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116TH CONGRESS
1ST SESSION

# H. R. 3978

To amend the Energy Independence and Security Act of 2007 to establish a program to incentivize innovation and to enhance the industrial competitiveness of the United States by developing technologies to reduce emissions of nonpower industrial sectors, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

JULY 25, 2019

Mr. CASTEN of Illinois (for himself, Mr. MCKINLEY, Ms. JOHNSON of Texas, and Mrs. RADEWAGEN) introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Energy and Commerce, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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# A BILL

To amend the Energy Independence and Security Act of 2007 to establish a program to incentivize innovation and to enhance the industrial competitiveness of the United States by developing technologies to reduce emissions of nonpower industrial sectors, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the ''Clean Industrial Technology Act of 2019'' or the ''CIT Act of 2019''.

**SEC. 2. PURPOSE.**

The purpose of this Act and the amendments made by this Act is to encourage the development and evaluation of innovative technologies aimed at increasing—

(1) the technological and economic competitiveness of industry and manufacturing in the United States; and

(2) the emissions reduction of nonpower industrial sectors.

**SEC. 3. INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.**

(a) IN GENERAL.—The Energy Independence and Security Act of 2007 is amended by inserting after section 453 (42 U.S.C. 17112) the following:

**''SEC. 454. INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.**

''(a) DEFINITIONS.—In this section:

''(1) DIRECTOR.—The term 'Director' means the Director of the Office of Science and Technology Policy.

''(2) ELIGIBLE ENTITY.—The term 'eligible entity' means—

''(A) a scientist or other individual with knowledge and expertise in emissions reduction;

''(B) an institution of higher education;

''(C) a nongovernmental organization;

''(D) a National Laboratory;

''(E) a private entity; and

''(F) a partnership or consortium of two or more entities described in subparagraphs (B) through (E).

''(3) EMISSIONS REDUCTION.—

''(A) IN GENERAL.—The term 'emissions reduction' means the reduction, to the maximum extent practicable, of net nonwater greenhouse gas emissions to the atmosphere by energy services and industrial processes.

''(B) EXCLUSION.—The term 'emissions reduction' does not include the elimination of carbon embodied in the principal products of industrial manufacturing.

''(4) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

''(5) PROGRAM.—The term 'program' means the program established under subsection (b)(1).

''(b) INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.—

''(1) IN GENERAL.—Not later than 1 year after the date of enactment of the CIT Act of 2019, the Secretary, in coordination with the Director and in consultation with the heads of relevant Federal agencies, National Laboratories, industry, and institutions of higher education, shall establish a cross-cutting industrial emissions reduction technology development program of research, development, demonstration, and commercial application to further the development and commercialization of innovative technologies that—

''(A) increase the technological and economic competitiveness of industry and manufacturing in the United States; and

''(B) achieve emissions reduction in non-power industrial sectors.

''(2) COORDINATION.—In carrying out the program, the Secretary shall—

''(A) coordinate with each relevant office in the Department and any other Federal agency;

''(B) coordinate and collaborate with the Industrial Technology Innovation Advisory Committee established under section 455; and

''(C) coordinate with the energy-intensive industries program established under section 452.

''(3) LEVERAGE OF EXISTING RESOURCES.—In carrying out the program, the Secretary shall leverage, to the maximum extent practicable—

''(A) existing resources and programs of the Department and other relevant Federal agencies; and

''(B) public-private partnerships.

''(c) FOCUS AREAS.—The program shall focus on—

''(1) industrial production processes, including technologies and processes that—

''(A) achieve emissions reduction in high-emissions industrial materials production processes, including production processes for iron, steel, steel mill products, aluminum, cement, glass, pulp, paper, and industrial ceramics;

''(B) achieve emissions reduction in medium- and high-temperature heat generation, including—

''(i) through electrification of heating processes;

''(ii) through renewable heat generation technology;

"(iii) through combined heat and power; and

"(iv) by switching to alternative fuels, including hydrogen;

"(C) achieve emissions reduction in chemical production processes;

"(D) leverage smart manufacturing technologies and principles, digital manufacturing technologies, and advanced data analytics to develop advanced technologies and practices in information, automation, monitoring, computation, sensing, modeling, and networking that—

"(i) simulate manufacturing production lines;

"(ii) monitor and communicate production line status;

"(iii) manage and optimize energy productivity and cost throughout production; and

"(iv) model, simulate, and optimize the energy efficiency of manufacturing processes;

"(E) leverage the principles of sustainable manufacturing to minimize the negative envi-

ronmental impacts of manufacturing while conserving energy and resources, including—

''(i) by designing products that enable reuse, refurbishment, remanufacturing, and recycling;

''(ii) by minimizing waste from industrial processes; and

''(iii) by reducing resource intensity; and

''(F) increase the energy efficiency of industrial processes;

''(2) alternative materials that produce fewer emissions during production and result in fewer emissions during use, including—

''(A) innovative building materials;

''(B) high-performance lightweight materials; and

''(C) substitutions for critical materials and minerals;

''(3) development of net-zero emissions liquid and gaseous fuels;

''(4) emissions reduction in shipping, aviation, and long distance transportation, including through the use of alternative fuels;

''(5) carbon capture technologies for industrial processes;

''(6) high-performance computing to develop advanced materials and manufacturing processes contributing to the focus areas described in paragraphs (1) through (5), including—

''(A) modeling, simulation, and optimization of the design of energy efficient and sustainable products; and

''(B) the use of digital prototyping and additive manufacturing to enhance product design; and

''(7) other technologies that achieve net-zero emissions in nonpower industrial sectors as determined by Secretary in coordination with the Director.

''(d) GRANTS, CONTRACTS, COOPERATIVE AGREEMENTS, AND DEMONSTRATION PROJECTS.—

''(1) GRANTS.—In carrying out the program, the Secretary shall award grants on a competitive basis to eligible entities for projects that the Secretary determines would best achieve the goals of the program.

''(2) CONTRACTS AND COOPERATIVE AGREEMENTS.—In carrying out the program, the Secretary

may enter into contracts and cooperative agreements with eligible entities and Federal agencies for projects that the Secretary determines would further the purposes of the program.

''(3) DEMONSTRATION PROJECTS.—In supporting technologies developed under this section, the Secretary shall fund demonstration projects that test and validate technologies described in subsection (c).

''(4) APPLICATION.—An entity seeking funding or a contract or agreement under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

''(5) COST SHARING.—In awarding funds under this section, the Secretary shall require cost sharing in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

''(e) AUTHORIZATION OF APPROPRIATIONS.—

''(1) IN GENERAL.—There are authorized to be appropriated to the Secretary such sums as are necessary to carry out this section for each fiscal year during which the program is in effect.

''(2) DEMONSTRATION PROJECTS.—Of the amount appropriated under paragraph (1), not more

than $650,000,000 shall be used to carry out demonstration projects under subsection (d)(3).''.

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) is amended by inserting after the item relating to section 453 the following:

''Sec. 454. Industrial emissions reduction technology development program.''.

**SEC. 4. INDUSTRIAL TECHNOLOGY INNOVATION ADVISORY COMMITTEE.**

(a) IN GENERAL.—The Energy Independence and Security Act of 2007 is amended by inserting after section 454 (as added by section 3(a)) the following:

**''SEC. 455. INDUSTRIAL TECHNOLOGY INNOVATION ADVISORY COMMITTEE.**

''(a) DEFINITIONS.—In this section:

''(1) COMMITTEE.—The term 'Committee' means the Industrial Technology Innovation Advisory Committee established under subsection (b).

''(2) DIRECTOR.—The term 'Director' means the Director of the Office of Science and Technology Policy.

''(3) EMISSIONS REDUCTION.—The term 'emissions reduction' has the meaning given the term in section 454(a).

''(4) PROGRAM.—The term 'program' means the industrial emissions reduction technology devel-

opment program established under section 454(b)(1).

''(b) ESTABLISHMENT.—Not later than 180 days after the date of enactment of the CIT Act of 2019, the Secretary, in coordination with the Director, shall establish an advisory committee, to be known as the 'Industrial Technology Innovation Advisory Committee'.

''(c) MEMBERSHIP.—

''(1) APPOINTMENT.—The Committee shall be comprised of not fewer than 14 members, who shall be appointed by the Secretary, in coordination with the Director.

''(2) REPRESENTATION.—Members appointed pursuant to paragraph (1) shall include—

''(A) not less than 1 representative of each relevant Federal agency, as determined by the Secretary;

''(B) not less than 2 representatives of labor groups;

''(C) not less than 3 representatives of the research community, which shall include academia and National Laboratories;

''(D) not less than 2 representatives of nongovernmental organizations;

''(E) not less than 6 representatives of industry, the collective expertise of which shall cover every focus area described in section 454(c); and

''(F) any other individual whom the Secretary, in coordination with the Director, determines to be necessary to ensure that the Committee is comprised of a diverse group of representatives of industry, academia, independent researchers, and public and private entities.

''(3) CHAIR.—The Secretary shall designate a member of the Committee to serve as Chair.

''(d) DUTIES.—

''(1) IN GENERAL.—The Committee shall—

''(A) in consultation with the Secretary and the Director, develop the missions and goals of the program, which shall be consistent with the purposes of the program described in section 454(b)(1); and

''(B) advise the Secretary and the Director with respect to the program—

''(i) by identifying and evaluating any technologies being developed by the private sector relating to the focus areas described in section 454(c);

''(ii) by identifying technology gaps in the private sector in those focus areas, and making recommendations to address those gaps;

''(iii) by surveying and analyzing factors that prevent the adoption of emissions reduction technologies by the private sector; and

''(iv) by recommending technology screening criteria for technology developed under the program to encourage adoption of the technology by the private sector; and

''(C) develop the roadmap described in paragraph (2).

''(2) EMISSIONS REDUCTION ROADMAP.—

''(A) PURPOSE.—The purpose of the roadmap developed under paragraph (1)(C) is to achieve the goals of the program in the focus areas described in section 454(c).

''(B) CONTENTS.—The roadmap developed under paragraph (1)(C) shall—

''(i) specify near-term and long-term qualitative and quantitative objectives relating to each focus area described in section 454(c), including research, develop-

ment, demonstration, and commercial application objectives;

"(ii) specify the anticipated timeframe for achieving the objectives specified under clause (i);

"(iii) include plans for developing emissions reduction technologies that are globally cost-competitive; and

"(iv) identify the appropriate role for investment by the Federal Government, in coordination with the private sector, to achieve the objectives specified under clause (i).

"(e) MEETINGS.—

"(1) FREQUENCY.—The Committee shall meet not less frequently than 2 times per year, at the call of the Chair.

"(2) INITIAL MEETING.—Not later than 30 days after the date on which the members are appointed under subsection (b), the Committee shall hold its first meeting.

"(f) COMMITTEE REPORT.—

"(1) IN GENERAL.—Not later than 2 years after the date of enactment of the CIT Act of 2019, and not less frequently than once every 3 years

thereafter, the Committee shall submit to the Secretary a report on the progress of achieving the purposes of the program.

''(2) CONTENTS.—The report under paragraph (1) shall include—

''(A) a description of any technology innovation opportunities identified by the Committee;

''(B) a description of any technology gaps identified by the Committee under subsection (d)(1)(B)(ii);

''(C) recommendations for improving technology screening criteria and management of the program;

''(D) an evaluation of the progress of the program and the research and development funded under the program;

''(E) any recommended changes to the focus areas of the program described in section 454(c);

''(F) a description of the manner in which the Committee has carried out the duties described in subsection (d)(1) and any relevant findings as a result of carrying out those duties;

''(G) the roadmap developed by the Committee under subsection (d)(1)(C);

''(H) the progress made in achieving the goals set out in that roadmap;

''(I) a review of the management, coordination, and industry utility of the program;

''(J) an assessment of the extent to which progress has been made under the program in developing commercial, cost-competitive technologies in each focus area described in section 454(c); and

''(K) an assessment of the effectiveness of the program in coordinating efforts within the Department and with other Federal agencies to achieve the purposes of the program.

''(g) REPORT TO CONGRESS.—Not later than 60 days after receiving a report from the Committee under subsection (f), the Secretary shall submit a copy of that report to the Committee on Science, Space, and Technology of the House of Representatives, the Committee on Energy and Natural Resources of the Senate, and any other relevant Committee of Congress.

''(h) APPLICABILITY OF FEDERAL ADVISORY COMMITTEE ACT.—Except as otherwise provided in this sec-

tion, the Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the Committee.''.

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) (as amended by section 3(b)) is amended by inserting after the item relating to section 454 the following:

''Sec. 455. Industrial Technology Innovation Advisory Committee.''.

**SEC. 5. TECHNICAL ASSISTANCE PROGRAM TO IMPLEMENT INDUSTRIAL EMISSIONS REDUCTION.**

(a) IN GENERAL.—The Energy Independence and Security Act of 2007 is amended by inserting after section 455 (as added by section 4(a)) the following:

**''SEC. 456. TECHNICAL ASSISTANCE PROGRAM TO IMPLEMENT INDUSTRIAL EMISSIONS REDUCTION.**

''(a) DEFINITIONS.—In this section:

''(1) ELIGIBLE ENTITY.—The term 'eligible entity' means—

''(A) a State;

''(B) a unit of local government;

''(C) a territory or possession of the United States;

''(D) a relevant State or local office, including an energy office;

''(E) a tribal organization (as defined in section 3765 of title 38, United States Code);

''(F) an institution of higher education; and

''(G) a private entity.

''(2) EMISSIONS REDUCTION.—The term 'emissions reduction' has the meaning given the term in section 454(a).

''(3) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

''(4) PROGRAM.—The term 'program' means the program established under subsection (b).

''(b) ESTABLISHMENT.—Not later than 180 days after the date of enactment of the CIT Act of 2019, the Secretary shall establish a program to provide technical assistance to eligible entities to carry out an activity described in subsection (c).

''(c) ACTIVITIES DESCRIBED.—An activity referred to in subsection (b) is any of the following activities carried out for the purpose of achieving emissions reduction in nonpower industrial sectors:

''(1) Adopting emissions reduction technologies.

''(2) Establishing goals and priorities to accelerate the development and evaluation of relevant technologies.

''(3) Developing collaborations across States, local governments, and territories and possessions of the United States.

''(4) Reviewing the appropriate emissions reduction options for a particular eligible entity.

''(5) Developing a roadmap for emissions reduction for a particular eligible entity.

''(6) Any other activity determined appropriate by the Secretary.

''(d) APPLICATIONS.—

''(1) IN GENERAL.—An eligible entity desiring technical assistance under the program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

''(2) APPLICATION PROCESS.—The Secretary shall seek applications for technical assistance under the program on a periodic basis, but not less frequently than once every 12 months.

''(3) PRIORITIES.—In selecting eligible entities for technical assistance under the program, the Secretary shall give priority to an eligible entity—

''(A) carrying out an activity that has the greatest potential for achieving emissions reduction in nonpower industrial sectors;

''(B) located in a State that has historically relied on industrial sectors for a substantial portion of the State economy, as determined by the Secretary, taking into account employment data, per capita income, and other indicators of economic output in the State; or

''(C) located in a State that has experienced significant decline in the economic contribution of industry to the State.

''(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary such sums as are necessary to carry out this section for each fiscal year during which the program is in effect.''.

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) (as amended by section 4(b)) is amended by inserting after the item relating to section 455 the following:

''Sec. 456. Technical assistance program to implement industrial emissions reduction.''.

**SEC. 6. COORDINATION OF RESEARCH AND DEVELOPMENT OF ENERGY EFFICIENT TECHNOLOGIES FOR INDUSTRY.**

Section 6(a) of the American Energy Manufacturing Technical Corrections Act (42 U.S.C. 6351(a)) is amended—

(1) by striking ''Industrial Technologies Program'' each place it appears and inserting ''Advanced Manufacturing Office''; and

(2) in the matter preceding paragraph (1), by striking ''Office of Energy'' and all that follows through ''Office of Science'' and inserting ''Department of Energy''.

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