solicitation for public input to help identify approaches that can accelerate the process from scientific discovery to sustainable production of new technologies across the innovation continuum. Responses should be limited to the SC mission areas, as described in the Background section. (Note: Responses submitted to the request for information on advanced computing ecosystems do not need to be submitted again: <https://sam.gov/opp/8c35a6cc1692492e94c337ba645ecce5/view>).

Responses are requested for the questions listed. Respondents may provide input regarding any or all of these questions. Each response should be numbered to match the specific question listed.

(1) What are the barriers or challenges that need to be addressed to transition basic scientific discoveries to applied technologies?

(2) What opportunities are there to build research teams that bridge the discovery to production spectrum, providing an "end to end" approach that fully integrates "science push" and "technology pull" processes to guide research to realize new technologies?

(3) What new opportunities could be realized by combining two or more of the ten key technologies to accelerate the development of innovative products?

(4) What specific metrics should be used to measure the success of new approaches for accelerating technology development?

(5) To prepare for future industries, what opportunities are there for ensuring a robust workforce related to the ten key technologies? What skills are needed for students preparing for a career, and which of these skills are not commonly available in educational institutions?

(6) What specialized facilities or capabilities are needed to support research activities related to the ten key technology areas? Are there new capabilities needed that could be provided through the scientific user facilities at the DOE National Laboratories, such as the light and neutron sources, particle accelerators, nanoscience centers, and high-performance computing facilities (<https://science.osti.gov/User-Facilities>)?

(7) What new mechanisms will help a region, especially those centered on underserved communities, establish a vibrant innovation ecosystem to foster training, recruitment, and retention of technical personnel, support spinoffs, and growth of existing companies, develop entrepreneurs, and catalyze future industries in the key technologies?

Comments containing references, studies, research, and other empirical data that are not widely published should include copies of the referenced materials. Note that comments will be made publicly available as submitted.

Signing Authority

This document of the Department of Energy was signed on November 2, 2022, by Asmeret Asefaw Berhe, Director, Office of Science, pursuant to delegated authority from the Secretary of Energy. The document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on November 2, 2022.

Treana V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

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DEPARTMENT OF ENERGY

International Energy Agency Meetings

AGENCY: Department of Energy.

ACTION: Notice of meetings.

SUMMARY: The Industry Advisory Board (IAB) to the International Energy Agency (IEA) will meet on November 16–17, 2022, as a hybrid meeting via

webinar and in person, in connection with a joint meeting of the IEA's Standing Group on Emergency Questions (SEQ) and the IEA's Standing Group on the Oil Market (SOM) which is scheduled at the same time via webinar.

DATES: November 16–17, 2022.

ADDRESSES: The location details of the SEQ and SOM webinar meeting are under the control of the IEA Secretariat, located at 9 rue de la Fédération, 75015 Paris, France. The in person meeting will take place at IEA Headquarters, 9 rue de la Fédération, 75015 Paris, France.

FOR FURTHER INFORMATION CONTACT: Mr. Thomas Reilly, Assistant General Counsel for International and National Security Programs, Department of Energy, 1000 Independence Avenue SW, Washington, DC 20585, (202) 586-5000.

SUPPLEMENTARY INFORMATION: In accordance with section 252(c)(1)(A)(i) of the Energy Policy and Conservation Act (42 U.S.C. 6272(c)(1)(A)(i)) (EPCA), the following notice of meetings is provided:

A meeting of the Industry Advisory Board (IAB) to the International Energy Agency (IEA) will be held in person and via webinar at the IEA Headquarters, 9 rue de la Fédération, 75015 Paris, commencing at 9:30 a.m., Paris time, on November 16, 2022. The purpose of this notice is to permit attendance by representatives of U.S. company members of the IAB at a joint meeting of the IEA's Standing Group on Emergency Questions (SEQ) and the IEA's Standing Group on the Oil Market (SOM), which is scheduled to be held at the same location in person and via webinar at the same time.

The location details of the SEQ and SOM webinar meeting are under the control of the IEA Secretariat, located at 9 rue de la Fédération, 75015 Paris, France. The agenda of the meeting is under the control of the SEQ and the SOM. It is expected that the SEQ and the SOM will adopt the following agenda:

1. Welcome by the Chair
2. New delegates to introduce themselves
3. Adoption of the Agenda
4. Approval of Summary Record of meeting of 21 June 2022
5. Update on the Current Oil Market Situation
6. Reports on Recent Oil Market and Policy Developments in IEA Countries
7. World Energy Outlook
8. Proposed changes to government reporting form for crude oil import prices (crude oil register)