Notice of Request for Information (RFI) Related to DOE’s Responsibilities on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

AGENCY: Office of Critical and Emerging Technologies, Department of Energy.

ACTION: Request for information.

SUMMARY: The Department of Energy (DOE) is seeking information to assist in carrying out certain responsibilities under an Executive order (E.O.) titled “Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence” issued on October 30, 2023. Among other things, the E.O. directs DOE to issue a public report within 180 days of the E.O. “describing the potential for Artificial Intelligence (AI) to improve planning, permitting, investment, and operations for electric grid infrastructure and to enable the provision of clean, affordable, reliable, resilient, and secure electric power to all Americans.” DOE is soliciting information on one or more of the topics outlined in this RFI to address in the public report. The information provided in response to this RFI will inform the preparation of that report.

DATES: Comments containing information in response to this notice must be received on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Submissions received after that date may not be considered.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic submission: Submit electronic public comments via www.regulations.gov.

1. Go to www.regulations.gov and enter DOE–HQ–2024–0007 in the search field,
2. Click the “Comment” icon and complete the required fields.

Electronic submissions may also be sent as an attachment via email to Alexecutiveorder.RFI@hq.doe.gov in any of the following unlocked formats: HTML; ASCII; Word; RTF; Unicode, or PDF.
Written comments may also be submitted by mail to: Department of Energy, Office of Policy, 1000 Independence Avenue, SW, Washington, DC 20585. Due to potential delays in DOE’s receipt and processing of mail sent through the U.S. Postal Service, DOE encourages responders to submit comments electronically in order to ensure timely receipt.

Submissions must not exceed 25 pages (when printed) in 12-point or larger font, with a page number provided on each page. Please include your name, organization's name (if any), and cite “DOE AI Executive Order” in all correspondence.

Comments containing references, studies, research, and other empirical data that are not widely published should include copies of the referenced materials. All comments and submissions, including attachments and other supporting materials, will become part of the public record and subject to public disclosure. Comments will be available on www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: For questions about this RFI contact: Alexecutiveorder.RFI@hq.doe.gov or Keith Benes, Department of Energy, Office of Policy, 1000 Independence Avenue, SW., Washington, DC 20585, 240-278-5478. Direct media inquiries to DOE's Office of Public Affairs at 202-586-4940.

SUPPLEMENTARY INFORMATION:

DOE is seeking information to assist in carrying out certain of its responsibilities under section 5.2(g) of E.O. 14110 issued on October 30, 2023 (88 FR 75191). This RFI addresses the specific responsibilities cited below. Other topics in E.O. 14110 are being addressed separately by DOE and other agencies.

In considering information for submission to DOE, respondents are encouraged to review information on DOE’s website for the Office of Critical and Emerging Technologies (www.energy.gov/cet/office-critical-and-emerging-technology). Respondents are also encouraged to review DOE’s AI Risk Management Playbook (https://www.energy.gov/ai/doe-ai-risk-management-playbook-airmp) and the Advanced Research Directions on AI for Science,
E.O. 14110 directs DOE to undertake the actions specified in section 5.2(g), including preparing this report, “in consultation with the Chair of the Federal Energy Regulatory Commission, the Director of OSTP, the Chair of the Council on Environmental Quality, the Assistant to the President and National Climate Advisor, and the heads of other relevant agencies as the Secretary of Energy may deem appropriate.”

In this RFI, DOE is soliciting input for the public report called for in section 5.2(g)(i). DOE is seeking information regarding topics related to this assignment, including:

1. **AI to improve the security and reliability of grid infrastructure and operations and their resilience to disruptions.**

DOE is seeking information on how AI can be developed and used by private actors, public-private partnerships, and government entities (at all levels of government, including Federal, State, local, etc.) to improve the security and reliability of grid infrastructure and operations, as well as resilience of the grid to potential disruptions. DOE is specifically requesting comments on the use of AI with regard to the following topics:
• Grid Operations and reliability;
  • Improvements in predictive maintenance for utilities;
  • For rapid, accurate, and cost-effective load and supply balancing in light of increasing penetration of variable generation sources and increased opportunities for demand management through technologies such as electric vehicle charging/discharging, smart devices, or optimizing clean hydrogen production;
  • To improve flexibility of power systems models or other interconnection software tools to facilitate more efficient processing of growing interconnection queues and handling distribution-side generation (such as rooftop solar) and increased demand from demand-side interconnection as, for example, transportation electrifies.

• Grid Resilience:
  • Characterization of impacts of climate hazards on electricity system infrastructure, connected to Climate Mapping for Resilience and Adaptation (CMRA) outputs;
  • Opportunity for AI-enabled real-time self-healing infrastructure;
  • Opportunity for AI-enabled detection and diagnosis of anomalous/malicious events;
  • AI-enabled situational awareness and actions for resilience during and after a disruption.

2. **AI to improve planning, permitting, and investment in the grid and related clean energy infrastructure.**

DOE is seeking information on how AI can be used both by government entities at all levels of government (Federal, State, local, etc.) as well as by private actors to improve the planning,
siting, permitting, and investment in the grid and related clean energy infrastructure. The following is a non-exhaustive list of topics that may be addressed in comments on this topic:

- Opportunities for siting and permitting authorities to utilize AI (e.g., Large Language Models, multi-modal generative, etc.) to improve and expedite their reviews;
- Actions Federal agencies can take to support the effective deployment of generative AI tools to improve project planning, community engagement, and siting and permitting reviews (e.g., processing of existing government documents into AI- and ML-compatible data formats, clarification of standards around use of generative AI in preparation of submittals to government agencies, etc.);
- Steps Federal agencies could take to improve compatibility of existing structured datasets (e.g., geospatial data on environmental resources, endangered species, environmental justice, historic and cultural resources, etc.) with emerging AI models and/or to utilize AI to revise and improve those existing datasets;
- Opportunities to use AI to validate and improve monitoring of existing projects (e.g., environmental mitigation monitoring, supply chain risks, and socio-economic impacts, etc.);
- Opportunities to use AI to illuminate and address artificial, arbitrary, and unnecessary disproportionate impacts on disadvantaged communities from planning, permitting, or operation of energy infrastructure and to improve energy equity;
- Steps that should be taken to ensure transparency about any use of generative AI in government reviews and decision-making processes to avoid unlawful biases or discrimination in AI algorithms and datasets used.

3. **AI to help mitigate climate change risks.**

DOE is seeking information regarding how AI can be used to strengthen the Nation’s resilience against climate change, including opportunities to help predict, prepare for, and mitigate climate-
driven risk. The following is a non-exhaustive list of topics that may be addressed in comments on this topic:

- Opportunities to use AI to forecast climate-driven extreme events (e.g. wildfires, flooding, hurricanes, etc.) and their impact on reliability and resilience requirements, as well as potential to use AI to mitigate climate-driven extreme event risks or otherwise bolster reliability and resilience;

- Opportunities to use AI to understand and forecast climate impacts on long-term future resource levels (compared to historical levels) and its effect on resource adequacy and availability;

- Opportunities to use AI to improve or accelerate numerical weather prediction models, particularly on time scales relevant to infrastructure planning and operations.

Across all of these topics, DOE is seeking information about costs and ease of implementation for tools, systems, practices, and the extent to which they will benefit the public if they can be efficiently adopted and utilized. DOE is interested to learn about how to handle liability for consequences of decisions made by AI algorithms as well as protocols to quantify the benefits of AI. In addition, DOE is interested in information about potential negative effects of broader use of AI on these systems, including concerns about data security and privacy, whether AI may cause unlawful biases or discrimination, and the possibility that AI could have artificial, arbitrary and unnecessary disparate impacts on communities, particularly underserved communities.

Pursuant to Executive Order 13985 “underserved communities” refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.”

**Confidential Business Information:** Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt 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 February 21, 2024, by Helena Fu, Director, Office of Critical and Emerging Technologies, 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 February 27, 2024.

**Treena V. Garrett,**  
*Federal Register Liaison Officer,*  
*U.S. Department of Energy.*

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