Working Paper

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Possible Options for Unlocking and Securing U.S. Energy for AI Production

RAND Global and Emerging Risks

WR-A3883-1
March 2025

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About This Working Paper

This paper provides public comment in response to the February 6, 2025, request for information (RFI) by the National Science Foundation's Networking and Information Technology Research and Development National Coordination Office on behalf of the Office of Science and Technology Policy (OSTP), concerning the development of an artificial intelligence (AI) action plan.[1] Our purpose is to share relevant expert knowledge on the subject areas prioritized in the RFI call. We focus on the highest priority policy actions in the areas of data centers, energy consumption and efficiency, regulation and governance, and innovation and competition, as described in the RFI, with particular emphasis on potential options to unlock energy for AI development. These options could improve energy capacity, which is key to accelerating AI progress and maintaining U.S. competitiveness.

Our target audience is OSTP. This paper is filed by Yusuf Mahmood, Christopher Byrd, Elika Somani, Konstantin Pilz, and Lennart Heim. The opinions presented in this paper are those of the authors and do not reflect those of RAND. This paper does not contain original research. We have not conducted a full analysis of the costs, benefits, or legal feasibility of the policy options that we describe; instead, we draw on our professional expertise and our assessment of published research.

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Funding

This research was independently initiated and conducted within the Technology and Security Policy Center using income from operations and gifts from philanthropic supporters, which have been made or recommended by DALHAP Investments Ltd., Effektiv Spenden, Ergo Impact, Founders Pledge, Charlottes och Fredrik Stiftelse, Good Ventures, Jaan Tallinn, Longview, Open

[1] National Science Foundation, "Request for Information on the Development of an Artificial Intelligence (AI) Action Plan," *Federal Register*, Vol. 90, No. 24, February 6, 2025.

Philanthropy, and Waking Up Foundation. A complete list of donors and funders is available at www.rand.org/TASP. RAND donors and grantors have no influence over research findings or recommendations.

Acknowledgments

We would like to thank the leadership of the RAND Technology and Security Policy Center, Jeff Alstott and Casey Dugan, for their guidance on this paper, and Ben Della Rocca and Ismael Arciniegas Rueda for helpful guidance and feedback.

Summary

Globally, AI data centers face a significant power shortfall—an estimated fourfold increase in demand in 2025 compared with 2023 demand.[2] If growth in AI chip demand continues at the current rate, this need could rise to 68 gigawatts (GW) by 2027, nearly doubling global data center power needs from 2022.[3] AI chip production could increase 1.3–2.0 times annually through 2030, driving a projected demand of 327 GW by 2030.[4] Per U.S. policy, the United States may need to unlock 50 GW of energy capacity by 2027 to remain dominant in AI infrastructure.[5] Yet, it is uncertain whether the United States is expanding its energy capacity quickly enough to meet the growing demand from U.S. AI data centers.[6] We refer to the resulting shortfall of energy supply in the United States as the *AI energy gap*.

The Biden administration took some steps to reduce the AI energy gap by issuing Executive Order (EO) 14141 in its final weeks. The Trump administration took additional steps to unlock domestic energy production by issuing EO 14154, Unleashing American Energy.[7] In this working paper, we explore potential options to build on these executive actions across the following lines of effort:

- **A. Streamlining federal permitting processes:** reducing the regulatory burden for environmental reviews—especially for geothermal, nuclear, and traditional energy sources—to speed up the development of AI infrastructure.
- **B. Grid access and building transmission lines:** expediting the construction of necessary transmission lines to connect AI data centers to the energy grid, including leveraging U.S. Department of Energy authorities to avoid state-level delays.
- **C. Designating federal lands for AI infrastructure:** expanding the use of federal lands for AI infrastructure by expediting federal site selection processes and removing

[2] Dylan Patel, and Gerald Wong, "GPT-4 Architecture, Infrastructure, Training Dataset, Costs, Vision, MoE," SemiAnalysis, July 10, 2023.

[3] Konstantin F. Pilz, Yusuf Mahmood, and Lennart Heim, *AI's Power Requirements Under Exponential Growth: Extrapolating AI Data Center Power Demand and Assessing Its Potential Impact on U.S. Competitiveness*, RAND Corporation, RR-A3572-1, 2025.

[4] Jaime Sevilla and Edu Roldán, "Training Compute of Frontier AI Models Grows by 4–5x per Year," Epoch AI, May 28, 2024.

[5] Pilz, Mahmood, and Heim, 2025.

[6] Pilz, Mahmood, and Heim, 2025.

[7] EO 14141, "Advancing United States Leadership in Artificial Intelligence Infrastructure," Executive Office of the President, January 14, 2025; EO 14154, "Unleashing American Energy," Executive Office of the President, January 20, 2025.

restrictions that mandate clean power procurement for AI data centers on leased federal land.

- **D. National security–related requirements for AI infrastructure developers:** enhancing security measures for AI infrastructure developers, including the reporting of personnel risk factors, and ensuring cybersecurity standards are met. Such measures help protect AI systems critical to national security.

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Chapter 1. The AI Energy Gap

The United States is at risk of losing its lead in data center and compute provider market share and is struggling to meet the growing energy demands to support artificial intelligence (AI) training and inference needs.[1] Not meeting these demands could result in the United States losing its advantage in AI development and missing economic opportunities.[2] To maintain and expand the current U.S. lead in AI, the U.S. government (USG) could implement policy options to facilitate the creation of new AI infrastructure, such as new and larger AI data centers, additional facilities for energy generation and storage, and enhanced transmission capacity. In this paper, we suggest potential options for the Office of Science and Technology Policy to coordinate efforts across various agencies to expedite the development of AI infrastructure. In formulating these options, we have drawn on our professional expertise and our assessment of published research. We did not conduct a full analysis of the costs, benefits, or legal feasibility of these options. We suggest further study prior to implementing any of these options.

Predicted Energy Shortfalls

Exponential growth in AI is significantly straining U.S. power grids. Globally, the demand for AI data centers is projected to reach 68 gigawatts (GW) by 2027.[3] Such demand is nearly equivalent to California's total power capacity (86 GW) in 2022.[4] U.S. companies are already struggling to secure enough grid capacity for data centers to meet AI demand, a challenge expected to intensify as AI training and deployment continue to grow.[5] If U.S. companies are unable to secure sufficient power, they may relocate their data centers abroad, which could undermine the country's AI leadership and carry national security implications. Furthermore, growth in AI development is a significant economic opportunity for the United States: Global AI data center demand is projected to reach 327 GW by 2030—far surpassing total global capacity

[1] Konstantin F. Pilz, Yusuf Mahmood, and Lennart Heim, *AI's Power Requirements Under Exponential Growth: Extrapolating AI Data Center Power Demand and Assessing Its Potential Impact on U.S. Competitiveness*, RAND Corporation, RR-A3572-1, 2025; Sastry, Girish, Lennart Heim, Haydn Belfield, Markus Anderljung, Miles Brundage, Julian Hazell, Cullen O'Keefe, Gillian K. Hadfield, Richard Ngo, Konstantin Pilz, et al., "Computing Power and the Governance of Artificial Intelligence," arXiv, arXiv:2402.08797, February 13, 2024.

[2] Under EO 14141, *AI infrastructure* includes AI data centers, energy generation and storage, and transmission facilities.

[3] If exponential growth in chip supply continues.

[4] Pilz, Mahmood, and Heim, 2025.

[5] Sebastian Moss, "Meta's Mark Zuckerberg Says Energy Constraints Are Holding Back AI Data Center Buildout," Data Centre Dynamics, April 19, 2024.

of just 88 GW in 2022.[6] This growing demand presents a critical area of opportunity for the United States to capitalize on its leadership in AI and related infrastructure. Recent RAND research shows that expected increases in AI's power demands by 2027 and 2030 may cause the United States to fall short of producing the amount of energy it needs to maintain AI infrastructure dominance.[7]

Impact of Federal, State, and Local Regulations

One of the key challenges in constructing data centers and power infrastructure is permitting processes, which can cause significant delays in development. For example, state and local land-use permits often take years to clear for large construction projects. Additionally, grid interconnection requests for new power-generation resources can take four to seven years for power hookup.[8] Finally, transmission line projects often face complex multistate permitting processes and local opposition, further delaying power delivery to data centers.[9] The difficulty of securing local and state permits is compounded by environmental regulations that make the use of available power sources challenging—limiting data center developers' opportunities to procure power quickly and pushing them to rely on more-challenging-to-scale renewable options. We found that the National Environmental Policy Act (NEPA) environment impact statement (EIS) completion time was, on average, 4.5 years.[10] A 2017 U.S. Department of Commerce (DOC) survey of manufacturers identified the Clean Air Act (CAA), Clean Water Act (CWA), and Endangered Species Act (ESA) as among the most significant regulatory barriers to new power production, affecting industries' ability to scale inputs such as AI chips.[11] As a result, U.S. companies are exploring expansion into countries with more-accessible power and quicker permitting processes as potentially their only opportunities to develop frontier AI.[12] To address these challenges, we suggest potential policy options to free up energy in the United States for AI data centers.

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[6] Pilz, Mahmood, and Heim, 2025.

[7] Pilz, Mahmood, and Heim, 2025.

[8] Josh Saul, "Data Centers Face Seven-Year Wait for Dominion Power Hookups," Bloomberg, August 30, 2024.

[9] Brian Potter, Arnab Datta, and Alec Stapp, How to Stop Environmental Review from Harming the Environment, Institute for Progress, September 13, 2022.

[10] Council on Environmental Quality, "Environmental Impact Statement Timelines (2010–2018)," Executive Office of the President, June 12, 2020.

[11] The survey compiles request for information responses from manufacturers, which relate to energy but may not be entirely transferrable (DOC, *Streamlining Permitting and Reducing Regulatory Burdens for Domestic Manufacturing*, October 6, 2017).

[12] Zaeem Shoaib, "Big Tech Moves More AI Spending Abroad," *Wall Street Journal*, May 23, 2024.

Chapter 2. Potential Energy Policy Options

The following policy options may help unlock and secure domestic energy production to support expanded AI data centers by 2027. We organize these policy options around four key lines of effort: (A) streamlining federal permitting processes, (B) grid access and building transmission lines, (C) designating federal lands for AI infrastructure, (D) and national security–related requirements to support AI infrastructure developers.

Line of Effort A. Streamlining Federal Permitting Processes

It may be possible to streamline federal permitting for AI infrastructure projects by simplifying requirements and providing developers with compliance assistance with such laws as the NEPA, CAA and CWA.[13] EO 14141 introduced some changes to the processes covered by such legislation, focusing, in particular, on deregulating geothermal and nuclear energy.[14] These policies could be expanded by (1) ensuring the timely completion of the U.S. Department of Defense's (DoD) programmatic environmental review, (2) exploring NEPA categorical exclusions for natural gas and oil, (3) initiating interagency consultation processes required for ESA exemptions, (4) activating national security exemptions for the CAA and CWA, and (5) considering Defense Production Act (DPA) authorities to avoid triggering federal and state regulations.

Option 1. Ensure the Timely Completion of DoD's Programmatic Environmental Review

Establishing federal sites for data centers obviates many state and local land-use permits—and may speed data center development timelines significantly—but it also triggers federal environmental review under NEPA, which must occur before the construction of a data center begins. Because DoD and the U.S. Department of Energy (DOE) will not award new projects until mid-2025, DoD's programmatic review is critical to reducing data centers' NEPA requirements.[15] The programmatic review can take place before sites or projects are selected and, if done appropriately, may substantially reduce the need for site-specific analysis after selection.

[13] Sections 7 and 9 of EO 14141 reduce NEPA review burden via categorical exclusions and programmatic environmental review, assist projects with CAA air-quality permit compliance, and order the speedy processing of CWA permits, among other examples.

[14] Geothermal power holds promise for rapidly supplying several gigawatts of capacity to AI data centers.

[15] See the following memorandum for a general explanation of the programmatic NEPA review: Michael Boots, "Effective Use of Programmatic NEPA Reviews," memorandum for heads of federal departments and agencies, Council on Environmental Quality, Executive Office of the President, December 18, 2014.

With EO 14154, the Trump administration has already taken steps to streamline NEPA requirements, which might be used in tandem with DoD's programmatic review. However, EO 14154 does not eliminate the need for DoD's review. The NEPA statute will require a threshold level of review in any event, and DoD programmatic review may satisfy this requirement more quickly than the alternative, which is for agencies to undertake lengthy new rulemaking to revise and update their NEPA procedures.

Option 2. Require Additional Review of Categorical Exclusions for Natural Gas and Oil

Under NEPA, federal agencies are required to draft detailed environmental impact statements (EISs) for all "major Federal actions" (generally including permit approvals) that are determined to "significantly affect the quality of the human environment."[16] Completion of EISs can take two or more years for many projects. To determine whether an action would significantly affect the quality of the human environment, agencies must often separately prepare environmental assessments.

According to Section 109 of NEPA, agencies may establish *categorical exclusions*, which are categories of major actions that do not require any further environmental review (i.e., an environmental assessment or EIS). To establish a categorical exclusion, the agency must determine that the relevant category of action typically does not have a significant effect on the human environment. EO 14141 directs agencies, such as the U.S. Department of the Interior, to explore adding new categorical exclusions for geothermal energy and other forms of clean energy, as well as to leverage existing ones that could apply to AI infrastructure (e.g., transmission, substations).[17] It may be possible to unlock additional energy capacity by developing categorical exclusions for traditional energy sources (e.g., natural gas). Categorical exclusions could streamline federal permitting processes and data center development timelines. Note, however, that establishing such exclusions could take significant time, and further cost-benefit analysis is needed.

Option 3. Activate Exemptions from the Endangered Species Act

The ESA has historically created delays for infrastructure projects.[18] Section 7 of the ESA requires that federal agencies' must ensure that their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species" or result in the destruction

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[16] U.S. Environmental Protection Agency, "National Environmental Policy Act Review Process," webpage, July 15, 2024; DOE, "Categorical Exclusion (CX) Determinations by CX," webpage, undated.

[17] EO 14141, 2025, Section 7(f)(iii).

[18] See, for example, the Atlantic Coast Pipeline, a proposed 600-mile interstate natural gas pipeline, which was halted after ESA litigation in 2018 (Ellen M. Gilmer, "Court Order Could Derail Atlantic Coast Construction," *E&E News*, May 16, 2018). Additionally, Nebraska Public Power District's "R-Project," a proposed 225-mile, 345-kV transmission line, was halted by courts pursuant to ESA litigation (Michael Doyle, "A Threatened Species Complicates Power Line Plans," *E&E News,* September 24, 2024).

or adverse modification of "critical habitats" of such species.[19] Agency "action" is expansively interpreted to include federal projects, granting federal permits, licenses, contracts, rights-of-way, leases, and the promulgation of federal regulations.[20] Agencies must evaluate the effects of agency actions and consider alternatives to minimize those effects, as needed.[21] However, Section 7(j) of the ESA allows DoD to exempt projects for which the Secretary of Defense finds that such exemption is "necessary for . . . national security."[22] The DoD exemption can take effect only after the ESA's required 90-day consultation process with the U.S. Fish and Wildlife Service. Therefore, it might be important to proceed with such consultations quickly for AI infrastructure on federal sites.[23]

Option 4. Activate Clean Air Act and Clean Water Act Exemptions

The CAA and CWA impose several permit requirements on industrial projects, which can delay construction.[24] The CWA requires Section 404 permits to build near federal wetlands—such "more significant impact" permits take about 217 days (more than seven months) on average.[25] The CAA mandates that new major sources of air pollution (or major modifications to existing sources) undergo New Source Review (NSR) permitting and the installation of state-of-the-art emission controls before construction begins.[26] The NSR permitting process for large energy projects is "complex, time-consuming, and occasionally costly—the average processing time was about 420 days (well over a year) from application to permit issuance."[27] These delays in obtaining CAA-required permits can postpone the start of construction and deter investments.[28]

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[19] Code of Federal Regulations, Title 16, Conservation; Chapter 35, Endangered Species; Section 1536, Interagency Cooperation.

[20] Code of Federal Regulations, Title 16, Chapter 35, Section 1536; Erin H. Ward and Pervaze A Sheikh, *Endangered Species Act (ESA) Section 7 Consultation and Infrastructure Projects*, Congressional Research Service, R46867, August 4, 2021.

[21] Code of Federal Regulations, Title 16, Chapter 35, Section 1536; Ward and Sheikh, 2021.

[22] Code of Federal Regulations, Title 16, Chapter 35, Section 1536(j). Note that this exemption has never been invoked, and it may not fully exempt agencies from Section 9's prohibitions on "taking" endangered species.

[23] Further analysis of the feasibility of such a decision and its costs and benefits is needed. See Benjamin Rubin, "Calling on the 'God Squad,'" *Endangered Species Law and Policy* blog, Nossaman, April 23, 2024.

[24] The CAA, CWA, and ESA were cited by a DOC survey of domestic manufacturers as being among their most significant production roadblocks. Barriers to manufacturing are particularly relevant for industrial projects that rely on such manufacturing inputs as solar panels or AI chips (DOC, 2017).

[25] Nicole T. Carter, *The Army Corps of Engineers' Nationwide Permits Program: Issues and Regulatory Developments*, Congressional Research Service, 97-223, January 12, 2017.

[26] Such controls might apply to data centers' backup generators, construction work for transmission lines, and more.

[27] Arthur G. Fraas, "EPA's New Source Review Program: A Look at Permit Processing Time," *Resources*, February 10, 2015.

[28] Fraas, 2015.

The CAA and CWA both give the President broad authority to exempt projects from those acts' compliance requirements, so long as the President deems such exemptions to be "in the paramount interest" of the United States.[29] These exemptions are limited to actions by "agencies" and "federal instrumentalit[ies] of the executive branch."[30] Although privately built data centers (even on federal lands) may not count as federal instrumentalities, a legal argument could be made that transmission projects benefiting from the establishment of public-private partnerships (authorized through Section 1222 of the Energy Policy Act) would meet the bar.[31] Further legal analysis is needed to assess this potential argument. The Executive Office of the President (EOP) could also explore whether projects involving significant DPA-initiated purchases may count as "federal instrumentalities."[32]

Option 5. Consider Using Defense Production Act Authorities

DPA Title I—Priorities and Allocations

The President may be able to use DPA prioritization and allocation authority to accelerate AI infrastructure. Title I of the DPA also allows the President—as "necessary or appropriate" for national defense—to (1) require companies to prioritize fulfilling USG contracts or (2) allocate materials and services.[33] EOP could explore several possible uses of these authorities to expand energy supplies for AI data centers. First, the USG could leverage Title I authorities to require public utilities to accelerate connecting AI data centers on federal sites to the electric grid for the energy resources needed to power them, to the extent necessary for national security. A second potential option may be for the USG to require energy companies to reserve energy resources for AI data centers, ensuring that these centers receive power in periods of energy scarcity—as required for national security. For example, if natural gas supplies are constrained by a severe shortage, the President could potentially require gas pipelines to deliver fuel preferentially to power plants serving AI data centers to the extent necessary for national security.

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[29] Code of Federal Regulations, Title 42, The Public Health and Welfare; Chapter 85, Air Pollution Prevention and Control; Subchapter I, Programs and Activities; Part A, Air Quality and Emission Limitations; Section 7418, Control of Pollution from Federal facilities; Code of Federal Regulations, Title 33, Navigation and Navigable Waters; Chapter 26, Water Pollution Prevention and Control; Subchapter I, Research and Related Programs; Section 1323, Federal Facilities Pollution Control.

[30] Code of Federal Regulations, Title 42, Chapter 85, Section 7418; Code of Federal Regulations, Title 33, Chapter 26, Section 1323.

[31] Public Law 109-58, Energy Policy Act of 2005; Section 1222, Third-Party Finance, August 8, 2005.

[32] Further analysis of the feasibility of such a decision and its costs and benefits is needed.

[33] From Section 101(a) of Title I of the DPA as cited in Alexandra G. Neenan and Luke A. Nicastro, *The Defense Production Act of 1950: History, Authorities, and Considerations for Congress*, Congressional Research Service, R43767, October 6, 2023, p. 5. See also Public Law 81-774, The Defense Production Act of 1950, September 8, 1950; U.S. Code, Title 50, War and National Defense, Sections 4501 et seq. The President must make certain factual findings about the resources' scarcity to activate these authorities (Neenan and Nicastro, 2023).

DPA Title III—Expansion of Productive Capacity and Supply

Title III of the DPA permits the President to purchase materials needed for national defense notwithstanding federal and state laws that might otherwise constrain such purchases. Section 303(b), Exemption for certain limitations, states that the President may make such purchases "without regard to the limitations of existing law (other than section 1341 of title 31, United States Code)."[34] Similar "notwithstanding" provisions have been used to exempt large projects from environmental laws. For example, when President Donald J. Trump declared a national emergency at the southern border, his administration applied the authority described in another notwithstanding clause to avoid triggering NEPA-required procedures before constructing portions of a wall at the U.S. southern border.[35] This DPA provision had not been used to exempt large-scale projects before, so further legal analysis is needed to determine under what circumstances the President may leverage this authority to avoid triggering NEPA or other federal environmental requirements or waive them for AI infrastructure projects.

Line of Effort B. Grid Access and Building Transmission Lines

It is important to ensure that federal sites selected for AI infrastructure have reliable energy transmission access. EO 14141 took some actions to address this need by requiring transmission providers to report locations with surplus capacity to connect new energy projects to the grid. Potential expansions to these policies are as follows: (1) leveraging Section 1222 authority to facilitate the construction of certain electric power transmission facilities, especially where state permitting processes may significantly delay necessary transmission projects, and (2) tasking DOE to engage public utilities serving AI infrastructure to accelerate their connection processes.[36]

Option 6. Avoid Triggering State Regulatory Processes That Delay Transmission Projects

Additional statutory authorities may be available to accelerate the siting and upgrading of transmission lines. EOP might consider commissioning a thorough legal review of statutes, potentially enabling the executive branch to avoid triggering state regulatory reviews that can delay transmission projects. One potential example is Section 1222 of the Energy Policy Act of 2005, which enables DOE to partner with companies to accelerate transmission projects. Prior

[34] Neenan and Nicastro, 2023.

[35] U.S. Code, Title 10, Armed Forces; Part IV, Service, Supply, and Procurement; Chapter 169, Military Construction and Military Family Housing; Subchapter I, Military Construction; Section 2808, Construction Authority in the Event of a Declaration of War or National Emergency; *Trump v. Sierra Club*, 140 S. Ct. 2620, 2020.

[36] Pub. L. 109-58, 2005.

DOE legal analysis suggests that Section 1222 may permit the executive branch to do the following:[37]

- **Avoid triggering lengthy reviews by state utility commissions by leveraging public-private partnerships**. Section 1222 of the Energy Policy Act allows DOE to establish public-private partnerships for transmission projects and does not waive DOE's sovereign immunity. Pursuing transmission projects via these public-private partnerships thus avoids triggering state-level public utility commission (PUC) reviews, which can last many years.[38]
- **Activate backstop eminent domain authorities**. Section 1222 allows DOE to exercise eminent domain over private parcels of land needed for transmission development, as a backstop, if doing so serves a public purpose. These authorities would function similarly to eminent domain powers that state PUCs typically grant private developers for transmission projects.

Activating this authority requires finding that the transmission project, whether for existing or new facilities, is "necessary to accommodate . . . [a] projected increase in demand for electric transmission capacity"—a condition that may be met by expected future AI infrastructure demand.[39] EOP could explore these authorities further to determine whether they may permit the USG to establish a program to which AI developers can apply to partner with DOE on transmission projects that serve frontier AI data centers.

Option 7. Task DOE to Engage Utilities on Overhauling Interconnection Processes

DOE could help expedite utility connection processes for AI infrastructure on federal sites. To provide sufficient energy to serve their data centers, AI developers may need to draw on power from multiple utility providers, which will require a significant number of

[37] Further analysis of the feasibility of such a decision and its costs and benefits is needed. Section 402 of the American Recovery and Reinvestment Act and Section 40106 of the Infrastructure Investment and Jobs Act grant DOE similar authorities (Public Law 111-5, American Recovery and Reinvestment Act of 2009, February 17, 2009; Public Law 117-58, Infrastructure Investment and Jobs Act, November 15, 2021, respectively). See also DOE, *Summary of Findings In re Application of Clean Line Energy Partners LLC Pursuant to Section 1222 of the Energy Policy Act of 2005*, March 25, 2016; and Justin Gundlach, *Transmission Siting Reforms in the Infrastructure Investment and Jobs Act of 2021*, Institute for Policy Integrity, December 2021, pp. 4, 9–10.

[38] DOE possesses independent authorities to perform—and in some cases does perform—"cost allocation" functions for transmission lines normally handled by state PUCs. See, for example, Western Area Power Administration, "Rates and Repayment," webpage, September 20, 2024.

[39] Pub. L. 109-58, 2005, Sections 1222(a)(1)(B) and 1222(b)(1)(B). See also, Thomas J. Dougherty, "DOE Participation In Plains & Eastern Clean Line Could Open Doors for Other Transmission Projects," *National Law Review*, Vol. XV, No. 73, March 30, 2016.

interconnections.[40] However, utilities' interconnection processes often take four to six years.[41] Utility companies could take several steps to streamline interconnection for AI infrastructure—such as reforming queue processes, adopting faster grid resilience tests, or prioritizing AI infrastructure developers over other applicants. While only the Federal Energy Regulatory Commission, an independent regulator, can require utility companies to reform their processes, DOE can negotiate voluntary reforms with utilities that serve AI infrastructure on federal sites. Such reforms could include (1) prioritizing generation resources that satisfy "resource adequacy" needs or bring national security benefits, (2) using automated tools to adjudicate interconnection applications, and (3) disclosing information that facilitates the auction of low-cost interconnection capacity.

Line of Effort C. Designating Federal Lands for AI Infrastructure

Infrastructure projects built on federal lands are not subject to many state- and local-level regulations, such as permitting requirements. The USG has previously directed DoD and DOE to make sites on federal lands available for AI data centers, streamlining permitting requirements for these projects.[42] This policy could be expanded by (1) ensuring the timely completion of DoD and DOE's federal site–selection process and (2) potentially removing clean power requirements. We discuss these potential options next.

Option 8. Ensure the Timely Completion of DoD and DOE's Federal Site–Selection Processes

The strategy laid out by EO 14141 and EO 14154—making federal lands available for AI infrastructure—hinges on the DoD and DOE's ability to quickly identify suitable sites for AI data centers. DoD and DOE could screen for potential issues that may cause future delays and litigation (e.g., the need for substantial new transmission infrastructure or the presence of historical properties). Any delay in site selection could cascade through the entire development timeline, because most other work cannot begin until sites are chosen and leased.

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[40] Specific relevant statues are Pub. L. 109-58, 2005, Section 1222; Pub. L. 111-5, Section 402; and Pub. L. 117-58, 2021, Section 40106. See also Bhargs Srivathsan, Marc Sorel, and Pankaj Sachdeva, with Arjita Bhan, Haripreet Batra, Raman Sharma, Rishi Gupta, and Surbhi Choudhary, "AI Power: Expanding Data Center Capacity to Meet Growing Demand," McKinsey & Company, October 29, 2024.

[41] Paul Ciampoli, "DOE Offers Funding to Accelerate Interconnection Process Through Utilization of Artificial Intelligence," American Public Power Association, November 26, 2024.

[42] Section 4 of EO 14141 (2025), for example, directs DoD and the U.S. Department of the Interior to make at least six federal sites available for AI data centers in a one-off rental auction, streamlining the permitting process for these locations.

Option 9. Remove Requirements Related to Clean Power

EO 14141's strict clean power requirements restrict the options available for bringing new energy sources online quickly. While the United States has abundant energy sources—particularly natural gas—EO 14141 makes it challenging to use them for AI infrastructure. Almost none of EO 14141's mechanisms for streamlining permitting may be applied to natural gas, oil, or coal unless accompanied by high-cost carbon capture technology. EO 14141 requires all companies leasing federal sites to "procur[e] sufficient new clean power generation resources . . . to meet [all of] the frontier AI data center's planned electricity needs." If such requirements were removed, more companies could potentially access more-available energy sources and land for power production.

Line of Effort D. National Security–Related Requirements for AI Infrastructure Developers

To ensure that the USG harnesses AI for national security, EO 14141 requires leasing entities to (1) adhere to cybersecurity standards, which may be needed to prevent foreign theft or sabotage of AI infrastructure; (2) allow the USG to procure AI models at or below market rates; and (3) sign a memorandum of understanding with DOC to collaborate on AI evaluations. These policies could be expanded by requiring leasing entities to report risk factors of the personnel they hire—including nationality and work history—to counter potential espionage. Although these are not directly energy policies, they could support and strengthen companies that play a key role in unlocking power for AI development by improving their security.

Option 10. Require Companies Leasing Federal Sites to Report Security Risk Factors of Their Personnel

As frontier AI capabilities improve, AI infrastructure may increasingly become a high-priority target for cyber operations by China, Russia, and other U.S. adversaries.[43] Leading AI companies are not on track to achieve the cybersecurity required to protect against well-resourced actors.[44] If adversaries gain physical access to AI data centers—including those developed on federal sites—they may steal AI model weights or sabotage AI systems by inserting vulnerabilities.[45] Mandatory reporting of personnel risk factors—including nationality

[43] Luke Barr, "China, Russia and Iran 'Attempting to Illegally Acquire' US Technology, Top DHS Official Says," ABC News, February 7, 2024; Masood Farivar, "FBI Warns About China Theft of US AI Technology," Voice of America, July 28, 2023.

[44] See Sella Nevo, Dan Lahav, Ajay Karpur, Yogev Bar-On, Henry Alexander Bradley, and Jeff Alstott, *Securing AI Model Weights: Preventing Theft and Misuse of Frontier Models*, RAND Corporation, RR-A2849-1, 2024.

[45] Nevo et al., 2024.

and work history—could aid AI security efforts. RAND research on AI facility personnel security is available upon request to inform the development of these protocols.

Conclusion

In this paper, we identify potential policy options that may help reduce the U.S. AI energy gap. The energy policy landscape is complicated—federal, state, and local authorities overlap. The costs and benefits of these changes, as well as their legal feasibility, should be fully assessed prior to implementation. A full assessment was beyond the scope of this working paper. We suggest further study on these policy options, including their costs, benefits, and legal feasibility.

Abbreviations

AI	artificial intelligence
CAA	Clean Air Act
CX	categorical exclusion
CWA	Clean Water Act
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DoD	U.S. Department of Defense
DPA	Defense Production Act
EO	Executive Order
EOP	Executive Office of the President
ESA	Endangered Species Act
NEPA	National Environmental Policy Act
PUC	public utility commission
USG	U.S. government

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