

**Calendar No. 631**118<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION**S. 4664**

To require the Secretary of Energy to establish a program to promote the use of artificial intelligence to support the missions of the Department of Energy, and for other purposes.

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**IN THE SENATE OF THE UNITED STATES**

JULY 10, 2024

Mr. MANCHIN (for himself and Ms. MURKOWSKI) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

NOVEMBER 21, 2024

Reported by Mr. MANCHIN, with an amendment

[Strike out all after the enacting clause and insert the part printed in italic]

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**A BILL**

To require the Secretary of Energy to establish a program to promote the use of artificial intelligence to support the missions of the Department of Energy, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Department of Energy  
3 AI Act”.

4 **SEC. 2. FINDINGS.**

5 Congress finds that—

6 (1) the Department has a leading role to play  
7 in making the most of the potential of artificial in-  
8 telligence to advance the missions of the Department  
9 relating to national security, science, and energy (in-  
10 cluding critical materials);

11 (2) the 17 National Laboratories employ over  
12 40,000 scientists, engineers, and researchers with  
13 decades of experience developing world-leading ad-  
14 vanced computational algorithms, computer science  
15 research, experimentation, and applications in ma-  
16 chine learning that underlie artificial intelligence;

17 (3) the NNSA manages the Stockpile Steward-  
18 ship Program established under section 4201 of the  
19 Atomic Energy Defense Act (50 U.S.C. 2521),  
20 which includes the Advanced Simulation and Com-  
21 puting program, that provides critical classified and  
22 unclassified computing capabilities to sustain the nu-  
23 clear stockpile of the United States;

24 (4) for decades, the Department has led the  
25 world in the design, construction, and operation of  
26 the preeminent high-performance computing systems

1 of the United States, which benefit the scientific and  
2 economic competitiveness of the United States  
3 across many sectors, including energy, critical mate-  
4 rials, biotechnology, and national security;

5 (5) across the network of 34 user facilities of  
6 the Department, scientists generate tremendous vol-  
7 umes of high-quality open data across diverse re-  
8 search areas, while the NNSA has always generated  
9 the foremost datasets in the world on nuclear deter-  
10 rence and strategic weapons;

11 (6) the unrivaled quantity and quality of open  
12 and classified scientific datasets of the Department  
13 is a unique asset to rapidly develop frontier AI mod-  
14 els;

15 (7) the Department already develops cutting-  
16 edge AI models to execute the broad mission of the  
17 Department, including AI models of the Department  
18 that are used to forecast disease transmission for  
19 COVID-19, and address critical material issues and  
20 emerging nuclear security missions;

21 (8) the AI capabilities of the Department will  
22 underpin and jumpstart a dedicated, focused, and  
23 centralized AI program; and

24 (9) under section 4.1(b) of Executive Order  
25 14110 (88 Fed. Reg. 75191 (November 1, 2023))

1 (relating to the safe, secure, and trustworthy devel-  
2 opment and use of artificial intelligence), the Sec-  
3 retary is tasked to lead development in testbeds, na-  
4 tional security protections, and assessment of artifi-  
5 cial intelligence applications.

6 **SEC. 3. DEFINITIONS.**

7 In this Act:

8 (1) **AI; ARTIFICIAL INTELLIGENCE.**—The terms  
9 “AI” and “artificial intelligence” have the meaning  
10 given the term “artificial intelligence” in section  
11 5002 of the National Artificial Intelligence Initiative  
12 Act of 2020 (15 U.S.C. 9401).

13 (2) **ALIGNMENT.**—The term “alignment”  
14 means a field of AI safety research that aims to  
15 make AI systems behave in line with human inten-  
16 tions.

17 (3) **DEPARTMENT.**—The term “Department”  
18 means the Department of Energy, including the  
19 NNSA.

20 (4) **FOUNDATION MODEL.**—The term “founda-  
21 tion model” means an AI model that—

22 (A) is trained on broad data;

23 (B) generally uses self-supervision;

24 (C) contains at least tens of billions of pa-  
25 rameters; and

1           (D) is applicable across a wide range of  
2 contexts; and

3           (E) exhibits, or could be easily modified to  
4 exhibit, high levels of performance at tasks that  
5 pose a serious risk to the security, national eco-  
6 nomic security, or national public health or  
7 safety of the United States.

8 (5) FRONTIER AI.—

9           (A) IN GENERAL.—The term “frontier AI”  
10 means the leading edge of AI research that re-  
11 mains unexplored and is considered to be the  
12 most challenging, including models—

13           (i) that exceed the capabilities cur-  
14 rently present in the most advanced exist-  
15 ing models; and

16           (ii) many of which perform a wide va-  
17 riety of tasks.

18           (B) INCLUSION.—The term “frontier AI”  
19 includes AI models with more than  
20 1,000,000,000,000 parameters.

21           (6) NATIONAL LABORATORY.—The term “Na-  
22 tional Laboratory” has the meaning given the term  
23 in section 2 of the Energy Policy Act of 2005 (42  
24 U.S.C. 15801).

1           (7) NNSA.—The term “NNSA” means the Na-  
2           tional Nuclear Security Administration.

3           (8) SECRETARY.—The term “Secretary” means  
4           the Secretary of Energy.

5           (9) TESTBED.—The term “testbed” means any  
6           platform, facility, or environment that enables the  
7           testing and evaluation of scientific theories and new  
8           technologies, including hardware, software, or field  
9           environments in which structured frameworks can be  
10          implemented to conduct tests to assess the perform-  
11          ance, reliability, safety, and security of a wide range  
12          of items, including prototypes, systems, applications,  
13          AI models, instruments, computational tools, de-  
14          vices, and other technological innovations.

15 **SEC. 4. ARTIFICIAL INTELLIGENCE RESEARCH TO DEPLOY-**  
16 **MENT.**

17          (a) PROGRAM TO DEVELOP AND DEPLOY FRON-  
18          TIERS IN ARTIFICIAL INTELLIGENCE FOR SCIENCE, SE-  
19          curity, AND TECHNOLOGY (FASST).—

20               (1) ESTABLISHMENT.—Not later than 180 days  
21               after the date of enactment of this Act, the Sec-  
22               retary shall establish a centralized AI program to  
23               carry out research on the development and deploy-  
24               ment of advanced artificial intelligence capabilities  
25               for the missions of the Department (referred to in

1 this subsection as the “program”); consistent with  
2 the program established under section 5501 of the  
3 William M. (Mac) Thornberry National Defense Au-  
4 thorization Act for Fiscal Year 2021 (15 U.S.C.  
5 9461).

6 ~~(2) PROGRAM COMPONENTS.—~~

7 ~~(A) IN GENERAL.—~~The program shall ad-  
8 vance and support diverse activities that include  
9 the following components:

10 ~~(i) Aggregation, curation, and dis-~~  
11 ~~tribution of AI training datasets.~~

12 ~~(ii) Development and deployment of~~  
13 ~~next-generation computing platforms and~~  
14 ~~infrastructure.~~

15 ~~(iii) Development and deployment of~~  
16 ~~safe and trustworthy AI models and sys-~~  
17 ~~tems.~~

18 ~~(iv) Tuning and adaptation of AI~~  
19 ~~models and systems for pressing scientific,~~  
20 ~~energy, and national security applications.~~

21 ~~(B) AGGREGATION, CURATION, AND DIS-~~  
22 ~~TRIBUTION OF AI TRAINING DATASETS.—~~In  
23 carrying out the component of the program de-  
24 scribed in subparagraph ~~(A)(i)~~, the Secretary  
25 shall develop methods, platforms, protocols, and

1 other tools required for efficient, safe, and ef-  
2 fective aggregation, generation, curation, and  
3 distribution of AI training datasets, including—

4 (i) assembling, aggregating, and  
5 curating large-scale training data for ad-  
6 vanced AI, including outputs from research  
7 programs of the Department and other  
8 open science data, with the goal of devel-  
9 oping comprehensive scientific AI training  
10 databases and testing and validation data;

11 (ii) developing and executing appro-  
12 priate data management plan for the eth-  
13 ical, responsible, and secure use of classi-  
14 fied and unclassified scientific data;

15 (iii) identifying, curating, and safely  
16 distributing, as appropriate based on the  
17 application—

18 (I) scientific and experimental  
19 Departmental datasets; and

20 (II) sponsored research activities  
21 that are needed for the training of  
22 foundation and adapted downstream  
23 AI models; and

24 (iv) partnering with stakeholders to  
25 curate critical datasets that reside outside



1 the Department but are determined to be  
2 critical to optimizing the capabilities of  
3 open-science AI foundation models, na-  
4 tional security AI foundation models, and  
5 other AI technologies developed under the  
6 program.

7 (C) DEVELOPMENT AND DEPLOYMENT OF  
8 NEXT-GENERATION COMPUTING PLATFORMS  
9 AND INFRASTRUCTURE.—In carrying out the  
10 component of the program described in sub-  
11 paragraph (A)(ii), the Secretary shall—

12 (i) develop early-stage AI testbeds to  
13 test and evaluate new software, hardware,  
14 algorithms, and other AI-based tech-  
15 nologies and applications;

16 (ii) develop and deploy new energy-ef-  
17 ficient AI computing hardware and soft-  
18 ware infrastructure necessary for devel-  
19 oping and deploying trustworthy frontier  
20 AI systems that leverage the high-perform-  
21 ance computing capabilities of the Depart-  
22 ment and the National Laboratories;

23 (iii) facilitate the development and de-  
24 ployment of unclassified and classified  
25 high-performance computing systems and

1 AI platforms through Department-owned  
2 infrastructure data and computing facili-  
3 ties;

4 (iv) procure high-performance com-  
5 puting and other resources necessary for  
6 developing, training, evaluating, and de-  
7 ploying AI foundation models and AI tech-  
8 nologies; and

9 (v) use appropriate supplier screening  
10 tools available through the Department to  
11 ensure that procurements under clause (iv)  
12 are from trusted suppliers.

13 (D) DEVELOPMENT AND DEPLOYMENT OF  
14 SAFE AND TRUSTWORTHY AI MODELS AND SYS-  
15 TEMS.—In carrying out the component of the  
16 program described in subparagraph (A)(iii), not  
17 later than 3 years after the date of enactment  
18 of this Act, the Secretary shall—

19 (i) develop innovative concepts and  
20 applied mathematics, computer science, en-  
21 gineering, and other science disciplines  
22 needed for frontier AI;

23 (ii) develop best-in-class AI foundation  
24 models and other AI technologies for open-  
25 science and national security applications;

1 (iii) research and deploy counter-ad-  
2 versarial artificial intelligence solutions to  
3 predict, prevent, mitigate, and respond to  
4 threats to critical infrastructure, energy se-  
5 curity, and nuclear nonproliferation, and  
6 biological and chemical threats;

7 (iv) establish crosscutting research ef-  
8 forts on AI risks, reliability, safety, trust-  
9 worthiness, and alignment, including the  
10 creation of unclassified and classified data  
11 platforms across the Department; and

12 (v) develop capabilities needed to en-  
13 sure the safe and responsible implementa-  
14 tion of AI in the private and public sectors  
15 that—

16 (I) may be readily applied across  
17 Federal agencies and private entities  
18 to ensure that open-science models are  
19 released responsibly, securely, and in  
20 the national interest; and

21 (II) ensure that classified na-  
22 tional security models are secure, re-  
23 sponsibly managed, and safely imple-  
24 mented in the national interest.

1           (E) TUNING AND ADAPTATION OF AI MOD-  
2           ELS AND SYSTEMS FOR PRESSING SCIENTIFIC  
3           AND NATIONAL SECURITY APPLICATIONS.—In  
4           carrying out the component of the program de-  
5           scribed in subparagraph (A)(iv), the Secretary  
6           shall—

7                   (i) use AI foundation models and  
8                   other AI technologies to develop a mul-  
9                   titude of tuned and adapted downstream  
10                  models to solve pressing scientific, energy,  
11                  and national security challenges;

12                  (ii) carry out joint work, including  
13                  public-private partnerships, and coopera-  
14                  tive research projects with industry, includ-  
15                  ing end user companies, hardware systems  
16                  vendors, and AI software companies, to ad-  
17                  vance AI technologies relevant to the mis-  
18                  sions of the Department;

19                  (iii) form partnerships with other  
20                  Federal agencies, institutions of higher  
21                  education, and international organizations  
22                  aligned with the interests of the United  
23                  States to advance frontier AI systems de-  
24                  velopment and deployment; and

1                   (iv) increase research experiences and  
2                   workforce development, including training  
3                   for undergraduate and graduate students  
4                   in frontier AI for science, energy, and na-  
5                   tional security.

6                   (3) STRATEGIC PLAN.—In carrying out the pro-  
7                   gram, the Secretary shall develop a strategic plan  
8                   with specific short-term and long-term goals and re-  
9                   source needs to advance applications in AI for  
10                  science, energy, and national security to support the  
11                  missions of the Department, consistent with—

12                  (A) the 2023 National Laboratory work-  
13                  shop report entitled “Advanced Research Direc-  
14                  tions on AI for Science, Energy, and Security”;  
15                  and

16                  (B) the 2024 National Laboratory work-  
17                  shop report entitled “AI for Energy”.

18                  (b) AI RESEARCH AND DEVELOPMENT CENTERS.—

19                  (1) IN GENERAL.—As part of the program es-  
20                  tablished under subsection (a), the Secretary shall  
21                  select, on a competitive, merit-reviewed basis, Na-  
22                  tional Laboratories to establish and operate not  
23                  fewer than 8 multidisciplinary AI Research and De-  
24                  velopment Centers (referred to in this subsection as  
25                  “Centers”)—

1           (A) to accelerate the safe and trustworthy  
2 deployment of AI for science, energy, and na-  
3 tional security missions;

4           (B) to demonstrate the use of AI in ad-  
5 dressing key challenge problems of national in-  
6 terest in science, energy, and national security;  
7 and

8           (C) to maintain the competitive advantage  
9 of the United States in AI.

10       (2) FOCUS.—Each Center shall bring together  
11 diverse teams from National Laboratories, academia,  
12 and industry to collaboratively and concurrently de-  
13 ploy hardware, software, numerical methods, data,  
14 algorithms, and applications for AI and ensure that  
15 the frontier AI research of the Department is well-  
16 suited for key Department missions, including by  
17 using existing and emerging computing systems to  
18 the maximum extent practicable.

19       (3) ADMINISTRATION.—

20           (A) NATIONAL LABORATORY.—Each Cen-  
21 ter shall be established as part of a National  
22 Laboratory.

23           (B) APPLICATION.—To be eligible for se-  
24 lection to establish and operate a Center under  
25 paragraph (1), a National Laboratory shall sub-

1 mit to the Secretary an application at such  
2 time, in such manner, and containing such in-  
3 formation as the Secretary may require.

4 (C) DIRECTOR.—Each Center shall be  
5 headed by a Director, who shall be the Chief  
6 Executive Officer of the Center and an em-  
7 ployee of the National Laboratory described in  
8 subparagraph (A), and responsible for—

9 (i) successful execution of the goals of  
10 the Center; and

11 (ii) coordinating with other Centers.

12 (D) TECHNICAL ROADMAP.—In support of  
13 the strategic plan developed under subsection  
14 (a)(3), each Center shall—

15 (i) set a research and innovation goal  
16 central to advancing the science, energy,  
17 and national security mission of the De-  
18 partment; and

19 (ii) establish a technical roadmap to  
20 meet that goal in not more than 7 years.

21 (E) COORDINATION.—The Secretary shall  
22 coordinate, minimize duplication, and resolve  
23 conflicts between the Centers.

24 (4) FUNDING.—Of the amounts made available  
25 under subsection (h), each Center shall receive not

1 less than \$30,000,000 per year for a duration of not  
2 less than 5 years but not more than 7 years, which  
3 yearly amount may be renewed for an additional 5-  
4 year period.

5 (c) AI RISK EVALUATION AND MITIGATION PRO-  
6 GRAM.—

7 (1) AI RISK PROGRAM.—As part of the program  
8 established under subsection (a), and consistent with  
9 the missions of the Department, the Secretary, in  
10 consultation with the Secretary of Homeland Secu-  
11 rity, the Secretary of Defense, the Director of Na-  
12 tional Intelligence, the Director of the National Se-  
13 curity Agency, and the Secretary of Commerce, shall  
14 carry out a comprehensive program to evaluate and  
15 mitigate safety and security risks associated with ar-  
16 tificial intelligence systems (referred to in this sub-  
17 section as the “AI risk program”).

18 (2) RISK TAXONOMY.—

19 (A) IN GENERAL.—Under the AI risk pro-  
20 gram, the Secretary shall develop a taxonomy of  
21 safety and security risks associated with artifi-  
22 cial intelligence systems relevant to the missions  
23 of the Department, including, at a minimum,  
24 the risks described in subparagraph (B).



1           (B) RISKS DESCRIBED.—The risks re-  
2           ferred to in subparagraph (A) are the abilities  
3           of artificial intelligence—

4                   (i) to generate information at a given  
5                   classification level;

6                   (ii) to assist in generation of nuclear  
7                   weapons information;

8                   (iii) to assist in generation of chem-  
9                   ical, biological, radiological, nuclear, non-  
10                  proliferation, critical infrastructure, and  
11                  energy security threats or hazards;

12                  (iv) to assist in generation of malware  
13                  and other cyber and adversarial threats  
14                  that pose a significant national security  
15                  risk, such as threatening the stability of  
16                  critical national infrastructure;

17                  (v) to undermine public trust in the  
18                  use of artificial intelligence technologies or  
19                  in national security;

20                  (vi) to deceive a human operator or  
21                  computer system, or otherwise act in oppo-  
22                  sition to the goals of a human operator or  
23                  automated systems; and

1                   (vii) to act autonomously with little or  
2                   no human intervention in ways that con-  
3                   flict with human intentions.

4       (d) SHARED RESOURCES FOR AI.—

5           (1) IN GENERAL.—As part of the program es-  
6           tablished under subsection (a), the Secretary shall  
7           identify, support, and sustain shared resources and  
8           enabling tools that have the potential to accelerate  
9           the pace of scientific discovery and technological in-  
10          novation with respect to the missions of the Depart-  
11          ment relating to science, energy, and national secu-  
12          rity.

13          (2) CONSULTATION.—In carrying out para-  
14          graph (1), the Secretary shall consult with relevant  
15          experts in industry, academia, and the National  
16          Laboratories.

17          (3) FOCUS.—Shared resources and enabling  
18          tools referred to in paragraph (1) shall include the  
19          following:

20                (A) Scientific data and knowledge bases  
21                for training AI systems.

22                (B) Benchmarks and competitions for eval-  
23                uating advances in AI systems.

1           (C) Platform technologies that lower the  
2           cost of generating training data or enable the  
3           generation of novel training data.

4           (D) High-performance computing, includ-  
5           ing hybrid computing systems that integrate AI  
6           and high-performance computing.

7           (E) The combination of AI and scientific  
8           automation, such as cloud labs and self-driving  
9           labs.

10          (F) Tools that enable AI to solve inverse  
11          design problems.

12          (G) Testbeds for accelerating progress at  
13          the intersection of AI and cyberphysical sys-  
14          tems.

15        (c) ADMINISTRATION.—

16           (1) RESEARCH SECURITY.—The activities au-  
17           thorized under this section shall be applied in a  
18           manner consistent with subtitle D of title VI of the  
19           Research and Development, Competition, and Inno-  
20           vation Act (42 U.S.C. 19231 et seq.).

21           (2) CYBERSECURITY.—The Secretary shall en-  
22           sure the integration of robust cybersecurity meas-  
23           ures into all AI research-to-deployment efforts au-  
24           thorized under this section to protect the integrity  
25           and confidentiality of collected and analyzed data.

1           (3) PARTNERSHIPS WITH PRIVATE ENTITIES.—

2           (A) IN GENERAL.—The Secretary shall  
3 seek to establish partnerships with private com-  
4 panies and nonprofit organizations in carrying  
5 out this Act, including with respect to the re-  
6 search, development, and deployment of each of  
7 the 4 program components described in sub-  
8 section (a)(2)(A).

9           (B) REQUIREMENT.—In carrying out sub-  
10 paragraph (A), the Secretary shall protect any  
11 information submitted to or shared by the De-  
12 partment consistent with applicable laws (in-  
13 cluding regulations).

14       (f) STEM EDUCATION AND WORKFORCE DEVELOP-  
15 MENT.—

16           (1) IN GENERAL.—Of the amounts made avail-  
17 able under subsection (h), not less than 10 percent  
18 shall be used to foster the education and training of  
19 the next-generation AI workforce.

20           (2) AI TALENT.—As part of the program estab-  
21 lished under subsection (a), the Secretary shall de-  
22 velop the required workforce, and hire and train not  
23 fewer than 500 new researchers to meet the rising  
24 demand for AI talent—

1           (A) with a particular emphasis on expand-  
2           ing the number of individuals from underrep-  
3           resented groups pursuing and attaining skills  
4           relevant to AI; and

5           (B) including by—

6                 (i) providing training, grants, and re-  
7                 search opportunities;

8                 (ii) carrying out public awareness  
9                 campaigns about AI career paths; and

10                (iii) establishing new degree and cer-  
11                tificate programs in AI-related disciplines  
12                at universities and community colleges.

13           (g) ANNUAL REPORT.—The Secretary shall submit  
14 to Congress an annual report describing—

15                (1) the progress, findings, and expenditures  
16                under each program established under this section;  
17                and

18                (2) any legislative recommendations for pro-  
19                moting and improving each of those programs.

20           (h) AUTHORIZATION OF APPROPRIATIONS.—There is  
21 authorized to be appropriated to carry out this section  
22 \$2,400,000,000 each year for the 5-year period following  
23 the date of enactment of this Act.

1 **SEC. 5. FEDERAL PERMITTING.**

2 (a) **ESTABLISHMENT.**—Not later than 180 days after  
3 the date of enactment of this Act, the Secretary shall es-  
4 tablish a program to improve Federal permitting processes  
5 for energy-related projects, including critical materials  
6 projects, using artificial intelligence.

7 (b) **PROGRAM COMPONENTS.**—In carrying out the  
8 program established under subsection (a), the Secretary  
9 shall carry out activities, including activities that—

10 (1) analyze data and provide tools from past  
11 environmental and other permitting reviews, includ-  
12 ing by—

13 (A) extracting data from applications for  
14 comparison with data relied on in environ-  
15 mental reviews to assess the adequacy and rel-  
16 evance of applications;

17 (B) extracting information from past site-  
18 specific analyses in the area of a current  
19 project;

20 (C) summarizing key mitigation actions  
21 that have been successfully applied in past simi-  
22 lar projects; and

23 (D) using AI for deeper reviews of past de-  
24 terminations under the National Environmental  
25 Policy Act of 1969 (42 U.S.C. 4321 et seq.) to

1 inform more flexible and effective categorical  
2 exclusions; and

3 (2) build tools to improve future reviews, in-  
4 cluding—

5 (A) tools for project proponents that accel-  
6 erate preparation of environmental documenta-  
7 tion;

8 (B) tools for government reviewers such as  
9 domain-specific large language models that help  
10 convert geographic information system or tab-  
11 ular data on resources potentially impacted into  
12 rough-draft narrative documents;

13 (C) tools to be applied in nongovernmental  
14 settings, such as automatic reviews of applica-  
15 tions to assess the completeness of information;  
16 and

17 (D) a strategic plan to implement and de-  
18 ploy online and digital tools to improve Federal  
19 permitting activities, developed in consultation  
20 with—

21 (i) the Secretary of the Interior;

22 (ii) the Secretary of Agriculture, with  
23 respect to National Forest System land;

24 (iii) the Executive Director of the  
25 Federal Permitting Improvement Steering

1 Council established by section 41002(a) of  
2 the FAST Act (42 U.S.C. 4370m-1(a));  
3 and

4 (iv) the heads of any other relevant  
5 Federal department or agency, as deter-  
6 mined appropriate by the Secretary.

7 **SEC. 6. RULEMAKING ON AI STANDARDIZATION FOR GRID**  
8 **INTERCONNECTION.**

9 Not later than 18 months after the date of enactment  
10 of this Act, the Federal Energy Regulatory Commission  
11 shall initiate a rulemaking to revise the pro forma Large  
12 Generator Interconnection Procedures promulgated pursu-  
13 ant to section 35.28(f) of title 18, Code of Federal Regula-  
14 tions (or successor regulations), to require public utility  
15 transmission providers to share and employ, as appro-  
16 priate, queue management best practices with respect to  
17 the use of computing technologies, such as artificial intel-  
18 ligence, machine learning, or automation, in evaluating  
19 and processing interconnection requests, in order to expe-  
20 dite study results with respect to those requests.

21 **SEC. 7. ENSURING ENERGY SECURITY FOR DATACENTERS**  
22 **AND COMPUTING RESOURCES.**

23 Not later than 1 year after the date of enactment  
24 of this Act, the Secretary shall submit to Congress a re-  
25 port that—



1           (1) assesses—

2                   (A) the growth of computing data centers  
3           and advanced computing electrical power load  
4           in the United States;

5                   (B) potential risks of growth in computing  
6           centers or growth in the required electrical  
7           power to United States energy and national se-  
8           curity; and

9                   (C) the extent to which emerging tech-  
10          nologies, such as artificial intelligence and ad-  
11          vanced computing, may impact hardware and  
12          software systems used at data and computing  
13          centers; and

14          (2) provides recommendations for—

15                   (A) resources and capabilities that the De-  
16          partment may provide to promote access to en-  
17          ergy resources by data centers and advanced  
18          computing;

19                   (B) policy changes to ensure domestic de-  
20          ployment of data center and advanced com-  
21          puting resources prevents offshoring of United  
22          States data and resources; and

23                   (C) improving the energy efficiency of data  
24          centers, advanced computing, and AI.

1 **SEC. 8. OFFICE OF CRITICAL AND EMERGING TECH-**  
 2 **NOLOGY.**

3 (a) IN GENERAL.—Title II of the Department of En-  
 4 ergy Organization Act is amended by inserting after sec-  
 5 tion 215 (42 U.S.C. 7144b) the following:

6 **“SEC. 216. OFFICE OF CRITICAL AND EMERGING TECH-**  
 7 **NOLOGY.**

8 “(a) DEFINITIONS.—In this section:

9 “(1) CRITICAL AND EMERGING TECHNOLOGY.—

10 The term ‘critical and emerging technology’  
 11 means—

12 “(A) advanced technology that is poten-  
 13 tially significant to United States competitive-  
 14 ness, energy security, or national security, such  
 15 as biotechnology, advanced computing, and ad-  
 16 vanced manufacturing;

17 “(B) technology that may address the chal-  
 18 lenges described in subsection (b) of section  
 19 10387 of the Research and Development, Com-  
 20 petition, and Innovation Act (42 U.S.C.  
 21 19107); and

22 “(C) technology described in the key tech-  
 23 nology focus areas described in subsection (e) of  
 24 that section (42 U.S.C. 19107).

25 “(2) DEPARTMENT CAPABILITIES.—The term  
 26 ‘Department capabilities’ means—

1           “(A) each of the National Laboratories (as  
2           defined in section 2 of the Energy Policy Act of  
3           2005 (42 U.S.C. 15801)); and

4           “(B) each associated user facility of the  
5           Department.

6           “(3) DIRECTOR.—The term ‘Director’ means  
7           the Director of Critical and Emerging Technology  
8           described in subsection (d).

9           “(4) OFFICE.—The term ‘Office’ means the Of-  
10          fice of Critical and Emerging Technology established  
11          by subsection (b).

12          “(b) ESTABLISHMENT.—There shall be within the  
13          Office of the Under Secretary for Science and Innovation  
14          an Office of Critical and Emerging Technology.

15          “(e) MISSION.—The mission of the Office shall be—

16                 “(1) to work across the entire Department to  
17                 assess and analyze the status of and gaps in United  
18                 States competitiveness, energy security, and national  
19                 security relating to critical and emerging tech-  
20                 nologies, including through the use of Department  
21                 capabilities;

22                 “(2) to leverage Department capabilities to pro-  
23                 vide for rapid response to emerging threats and  
24                 technological surprise from new emerging tech-  
25                 nologies;

1           “(3) to promote greater participation of De-  
2           partment capabilities within national science policy  
3           and international forums; and

4           “(4) to inform the direction of research and  
5           policy decisionmaking relating to potential risks of  
6           adoption and use of emerging technologies, such as  
7           inadvertent or deliberate misuses of technology.

8           “(d) DIRECTOR OF CRITICAL AND EMERGING TECH-  
9           NOLOGY.—The Office shall be headed by a director, to be  
10          known as the ‘Director of Critical and Emerging Tech-  
11          nology’, who shall—

12           “(1) be appointed by the Secretary; and

13           “(2) be an individual who, by reason of profes-  
14          sional background and experience, is specially quali-  
15          fied to advise the Secretary on matters pertaining to  
16          critical and emerging technology.

17          “(e) COLLABORATION.—In carrying out the mission  
18          and activities of the Office, the Director shall closely col-  
19          laborate with all relevant Departmental entities, including  
20          the National Nuclear Security Administration and the Of-  
21          fice of Science, to maximize the computational capabilities  
22          of the Department and minimize redundant capabilities.

23          “(f) COORDINATION.—In carrying out the mission  
24          and activities of the Office, the Director—

1           “(1) shall coordinate with senior leadership  
2 across the Department and other stakeholders (such  
3 as institutions of higher education and private in-  
4 dustry);

5           “(2) shall ensure the coordination of the Office  
6 of Science with the other activities of the Depart-  
7 ment relating to critical and emerging technology,  
8 including the transfer of knowledge, capabilities, and  
9 relevant technologies, from basic research programs  
10 of the Department to applied research and develop-  
11 ment programs of the Department, for the purpose  
12 of enabling development of mission-relevant tech-  
13 nologies;

14           “(3) shall support joint activities among the  
15 programs of the Department;

16           “(4) shall coordinate with the heads of other  
17 relevant Federal agencies operating under existing  
18 authorizations with subjects related to the mission of  
19 the Office described in subsection (c) in support of  
20 advancements in related research areas, as the Di-  
21 rector determines to be appropriate; and

22           “(5) may form partnerships to enhance the use  
23 of, and to ensure access to, user facilities by other  
24 Federal agencies.

25           “(g) PLANNING, ASSESSMENT, AND REPORTING.—

1           “(1) IN GENERAL.—Not later than 180 days  
2 after the date of enactment of the Department of  
3 Energy AI Act, the Secretary shall submit to Con-  
4 gress a critical and emerging technology action plan  
5 and assessment, which shall include—

6           “(A) a review of current investments, pro-  
7 grams, activities, and science infrastructure of  
8 the Department, including under National Lab-  
9 oratories, to advance critical and emerging tech-  
10 nologies;

11           “(B) a description of any shortcomings of  
12 the capabilities of the Department that may ad-  
13 versely impact national competitiveness relating  
14 to emerging technologies or national security;  
15 and

16           “(C) a budget projection for the subse-  
17 quent 5 fiscal years of planned investments of  
18 the Department in each critical and emerging  
19 technology, including research and development,  
20 infrastructure, pilots, test beds, demonstration  
21 projects, and other relevant activities.

22           “(2) UPDATES.—Every 2 years after the sub-  
23 mission of the plan and assessment under paragraph  
24 (1), the Secretary shall submit to Congress—

1           “(A) an updated emerging technology ac-  
2           tion plan and assessment; and

3           “(B) a report that describes the progress  
4           made toward meeting the goals set forth in the  
5           emerging technology action plan and assess-  
6           ment submitted previously.”.

7           (b) CLERICAL AMENDMENT.—The table of contents  
8           for the Department of Energy Organization Act (Public  
9           Law 95–91; 91 Stat. 565; 119 Stat. 764; 133 Stat. 2199)  
10          is amended by inserting after the item relating to section  
11          215 the following:

          “Sec. 216. Office of Critical and Emerging Technology.”.

12          **SECTION 1. SHORT TITLE.**

13           *This Act may be cited as the “Department of Energy*  
14          *AI Act”.*

15          **SEC. 2. FINDINGS.**

16           *Congress finds that—*

17           (1) *the Department has a leading role to play in*  
18           *making the most of the potential of artificial intel-*  
19           *ligence to advance the missions of the Department re-*  
20           *lating to national security, science, and energy (in-*  
21           *cluding critical materials);*

22           (2) *the 17 National Laboratories employ over*  
23           *40,000 scientists, engineers, and researchers with dec-*  
24           *ades of experience developing world-leading advanced*  
25           *computational algorithms, computer science research,*

1        *experimentation, and applications in machine learn-*  
2        *ing that underlie artificial intelligence;*

3            *(3) the NNSA manages the Stockpile Steward-*  
4        *ship Program established under section 4201 of the*  
5        *Atomic Energy Defense Act (50 U.S.C. 2521), which*  
6        *includes the Advanced Simulation and Computing*  
7        *program, that provides critical classified and unclas-*  
8        *sified computing capabilities to sustain the nuclear*  
9        *stockpile of the United States;*

10           *(4) for decades, the Department has led the world*  
11        *in the design, construction, and operation of the pre-*  
12        *eminent high-performance computing systems of the*  
13        *United States, which benefit the scientific and eco-*  
14        *nomics competitiveness of the United States across*  
15        *many sectors, including energy, critical materials,*  
16        *biotechnology, and national security;*

17           *(5) across the Department's network of 34 user*  
18        *facilities, scientists generate tremendous volumes of*  
19        *high-quality open data across diverse research areas,*  
20        *while the NNSA has always generated the foremost*  
21        *datasets in the world on nuclear deterrence and stra-*  
22        *tegic weapons;*

23           *(6) the unrivaled quantity and quality of open*  
24        *and classified scientific datasets of the Department is*  
25        *a unique asset to rapidly develop frontier AI models;*



1           (7) *the Department already develops cutting-edge*  
2 *AI models to execute the broad mission of the Depart-*  
3 *ment, including AI models developed by the Depart-*  
4 *ment that are used to forecast disease transmission*  
5 *for COVID–19, and address critical material issues*  
6 *and emerging nuclear security missions;*

7           (8) *the AI capabilities of the Department will*  
8 *underpin and jumpstart a dedicated, focused, and*  
9 *centralized AI program; and*

10           (9) *under section 4.1(b) of Executive Order*  
11 *14110 (88 Fed. Reg. 75191 (November 1, 2023)) (re-*  
12 *lating to the safe, secure, and trustworthy develop-*  
13 *ment and use of artificial intelligence), the Secretary*  
14 *is tasked to lead development in testbeds, national se-*  
15 *curity protections, and assessment of artificial intel-*  
16 *ligence applications.*

17 **SEC. 3. DEFINITIONS.**

18 *In this Act:*

19           (1) *AI; ARTIFICIAL INTELLIGENCE.—The terms*  
20 *“AI” and “artificial intelligence” have the meaning*  
21 *given the term “artificial intelligence” in section*  
22 *5002 of the National Artificial Intelligence Initiative*  
23 *Act of 2020 (15 U.S.C. 9401).*

1           (2) *ALIGNMENT*.—The term “alignment” means  
2 a field of AI safety research that aims to make AI  
3 systems behave in line with human intentions.

4           (3) *DEPARTMENT*.—The term “Department”  
5 means the Department of Energy, including the  
6 NNSA.

7           (4) *FOUNDATION MODEL*.—The term “foundation  
8 model” means an AI model that—

9                   (A) is trained on broad data;

10                   (B) generally uses self-supervision;

11                   (C) contains at least tens of billions of pa-  
12 rameters; and

13                   (D) is applicable across a wide range of  
14 contexts; and

15                   (E) exhibits, or could be easily modified to  
16 exhibit, high levels of performance at tasks that  
17 pose a serious risk to the security, national eco-  
18 nomic security, or national public health or safe-  
19 ty of the United States.

20           (5) *FRONTIER AI*.—

21                   (A) *IN GENERAL*.—The term “frontier AI”  
22 means the leading edge of AI research that re-  
23 mains unexplored and is considered to be the  
24 most challenging, including models—

1                   (i) that exceed the capabilities cur-  
2                   rently present in the most advanced existing  
3                   models; and

4                   (ii) many of which perform a wide va-  
5                   riety of tasks.

6                   (B) *INCLUSION.*—The term “frontier AI”  
7                   includes AI models with more than  
8                   1,000,000,000,000 parameters.

9                   (6) *NATIONAL LABORATORY.*—The term “Na-  
10                  tional Laboratory” has the meaning given the term in  
11                  section 2 of the Energy Policy Act of 2005 (42 U.S.C.  
12                  15801).

13                  (7) *NNSA.*—The term “NNSA” means the Na-  
14                  tional Nuclear Security Administration.

15                  (8) *SECRETARY.*—The term “Secretary” means  
16                  the Secretary of Energy.

17                  (9) *TESTBED.*—The term “testbed” means any  
18                  platform, facility, or environment that enables the  
19                  testing and evaluation of scientific theories and new  
20                  technologies, including hardware, software, or field  
21                  environments in which structured frameworks can be  
22                  implemented to conduct tests to assess the perform-  
23                  ance, reliability, safety, and security of a wide range  
24                  of items, including prototypes, systems, applications,

1       *AI models, instruments, computational tools, devices,*  
2       *and other technological innovations.*

3 **SEC. 4. ARTIFICIAL INTELLIGENCE RESEARCH TO DEPLOY-**  
4                               **MENT.**

5       *(a) PROGRAM TO DEVELOP AND DEPLOY FRONTIERS*  
6 *IN ARTIFICIAL INTELLIGENCE FOR SCIENCE, SECURITY,*  
7 *AND TECHNOLOGY (FASST).—*

8               *(1) ESTABLISHMENT.—Not later than 180 days*  
9       *after the date of enactment of this Act, the Secretary*  
10       *shall establish a centralized AI program to carry out*  
11       *research on the development and deployment of ad-*  
12       *vanced artificial intelligence capabilities for the mis-*  
13       *sions of the Department (referred to in this subsection*  
14       *as the “program”), consistent with the program estab-*  
15       *lished under section 5501 of the William M. (Mac)*  
16       *Thornberry National Defense Authorization Act for*  
17       *Fiscal Year 2021 (15 U.S.C. 9461).*

18               *(2) PROGRAM COMPONENTS.—*

19                       *(A) IN GENERAL.—The program shall ad-*  
20       *vance and support diverse activities that include*  
21       *the following components:*

22                               *(i) Aggregation, curation, and dis-*  
23       *tribution of AI training datasets.*

1                   (ii) *Development and deployment of*  
2                   *next-generation computing platforms and*  
3                   *infrastructure.*

4                   (iii) *Development and deployment of*  
5                   *safe and trustworthy AI models and sys-*  
6                   *tems.*

7                   (iv) *Tuning and adaptation of AI*  
8                   *models and systems for pressing scientific,*  
9                   *energy, and national security applications.*

10                  (B) *AGGREGATION, CURATION, AND DIS-*  
11                  *TRIBUTION OF AI TRAINING DATASETS.—In car-*  
12                  *rying out the component of the program de-*  
13                  *scribed in subparagraph (A)(i), the Secretary*  
14                  *shall develop methods, platforms, protocols, and*  
15                  *other tools required for efficient, safe, secure, and*  
16                  *effective aggregation, generation, curation, and*  
17                  *distribution of AI training datasets, including—*

18                         (i) *assembling, aggregating, and*  
19                         *curating large-scale training data for ad-*  
20                         *vanced AI, including outputs and synthetic*  
21                         *data from research programs of the Depart-*  
22                         *ment and other open science data, with the*  
23                         *goal of developing comprehensive scientific*  
24                         *AI training databases and testing and vali-*  
25                         *ation data;*

1           (ii) developing and executing appro-  
2           priate data management plan for the eth-  
3           ical, responsible, and secure use of classified  
4           and unclassified scientific data;

5           (iii) identifying, restricting, securing,  
6           curating, and safely distributing, as appro-  
7           priate based on the application—

8                   (I) scientific and experimental  
9                   Departmental datasets; and

10                   (II) sponsored research activities  
11                   that are needed for the training of  
12                   foundation and adapted downstream  
13                   AI models; and

14           (iv) partnering with stakeholders to  
15           identify, secure, and curate critical datasets  
16           that reside outside the Department but are  
17           determined to be critical to optimizing the  
18           capabilities of open-science AI foundation  
19           models, national security AI foundation  
20           models, applied energy AI foundation mod-  
21           els, and other AI technologies developed  
22           under the program.

23           (C) DEVELOPMENT AND DEPLOYMENT OF  
24           NEXT-GENERATION COMPUTING PLATFORMS AND  
25           INFRASTRUCTURE.—In carrying out the compo-

1           *ment of the program described in subparagraph*  
2           *(A)(ii), the Secretary shall—*

3                     *(i) develop early-stage and applica-*  
4                     *tion-stage AI testbeds to test and evaluate*  
5                     *new software, hardware, algorithms, and*  
6                     *other AI-based technologies and applica-*  
7                     *tions;*

8                     *(ii) develop and deploy new energy-ef-*  
9                     *ficient AI computing hardware and soft-*  
10                    *ware infrastructure necessary for developing*  
11                    *and deploying trustworthy and secure inter-*  
12                    *operable frontier AI systems that leverage*  
13                    *the high-performance computing capabilities*  
14                    *of the Department and the National Lab-*  
15                    *oratories;*

16                    *(iii) facilitate the development and de-*  
17                    *ployment of unclassified and classified high-*  
18                    *performance computing systems and AI*  
19                    *platforms through Department-owned infra-*  
20                    *structure data and computing facilities;*

21                    *(iv) procure interoperable high-per-*  
22                    *formance computing and other resources*  
23                    *necessary for developing, training, evalu-*  
24                    *ating, and deploying AI foundation models*  
25                    *and AI technologies; and*

1                   (v) use appropriate supplier screening  
2                   tools available through the Department to  
3                   ensure that procurements under clause (iv)  
4                   are from trusted suppliers.

5                   (D) DEVELOPMENT AND DEPLOYMENT OF  
6                   SAFE, SECURE, AND TRUSTWORTHY AI MODELS  
7                   AND SYSTEMS.—In carrying out the component  
8                   of the program described in subparagraph  
9                   (A)(iii), not later than 3 years after the date of  
10                  enactment of this Act, the Secretary shall—

11                  (i) develop innovative concepts and ap-  
12                  plied mathematics, computer science, engi-  
13                  neering, and other science disciplines needed  
14                  for frontier AI;

15                  (ii) develop best-in-class AI foundation  
16                  models and other AI technologies for open-  
17                  science, applied energy, and national secu-  
18                  rity applications;

19                  (iii) research, develop, and deploy  
20                  counter-adversarial artificial intelligence so-  
21                  lutions to predict, prevent, mitigate, and re-  
22                  spond to threats to critical infrastructure,  
23                  energy security, nuclear nonproliferation,  
24                  biological and chemical threats, and cyber  
25                  threats;



1           (iv) establish crosscutting research ef-  
2           forts on AI risks, reliability, safety, cyberse-  
3           curity, trustworthiness, and alignment, in-  
4           cluding the creation of unclassified and  
5           classified data platforms across the Depart-  
6           ment; and

7           (v) develop capabilities needed to en-  
8           sure the safe, secure, and responsible imple-  
9           mentation of AI in the private and public  
10          sectors that—

11                   (I) may be readily applied across  
12                   Federal agencies and private entities to  
13                   ensure that open-science models are re-  
14                   leased, operated, and managed respon-  
15                   sibly, securely, and in the national in-  
16                   terest; and

17                   (II) ensure that classified national  
18                   security models are secure, responsibly-  
19                   managed, and safely implemented in  
20                   the national interest.

21           (E) TUNING AND ADAPTATION OF AI MOD-  
22           ELS AND SYSTEMS FOR PRESSING SCIENTIFIC,  
23           APPLIED ENERGY, AND NATIONAL SECURITY AP-  
24           PLICATIONS.—In carrying out the component of

1           *the program described in subparagraph (A)(iv),*  
2           *the Secretary shall—*

3                     *(i) use AI foundation models and other*  
4                     *AI technologies to develop a multitude of*  
5                     *tuned and adapted downstream models to*  
6                     *solve pressing scientific, applied energy, and*  
7                     *national security challenges;*

8                     *(ii) carry out joint work, including*  
9                     *public-private partnerships, and cooperative*  
10                    *research projects with industry, including*  
11                    *end user companies, hardware systems ven-*  
12                    *dors, and AI software companies, to ad-*  
13                    *vance AI technologies relevant to the mis-*  
14                    *sions of the Department;*

15                    *(iii) form partnerships with other Fed-*  
16                    *eral agencies, institutions of higher edu-*  
17                    *cation, and international organizations*  
18                    *aligned with the interests of the United*  
19                    *States to advance frontier AI systems devel-*  
20                    *opment and deployment; and*

21                    *(iv) increase research experiences and*  
22                    *workforce development, including training*  
23                    *for undergraduate and graduate students in*  
24                    *frontier AI for science, energy, and national*  
25                    *security.*

1           (3) *STRATEGIC PLAN.*—*In carrying out the pro-*  
2 *gram, the Secretary shall develop a strategic plan*  
3 *with specific short-term and long-term goals and re-*  
4 *source needs to advance applications in AI for*  
5 *science, energy, and national security to support the*  
6 *missions of the Department, consistent with—*

7           (A) *the 2023 National Laboratory workshop*  
8 *report entitled “Advanced Research Directions*  
9 *on AI for Science, Energy, and Security”;* and

10          (B) *the 2024 National Laboratory workshop*  
11 *report entitled “AI for Energy”.*

12          (4) *AI TALENT.*—*As part of the program, the*  
13 *Secretary shall develop the required workforce, and*  
14 *hire and train not fewer than 500 new researchers to*  
15 *meet the rising demand for AI talent—*

16          (A) *with a particular emphasis on expand-*  
17 *ing the number of individuals from underrep-*  
18 *resented groups pursuing and attaining skills*  
19 *relevant to AI; and*

20          (B) *including by—*

21           (i) *providing training, grants, and re-*  
22 *search opportunities;*

23           (ii) *carrying out public awareness*  
24 *campaigns about AI career paths; and*

1                   (iii) *establishing new degree and cer-*  
2                   *tificate programs in AI-related disciplines*  
3                   *at universities and community colleges.*

4           (b) *AI RESEARCH AND DEVELOPMENT CENTERS.—*

5                   (1) *IN GENERAL.—As part of the program estab-*  
6                   *lished under subsection (a), the Secretary shall select,*  
7                   *on a competitive, merit-reviewed basis, National Lab-*  
8                   *oratories to establish and operate not fewer than 8*  
9                   *multidisciplinary AI Research and Development Cen-*  
10                   *ters (referred to in this subsection as “Centers”)—*

11                           (A) *to accelerate the safe, secure, and trust-*  
12                           *worthy deployment of AI for science, energy, and*  
13                           *national security missions;*

14                           (B) *to demonstrate the use of AI in address-*  
15                           *ing key challenge problems of national interest*  
16                           *in science, energy, and national security; and*

17                           (C) *to maintain the competitive advantage*  
18                           *of the United States in AI.*

19                   (2) *CONSIDERATIONS FOR SELECTION.—In se-*  
20                   *lecting National Laboratories under paragraph (1),*  
21                   *the Secretary shall, to the maximum extent prac-*  
22                   *ticable—*

23                           (A) *ensure that at least 1 Center focuses on*  
24                           *applied energy activities carried out by the Of-*  
25                           *fice of Energy Efficiency and Renewable Energy,*

1           *the Office of Fossil Energy and Carbon Manage-*  
2           *ment, or the Office of Nuclear Energy; and*

3                   *(B) consider geographic diversity to leverage*  
4           *resources and facilities of National Laboratories*  
5           *and partners in different regions.*

6           *(3) FOCUS.—Each Center shall bring together di-*  
7           *verse teams from National Laboratories, Department*  
8           *user facilities, academia, and industry to collabo-*  
9           *ratively and concurrently deploy hardware, software,*  
10           *numerical methods, data, algorithms, and applica-*  
11           *tions for AI and ensure that the frontier AI research*  
12           *of the Department is well-suited for key Department*  
13           *missions, including by using existing and emerging*  
14           *computing systems and datasets to the maximum ex-*  
15           *tent practicable.*

16           *(4) ADMINISTRATION.—*

17                   *(A) NATIONAL LABORATORY.—Each Center*  
18           *shall be established as part of a National Lab-*  
19           *oratory.*

20                   *(B) APPLICATION.—To be eligible for selec-*  
21           *tion to establish and operate a Center under*  
22           *paragraph (1), a National Laboratory shall sub-*  
23           *mit to the Secretary an application at such time,*  
24           *in such manner, and containing such informa-*  
25           *tion as the Secretary may require.*

1           (C) *DIRECTOR.*—*Each Center shall be head-*  
2           *ed by a Director, who shall be the Chief Execu-*  
3           *tive Officer of the Center and an employee of the*  
4           *National Laboratory described in subparagraph*  
5           *(A), and responsible for—*

6                   (i) *successful execution of the goals of*  
7                   *the Center; and*

8                   (ii) *coordinating with other Centers.*

9           (D) *TECHNICAL ROADMAP.*—*In support of*  
10           *the strategic plan developed under subsection*  
11           *(a)(3), each Center shall—*

12                   (i) *set a research and innovation goal*  
13                   *central to advancing the science, energy,*  
14                   *and national security mission of the De-*  
15                   *partment; and*

16                   (ii) *establish a technical roadmap to*  
17                   *meet that goal in not more than 7 years.*

18           (E) *COORDINATION.*—*The Secretary shall*  
19           *coordinate, minimize duplication, and resolve*  
20           *conflicts between the Centers.*

21           (c) *AI RISK EVALUATION AND MITIGATION PRO-*  
22           *GRAM.*—

23                   (1) *AI RISK PROGRAM.*—*As part of the program*  
24                   *established under subsection (a), and consistent with*  
25                   *the missions of the Department, the Secretary, in con-*

1 *sultation with the Secretary of Homeland Security,*  
2 *the Secretary of Defense, the Director of National In-*  
3 *telligence, the Director of the National Security Agen-*  
4 *cy, and the Secretary of Commerce, shall carry out a*  
5 *comprehensive program to evaluate and mitigate safe-*  
6 *ty and security risks associated with artificial intel-*  
7 *ligence systems (referred to in this subsection as the*  
8 *“AI risk program”).*

9 (2) *RISK TAXONOMY.—*

10 (A) *IN GENERAL.—Under the AI risk pro-*  
11 *gram, the Secretary shall develop a taxonomy of*  
12 *safety and security risks associated with artifi-*  
13 *cial intelligence systems and datasets relevant to*  
14 *the missions of the Department, including, at a*  
15 *minimum, the risks described in subparagraph*  
16 *(B).*

17 (B) *RISKS DESCRIBED.—The risks referred*  
18 *to in subparagraph (A) are the abilities of artifi-*  
19 *cial intelligence—*

20 (i) *to generate information at a given*  
21 *classification level;*

22 (ii) *to assist in generation of nuclear*  
23 *weapons information;*

24 (iii) *to assist in generation of chem-*  
25 *ical, biological, radiological, nuclear, non-*

1            *proliferation, critical infrastructure, and*  
2            *other economic, security, or energy threats;*

3            *(iv) to assist in generation of malware*  
4            *and other cyber and adversarial tactics,*  
5            *techniques, and procedures that pose a sig-*  
6            *nificant national security risk, such as*  
7            *threatening the stability of critical national*  
8            *infrastructure;*

9            *(v) to undermine public trust in the*  
10           *use of artificial intelligence technologies or*  
11           *in national security;*

12           *(vi) to deceive a human operator or*  
13           *computer system, or otherwise act in oppo-*  
14           *sition to the goals of a human operator or*  
15           *automated systems;*

16           *(vii) to act autonomously with little or*  
17           *no human intervention in ways that con-*  
18           *flict with human intentions;*

19           *(viii) to be vulnerable to data com-*  
20           *promise by malicious cyber actors; and*

21           *(ix) to be vulnerable to other emerging*  
22           *or unforeseen risk, as determined by the*  
23           *Secretary.*

24           *(d) SHARED RESOURCES FOR AI.—*



1           (1) *IN GENERAL.*—As part of the program estab-  
2           lished under subsection (a), the Secretary shall iden-  
3           tify, support, and sustain shared resources and ena-  
4           bling tools that have the potential to reduce cost and  
5           accelerate the pace of scientific discovery and techno-  
6           logical innovation with respect to the missions of the  
7           Department relating to science, energy, and national  
8           security.

9           (2) *CONSULTATION.*—In carrying out paragraph  
10          (1), the Secretary shall consult with relevant experts  
11          in industry, academia, and the National Labora-  
12          tories.

13          (3) *FOCUS.*—Shared resources and enabling tools  
14          referred to in paragraph (1) shall include the fol-  
15          lowing:

16                (A) *Scientific data and knowledge bases for*  
17                *training AI systems.*

18                (B) *Benchmarks and competitions for evalu-*  
19                *ating advances in AI systems.*

20                (C) *Platform technologies that lower the cost*  
21                *of generating training data or enable the genera-*  
22                *tion of novel training data.*

23                (D) *High-performance computing, includ-*  
24                *ing hybrid computing systems that integrate AI*  
25                *and high-performance computing.*

1           (E) *The combination of AI and scientific*  
2           *automation, such as cloud labs and self-driving*  
3           *labs.*

4           (F) *Tools that enable AI to solve inverse de-*  
5           *sign problems.*

6           (G) *Testbeds for accelerating progress at the*  
7           *intersection of AI and cyberphysical systems.*

8       (e) *ADMINISTRATION.—*

9           (1) *RESEARCH SECURITY.—The activities au-*  
10          *thorized under this section shall be applied in a man-*  
11          *ner consistent with subtitle D of title VI of the Re-*  
12          *search and Development, Competition, and Innova-*  
13          *tion Act (42 U.S.C. 19231 et seq.).*

14          (2) *CYBERSECURITY.—The Secretary shall en-*  
15          *sure the integration of robust cybersecurity and data*  
16          *security measures into all AI research-to-deployment*  
17          *efforts authorized under this section to protect the in-*  
18          *tegrity and confidentiality of collected and analyzed*  
19          *data.*

20          (3) *PARTNERSHIPS WITH PRIVATE ENTITIES.—*

21               (A) *IN GENERAL.—The Secretary shall seek*  
22               *to establish partnerships with private companies*  
23               *and nonprofit organizations in carrying out this*  
24               *Act, including with respect to the research, devel-*  
25               *opment, and deployment of each of the 4 pro-*

1           gram components described in subsection  
2           (a)(2)(A).

3                   (B) *REQUIREMENT.*—In carrying out sub-  
4           paragraph (A), the Secretary shall protect any  
5           information submitted to or shared by the De-  
6           partment consistent with applicable laws (in-  
7           cluding regulations).

8                   (4) *CONSIDERATIONS.*—In carrying out this sec-  
9           tion, the Secretary shall, to the maximum extent  
10          practicable, consider leveraging existing resources  
11          from public and private sectors.

12          (f) *ANNUAL REPORT.*—The Secretary shall submit to  
13          Congress an annual report describing—

14                  (1) the progress, findings, and expenditures  
15                  under each program established under this section;  
16                  and

17                  (2) any legislative recommendations for pro-  
18                  moting and improving each of those programs.

19          **SEC. 5. FEDERAL PERMITTING.**

20                  (a) *ESTABLISHMENT.*—Not later than 180 days after  
21          the date of enactment of this Act, the Secretary shall estab-  
22          lish a program to improve Federal permitting processes for  
23          energy-related projects, including critical materials projects  
24          using artificial intelligence.

1           (b) *PROGRAM COMPONENTS.*—*In carrying out the pro-*  
2 *gram established under subsection (a), the Secretary shall*  
3 *carry out activities, including activities that—*

4           (1) *generate, collect, and analyze data and pro-*  
5 *vide tools from past environmental and other permit-*  
6 *ting reviews, including by—*

7           (A) *extracting data from applications for*  
8 *comparison with data relied on in environ-*  
9 *mental reviews to assess the adequacy and rel-*  
10 *evance of applications;*

11           (B) *extracting information from past site-*  
12 *specific analyses in the area of a current project;*

13           (C) *summarizing key mitigation actions*  
14 *that have been successfully applied in past simi-*  
15 *lar projects; and*

16           (D) *using AI for deeper reviews of past de-*  
17 *terminations under the National Environmental*  
18 *Policy Act of 1969 (42 U.S.C. 4321 et seq.) to*  
19 *inform more flexible and effective categorical ex-*  
20 *clusions; and*

21           (2) *build tools to improve future reviews, includ-*  
22 *ing—*

23           (A) *tools for project proponents that accel-*  
24 *erate preparation of environmental documenta-*  
25 *tion;*

1           (B) tools for government reviewers such as  
2 domain-specific large language models that help  
3 convert geographic information system or tab-  
4 ular data on resources potentially impacted into  
5 rough-draft narrative documents;

6           (C) tools to be applied in nongovernmental  
7 settings, such as automatic reviews of applica-  
8 tions to assess the completeness of information;  
9 and

10          (D) a strategic plan to implement and de-  
11 ploy online and digital tools to improve Federal  
12 permitting activities, developed in consultation  
13 with—

14           (i) the Secretary of the Interior;

15           (ii) the Secretary of Agriculture, with  
16 respect to National Forest System land;

17           (iii) the Executive Director of the Fed-  
18 eral Permitting Improvement Steering  
19 Council established by section 41002(a) of  
20 the FAST Act (42 U.S.C. 4370m-1(a)); and

21           (iv) the heads of any other relevant  
22 Federal department or agency, as deter-  
23 mined appropriate by the Secretary.

24          (c) INTERAGENCY ACCESS.—The Secretary shall make  
25 available to Federal agencies—

1           (1) *the code for any artificial intelligence devel-*  
2           *oped in furtherance of the program established under*  
3           *subsection (a);*

4           (2) *the training dataset curated under this sec-*  
5           *tion; and*

6           (3) *the particular environmental documents used*  
7           *in that training dataset.*

8   **SEC. 6. RULEMAKING ON AI STANDARDIZATION FOR GRID**  
9                                   **INTERCONNECTION.**

10       *Not later than 18 months after the date of enactment*  
11       *of this Act, the Federal Energy Regulatory Commission*  
12       *shall initiate a rulemaking to revise the pro forma Large*  
13       *Generator Interconnection Procedures promulgated pursu-*  
14       *ant to section 35.28(f) of title 18, Code of Federal Regula-*  
15       *tions (or successor regulations), to require public utility*  
16       *transmission providers to share and employ, as appro-*  
17       *priate, queue management best practices with respect to the*  
18       *use of computing technologies, such as artificial intelligence,*  
19       *machine learning, or automation, in evaluating and proc-*  
20       *essing interconnection requests, in order to expedite study*  
21       *results with respect to those requests.*

1 **SEC. 7. ENSURING ENERGY SECURITY FOR DATACENTERS**  
2 **AND COMPUTING RESOURCES.**

3 *Not later than 1 year after the date of enactment of*  
4 *this Act, the Secretary shall submit to Congress a report*  
5 *that—*

6 (1) *assesses—*

7 (A) *the growth of computing data centers*  
8 *and advanced computing electrical power load in*  
9 *the United States;*

10 (B) *potential risks of growth in computing*  
11 *centers or growth in the required electrical power*  
12 *to United States energy and national security;*

13 (C) *the national security impacts of com-*  
14 *puting data centers being manipulated through*  
15 *nefarious means to cause broad impacts to en-*  
16 *ergy reliability; and*

17 (D) *the extent to which emerging tech-*  
18 *nologies, such as artificial intelligence and ad-*  
19 *vanced computing, may impact hardware and*  
20 *software systems used at data and computing*  
21 *centers; and*

22 (2) *provides recommendations for—*

23 (A) *resources and capabilities that the De-*  
24 *partment may provide to promote access to en-*  
25 *ergy resources by data centers and advanced*  
26 *computing;*

1           (B) policy changes to ensure domestic de-  
2           ployment of data center and advanced com-  
3           puting resources prevents offshoring of United  
4           States data and resources;

5           (C) improving the energy efficiency of data  
6           centers, advanced computing, and AI; and

7           (D) enhancing collaboration and resource  
8           sharing between National Laboratories and other  
9           applicable entities to maximize scientific output  
10          and accelerate AI innovation.

11 **SEC. 8. OFFICE OF CRITICAL AND EMERGING TECHNOLOGY.**

12          (a) *IN GENERAL.*—Title II of the Department of En-  
13          ergy Organization Act is amended by inserting after section  
14          215 (42 U.S.C. 7144b) the following:

15 **“SEC. 216. OFFICE OF CRITICAL AND EMERGING TECH-**  
16 **NOLOGY.**

17          “(a) *DEFINITIONS.*—In this section:

18                 “(1) *CRITICAL AND EMERGING TECHNOLOGY.*—

19                 The term ‘critical and emerging technology’ means—

20                         “(A) advanced technology that is potentially  
21                         significant to United States competitiveness, en-  
22                         ergy security, or national security, such as bio-  
23                         technology, advanced computing, and advanced  
24                         manufacturing;



1           “(B) *technology that may address the chal-*  
2           *lenges described in subsection (b) of section*  
3           *10387 of the Research and Development, Com-*  
4           *petition, and Innovation Act (42 U.S.C. 19107);*  
5           *and*

6           “(C) *technology described in the key tech-*  
7           *nology focus areas described in subsection (c) of*  
8           *that section (42 U.S.C. 19107).*

9           “(2) *DEPARTMENT CAPABILITIES.—The term*  
10          *‘Department capabilities’ means—*

11           “(A) *each of the National Laboratories (as*  
12           *defined in section 2 of the Energy Policy Act of*  
13           *2005 (42 U.S.C. 15801)); and*

14           “(B) *each associated user facility of the De-*  
15           *partment.*

16           “(3) *DIRECTOR.—The term ‘Director’ means the*  
17           *Director of Critical and Emerging Technology de-*  
18           *scribed in subsection (d).*

19           “(4) *OFFICE.—The term ‘Office’ means the Office*  
20           *of Critical and Emerging Technology established by*  
21           *subsection (b).*

22           “(b) *ESTABLISHMENT.—There shall be within the Of-*  
23           *fice of the Under Secretary for Science and Innovation an*  
24           *Office of Critical and Emerging Technology.*

25           “(c) *MISSION.—The mission of the Office shall be—*

1           “(1) to work across the entire Department to as-  
2           sess and analyze the status of and gaps in United  
3           States competitiveness, energy security, and national  
4           security relating to critical and emerging tech-  
5           nologies, including through the use of Department ca-  
6           pabilities;

7           “(2) to leverage Department capabilities to pro-  
8           vide for rapid response to emerging threats and tech-  
9           nological surprise from new emerging technologies;

10           “(3) to promote greater participation of Depart-  
11           ment capabilities within national science policy and  
12           international forums; and

13           “(4) to inform the direction of research and pol-  
14           icy decisionmaking relating to potential risks of  
15           adoption and use of emerging technologies, such as in-  
16           advertent or deliberate misuses of technology.

17           “(d) *DIRECTOR OF CRITICAL AND EMERGING TECH-*  
18 *NOLOGY.*—The Office shall be headed by a director, to be  
19 *known as the ‘Director of Critical and Emerging Tech-*  
20 *nology’, who shall—*

21           “(1) be appointed by the Secretary; and

22           “(2) be an individual who, by reason of profes-  
23           sional background and experience, is specially quali-  
24           fied to advise the Secretary on matters pertaining to  
25           critical and emerging technology.

1       “(e) *COLLABORATION.*—*In carrying out the mission*  
2 *and activities of the Office, the Director shall closely collabo-*  
3 *rate with all relevant Departmental entities, including the*  
4 *National Nuclear Security Administration, the applied en-*  
5 *ergy offices, and the Office of Science, to maximize the com-*  
6 *putational capabilities of the Department and minimize re-*  
7 *dundant capabilities.*

8       “(f) *COORDINATION.*—*In carrying out the mission and*  
9 *activities of the Office, the Director—*

10           “(1) *shall coordinate with senior leadership*  
11 *across the Department and other stakeholders (such as*  
12 *institutions of higher education and private indus-*  
13 *try);*

14           “(2) *shall ensure the coordination of the Office of*  
15 *Science with the other activities of the Department re-*  
16 *lating to critical and emerging technology, including*  
17 *the transfer of knowledge, capabilities, and relevant*  
18 *technologies, from basic research programs of the De-*  
19 *partment to applied research and development pro-*  
20 *grams of the Department, for the purpose of enabling*  
21 *development of mission-relevant technologies;*

22           “(3) *shall support joint activities among the pro-*  
23 *grams of the Department;*

24           “(4) *shall coordinate with the heads of other rel-*  
25 *evant Federal agencies operating under existing au-*

1 *thorizations with subjects related to the mission of the*  
2 *Office described in subsection (c) in support of ad-*  
3 *vancements in related research areas, as the Director*  
4 *determines to be appropriate; and*

5 *“(5) may form partnerships to enhance the use*  
6 *of, and to ensure access to, user facilities by other*  
7 *Federal agencies.*

8 *“(g) PLANNING, ASSESSMENT, AND REPORTING.—*

9 *“(1) IN GENERAL.—Not later than 180 days*  
10 *after the date of enactment of the Department of En-*  
11 *ergy AI Act, the Secretary shall submit to Congress*  
12 *a critical and emerging technology action plan and*  
13 *assessment, which shall include—*

14 *“(A) a review of current investments, pro-*  
15 *grams, activities, and science infrastructure of*  
16 *the Department, including under National Lab-*  
17 *oratories, to advance critical and emerging tech-*  
18 *nologies;*

19 *“(B) a description of any shortcomings of*  
20 *the capabilities of the Department that may ad-*  
21 *versely impact national competitiveness relating*  
22 *to emerging technologies or national security;*  
23 *and*

24 *“(C) a budget projection for the subsequent*  
25 *5 fiscal years of planned investments of the De-*

1            *partment in each critical and emerging tech-*  
 2            *nology, including research and development, in-*  
 3            *frastructure, pilots, test beds, demonstration*  
 4            *projects, and other relevant activities.*

5            “(2) *UPDATES.—Every 2 years after the submis-*  
 6            *sion of the plan and assessment under paragraph (1),*  
 7            *the Secretary shall submit to Congress—*

8                    “(A) *an updated emerging technology action*  
 9                    *plan and assessment; and*

10                    “(B) *a report that describes the progress*  
 11                    *made toward meeting the goals set forth in the*  
 12                    *emerging technology action plan and assessment*  
 13                    *submitted previously.”.*

14            (b) *CLERICAL AMENDMENT.—The table of contents for*  
 15            *the Department of Energy Organization Act (Public Law*  
 16            *95–91; 91 Stat. 565; 119 Stat. 764; 133 Stat. 2199) is*  
 17            *amended by inserting after the item relating to section 215*  
 18            *the following:*

*“Sec. 216. Office of Critical and Emerging Technology.”.*

19            **SEC. 9. OFFICE OF INTELLIGENCE AND COUNTERINTEL-**  
 20                    **LIGENCE REVIEW OF VISITORS AND ASSIGN-**  
 21                    **EES.**

22            (a) *DEFINITIONS.—In this section:*

23                    (1) *APPROPRIATE CONGRESSIONAL COMMIT-*  
 24                    *TEES.—The term “appropriate congressional commit-*  
 25                    *tees” means—*

1           (A) *the congressional intelligence commit-*  
2           *tees;*

3           (B) *the Committee on Armed Services, the*  
4           *Committee on Energy and Natural Resources,*  
5           *the Committee on Foreign Relations, the Com-*  
6           *mittee on the Judiciary, the Committee on*  
7           *Homeland Security and Governmental Affairs,*  
8           *and the Committee on Appropriations of the*  
9           *Senate; and*

10          (C) *the Committee on Armed Services, the*  
11          *Committee on Energy and Commerce, the Com-*  
12          *mittee on Foreign Affairs, the Committee on the*  
13          *Judiciary, the Committee on Homeland Secu-*  
14          *rity, and the Committee on Appropriations of*  
15          *the House of Representatives.*

16          (2) *COUNTRY OF RISK.*—*The term “country of*  
17          *risk” means a country identified in the report sub-*  
18          *mitted to Congress by the Director of National Intel-*  
19          *ligence in 2024 pursuant to section 108B of the Na-*  
20          *tional Security Act of 1947 (50 U.S.C. 3043b) (com-*  
21          *monly referred to as the “Annual Threat Assess-*  
22          *ment”).*

23          (3) *COVERED ASSIGNEE; COVERED VISITOR.*—  
24          *The terms “covered assignee” and “covered visitor”*  
25          *mean a foreign national from a country of risk that*

1       is “engaging in competitive behavior that directly  
2       threatens U.S. national security”, who is not an em-  
3       ployee of either the Department or the management  
4       and operations contractor operating a National Lab-  
5       oratory on behalf of the Department, and has re-  
6       quested access to the premises, information, or tech-  
7       nology of a National Laboratory.

8               (4) *DIRECTOR*.—The term “Director” means the  
9       Director of the Office of Intelligence and Counterintel-  
10      ligence of the Department (or their designee).

11              (5) *FOREIGN NATIONAL*.—The term “foreign na-  
12      tional” has the meaning given the term “alien” in  
13      section 101(a) of the Immigration and Nationality  
14      Act (8 U.S.C. 1101(a)).

15              (6) *NATIONAL LABORATORY*.—The term “Na-  
16      tional Laboratory” has the meaning given the term in  
17      section 2 of the Energy Policy Act of 2005 (42 U.S.C.  
18      15801).

19              (7) *NONTRADITIONAL INTELLIGENCE COLLECTION*  
20      *THREAT*.—The term “nontraditional intelligence col-  
21      lection threat” means a threat posed by an individual  
22      not employed by a foreign intelligence service, who is  
23      seeking access to information about a capability, re-  
24      search, or organizational dynamics of the United

1 *States to inform a foreign adversary or nonstate*  
2 *actor.*

3 *(b) FINDINGS.—The Senate finds the following:*

4 *(1) The National Laboratories conduct critical,*  
5 *cutting-edge research across a range of scientific dis-*  
6 *ciplines that provide the United States with a techno-*  
7 *logical edge over other countries.*

8 *(2) The technologies developed in the National*  
9 *Laboratories contribute to the national security of the*  
10 *United States, including classified and sensitive mili-*  
11 *tary technology and dual-use commercial technology.*

12 *(3) International cooperation in the field of*  
13 *science is critical to the United States maintaining*  
14 *its leading technological edge.*

15 *(4) The research enterprise of the Department,*  
16 *including the National Laboratories, is increasingly*  
17 *targeted by adversarial nations to exploit military*  
18 *and dual-use technologies for military or economic*  
19 *gain.*

20 *(5) Approximately 40,000 citizens of foreign*  
21 *countries, including more than 8,000 citizens from*  
22 *China and Russia, were granted access to the prem-*  
23 *ises, information, or technology of National Labora-*  
24 *tories in fiscal year 2023.*



1           (6) *The Office of Intelligence and Counterintel-*  
2           *ligence of the Department is responsible for identi-*  
3           *fying counterintelligence risks to the Department, in-*  
4           *cluding the National Laboratories, and providing di-*  
5           *rection for the mitigation of such risks.*

6           (c) *SENSE OF THE SENATE.—It is the sense of the Sen-*  
7           *ate that—*

8           (1) *before being granted access to the premises,*  
9           *information, or technology of a National Laboratory,*  
10          *citizens of foreign countries identified in the 2024 An-*  
11          *nuual Threat Assessment of the intelligence community*  
12          *as “engaging in competitive behavior that directly*  
13          *threatens U.S. national security” should be appro-*  
14          *priately screened by the National Laboratory to which*  
15          *they seek access, and by the Office of Intelligence and*  
16          *Counterintelligence of the Department, to identify*  
17          *risks associated with granting the requested access to*  
18          *sensitive military, or dual-use technologies; and*

19          (2) *identified risks should be mitigated.*

20          (d) *REVIEW OF COUNTRY OF RISK COVERED VISITOR*  
21          *AND COVERED ASSIGNEE ACCESS REQUESTS.—The Direc-*  
22          *tor shall, in consultation with the applicable Under Sec-*  
23          *retary of the Department that oversees the National Labora-*  
24          *tory, or their designee, promulgate a policy to assess the*  
25          *counterintelligence risk that covered visitors or covered as-*

1 *signees pose to the research or activities undertaken at a*  
2 *National Laboratory.*

3 *(e) ADVICE WITH RESPECT TO COVERED VISITORS OR*  
4 *COVERED ASSIGNEES.—*

5 *(1) IN GENERAL.—The Director shall provide ad-*  
6 *vice to a National Laboratory on covered visitors and*  
7 *covered assignees when 1 or more of the following con-*  
8 *ditions are present:*

9 *(A) The Director has reason to believe that*  
10 *a covered visitor or covered assignee is a non-*  
11 *traditional intelligence collection threat.*

12 *(B) The Director is in receipt of informa-*  
13 *tion indicating that a covered visitor or covered*  
14 *assignee constitutes a counterintelligence risk to*  
15 *a National Laboratory.*

16 *(2) ADVICE DESCRIBED.—Advice provided to a*  
17 *National Laboratory in accordance with paragraph*  
18 *(1) shall include a description of the assessed risk.*

19 *(3) RISK MITIGATION.—When appropriate, the*  
20 *Director shall, in consultation with the applicable*  
21 *Under Secretary of the Department that oversees the*  
22 *National Laboratory, or their designee, provide rec-*  
23 *ommendations to mitigate the risk as part of the ad-*  
24 *vice provided in accordance with paragraph (1).*

1       (f) *REPORTS TO CONGRESS.*—Not later than 90 days  
2 after the date of the enactment of this Act, and quarterly  
3 thereafter, the Secretary shall submit to the appropriate  
4 congressional committees a report, which shall include—

5           (1) *the number of covered visitors or covered as-*  
6 *signees permitted to access the premises, information,*  
7 *or technology of each National Laboratory;*

8           (2) *the number of instances in which the Direc-*  
9 *tor provided advice to a National Laboratory in ac-*  
10 *cordance with subsection (e); and*

11           (3) *the number of instances in which a National*  
12 *Laboratory took action inconsistent with advice pro-*  
13 *vided by the Director in accordance with subsection*  
14 *(e).*

15       (g) *AUTHORIZATION OF APPROPRIATIONS.*—There is  
16 authorized to be appropriated such sums as may be nec-  
17 essary to carry out this section for each of fiscal years 2024  
18 through 2032.

Calendar No. 631

118<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

**S. 4664**

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**A BILL**

To require the Secretary of Energy to establish a program to promote the use of artificial intelligence to support the missions of the Department of Energy, and for other purposes.

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NOVEMBER 21, 2024

Reported with an amendment