

118TH CONGRESS
2D SESSION

S. 5527

To accelerate the development, demonstration, and deployment of new technologies and innovative solutions to address the environmental cleanup mission of the Department of Energy, and for other purposes.

IN THE SENATE OF THE UNITED STATES

DECEMBER 12, 2024

Mr. LUJÁN introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To accelerate the development, demonstration, and deployment of new technologies and innovative solutions to address the environmental cleanup mission 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,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Combining Laboratory
5 Expertise to Accelerate Novel Solutions for Minimizing
6 Accumulated Radioactive Toxins Act of 2024” or the
7 “CLEAN SMART Act of 2024”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) **APPROPRIATE CONGRESSIONAL COMMIT-**
4 **TEES.**—The term “appropriate congressional com-
5 mittees” means—

6 (A) the Committee on Commerce, Science,
7 and Transportation, the Committee on Energy
8 and Natural Resources, and the Committee on
9 Armed Services of the Senate; and

10 (B) the Committee on Science, Space, and
11 Technology, the Committee on Energy and
12 Commerce, and the Committee on Armed Serv-
13 ices of the House of Representatives.

14 (2) **ASSISTANT SECRETARY.**—The term “Assist-
15 ant Secretary” means the Assistant Secretary of En-
16 ergy for Environmental Management.

17 (3) **CHAIR.**—The term “Chair” means the
18 Chair of the Nuclear Regulatory Commission.

19 (4) **CORE NATIONAL LABORATORIES.**—The
20 term “Core National Laboratories” means the Idaho
21 National Laboratory, the Los Alamos National Lab-
22 oratory, the Oak Ridge National Laboratory, the Pa-
23 cific Northwest National Laboratory, the Sandia Na-
24 tional Laboratories, and the Savannah River Na-
25 tional Laboratory.

1 (5) DEPARTMENT.—The term “Department”
2 means the Department of Energy.

3 (6) DIRECTOR.—The term “Director” means
4 Director of the Office of Legacy Management.

5 (7) FEDERAL SITE LIFE-CYCLE ESTIMATE.—
6 The term “Federal site life-cycle estimate” means
7 the scope, cost, and schedule profiles of work activi-
8 ties, including sunk costs and other relevant metrics,
9 of work activities pertaining to the cleanup mission
10 for an individual site of the Office of Environmental
11 Management.

12 (8) FRAMEWORK.—The term “Framework”
13 means the Technology Development and Deployment
14 Framework developed pursuant to section 5.

15 (9) MEMORANDUM.—The term “Memorandum”
16 means the memorandum of understanding entered
17 into pursuant to section 4(c).

18 (10) NETWORK.—The term “Network” means
19 the Network of National Laboratories for Environ-
20 mental Management and Stewardship established
21 under section 3.

22 (11) SECRETARY.—The term “Secretary”
23 means the Secretary of Energy.

24 (12) SITE.—The term “site” means any out-
25 standing defense- and non-defense-related nuclear

1 waste site that is undergoing environmental remedi-
2 ation and facility decommissioning under the respon-
3 sibility of the Office of Environmental Management,
4 and any site that is undergoing long-term mainte-
5 nance and surveillance under the responsibility of
6 the Office of Legacy Management.

7 **SEC. 3. ESTABLISHMENT OF THE NETWORK OF NATIONAL**
8 **LABORATORIES FOR ENVIRONMENTAL MAN-**
9 **AGEMENT AND STEWARDSHIP.**

10 (a) ESTABLISHMENT.—The Secretary shall establish
11 a steering committee to be known as the “Network of Na-
12 tional Laboratories for Environmental Management and
13 Stewardship”.

14 (b) PURPOSE.—The Network shall advance the sci-
15 entific and technical expertise of the National Laboratory
16 system in support of the environmental cleanup mission
17 of the Office of Environmental Management and the long-
18 term surveillance and maintenance mission of the Office
19 of Legacy Management through support for research, de-
20 velopment, demonstration, and deployment of treatment
21 technologies, disposal methods, and other capabilities—

22 (1) to minimize the impact of environmental
23 contamination and risks to public health and the en-
24 vironment from radioactive and hazardous waste and
25 materials from defense-related nuclear activities;

- 1 (2) to lower lifecycle cleanup costs for sites;
- 2 (3) to accelerate cleanup schedules or reduce
- 3 the timeframe of site decommissioning; and
- 4 (4) to address high-priority technical challenges
- 5 in cleanup operations, or otherwise improve the ef-
- 6 fectiveness and safety of cleanup methods.

7 (c) DUTIES.—At the direction of the Assistant Sec-
8 retary and the Director, the Network and its participants
9 shall—

10 (1) leverage National Laboratory partnerships
11 to develop alternate treatment technologies, disposal
12 methods, and other capabilities to assist in the
13 cleanup and long-term management of sites, in order
14 to improve the cost, timeframe, effectiveness, and
15 safety of cleanup methods;

16 (2) identify and coordinate technical support re-
17 sources and capabilities to address emergent events
18 associated with environmental cleanup and long-term
19 monitoring of sites and facilitate the deployment of
20 viable alternative treatment technologies, disposal
21 methods, and other capabilities;

22 (3) conduct scalable performance testing, eval-
23 uation, verification, and validation of alternate treat-
24 ment technologies, disposal methods, and other ca-
25 pabilities to demonstrate the potential cost, safety,

1 and performance benefits of such capabilities in
2 comparison to those currently deployed in support of
3 the environmental cleanup mission of the Depart-
4 ment;

5 (4) conduct independent programmatic and
6 technical reviews of plans or activities of the Depart-
7 ment at the national or site level, including assess-
8 ments of technology performance and alignment with
9 respect to the programmatic priorities of the Office
10 of Environmental Management and the Office of
11 Legacy Management;

12 (5) collaborate with the contractors and staff of
13 the Department, other Federal agencies, academia,
14 industry, and other relevant entities to ensure best
15 practices are being exchanged and to identify oppor-
16 tunities for technology transfer;

17 (6) provide scientific and technical analysis to
18 the Department and to stakeholders, as directed by
19 the Department, regarding environmental cleanup,
20 waste disposal, and long-term stewardship policy op-
21 tions and issues;

22 (7) provide an integrated science and tech-
23 nology perspective to support near- and long-term
24 strategic planning for the Office of Environmental
25 Management and the Office of Legacy Management

1 at sites, including conducting analyses of alternative
2 technologies and treatment methods and providing
3 input on their insertion into the cleanup mission;

4 (8) coordinate and serve as a liaison among the
5 Department and contractors of the Department and
6 the National Laboratories with capabilities relating
7 to the Office of Environmental Management and the
8 Office of Legacy Management that have been devel-
9 oped and supported across all of the program offices
10 of the Department;

11 (9) provide technical expertise to inform con-
12 tract decisions and language, research and develop-
13 ment investments of the Department, and technical
14 feasibility of contractor proposals consistent with all
15 appropriate and applicable compliance requirements
16 to mitigate potential conflicts of interest;

17 (10) assist the Department in developing and
18 maintaining career pathway training opportunities in
19 environmental remediation science, with a focus on
20 engaging historically underserved or marginalized
21 populations; and

22 (11) other duties as determined by the Assist-
23 ant Secretary and Director.

24 (d) MEMBERSHIP.—The Network shall be comprised
25 of a representative from—

1 (1) each Core National Laboratory;

2 (2) each of the other National Laboratories
3 with stewarded competencies for research activities
4 associated with the Office of Environmental Man-
5 agement and the Office of Legacy Management, in-
6 cluding the Argonne National Laboratory, the Fermi
7 National Accelerator Laboratory, the Lawrence
8 Berkeley National Laboratory, the Lawrence Liver-
9 more National Laboratory, the National Energy
10 Technology Laboratory, and the SLAC National Ac-
11 celerator Laboratory; and

12 (3) other National Laboratories or entities at
13 the request of the Assistant Secretary or the Direc-
14 tor.

15 (e) LEADERSHIP AND RESPONSIBILITIES.—

16 (1) COMPOSITION.—The leadership of the Net-
17 work shall be composed of—

18 (A) a liaison from the Office of Environ-
19 mental Management, designated by the Assist-
20 ant Secretary, who shall be responsible for Na-
21 tional Laboratory stewardship, coordination of
22 resources, and guidance and oversight of the
23 Network regarding the needs of the Office of
24 Environmental Management;

1 (B) a liaison from the Office of Legacy
2 Management, designated by the Director, who
3 shall work directly with the Director and mem-
4 bers of the Network to fulfill the needs of the
5 Office of Legacy Management;

6 (C) an Executive Director, who shall—

7 (i) be affiliated with 1 of the Core Na-
8 tional Laboratories and appointed by the
9 Network Chair and Network Co-Chair; and

10 (ii) work on behalf of all National
11 Laboratories to coordinate the day-to-day
12 needs of the Network;

13 (D) an official representative from each
14 Core National Laboratory, who shall be des-
15 ignated by the respective Laboratory Director
16 or Chief Research Officer, and who shall be re-
17 sponsible for coordinating and procuring the
18 full complement of capabilities and resources
19 from the relevant National Laboratory in order
20 to fulfill its obligations with respect to the Net-
21 work; and

22 (E) ad hoc representatives, who are Fed-
23 eral Government employees or employees of the
24 management and operating contractors of the
25 National Laboratories, and who may be—

1 (i) representatives of other National
 2 Laboratories, as needed based on the work
 3 undertaken by the Network; or

4 (ii) additional representatives from
 5 the Core National Laboratories, as needed
 6 and subject to the approval of the Network
 7 Chair and Network Co-Chair, with concu-
 8 rence of the liaisons of the Office of Envi-
 9 ronmental Management and the Office of
 10 Legacy Management.

11 (2) NETWORK CHAIR AND NETWORK CO-
 12 CHAIR.—

13 (A) NETWORK CHAIR.—The Laboratory
 14 Director for the Savannah River National Lab-
 15 oratory shall—

16 (i) serve as Network Chair;

17 (ii) report to the Assistant Secretary
 18 and the Director; and

19 (iii) ensure the overall effectiveness
 20 and coordination of the Network.

21 (B) NETWORK CO-CHAIR.—The Network
 22 Co-Chair shall work with the Network Chair to
 23 ensure the overall effectiveness of the Network
 24 and shall rotate annually among the Directors

1 and Deputy Directors of the Core National
2 Laboratories.

3 (f) PARTICIPATION OF NONMEMBERS.—

4 (1) ENGAGEMENT.—The Network may engage
5 stakeholders, such as industry experts, educators,
6 nonprofit stakeholders, and advisory groups, for the
7 purpose of receiving mission-relevant information
8 from such stakeholders.

9 (2) LIMITATIONS ON PARTICIPATION.—The
10 Network shall prevent the regular and systematic
11 participation of stakeholders at meetings of the Net-
12 work, unless otherwise authorized by this Act.

13 (3) LIMITATIONS ON NONMEMBER INPUT.—The
14 engagement of nonmembers shall be limited to the
15 provision of individual advice and recommendations,
16 unless otherwise authorized by this Act.

17 (g) REPORT.—Not later than 1 year after the date
18 of the enactment of this Act, and annually thereafter, the
19 Secretary, in coordination with the Assistant Secretary
20 and Director, shall submit to the appropriate congres-
21 sional committees a report that includes a summary of—

22 (1) the major activities of the Network during
23 the prior year;

24 (2) the major science and technology efforts of
25 the Office of Environmental Management and the

1 Office of Legacy Management during the prior year;
2 and

3 (3) the state of technology adoption and align-
4 ment across the Office of Environmental Manage-
5 ment and the Office of Legacy Management.

6 (h) AUTHORIZATION OF APPROPRIATIONS.—There is
7 authorized to be appropriated to the Secretary—

8 (1) \$55,000,000 for fiscal year 2025 and each
9 fiscal year thereafter to support the development
10 and implementation of activities specified under sub-
11 section (c); and

12 (2) \$3,000,000 for fiscal year 2025 and each
13 fiscal year thereafter to support the operation and
14 coordination of the Network.

15 (i) OTHER ENVIRONMENTAL CLEANUP CHAL-
16 LENGES.—The Secretary, in consultation with the Assist-
17 ant Secretary and the Director, may enter into an agree-
18 ment with any Federal agency to utilize the capabilities
19 of the Network to address radiological hazards and envi-
20 ronmental contamination challenges at locations where the
21 Office of Environmental Management and Office of Leg-
22 acy Management do not have primary cleanup responsibil-
23 ities, if and only if the agreement—

24 (1) is subject to the availability of the existing
25 appropriations of the Department, except for those

1 authorized in subsection (h), and to the extent pos-
 2 sible leverages existing appropriations and resources
 3 from the Federal agency with which the agreement
 4 is made;

5 (2) does not utilize resources made available to
 6 support the cleanup missions of the Office of Envi-
 7 ronmental Management and the Office of Legacy
 8 Management; and

9 (3) does not utilize the capabilities of the Net-
 10 work in a manner that would prevent or otherwise
 11 limit the Network from fulfilling responsibilities
 12 specified in subsection (c).

13 (j) INAPPLICABILITY OF FEDERAL ADVISORY COM-
 14 MITTEE ACT.—Chapter 10 of title 5 (commonly referred
 15 to as the “Federal Advisory Committee Act”), shall not
 16 apply with respect to the Network or the activities of the
 17 Network.

18 **SEC. 4. COORDINATION WITH OTHER DEPARTMENT OF-**
 19 **FICES AND FEDERAL AGENCIES ON ENVIRON-**
 20 **MENTAL MANAGEMENT RESEARCH.**

21 (a) IN GENERAL.—The Secretary, in cooperation
 22 with the Network, shall improve coordination across the
 23 Department and the Federal government on science and
 24 technology efforts applicable to the environmental cleanup
 25 mission of the Office of Environmental Management as

1 necessary to procure sufficient expertise and resources to
2 address the full range of research challenges and needs
3 identified by the Office.

4 (b) INTERAGENCY WORKING ADVISORY ON TECH-
5 NOLOGY EXCELLENCE IN ENVIRONMENTAL CLEANUP.—

6 (1) IN GENERAL.—The Secretary shall establish
7 an advisory group to be known as the “Interagency
8 Advisory Group on Technology Excellence in Envi-
9 ronmental Cleanup”, which shall—

10 (A) coordinate relevant technology transfer
11 activities among the National Laboratories, the
12 Technology Transfer Working Group of the De-
13 partment, and other appropriate Federal agen-
14 cies;

15 (B) facilitate the exchange of mission-rel-
16 evant information and best practices, including
17 information on technology transfer practices,
18 developments in environmental remediation
19 science and treatment methods, and alternative
20 approaches to radioactive waste management;

21 (C) identify and recommend technologies
22 developed within and outside of the jurisdiction
23 of the Department with potential applications
24 for the Office of Environmental Management;

1 (D) identify and recommend opportunities
2 to utilize the services and expertise of the Net-
3 work to assist in addressing cleanup challenges
4 at locations where the Office of Environmental
5 Management does not have cleanup responsibil-
6 ities, as described in section 3(i); and

7 (E) develop and disseminate to the public
8 and prospective technology partners information
9 about opportunities and procedures for tech-
10 nology transfer with the Network.

11 (2) COMPOSITION.—

12 (A) MEMBERS.—The Advisory Group shall
13 be comprised of representatives selected from—

14 (i) the Core National Laboratories;

15 (ii) the Office of Environmental Man-
16 agement;

17 (iii) the Office of Legacy Manage-
18 ment;

19 (iv) the Office of Nuclear Energy;

20 (v) the Office of Science;

21 (vi) the National Nuclear Security Ad-
22 ministration;

23 (vii) the Environmental Protection
24 Agency;

- 1 (viii) the Nuclear Regulatory Commis-
2 sion;
3 (ix) the Bureau of Land Management;
4 (x) the National Park Service;
5 (xi) the Bureau of Indian Affairs;
6 (xii) the United States Forest Service;
7 (xiii) such other Federal agencies with
8 relevant science and technology expertise,
9 as the Secretary determines, including
10 agencies within the Department involved in
11 technology development relating to radio-
12 active waste disposal or environmental re-
13 mediation;
14 (xiv) State and Tribal governments;
15 (xv) academia; and
16 (xvi) the private sector.

17 (3) CHAIR.—The Assistant Secretary shall
18 serve as the Chair of the Advisory Group.

19 (4) MEETINGS.—The Advisory Group shall
20 meet not less frequently than once every 180 days.

21 (5) INAPPLICABILITY OF FEDERAL ADVISORY
22 COMMITTEE ACT.—Chapter 10 of title 5, United
23 States Code (commonly referred to as the “Federal
24 Advisory Committee Act”), shall not apply with re-

1 spect to the Advisory Group or the activities of the
2 Advisory Group.

3 (c) PARTNERSHIP WITH OFFICE OF SCIENCE.—

4 (1) MEMORANDUM OF UNDERSTANDING.—Not
5 later than 1 year after the date of the enactment of
6 this Act, the Assistant Secretary and the Director of
7 the Office of Science of the Department shall enter
8 into a memorandum of understanding to facilitate
9 improved coordination and cooperation between the
10 Office of Environmental Management and the Office
11 of Science on areas of basic research that are appli-
12 cable to the environmental cleanup mission of the
13 Office of Environmental Management.

14 (2) BASIC RESEARCH NEEDS WORKSHOPS.—
15 Not later than 180 days after the Memorandum
16 takes effect, and on a periodic basis thereafter, the
17 Director of the Office of Science, in coordination
18 with the Assistant Secretary and the Network, shall
19 administer a workshop to solicit the input of rel-
20 evant Federal agencies, academia, industry, the Na-
21 tional Laboratories, and other relevant entities—

22 (A) to identify the major basic research
23 needs of the Office of Environmental Manage-
24 ment; and

1 (B) to develop strategic research plans to
2 advance knowledge and technological capabili-
3 ties to address the basic research needs identi-
4 fied in subparagraph (A).

5 (3) REPORTS.—

6 (A) INITIAL WORKSHOP REPORT.—Not
7 later than 180 days after the date of the initial
8 workshop described in paragraph (2), the As-
9 sistant Secretary and the Director of the Office
10 of Science shall submit to the appropriate con-
11 gressional committees a report summarizing the
12 major findings of the workshop, including gaps
13 in basic research knowledge relating to the envi-
14 ronmental cleanup mission of the Office of En-
15 vironmental Management.

16 (B) Not later than 1 year after the Memo-
17 randum takes effect, the Assistant Secretary
18 and the Director of the Office of Science shall
19 submit to the appropriate congressional com-
20 mittees a report summarizing the steps that the
21 Office of Environmental Management and the
22 Office of Science have taken to fulfill the obli-
23 gations of the Memorandum.

1 **SEC. 5. PROGRAM MANAGEMENT PROTOCOLS OF THE OF-**
2 **FICE OF ENVIRONMENTAL MANAGEMENT.**

3 (a) IN GENERAL.—At the request and direction of
4 the Assistant Secretary, the Network shall provide an inte-
5 grated science and technology perspective to assist the Of-
6 fice of Environmental Management in implementing and
7 enhancing established, technology-focused strategic plans,
8 roadmaps, and program management protocols as nec-
9 essary to incorporate leading program management prac-
10 tices and facilitate safe, timely, and cost-efficient cleanup
11 of sites.

12 (b) TECHNOLOGY DEVELOPMENT AND DEPLOYMENT
13 FRAMEWORK.—

14 (1) IN GENERAL.—The Secretary shall direct
15 the Network, in coordination with the Assistant Sec-
16 retary, to develop and update biennially a framework
17 to be known as the “Technology Development and
18 Deployment Framework” that outlines—

19 (A) the key science and technology objec-
20 tives of the Office of Environmental Manage-
21 ment; and

22 (B) an integrated strategy to assist the Of-
23 fice of Environmental Management in—

24 (i) selecting safe, effective, and cost-
25 efficient approaches to resolve technically
26 complex challenges or reduce the cost,

time, and scope associated with the clean-up mission;

(ii) advancing the development, demonstration, and deployment of new innovations, such as alternate treatment technologies, disposal methods, and other capabilities; and

(iii) maximizing the benefits of existing research and technology investments.

(2) OBJECTIVES.—The Framework shall complement and support existing program management protocols, strategic plans, and roadmaps of the Office of Environmental Management and, at minimum, shall—

(A) emphasize support for a wide of range of research and technology development activities, including—

(i) applied technology research and technology development programs that seek to—

(I) improve existing technologies or mature early concept and emerging technologies as specified under section 4406A(a) of the Atomic Energy Defense Act (50 U.S.C. 2586a(a)); and

- 1 (II) pursue breakthrough innova-
2 tions or improvements to the cleanup
3 mission that substantially lower
4 lifecycle cleanup costs and schedules
5 or address technically complex cleanup
6 challenges, as specified under section
7 4406A(b) of the Atomic Energy De-
8 fense Act (50 U.S.C. 2586a(b));
- 9 (ii) basic research;
- 10 (iii) scientific studies and technical
11 issue resolution to support evaluation and
12 selection of technologies for insertion into
13 the cleanup mission; and
- 14 (iv) research that addresses both
15 near-term, site-specific needs and long-
16 term, program-wide needs;
- 17 (B) summarize the major focus areas and
18 objectives of the science and technology efforts
19 of the Office of Environment Management;
- 20 (C) detail plans to leverage relevant ad-
21 vances and expertise in other technology devel-
22 opment programs across the Department, the
23 National Laboratories, academia, private indus-
24 try, and other technology providers; and

1 (D) support the development or mainte-
2 nance of a workforce pipeline that leverages the
3 capabilities of institutions of higher education,
4 especially those serving minority or historically
5 underserved populations.

6 (c) CORRECTIVE ACTION PLANS.—Section 4713 of
7 the Atomic Energy Defense Act (50 U.S.C. 2753) is
8 amended by inserting at the end the following:

9 “(e) CORRECTIVE ACTION PLANS FOR DEFENSE EN-
10 VIRONMENTAL CLEANUP PROJECTS.—If a root cause
11 analysis for a defense environmental cleanup project is re-
12 quired under the project management protocols of the De-
13 partment of Energy or under subsection (c)(3), then—

14 “(1) the site contracting entity, in consultation
15 with the site manager and Assistant Secretary, shall
16 develop a corrective action plan to address the un-
17 derlying causes for the cost or schedule change iden-
18 tified in the analysis; and

19 “(2) the Secretary, at the conclusion of the cor-
20 rective action plan, shall—

21 “(A) conduct an independent review that
22 includes an assessment and validation of the ef-
23 ficacy of the corrective measures utilized;

1 “(B) submit to the appropriate congres-
2 sional committees the outcome of the assess-
3 ment described in subparagraph (A); and

4 “(C) certify to the appropriate congres-
5 sional committees that program management
6 measures are in place to manage the cost and
7 schedule of the project and mitigate against fu-
8 ture cost overruns.”.

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