114TH CONGRESS
*1st Session*
HOUSE OF REPRESENTATIVES
REPORT
114–124

# DEPARTMENT OF ENERGY LABORATORY MODERNIZATION AND TECHNOLOGY TRANSFER ACT OF 2015

MAY 19, 2015.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. SMITH of Texas, from the Committee on Science, Space, and Technology, submitted the following

# R E P O R T

[To accompany H.R. 1158]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 1158) to improve management of the National Laboratories, enhance technology commercialization, facilitate public-private partnerships, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

CONTENTS



The amendment is as follows:

Strike all after the enacting clause and insert the following:

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) SHORT TITLE.—This Act may be cited as the "Department of Energy Laboratory Modernization and Technology Transfer Act of 2015".

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:



**SEC. 2. DEFINITIONS.**

In this Act:

(1) DEPARTMENT.—The term "Department" means the Department of Energy.

(2) NATIONAL LABORATORY.—The term "National Laboratory" means a Department of Energy nonmilitary national laboratory, including—

(A) Ames Laboratory;
(B) Argonne National Laboratory;
(C) Brookhaven National Laboratory;
(D) Fermi National Accelerator Laboratory;
(E) Idaho National Laboratory;
(F) Lawrence Berkeley National Laboratory;
(G) National Energy Technology Laboratory;
(H) National Renewable Energy Laboratory;
(I) Oak Ridge National Laboratory;
(J) Pacific Northwest National Laboratory;
(K) Princeton Plasma Physics Laboratory;
(L) Savannah River National Laboratory;
(M) Stanford Linear Accelerator Center;
(N) Thomas Jefferson National Accelerator Facility; and
(O) any laboratory operated by the National Nuclear Security Administration, but only with respect to the civilian energy activities thereof.

(3) SECRETARY.—The term "Secretary" means the Secretary of Energy.

**SEC. 3. SAVINGS CLAUSE.**

Nothing in this Act or an amendment made by this Act abrogates or otherwise affects the primary responsibilities of any National Laboratory to the Department.

# TITLE I—INNOVATION MANAGEMENT AT DEPARTMENT OF ENERGY

**SEC. 101. UNDER SECRETARY FOR SCIENCE AND ENERGY.**

(a) IN GENERAL.—Section 202(b) of the Department of Energy Organization Act (42 U.S.C. 7132(b)) is amended—

(1) by striking "Under Secretary for Science" each place it appears and inserting "Under Secretary for Science and Energy"; and

(2) in paragraph (4)—

(A) in subparagraph (F), by striking "and" at the end;
(B) in subparagraph (G), by striking the period at the end and inserting a semicolon; and
(C) by inserting after subparagraph (G) the following:

"(H) establish appropriate linkages between offices under the jurisdiction of the Under Secretary; and

"(I) perform such functions and duties as the Secretary shall prescribe, consistent with this section.".

(b) CONFORMING AMENDMENTS.—

(1) Section 3164(b)(1) of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381a(b)(1)) is amended by striking "Under Secretary for Science" and inserting "Under Secretary for Science and Energy".

(2) Section 641(h)(2) of the United States Energy Storage Competitiveness Act of 2007 (42 U.S.C. 17231(h)(2)) is amended by striking "Under Secretary for Science" and inserting "Under Secretary for Science and Energy".

**SEC. 102. TECHNOLOGY TRANSFER AND TRANSITIONS ASSESSMENT.**

Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Secretary shall transmit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report which shall include—

(1) an assessment of the Department's current ability to carry out the goals of section 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391), including an assessment of the role and effectiveness of the Director of the Office of Technology Transitions; and

(2) recommended departmental policy changes and legislative changes to section 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391) to improve the Department's ability to successfully transfer new energy technologies to the private sector.

**SEC. 103. SENSE OF CONGRESS.**

It is the sense of the Congress that the Secretary should encourage the National Laboratories and federally funded research and development centers to inform small businesses of the opportunities and resources that exist pursuant to this Act.

**SEC. 104. NUCLEAR ENERGY INNOVATION.**

Not later than 180 days after the date of enactment of this Act, the Secretary, in consultation with the National Laboratories, relevant Federal agencies, and other stakeholders, shall transmit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report assessing the Department's capabilities to authorize, host, and oversee privately funded fusion and non-light water reactor prototypes and related demonstration facilities at Department-owned sites. For purposes of this report, the Secretary shall consider the Department's capabilities to facilitate privately-funded prototypes up to 20 megawatts thermal output. The report shall address the following:

(1) The Department's safety review and oversight capabilities.

(2) Potential sites capable of hosting research, development, and demonstration of prototype reactors and related facilities for the purpose of reducing technical risk.

(3) The Department's and National Laboratories' existing physical and technical capabilities relevant to research, development, and oversight.

(4) The efficacy of the Department's available contractual mechanisms, including cooperative research and development agreements, work for others agreements, and agreements for commercializing technology.

(5) Potential cost structures related to physical security, decommissioning, liability, and other long-term project costs.

(6) Other challenges or considerations identified by the Secretary, including issues related to potential cases of demonstration reactors up to 2 gigawatts of thermal output.

# TITLE II—CROSS-SECTOR PARTNERSHIPS AND GRANT COMPETITIVENESS

**SEC. 201. AGREEMENTS FOR COMMERCIALIZING TECHNOLOGY PILOT PROGRAM.**

(a) IN GENERAL.—The Secretary shall carry out the Agreements for Commercializing Technology pilot program of the Department, as announced by the Secretary on December 8, 2011, in accordance with this section.

(b) TERMS.—Each agreement entered into pursuant to the pilot program referred to in subsection (a) shall provide to the contractor of the applicable National Laboratory, to the maximum extent determined to be appropriate by the Secretary, increased authority to negotiate contract terms, such as intellectual property rights, payment structures, performance guarantees, and multiparty collaborations.

(c) ELIGIBILITY.—

(1) IN GENERAL.—Any director of a National Laboratory may enter into an agreement pursuant to the pilot program referred to in subsection (a).

(2) AGREEMENTS WITH NON-FEDERAL ENTITIES.—To carry out paragraph (1) and subject to paragraph (3), the Secretary shall permit the directors of the National Laboratories to execute agreements with a non-Federal entity, including a non-Federal entity already receiving Federal funding that will be used to support activities under agreements executed pursuant to paragraph (1), provided that such funding is solely used to carry out the purposes of the Federal award.

(3) RESTRICTION.—The requirements of chapter 18 of title 35, United States Code (commonly known as the "Bayh-Dole Act") shall apply if—

(A) the agreement is a funding agreement (as that term is defined in section 201 of that title); and

(B) at least 1 of the parties to the funding agreement is eligible to receive rights under that chapter.

(d) SUBMISSION TO SECRETARY.—Each affected director of a National Laboratory shall submit to the Secretary, with respect to each agreement entered into under this section—

(1) a summary of information relating to the relevant project;

(2) the total estimated costs of the project;

(3) estimated commencement and completion dates of the project; and

(4) other documentation determined to be appropriate by the Secretary.

(e) CERTIFICATION.—The Secretary shall require the contractor of the affected National Laboratory to certify that each activity carried out under a project for which an agreement is entered into under this section—

(1) is not in direct competition with the private sector; and

(2) does not present, or minimizes, any apparent conflict of interest, and avoids or neutralizes any actual conflict of interest, as a result of the agreement under this section.

(f) EXTENSION.—The pilot program referred to in subsection (a) shall be extended until October 31, 2017.

(g) REPORTS.—

(1) OVERALL ASSESSMENT.—Not later than 60 days after the date described in subsection (f), the Secretary, in coordination with directors of the National Laboratories, shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report that—

(A) assesses the overall effectiveness of the pilot program referred to in subsection (a);

(B) identifies opportunities to improve the effectiveness of the pilot program;

(C) assesses the potential for program activities to interfere with the responsibilities of the National Laboratories to the Department; and

(D) provides a recommendation regarding the future of the pilot program.

(2) TRANSPARENCY.—The Secretary, in coordination with directors of the National Laboratories, shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an annual report that accounts for all incidences of, and provides a justification for, non-Federal entities using funds derived from a Federal contract or award to carry out agreements pursuant to this section.

**SEC. 202. PUBLIC-PRIVATE PARTNERSHIPS FOR COMMERCIALIZATION.**

(a) IN GENERAL.—Subject to subsections (b) and (c), the Secretary shall delegate to directors of the National Laboratories signature authority with respect to any agreement described in subsection (b) the total cost of which (including the National Laboratory contributions and project recipient cost share) is less than $1,000,000.

(b) AGREEMENTS.—Subsection (a) applies to—

(1) a cooperative research and development agreement;

(2) a non-Federal work-for-others agreement; and

(3) any other agreement determined to be appropriate by the Secretary, in collaboration with the directors of the National Laboratories.

(c) ADMINISTRATION.—

(1) ACCOUNTABILITY.—The director of the affected National Laboratory and the affected contractor shall carry out an agreement under this section in accordance with applicable policies of the Department, including by ensuring that the agreement does not compromise any national security, economic, or environmental interest of the United States.

(2) CERTIFICATION.—The director of the affected National Laboratory and the affected contractor shall certify that each activity carried out under a project for which an agreement is entered into under this section does not present, or

minimizes, any apparent conflict of interest, and avoids or neutralizes any actual conflict of interest, as a result of the agreement under this section.

(3) AVAILABILITY OF RECORDS.—On entering an agreement under this section, the director of a National Laboratory shall submit to the Secretary for monitoring and review all records of the National Laboratory relating to the agreement.

(4) RATES.—The director of a National Laboratory may charge higher rates for services performed under a partnership agreement entered into pursuant to this section, regardless of the full cost of recovery, if such funds are used exclusively to support further research and development activities at the respective National Laboratory.

(d) EXCEPTION.—This section does not apply to any agreement with a majority foreign-owned company.

(e) CONFORMING AMENDMENT.—Section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) is amended—

(1) in subsection (a)—

(A) by redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively, and indenting the subparagraphs appropriately;

(B) by striking "Each Federal agency" and inserting the following:

"(1) IN GENERAL.—Except as provided in paragraph (2), each Federal agency"; and

(C) by adding at the end the following:

"(2) EXCEPTION.—Notwithstanding paragraph (1), in accordance with section 202(a) of the Department of Energy Laboratory Modernization and Technology Transfer Act of 2015, approval by the Secretary of Energy shall not be required for any technology transfer agreement proposed to be entered into by a National Laboratory of the Department of Energy, the total cost of which (including the National Laboratory contributions and project recipient cost share) is less than $1,000,000."; and

(2) in subsection (b), by striking "subsection (a)(1)" each place it appears and inserting "subsection (a)(1)(A)".

**SEC. 203. INCLUSION OF EARLY-STAGE TECHNOLOGY DEMONSTRATION IN AUTHORIZED TECHNOLOGY TRANSFER ACTIVITIES.**

Section 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391) is amended by—

(1) redesignating subsection (g) as subsection (h); and

(2) inserting after subsection (f) the following:

"(g) EARLY-STAGE TECHNOLOGY DEMONSTRATION.—The Secretary shall permit the directors of the National Laboratories to use funds authorized to support technology transfer within the Department to carry out early-stage and pre-commercial technology demonstration activities to remove technology barriers that limit private sector interest and demonstrate potential commercial applications of any research and technologies arising from National Laboratory activities.".

**SEC. 204. FUNDING COMPETITIVENESS FOR INSTITUTIONS OF HIGHER EDUCATION AND OTHER NONPROFIT INSTITUTIONS.**

Section 988(b) of the Energy Policy Act of 2005 (42 U.S.C. 16352(b)) is amended—

(1) in paragraph (1), by striking "Except as provided in paragraphs (2) and (3)" and inserting "Except as provided in paragraphs (2), (3), and (4)"; and

(2) by adding at the end the following:

"(4) EXEMPTION FOR INSTITUTIONS OF HIGHER EDUCATION AND OTHER NONPROFIT INSTITUTIONS.—

"(A) IN GENERAL.—Paragraph (1) shall not apply to a research or development activity performed by an institution of higher education or nonprofit institution (as defined in section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703)).

"(B) TERMINATION DATE.—The exemption under subparagraph (A) shall apply during the 6-year period beginning on the date of enactment of this paragraph.".

**SEC. 205. PARTICIPATION IN THE INNOVATION CORPS PROGRAM.**

The Secretary may enter into an agreement with the Director of the National Science Foundation to enable researchers funded by the Department to participate in the National Science Foundation Innovation Corps program.

# TITLE III—ASSESSMENT OF IMPACT

**SEC. 301. REPORT BY GOVERNMENT ACCOUNTABILITY OFFICE.**

Not later than 3 years after the date of enactment of this Act, the Comptroller General of the United States shall submit to Congress a report—

(1) describing the results of the projects developed under sections 201, 202, and 203, including information regarding—

(A) partnerships initiated as a result of those projects and the potential linkages presented by those partnerships with respect to national priorities and other taxpayer-funded research; and

(B) whether the activities carried out under those projects result in—

(i) fiscal savings;

(ii) expansion of National Laboratory capabilities;

(iii) increased efficiency of technology transfers; or

(iv) an increase in general efficiency of the National Laboratory system; and

(2) assess the scale, scope, efficacy, and impact of the Department's efforts to promote technology transfer and private sector engagement at the National Laboratories, and make recommendations on how the Department can improve these activities.

## COMMITTEE STATEMENT AND VIEWS

### PURPOSE AND SUMMARY

This legislation makes targeted reforms to the relationship between the Department of Energy and its national laboratories. Laboratory directors will receive increased authority to enter into certain cooperative agreements with the private sector. Laboratory directors will receive new authority to use technology transfer funds for the purpose of demonstrating research concepts, otherwise known as "maturation." The Department will assess its capabilities to authorize, host, and oversee privately funded fusion and non-light water reactor prototypes and related demonstration facilities at Department-owned sites.

### BACKGROUND AND NEED FOR LEGISLATION

The Department of Energy owns seventeen national laboratories, sixteen of which are federally funded research and development centers. These facilities provide unique scientific research capabilities critical to the Department's mission and keep the United States' competitive in technology development by providing opportunities for collaboration with the private sector. The legislation corrects institutional inefficiencies that mitigate the effectiveness of the national laboratories to transfer research knowhow and work products to the private sector.

### COMMITTEE VIEWS

The Committee is concerned that institutional inefficiencies between the Department of Energy and its laboratories, including onerous transactional oversight by the Department, harm laboratories' productivity with respect to cooperative research and development with the private sector and technology transfer. The Committee finds that the laboratories provide unique capabilities for the progress of science and technology, but have been prevented from achieving their potential due to bureaucratic restrictions inconsistent with the intent of the government-owned, contractor-operated model.

The Committee is concerned about the lack of progress in developing fusion and next generation nuclear fission technology in the United States, considering the more rapid rate of nuclear technology advancement in previous decades and comparative growth for such technologies overseas. While other countries continue to develop prototypes and commercial advanced reactors, the United States appears to be at least a decade away from beginning construction of an advanced reactor. If the United States fails to regain leadership in advanced nuclear technology, it will lose the opportunity to compete in the global export market and weaken its position to influence global nuclear safety and nonproliferation issues.

The Committee recognizes that the Nuclear Regulatory Commission regulates the operating fleet of light-water reactors, which generate nearly 20 percent of the United States' electricity while maintaining a very high record of safety. The Committee understands that the Commission's current regulatory framework is not well-suited to provide timely consideration of non-light water fission technology, otherwise known as "advanced reactors," and fusion technology. The Commission's light-water reactor centric regulatory framework creates a barrier for private developers to demonstrate the increased safety and efficiency features of their proposed designs. The Committee urges the Department of Energy to place a higher emphasis on advanced reactor technology and anticipates the Department's assessment of its capabilities to authorize, host, and oversee privately-funded advanced reactor prototypes, including research projects that could lead to prototypes.

## LEGISLATIVE HISTORY

In 2014, Rep. Randy Hultgren and Rep. Derek Kilmer introduced H.R. 5120, Department of Energy Laboratory Modernization and Technology Transfer Act of 2014. In 2014, Senator Christopher Coons and Senator Marco Rubio introduced similar legislation, S. 1973, America Implementing New National Opportunities To Vigorously Accelerate Technology, Energy, and Science Act (America INNOVATES Act).

On December 11, 2014, the Energy Subcommittee of the House Committee on Science, Space, and Technology held a hearing titled "The Future of Nuclear Energy," which addressed the need for the Department of Energy to use its authority to enable prototype reactor construction and operation.

## SECTION-BY-SECTION

*SEC. 1. Short title and table of contents*

The short title of this legislation is "Department of Energy Laboratory Modernization and Technology Transfer Act of 2015."

*SEC. 2. Definitions*

This section defines "National Laboratory" and other relevant terms.

*SEC. 3. Savings clause*

This section states that nothing within the Subtitle shall abrogate or affect the primary responsibilities of any national laboratory or the Department of Energy (DOE).

*SEC. 101. Under Secretary for Science and Energy*

Section 101 codifies the consolidation of the Under Secretary for Energy and Under Secretary for Science positions into one Under Secretary for Science and Energy.

*SEC. 102. Technology transfer and transitions assessment*

This Section requires the Secretary to assess the effectiveness of DOE's Office of Technology Transitions and make recommended departmental policy changes accordingly.

*SEC. 103. Sense of Congress*

Section 103 provides a sense of congress that the secretary should encourage the national laboratories to inform small businesses or relevant opportunities and resources.

*SEC. 104. Nuclear energy innovation*

This Section requires DOE to assess its capabilities to authorize, host, and oversee privately funded fusion and non-light water reactor prototypes at Department-owned sites.

*SEC. 201. Agreements for commercializing Technology Pilot Program*

This section authorizes the Secretary to continue until October 31, 2017, a pilot program to institute agreements between national laboratories and third-party entities. These agreements, known as ACT agreements, provide national laboratories with increased authority to negotiate contract terms, including intellectual property rights, payment structures, performance guarantees, and multiparty collaborations. Section 201 also requires the Secretary, in coordination with the laboratory directors, to report on the effectiveness of this pilot program and provide transparency regarding the potential use of funds derived from federal contracts pursuant to this section.

*SEC. 202. Public-private partnerships for commercialization*

This section delegates to the national laboratories signature authority for certain agreements with third-party entities for an amount of less than $1,000,000.

*SEC. 203. Inclusion of early-stage technology demonstration in authorized technology transfer activities*

Section 203 delegates to national laboratories authority to use technology transfer funds to carry out early-stage and pre-commercial technology demonstration activities to attract private sector investment for research and technology arising out of the national laboratories.

*SEC. 204. Funding competitiveness for institutions of higher education and other nonprofit institutions*

This section exempts for a 6-year trial period universities and nonprofit institutions from the 20 percent cost-share requirement for applied research and development grants.

*SEC. 205. Participation in the Innovation Corps Program*

Section 205 clarifies that the Secretary of Energy may enter into an agreement with the National Science Foundation (NSF) to enable researchers funded by DOE to participate in NSF's Innovation Corps program.

*SEC. 301. Report by Government Accountability Office*

Section 301 instructs the GAO to submit a report within three years of enactment assessing the impact of the technology transfer activities authorized in this legislation, pursuant to sections 201, 202, and 203. This section also requires an assessment of DOE's efforts to promote technology transfer.

## EXPLANATION OF AMENDMENTS

The Committee on Science, Space, and Technology agreed to an amendment by voice vote that prevents majority foreign-owned companies from entering into agreements under section 202 of this legislation.

## COMMITTEE CONSIDERATION

On March 4, 2015 the Committee met in open session and ordered reported favorably the bill, H.R. 1158, as amended, by voice vote, a quorum being present.

## APPLICATION OF LAW TO THE LEGISLATIVE BRANCH

Section 102(b)(3) of Public Law 104–1 requires a description of the application of this bill to the legislative branch where the bill relates to the terms and conditions of employment or access to public services and accommodations. This bill makes targeted reforms to the relationship between the Department of Energy and its national laboratories. As such this bill does not relate to employment or access to public services and accommodations.

## STATEMENT OF OVERSIGHT FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

In compliance with clause 3(c)(1) of rule XIII and clause (2)(b)(1) of rule X of the Rules of the House of Representatives, the Committee's oversight findings and recommendations are reflected in the descriptive portions of this report.

## STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

In accordance with clause 3(c)(4) of rule XIII of the Rules of the House of Representatives, the Committee's performance goals and objectives to urge the Department of Energy to place a higher emphasis on advanced reactor technology and anticipates the Department's assessment of its capabilities to authorize, host, and oversee

privately-funded advanced reactor prototypes, including research projects that could lead to prototypes.

## DUPLICATION OF FEDERAL PROGRAMS

No provision of H.R. 1158 establishes or reauthorizes a program of the Federal Government known to be duplicative of another Federal program, a program that was included in any report from the Government Accountability Office to Congress pursuant to section 21 of Public Law 111–139, or a program related to a program identified in the most recent Catalog of Federal Domestic Assistance.

## DISCLOSURE OF DIRECTED RULE MAKINGS

The Committee estimates that enacting H.R. 1158 does not direct the completion of any specific rule makings within the meaning of 5 U.S.C. 551.

## FEDERAL ADVISORY COMMITTEE ACT

The Committee finds that the legislation does not establish or authorize the establishment of an advisory committee within the definition of 5 U.S.C. App., Section 5(b).

## UNFUNDED MANDATE STATEMENT

Section 423 of the Congressional Budget and Impoundment Control Act (as amended by Section 101(a)(2) of the Unfunded Mandate Reform Act, P.L. 104–4) requires a statement as to whether the provisions of the reported include unfunded mandates. In compliance with this requirement the Committee has received a letter from the Congressional Budget Office included herein.

## EARMARK IDENTIFICATION

H.R. 1158 does not include any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9 of rule XXI.

## COMMITTEE ESTIMATE

Clause 3(d)(2) of rule XIII of the Rules of the House of Representatives requires an estimate and a comparison by the Committee of the costs that would be incurred in carrying out H.R. 1158. However, clause 3(d)(3)(B) of that rule provides that this requirement does not apply when the Committee has included in its report a timely submitted cost estimate of the bill prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act.

## BUDGET AUTHORITY AND CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

With respect to the requirements of clause 3(c)(2) of rule XIII of the Rules of the House of Representatives and section 308(a) of the Congressional Budget Act of 1974 and with respect to requirements of clause (3)(c)(3) of rule XIII of the Rules of the House of Representatives and section 402 of the Congressional Budget Act of

1974, the Committee has received the following cost estimate for H.R. 1158 from the Director of Congressional Budget Office:

APRIL 22, 2015.

Hon. LAMAR SMITH,
*Chairman, Committee on Science, Space, and Technology,*
*House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 1158, the Department of Energy Laboratory Modernization and Technology Transfer Act of 2015.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Marin Burnett.

Sincerely,

KEITH HALL,
*Director.*

Enclosure.

*H.R. 1158—Department of Energy Laboratory Modernization and Technology Transfer Act of 2015*

H.R. 1158 would authorize the Department of Energy and the directors of its national laboratories to enter into agreements to increase collaboration with non-federal entities for research and technology exchange projects. The legislation would authorize the directors to continue to engage in Agreements for Commercializing Technology (ACT), a pilot program that allows private entities to partner with participating national laboratories for research and development. It also would authorize them to enter into certain agreements valued at less than $1 million prior to approval by the Department of Energy. The bill would require the Secretary of Energy and Comptroller General to submit reports to the Congress respectively on nuclear energy innovation and the result of new partnerships created by the legislation.

Under current law, the agreements affected by the legislation require the directors of national laboratories to obtain insurance for any contract that creates a partnership with a third party. In certain situations, directors may be reimbursed by the federal government for the cost of liabilities to third parties that are not covered by insurance. Implementing the legislation would likely increase the number of partnerships with national laboratories, thereby increasing DOE's potential reimbursement payments to lab directors.

In the past those reimbursements have been made with funds from the Department of Energy's existing appropriations, thus, CBO estimates that implementing the bill could increase discretionary spending. However, based on information about the size and probability of such payments in the past, CBO estimates that any additional costs under the bill would be insignificant. Enacting H.R. 1158 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

H.R. 1158 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act and would benefit public universities participating in federal technology commercialization programs.

The CBO staff contact for this estimate is Marin Burnett. The estimate was approved by Theresa Gullo, Assistant Director for Budget Analysis.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

## DEPARTMENT OF ENERGY ORGANIZATION ACT

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## TITLE II—ESTABLISHMENT OF THE DEPARTMENT

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### PRINCIPAL OFFICERS

SEC. 202. (a) There shall be in the Department a Deputy Secretary, who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall be compensated at the rate provided for level II of the Executive Schedule under section 5313 of title 5, United States Code. The Deputy Secretary shall act for and exercise the functions of the Secretary during the absence or disability of the Secretary or in the event the office of Secretary becomes vacant. The Secretary shall designate the order in which the Under Secretary and other officials shall act for and perform the functions of the Secretary during the absence or disability of both the Secretary and Deputy Secretary or in the event of vacancies in both of those offices.

(b)(1) There shall be in the Department an [Under Secretary for Science] *Under Secretary for Science and Energy*, who shall be appointed by the President, by and with the advice and consent of the Senate.

(2) The Under Secretary shall be compensated at the rate provided for level III of the Executive Schedule under section 5314 of title 5, United States Code.

(3) The [Under Secretary for Science] *Under Secretary for Science and Energy* shall be appointed from among persons who—

(A) have extensive background in scientific or engineering fields; and

(B) are well qualified to manage the civilian research and development programs of the Department.

(4) The [Under Secretary for Science] *Under Secretary for Science and Energy* shall—

(A) serve as the Science and Technology Advisor to the Secretary;

(B) monitor the research and development programs of the Department in order to advise the Secretary with respect to any undesirable duplication or gaps in the programs;

(C) advise the Secretary with respect to the well-being and management of the multipurpose laboratories under the jurisdiction of the Department;

(D) advise the Secretary with respect to education and training activities required for effective short- and long-term basic and applied research activities of the Department;

(E) advise the Secretary with respect to grants and other forms of financial assistance required for effective short- and long-term basic and applied research activities of the Department;

(F) advise the Secretary with respect to long-term planning, coordination, and development of a strategic framework for Department research and development activities; [and]

(G) carry out such additional duties assigned to the Under Secretary by the Secretary relating to basic and applied research, including supervision or support of research activities carried out by any of the Assistant Secretaries designated by section 203 of this Act, as the Secretary considers advantageous[.]*;*

*(H) establish appropriate linkages between offices under the jurisdiction of the Under Secretary; and*

*(I) perform such functions and duties as the Secretary shall prescribe, consistent with this section.*

(c)(1) There shall be in the Department an Under Secretary for Nuclear Security, who shall be appointed by the President, by and with the advice and consent of the Senate. The Under Secretary shall be compensated at the rate provided for at level III of the Executive Schedule under section 5314 of title 5, United States Code.

(2) The Under Secretary for Nuclear Security shall be appointed from among persons who—

(A) have extensive background in national security, organizational management, and appropriate technical fields; and

(B) are well qualified to manage the nuclear weapons, nonproliferation, and materials disposition programs of the National Nuclear Security Administration in a manner that advances and protects the national security of the United States.

(3) The Under Secretary for Nuclear Security shall serve as the Administrator for Nuclear Security under section 3212 of the National Nuclear Security Administration Act. In carrying out the functions of the Administrator, the Under Secretary shall be subject to the authority, direction, and control of the Secretary. Such authority, direction, and control may be delegated only to the Deputy Secretary of Energy, without redelegation.

(d)(1) There shall be in the Department an Under Secretary, who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall perform such functions and duties as the Secretary shall prescribe, consistent with this section.

(2) The Under Secretary shall be compensated at the rate provided for level III of the Executive Schedule under section 5314 of title 5, United States Code.

(e)(1) There shall be in the Department a General Counsel, who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall perform such functions and duties as the Secretary shall prescribe.

(2) The General Counsel shall be compensated at the rate provided for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

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**DEPARTMENT OF ENERGY SCIENCE EDUCATION ENHANCEMENT ACT**

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DIVISION C—OTHER NATIONAL DEFENSE AUTHORIZATIONS

TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

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PART E—DEPARTMENT OF ENERGY SCIENCE EDUCATION PROGRAMS

**SEC. 3161. SHORT TITLE.**

This part may be cited as the "Department of Energy Science Education Enhancement Act".

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## Subpart A—Science Education Enhancement

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**SEC. 3164. SCIENCE EDUCATION PROGRAMS.**

(a) PROGRAMS.—The Secretary is authorized to establish programs to enhance the quality of mathematics, science, and engineering education. Any such programs shall be operated at or through the support of Department research and development facilities, shall use the scientific resources of the Department, and shall be consistent with the overall Federal plan for education and human resources in science and technology developed by the Federal Coordinating Council for Science, Engineering, and Technology.

(b) ORGANIZATION OF SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION PROGRAMS.—

(1) DIRECTOR OF SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION.—Notwithstanding any other provision of law, the Secretary, acting through the [Under Secretary for Science] *Under Secretary for Science and Energy* (referred to in this subsection as the "Under Secretary"), shall appoint a Director of Science, Engineering, and Mathematics Education (referred to in this subsection as the "Director") with the principal responsibility for administering science, engineering, and mathematics education programs across all functions of the Department.

(2) QUALIFICATIONS.—The Director shall be an individual, who by reason of professional background and experience, is specially qualified to advise the Under Secretary on all matters

pertaining to science, engineering, and mathematics education at the Department.

(3) DUTIES.—The Director shall—

(A) oversee all science, engineering, and mathematics education programs of the Department;

(B) represent the Department as the principal interagency liaison for all science, engineering, and mathematics education programs, unless otherwise represented by the Secretary or the Under Secretary;

(C) prepare the annual budget and advise the Under Secretary on all budgetary issues for science, engineering, and mathematics education programs of the Department;

(D) increase, to the maximum extent practicable, the participation and advancement of women and underrepresented minorities at every level of science, technology, engineering, and mathematics education; and

(E) perform other such matters relating to science, engineering, and mathematics education as are required by the Secretary or the Under Secretary.

(4) STAFF AND OTHER RESOURCES.—The Secretary shall assign to the Director such personnel and other resources as the Secretary considers necessary to permit the Director to carry out the duties of the Director.

(5) ASSESSMENT.—

(A) IN GENERAL.—The Secretary shall offer to enter into a contract with the National Academy of Sciences under which the National Academy, not later than 5 years after, and not later than 10 years after, the date of enactment of this paragraph, shall assess the performance of the science, engineering, and mathematics education programs of the Department.

(B) CONSIDERATIONS.—An assessment under this paragraph shall be conducted taking into consideration, where applicable, the effect of science, engineering, and mathematics education programs of the Department on student academic achievement in science and mathematics.

(6) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as are necessary to carry out this subsection.

(c) RELATIONSHIP TO OTHER DEPARTMENT ACTIVITIES.—The programs described in subsection (a) shall supplement and be coordinated with current activities of the Department, but shall not supplant them.

(d) SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION FUND.—The Secretary shall establish a Science, Engineering, and Mathematics Education Fund, using not less than 0.3 percent of the amount made available to the Department for research, development, demonstration, and commercial application for each fiscal year, to carry out sections 3165, 3166, and 3167.

(e) ANNUAL PLAN FOR ALLOCATION OF EDUCATION FUNDING.—The Secretary shall submit to Congress as part of the annual budget submission for a fiscal year a report describing the manner in which the Department has complied with subsection (d) for the prior fiscal year and the manner in which the Department proposes

to comply with subsection (d) during the following fiscal year, including—

(1) the total amount of funding for research, development, demonstration, and commercial application activities for the corresponding fiscal year;

(2) the amounts set aside for the Science, Engineering, and Mathematics Education Fund under subsection (d) from funding for research activities, development activities, demonstration activities, and commercial application activities for the corresponding fiscal year; and

(3) a description of how the funds set aside under subsection (d) were allocated for the prior fiscal year and will be allocated for the following fiscal year.

(f) PROGRAMS FOR STUDENTS FROM UNDER-REPRESENTED GROUPS.—In carrying out a program under subsection (a), the Secretary shall give priority to activities that are designed to encourage students from under-represented groups to pursue scientific and technical careers.

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## UNITED STATES ENERGY STORAGE COMPETITIVENESS ACT OF 2007

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**SEC. 641. ENERGY STORAGE COMPETITIVENESS.**

(a) SHORT TITLE.—This section may be cited as the "United States Energy Storage Competitiveness Act of 2007".

(b) DEFINITIONS.—In this section:

(1) COUNCIL.—The term "Council" means the Energy Storage Advisory Council established under subsection (e).

(2) COMPRESSED AIR ENERGY STORAGE.—The term "compressed air energy storage" means, in the case of an electricity grid application, the storage of energy through the compression of air.

(3) ELECTRIC DRIVE VEHICLE.—The term "electric drive vehicle" means—

(A) a vehicle that uses an electric motor for all or part of the motive power of the vehicle, including battery electric, hybrid electric, plug-in hybrid electric, fuel cell, and plug-in fuel cell vehicles and rail transportation vehicles; or

(B) mobile equipment that uses an electric motor to replace an internal combustion engine for all or part of the work of the equipment.

(4) ISLANDING.—The term "islanding" means a distributed generator or energy storage device continuing to power a location in the absence of electric power from the primary source.

(5) FLYWHEEL.—The term "flywheel" means, in the case of an electricity grid application, a device used to store rotational kinetic energy.

(6) MICROGRID.—The term "microgrid" means an integrated energy system consisting of interconnected loads and distributed energy resources (including generators and energy storage

devices), which as an integrated system can operate in parallel with the utility grid or in an intentional islanding mode.

(7) SELF-HEALING GRID.—The term "self-healing grid" means a grid that is capable of automatically anticipating and responding to power system disturbances (including the isolation of failed sections and components), while optimizing the performance and service of the grid to customers.

(8) SPINNING RESERVE SERVICES.—The term "spinning reserve services" means a quantity of electric generating capacity in excess of the quantity needed to meet peak electric demand.

(9) ULTRACAPACITOR.—The term "ultracapacitor" means an energy storage device that has a power density comparable to a conventional capacitor but is capable of exceeding the energy density of a conventional capacitor by several orders of magnitude.

(c) PROGRAM.—The Secretary shall carry out a research, development, and demonstration program to support the ability of the United States to remain globally competitive in energy storage systems for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(d) COORDINATION.—In carrying out the activities of this section, the Secretary shall coordinate relevant efforts with appropriate Federal agencies, including the Department of Transportation.

(e) ENERGY STORAGE ADVISORY COUNCIL.—

(1) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary shall establish an Energy Storage Advisory Council.

(2) COMPOSITION.—

(A) IN GENERAL.—Subject to subparagraph (B), the Council shall consist of not less than 15 individuals appointed by the Secretary, based on recommendations of the National Academy of Sciences.

(B) ENERGY STORAGE INDUSTRY.—The Council shall consist primarily of representatives of the energy storage industry of the United States.

(C) CHAIRPERSON.—The Secretary shall select a Chairperson for the Council from among the members appointed under subparagraph (A).

(3) MEETINGS.—

(A) IN GENERAL.—The Council shall meet not less than once a year.

(B) FEDERAL ADVISORY COMMITTEE ACT.—The Federal Advisory Committee Act (5 U.S.C. App.) shall apply to a meeting of the Council.

(4) PLANS.—No later than 1 year after the date of enactment of this Act and every 5 years thereafter, the Council, in conjunction with the Secretary, shall develop a 5-year plan for integrating basic and applied research so that the United States retains a globally competitive domestic energy storage industry for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(5) REVIEW.—The Council shall—

(A) assess, every 2 years, the performance of the Department in meeting the goals of the plans developed under paragraph (4); and

(B) make specific recommendations to the Secretary on programs or activities that should be established or terminated to meet those goals.

(f) BASIC RESEARCH PROGRAM.—

(1) BASIC RESEARCH.—The Secretary shall conduct a basic research program on energy storage systems to support electric drive vehicles, stationary applications, and electricity transmission and distribution, including—

(A) materials design;

(B) materials synthesis and characterization;

(C) electrode-active materials, including electrolytes and bioelectrolytes;

(D) surface and interface dynamics;

(E) modeling and simulation; and

(F) thermal behavior and life degradation mechanisms.

(2) NANOSCIENCE CENTERS.—The Secretary, in cooperation with the Council, shall coordinate the activities of the nanoscience centers of the Department to help the energy storage research centers of the Department maintain a globally competitive posture in energy storage systems for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(3) FUNDING.—For activities carried out under this subsection, in addition to funding activities at National Laboratories, the Secretary shall award funds to, and coordinate activities with, a range of stakeholders including the public, private, and academic sectors.

(g) APPLIED RESEARCH PROGRAM.—

(1) IN GENERAL.—The Secretary shall conduct an applied research program on energy storage systems to support electric drive vehicles, stationary applications, and electricity transmission and distribution technologies, including—

(A) ultracapacitors;

(B) flywheels;

(C) batteries and battery systems (including flow batteries);

(D) compressed air energy systems;

(E) power conditioning electronics;

(F) manufacturing technologies for energy storage systems;

(G) thermal management systems; and

(H) hydrogen as an energy storage medium.

(2) FUNDING.—For activities carried out under this subsection, in addition to funding activities at National Laboratories, the Secretary shall provide funds to, and coordinate activities with, a range of stakeholders, including the public, private, and academic sectors.

(h) ENERGY STORAGE RESEARCH CENTERS.—

(1) IN GENERAL.—The Secretary shall establish, through competitive bids, not more than 4 energy storage research centers to translate basic research into applied technologies to advance the capability of the United States to maintain a globally competitive posture in energy storage systems for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(2) PROGRAM MANAGEMENT.—The centers shall be managed by the [Under Secretary for Science] *Under Secretary for Science and Energy* of the Department.

(3) PARTICIPATION AGREEMENTS.—As a condition of participating in a center, a participant shall enter into a participation agreement with the center that requires that activities conducted by the participant for the center promote the goal of enabling the United States to compete successfully in global energy storage markets.

(4) PLANS.—A center shall conduct activities that promote the achievement of the goals of the plans of the Council under subsection (e)(4).

(5) NATIONAL LABORATORIES.—A national laboratory (as defined in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801)) may participate in a center established under this subsection, including a cooperative research and development agreement (as defined in section 12(d) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d))).

(6) DISCLOSURE.—Section 623 of the Energy Policy Act of 1992 (42 U.S.C. 13293) may apply to any project carried out through a grant, contract, or cooperative agreement under this subsection.

(7) INTELLECTUAL PROPERTY.—In accordance with section 202(a)(ii) of title 35, United States Code, section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182), and section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908), the Secretary may require, for any new invention developed under this subsection, that—

(A) if an industrial participant is active in a energy storage research center established under this subsection relating to the advancement of energy storage technologies carried out, in whole or in part, with Federal funding, the industrial participant be granted the first option to negotiate with the invention owner, at least in the field of energy storage technologies, nonexclusive licenses, and royalties on terms that are reasonable, as determined by the Secretary;

(B) if 1 or more industry participants are active in a center, during a 2-year period beginning on the date on which an invention is made—

(i) the patent holder shall not negotiate any license or royalty agreement with any entity that is not an industrial participant under this subsection; and

(ii) the patent holder shall negotiate nonexclusive licenses and royalties in good faith with any interested industrial participant under this subsection; and

(C) the new invention be developed under such other terms as the Secretary determines to be necessary to promote the accelerated commercialization of inventions made under this subsection to advance the capability of the United States to successfully compete in global energy storage markets.

(i) ENERGY STORAGE SYSTEMS DEMONSTRATIONS.—

(1) IN GENERAL.—The Secretary shall carry out a program of new demonstrations of advanced energy storage systems.

(2) SCOPE.—The demonstrations shall—

(A) be regionally diversified; and

(B) expand on the existing technology demonstration program of the Department.

(3) STAKEHOLDERS.—In carrying out the demonstrations, the Secretary shall, to the maximum extent practicable, include the participation of a range of stakeholders, including—

(A) rural electric cooperatives;

(B) investor owned utilities;

(C) municipally owned electric utilities;

(D) energy storage systems manufacturers;

(E) electric drive vehicle manufacturers;

(F) the renewable energy production industry;

(G) State or local energy offices;

(H) the fuel cell industry; and

(I) institutions of higher education.

(4) OBJECTIVES.—Each of the demonstrations shall include 1 or more of the following:

(A) Energy storage to improve the feasibility of microgrids or islanding, or transmission and distribution capability, to improve reliability in rural areas.

(B) Integration of an energy storage system with a self-healing grid.

(C) Use of energy storage to improve security to emergency response infrastructure and ensure availability of emergency backup power for consumers.

(D) Integration with a renewable energy production source, at the source or away from the source.

(E) Use of energy storage to provide ancillary services, such as spinning reserve services, for grid management.

(F) Advancement of power conversion systems to make the systems smarter, more efficient, able to communicate with other inverters, and able to control voltage.

(G) Use of energy storage to optimize transmission and distribution operation and power quality, which could address overloaded lines and maintenance of transformers and substations.

(H) Use of advanced energy storage for peak load management of homes, businesses, and the grid.

(I) Use of energy storage devices to store energy during nonpeak generation periods to make better use of existing grid assets.

(j) VEHICLE ENERGY STORAGE DEMONSTRATION.—

(1) IN GENERAL.—The Secretary shall carry out a program of electric drive vehicle energy storage technology demonstrations.

(2) CONSORTIA.—The technology demonstrations shall be conducted through consortia, which may include—

(A) energy storage systems manufacturers and suppliers of the manufacturers;

(B) electric drive vehicle manufacturers;

(C) rural electric cooperatives;

(D) investor owned utilities;

(E) municipal and rural electric utilities;

(F) State and local governments;

(G) metropolitan transportation authorities; and

(H) institutions of higher education.

(3) OBJECTIVES.—The program shall demonstrate 1 or more of the following:

(A) Novel, high capacity, high efficiency energy storage, charging, and control systems, along with the collection of data on performance characteristics, such as battery life, energy storage capacity, and power delivery capacity.

(B) Advanced onboard energy management systems and highly efficient battery cooling systems.

(C) Integration of those systems on a prototype vehicular platform, including with drivetrain systems for passenger, commercial, and nonroad electric drive vehicles.

(D) New technologies and processes that reduce manufacturing costs.

(E) Integration of advanced vehicle technologies with electricity distribution system and smart metering technology.

(F) Control systems that minimize emissions profiles in cases in which clean diesel engines are part of a plug-in hybrid drive system.

(k) SECONDARY APPLICATIONS AND DISPOSAL OF ELECTRIC DRIVE VEHICLE BATTERIES.—The Secretary shall carry out a program of research, development, and demonstration of—

(1) secondary applications of energy storage devices following service in electric drive vehicles; and

(2) technologies and processes for final recycling and disposal of the devices.

(l) COST SHARING.—The Secretary shall carry out the programs established under this section in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

(m) MERIT REVIEW OF PROPOSALS.—The Secretary shall carry out the programs established under subsections (i), (j), and (k) in accordance with section 989 of the Energy Policy Act of 2005 (42 U.S.C. 16353).

(n) COORDINATION AND NONDUPLICATION.—To the maximum extent practicable, the Secretary shall coordinate activities under this section with other programs and laboratories of the Department and other Federal research programs.

(o) REVIEW BY NATIONAL ACADEMY OF SCIENCES.—On the business day that is 5 years after the date of enactment of this Act, the Secretary shall offer to enter into an arrangement with the National Academy of Sciences to assess the performance of the Department in carrying out this section.

(p) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out—

(1) the basic research program under subsection (f) $50,000,000 for each of fiscal years 2009 through 2018;

(2) the applied research program under subsection (g) $80,000,000 for each of fiscal years 2009 through 2018; and;

(3) the energy storage research center program under subsection (h) $100,000,000 for each of fiscal years 2009 through 2018;

(4) the energy storage systems demonstration program under subsection (i) $30,000,000 for each of fiscal years 2009 through 2018;

(5) the vehicle energy storage demonstration program under subsection (j) $30,000,000 for each of fiscal years 2009 through 2018; and

(6) the secondary applications and disposal of electric drive vehicle batteries program under subsection (k) $5,000,000 for each of fiscal years 2009 through 2018.

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## STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

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**SEC. 12. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.**

(a) GENERAL AUTHORITY.—[Each Federal agency]

*(1) IN GENERAL.—Except as provided in paragraph (2), each Federal agency* may permit the director of any of its Government-operated Federal laboratories, and, to the extent provided in an agency-approved joint work statement or, if permitted by the agency, in an agency-approved annual strategic plan, contractor-operated laboratories—

[(1)] *(A)* to enter into cooperative research and development agreements on behalf of such agency (subject to subsection (c) of this section) with other Federal agencies; units of State or local government; industrial organizations (including corporations, partnerships, and limited partnerships, and industrial development organizations); public and private foundations; nonprofit organizations (including universities); or other persons (including licensees of inventions owned by the Federal agency); and

[(2)] *(B)* to negotiate licensing agreements under section 207 of title 35, United States Code, or under other authorities (in the case of a Government-owned, contractor-operated laboratory, subject to subsection (c) of this section) for inventions made or other intellectual property developed at the laboratory and other inventions or other intellectual property that may be voluntarily assigned to the Government.

*(2) EXCEPTION.—Notwithstanding paragraph (1), in accordance with section 202(a) of the Department of Energy Laboratory Modernization and Technology Transfer Act of 2015, approval by the Secretary of Energy shall not be required for any technology transfer agreement proposed to be entered into by a National Laboratory of the Department of Energy, the total cost of which (including the National Laboratory contributions and project recipient cost share) is less than $1,000,000.*

(b) ENUMERATED AUTHORITY.—(1) Under an agreement entered into pursuant to [subsection (a)(1)] *subsection (a)(1)(A)*, the laboratory may grant, or agree to grant in advance, to a collaborating party patent licenses or assignments, or options thereto, in any invention made in whole or in part by a laboratory employee under the agreement, or, subject to section 209 of title 35, United States

Code, may grant a license to an invention which is federally owned, for which a patent application was filed before the signing of the agreement, and directly within the scope of the work under the agreement, for reasonable compensation when appropriate. The laboratory shall ensure, through such agreement, that the collaborating party has the option to choose an exclusive license for a prenegotiated field of use for any such invention under the agreement or, if there is more than one collaborating party, that the collaborating parties are offered the option to hold licensing rights that collectively encompass the rights that would be held under such an exclusive license by one party. In consideration for the Government's contribution under the agreement, grants under this paragraph shall be subject to the following explicit conditions:

(A) A nonexclusive, nontransferable, irrevocable, paid-up license from the collaborating party to the laboratory to practice the invention or have the invention practiced throughout the world by or on behalf of the Government. In the exercise of such license, the Government shall not publicly disclose trade secrets or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5, United States Code, or which would be considered as such if it had been obtained from a non-Federal party.

(B) If a laboratory assigns title or grants an exclusive license to such an invention, the Government shall retain the right—

(i) to require the collaborating party to grant to a responsible applicant a nonexclusive, partially exclusive, or exclusive license to use the invention in the applicant's licensed field of use, on terms that are reasonable under the circumstances; or

(ii) if the collaborating party fails to grant such a license, to grant the license itself.

(C) The Government may exercise its right retained under subparagraph (B) only in exceptional circumstances and only if the Government determines that—

(i) the action is necessary to meet health or safety needs that are not reasonably satisfied by the collaborating party;

(ii) the action is necessary to meet requirements for public use specified by Federal regulations, and such requirements are not reasonably satisfied by the collaborating party; or

(iii) the collaborating party has failed to comply with an agreement containing provisions described in subsection (c)(4)(B).

This determination is subject to administrative appeal and judicial review under section 203(2) of title 35, United States Code.

(2) Under agreements entered into pursuant to [subsection (a)(1)] *subsection (a)(1)(A)*, the laboratory shall ensure that a collaborating party may retain title to any invention made solely by its employee in exchange for normally granting the Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government for research or other Government purposes.

(3) Under an agreement entered into pursuant to [subsection (a)(1)] *subsection (a)(1)(A)*, a laboratory may—

(A) accept, retain, and use funds, personnel, services, and property from a collaborating party and provide personnel, services, and property to a collaborating party;

(B) use funds received from a collaborating party in accordance with subparagraph (A) to hire personnel to carry out the agreement who will not be subject to full-time-equivalent restrictions of the agency;

(C) to the extent consistent with any applicable agency requirements or standards of conduct, permit an employee or former employee of the laboratory to participate in an effort to commercialize an invention made by the employee or former employee while in the employment or service of the Government; and

(D) waive, subject to reservation by the Government of a nonexclusive, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government, in advance, in whole or in part, any right of ownership which the Federal Government may have to any subject invention made under the agreement by a collaborating party or employee of a collaborating party.

(4) A collaborating party in an exclusive license in any invention made under an agreement entered into pursuant to [subsection (a)(1)] *subsection (a)(1)(A)* shall have the right of enforcement under chapter 29 of title 35, United States Code.

(5) A Government-owned, contractor-operated laboratory that enters into a cooperative research and development agreement pursuant to [subsection (a)(1)] *subsection (a)(1)(A)* may use or obligate royalties or other income accruing to the laboratory under such agreement with respect to any invention only—

(A) for payments to inventors;

(B) for purposes described in clauses (i), (ii), (iii), and (iv) of section 14(a)(1)(B); and

(C) for scientific research and development consistent with the research and development missions and objectives of the laboratory.

(6)(A) In the case of a laboratory that is part of the National Nuclear Security Administration, a designated official of that Administration may waive any license retained by the Government under paragraph (1)(A), (2), or (3)(D), in whole or in part and according to negotiated terms and conditions, if the designated official finds that the retention of the license by the Government would substantially inhibit the commercialization of an invention that would otherwise serve an important national security mission.

(B) The authority to grant a waiver under subparagraph (A) shall expire on the date that is five years after the date of the enactment of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001. The expiration under the preceding sentence of authority to grant a waiver under subparagraph (A) shall not affect any waiver granted under that subparagraph before the expiration of such authority.

(C) Not later than February 15 of each year, the Administrator for Nuclear Security shall submit to Congress a report on any waivers granted under this paragraph during the preceding year.

(c) CONTRACT CONSIDERATIONS.—(1) A Federal agency may issue regulations on suitable procedures for implementing the provisions of this section; however, implementation of this section shall not be delayed until issuance of such regulations.

(2) The agency in permitting a Federal laboratory to enter into agreements under this section shall be guided by the purposes of this Act.

(3)(A) Any agency using the authority given it under subsection (a) shall review standards of conduct for its employees for resolving potential conflicts of interest to make sure they adequately establish guidelines for situations likely to arise through the use of this authority, including but not limited to cases where present or former employees or their partners negotiate licenses or assignments of titles to inventions or negotiate cooperative research and development agreements with federal agencies (including the agency with which the employee involved is or was formerly employed).

(B) If, in implementing subparagraph (A), an agency is unable to resolve potential conflicts of interest within its current statutory framework, it shall propose necessary statutory changes to be forwarded to its authorizing committees in Congress.

(4) The laboratory director in deciding what cooperative research and development agreements to enter into shall—

(A) give special consideration to small business firms, and consortia involving small business firms; and

(B) give preference to business units located in the United States which agree that products embodying inventions made under the cooperative research and development agreement or produced through the use of such inventions will be manufactured substantially in the United States and, in the case of any industrial organization or other person subject to the control of a foreign company or government, as appropriate, take into consideration whether or not such foreign government permits United States agencies, organizations, or other persons to enter into cooperative research and development agreements and licensing agreements.

(5)(A) If the head of the agency or his designee desires an opportunity to disapprove or require the modification of any such agreement presented by the director of a Government-operated laboratory, the agreement shall provide a 30-day period within which such action must be taken beginning on the date the agreement is presented to him or her by the head of the laboratory concerned.

(B) In any case in which the head of an agency or his designee disapproves or requires the modification of an agreement presented by the director of a Government-operated laboratory under this section, the head of the agency or such designee shall transmit a written explanation of such disapproval or modification to the head of the laboratory concerned.

(C)(i) Any non-Federal entity that operates a laboratory pursuant to a contract with a Federal agency shall submit to the agency any cooperative research and development agreement that the entity proposes to enter into and the joint work statement if required with respect to that agreement.

(ii) A Federal agency that receives a proposed agreement and joint work statement under clause (i) shall review and approve, request specific modifications to, or disapprove the proposed agree-

ment and joint work statement within 30 days after such submission. No agreement may be entered into by a Government-owned, contractor-operated laboratory under this section before both approval of the agreement and approval of a joint work statement under this clause.

(iii) In any case in which an agency which has contracted with an entity referred to in clause (i) disapproves or requests the modification of a cooperative research and development agreement or joint work statement submitted under that clause, the agency shall transmit a written explanation of such disapproval or modification to the head of the laboratory concerned.

(iv) Any agency that has contracted with a non-Federal entity to operate a laboratory may develop and provide to such laboratory one or more model cooperative research and development agreements for purposes of standardizing practices and procedures, resolving common legal issues, and enabling review of cooperative research and development agreements to be carried out in a routine and prompt manner.

(v) A Federal agency may waive the requirements of clause (i) or (ii) under such circumstances as the agency considers appropriate.

(6) Each agency shall maintain a record of all agreements entered into under this section.

(7)(A) No trade secrets or commercial or financial information that is privileged or confidential, under the meaning of section 552(b)(4) of title 5, United States Code, which is obtained in the conduct of research or as a result of activities under this Act from a non-Federal party participating in a cooperative research and development agreement shall be disclosed.

(B) The director, or in the case of a contractor-operated laboratory, the agency, for a period of up to 5 years after development of information that results from research and development activities conducted under this Act and that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from a non-Federal party participating in a cooperative research and development agreement, may provide appropriate protections against the dissemination of such information, including exemption from subchapter II of chapter 5 of title 5, United States Code.

(d) DEFINITION.—As used in this section—

(1) the term "cooperative research and development agreement" means any agreement between one or more Federal laboratories and one or more non-Federal parties under which the Government, through its laboratories, provides personnel, services, facilities, equipment, intellectual property, or other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, intellectual property, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the laboratory; except that such term does not include a procurement contract or cooperative agreement as those terms are used in sections 6303, 6304, and 6305 of title 31, United States Code;

(2) the term "laboratory" means—

(A) a facility or group of facilities owned, leased, or otherwise used by a Federal agency, a substantial purpose of which is the performance of research, development, or engineering by employees of the Federal Government;

(B) a group of Government-owned, contractor-operated facilities (including a weapon production facility of the Department of Energy) under a common contract, when a substantial purpose of the contract is the performance of research and development, or the production, maintenance, testing, or dismantlement of a nuclear weapon or its components, for the Federal Government; and

(C) a Government-owned, contractor-operated facility (including a weapon production facility of the Department of Energy) that is not under a common contract described in subparagraph (B), and the primary purpose of which is the performance of research and development, or the production, maintenance, testing, or dismantlement of a nuclear weapon or its components, for the Federal Government,

but such term does not include any facility covered by Executive Order No. 12344, dated February 1, 1982, pertaining to the naval nuclear propulsion program;

(3) the term "joint work statement" means a proposal prepared for a Federal agency by the director of a Government-owned, contractor-operated laboratory describing the purpose and scope of a proposed cooperative research and development agreement, and assigning rights and responsibilities among the agency, the laboratory, and any other party or parties to the proposed agreement; and

(4) the term "weapon production facility of the Department of Energy" means a facility under the control or jurisdiction of the Secretary of Energy that is operated for national security purposes and is engaged in the production, maintenance, testing, or dismantlement of a nuclear weapon or its components.

(e) DETERMINATION OF LABORATORY MISSIONS.—For purposes of this section, an agency shall make separate determinations of the mission or missions of each of its laboratories.

(f) RELATIONSHIP TO OTHER LAWS.—Nothing in this section is intended to limit or diminish existing authorities of any agency.

(g) PRINCIPLES.—In implementing this section, each agency which has contracted with a non-Federal entity to operate a laboratory shall be guided by the following principles:

(1) The implementation shall advance program missions at the laboratory, including any national security mission.

(2) Classified information and unclassified sensitive information protected by law, regulation, or Executive order shall be appropriately safeguarded.

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## ENERGY POLICY ACT OF 2005

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# TITLE IX—RESEARCH AND DEVELOPMENT

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## Subtitle I—Research Administration and Operations

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**SEC. 988. COST SHARING.**

(a) APPLICABILITY.—Notwithstanding any other provision of law, in carrying out a research, development, demonstration, or commercial application program or activity that is initiated after the date of enactment of this section, the Secretary shall require cost-sharing in accordance with this section.

(b) RESEARCH AND DEVELOPMENT.—

(1) IN GENERAL.—[Except as provided in paragraphs (2) and (3)] *Except as provided in paragraphs (2), (3), and (4)* and subsection (f), the Secretary shall require not less than 20 percent of the cost of a research or development activity described in subsection (a) to be provided by a non-Federal source.

(2) EXCLUSION.—Paragraph (1) shall not apply to a research or development activity described in subsection (a) that is of a basic or fundamental nature, as determined by the appropriate officer of the Department.

(3) REDUCTION.—The Secretary may reduce or eliminate the requirement of paragraph (1) for a research and development activity of an applied nature if the Secretary determines that the reduction is necessary and appropriate.

*(4) EXEMPTION FOR INSTITUTIONS OF HIGHER EDUCATION AND OTHER NONPROFIT INSTITUTIONS.—*

*(A) IN GENERAL.—Paragraph (1) shall not apply to a research or development activity performed by an institution of higher education or nonprofit institution (as defined in section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703)).*

*(B) TERMINATION DATE.—The exemption under subparagraph (A) shall apply during the 6-year period beginning on the date of enactment of this paragraph.*

(c) DEMONSTRATION AND COMMERCIAL APPLICATION.—

(1) IN GENERAL.—Except as provided in paragraph (2) and subsection (f), the Secretary shall require that not less than 50 percent of the cost of a demonstration or commercial application activity described in subsection (a) to be provided by a non-Federal source.

(2) REDUCTION OF NON-FEDERAL SHARE.—The Secretary may reduce the non-Federal share required under paragraph (1) if the Secretary determines the reduction to be necessary and appropriate, taking into consideration any technological risk relating to the activity.

(d) CALCULATION OF AMOUNT.—In calculating the amount of a non-Federal contribution under this section, the Secretary—

(1) may include allowable costs in accordance with the applicable cost principles, including—

(A) cash;

(B) personnel costs;

(C) the value of a service, other resource, or third party in-kind contribution determined in accordance with the applicable circular of the Office of Management and Budget;

(D) indirect costs or facilities and administrative costs; or

(E) any funds received under the power program of the Tennessee Valley Authority (except to the extent that such funds are made available under an annual appropriation Act); and

(2) shall not include—

(A) revenues or royalties from the prospective operation of an activity beyond the time considered in the award;

(B) proceeds from the prospective sale of an asset of an activity; or

(C) other appropriated Federal funds.

(e) REPAYMENT OF FEDERAL SHARE.—The Secretary shall not require repayment of the Federal share of a cost-shared activity under this section as a condition of making an award.

(f) EXCLUSIONS.—This section shall not apply to—

(1) a cooperative research and development agreement under the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.);

(2) a fee charged for the use of a Department facility; or

(3) an award under—

(A) the small business innovation research program under section 9 of the Small Business Act (15 U.S.C. 638); or

(B) the small business technology transfer program under that section.

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# TITLE X—DEPARTMENT OF ENERGY MANAGEMENT

**SEC. 1001. IMPROVED TECHNOLOGY TRANSFER OF ENERGY TECHNOLOGIES.**

(a) TECHNOLOGY TRANSFER COORDINATOR.—The Secretary shall appoint a Technology Transfer Coordinator to be the principal advisor to the Secretary on all matters relating to technology transfer and commercialization.

(b) QUALIFICATIONS.—The Coordinator shall be an individual who, by reason of professional background and experience, is specially qualified to advise the Secretary on matters pertaining to technology transfer at the Department.

(c) DUTIES OF THE COORDINATOR.—The Coordinator shall oversee—

(1) the activities of the Technology Transfer Working Group established under subsection (d);

(2) the expenditure of funds allocated for technology transfer within the Department;

(3) the activities of each technology partnership ombudsman appointed under section 11 of the Technology Transfer Commercialization Act of 2000 (42 U.S.C. 7261c); and

(4) efforts to engage private sector entities, including venture capital companies.

(d) TECHNOLOGY TRANSFER WORKING GROUP.—The Secretary shall establish a Technology Transfer Working Group, which shall consist of representatives of the National Laboratories and single-purpose research facilities, to—

(1) coordinate technology transfer activities occurring at National Laboratories and single-purpose research facilities;

(2) exchange information about technology transfer practices, including alternative approaches to resolution of disputes involving intellectual property rights and other technology transfer matters; and

(3) develop and disseminate to the public and prospective technology partners information about opportunities and procedures for technology transfer with the Department, including opportunities and procedures related to alternative approaches to resolution of disputes involving intellectual property rights and other technology transfer matters.

(e) TECHNOLOGY COMMERCIALIZATION FUND.—The Secretary shall establish an Energy Technology Commercialization Fund, using 0.9 percent of the amount made available to the Department for applied energy research, development, demonstration, and commercial application for each fiscal year based on future planned activities and the amount of the appropriations for the fiscal year, to be used to provide matching funds with private partners to promote promising energy technologies for commercial purposes.

(f) TECHNOLOGY TRANSFER RESPONSIBILITY.—Nothing in this section affects the technology transfer responsibilities of Federal employees under the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.).

*(g) EARLY-STAGE TECHNOLOGY DEMONSTRATION.—The Secretary shall permit the directors of the National Laboratories to use funds authorized to support technology transfer within the Department to carry out early-stage and pre-commercial technology demonstration activities to remove technology barriers that limit private sector interest and demonstrate potential commercial applications of any research and technologies arising from National Laboratory activities.*

**[**(g)**]** *(h)* PLANNING AND REPORTING.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall submit to Congress a technology transfer execution plan.

(2) UPDATES.—Each year after the submission of the plan under paragraph (1), the Secretary shall submit to Congress an updated execution plan and reports that describe progress toward meeting goals set forth in the execution plan and the funds expended under subsection (e).

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