

Union Calendar No. 383

116TH CONGRESS
2D SESSION

H. R. 4230

[Report No. 116–477]

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.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 6, 2019

Mr. CASTEN of Illinois (for himself, Mr. MCKINLEY, Ms. JOHNSON of Texas, Mrs. RADEWAGEN, Mr. FITZPATRICK, and Mr. TONKO) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

AUGUST 14, 2020

Additional sponsors: Mrs. LURIA, Mr. LUJÁN, Mr. VEASEY, Ms. BONAMICI, Ms. BROWNLEY of California, Mr. LEVIN of California, Mr. SWALWELL of California, Ms. SPANBERGER, Mr. REED, Ms. SHERRILL, Mr. HUFFMAN, Mr. CUELLAR, Mr. VISCLOSKY, Ms. WASSERMAN SCHULTZ, Mr. BACON, Mr. PAPPAS, Ms. STEVENS, Ms. STEFANIK, Mr. CASE, Mr. FOSTER, Ms. PINGREE, Mr. ROUDA, Mr. VARGAS, Ms. CLARKE of New York, Mr. THOMPSON of Mississippi, Mr. SIRES, Ms. WILD, Mr. SUOZZI, Mr. PETERS, Ms. SLOTKIN, Mr. GONZALEZ of Texas, Mr. MICHAEL F. DOYLE of Pennsylvania, Ms. NORTON, Ms. HOULAHAN, Mr. KIM, Mrs. AXNE, Ms. WEXTON, Mr. LIPINSKI, Mr. MCADAMS, Mr. ROONEY of Florida, and Ms. HAALAND

AUGUST 14, 2020

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

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

[For text of introduced bill, see copy of bill as introduced on September 6, 2019]

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.

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

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “Clean Industrial Tech-*
 5 *nology Act of 2019” or the “CIT Act of 2019”.*

6 **SEC. 2. PURPOSE.**

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

10 *(1) the technological and economic competitive-*
 11 *ness of industry and manufacturing in the United*
 12 *States; and*

13 *(2) the emissions reduction of nonpower indus-*
 14 *trial sectors.*

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

17 *(a) IN GENERAL.—The Energy Independence and Se-*
 18 *curity Act of 2007 is amended by inserting after section*
 19 *453 (42 U.S.C. 17112) the following:*

20 **“SEC. 454. INDUSTRIAL EMISSIONS REDUCTION TECH-**
 21 **NOLOGY DEVELOPMENT PROGRAM.**

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

23 *“(1) DIRECTOR.—The term ‘Director’ means the*
 24 *Director of the Office of Science and Technology Pol-*
 25 *icy.*

1 “(2) *ELIGIBLE ENTITY*.—The term ‘eligible enti-
2 ty’ means—

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

5 “(B) an institution of higher education;

6 “(C) a nongovernmental organization;

7 “(D) a National Laboratory;

8 “(E) a private entity; and

9 “(F) a partnership or consortium of 2 or
10 more entities described in subparagraphs (B)
11 through (E).

12 “(3) *EMISSIONS REDUCTION*.—

13 “(A) *IN GENERAL*.—The term ‘emissions re-
14 duction’ means the reduction, to the maximum
15 extent practicable, of net nonwater greenhouse
16 gas emissions to the atmosphere by energy serv-
17 ices and industrial processes.

18 “(B) *EXCLUSION*.—The term ‘emissions re-
19 duction’ does not include the elimination of car-
20 bon embodied in the principal products of indus-
21 trial manufacturing.

22 “(4) *INSTITUTION OF HIGHER EDUCATION*.—The
23 term ‘institution of higher education’ has the meaning
24 given the term in section 101 of the Higher Education
25 Act of 1965 (20 U.S.C. 1001).

1 “(5) *PROGRAM.*—*The term ‘program’ means the*
2 *program established under subsection (b)(1).*

3 “(b) *INDUSTRIAL EMISSIONS REDUCTION TECH-*
4 *NOLOGY DEVELOPMENT PROGRAM.*—

5 “(1) *IN GENERAL.*—*Not later than 1 year after*
6 *the date of enactment of the CIT Act of 2019, the Sec-*
7 *retary, in coordination with the Director and in con-*
8 *sultation with the heads of relevant Federal agencies,*
9 *National Laboratories, industry, and institutions of*
10 *higher education, shall establish a crosscutting re-*
11 *search, development, and demonstration program to*
12 *further the development and commercial application*
13 *of innovative industrial emissions reduction tech-*
14 *nologies that—*

15 “(A) *increase the technological and eco-*
16 *nomics competitiveness of industry and manufac-*
17 *turing in the United States; and*

18 “(B) *achieve emissions reduction in*
19 *nonpower industrial sectors.*

20 “(2) *COORDINATION.*—*In carrying out the pro-*
21 *gram, the Secretary shall, to the maximum extent*
22 *practicable—*

23 “(A) *coordinate with each relevant office in*
24 *the Department and any other Federal agency;*

1 “(B) coordinate and collaborate with the In-
 2 dustrial Technology Innovation Advisory Com-
 3 mittee established under section 455; and

4 “(C) coordinate with the energy-intensive
 5 industries program established under section
 6 452.

7 “(3) *LEVERAGE OF EXISTING RESOURCES.*—In
 8 carrying out the program, the Secretary shall lever-
 9 age, to the maximum extent practicable—

10 “(A) existing resources and programs of the
 11 Department and other relevant Federal agencies;
 12 and

13 “(B) public-private partnerships.

14 “(c) *FOCUS AREAS.*—The program shall focus on, to
 15 the maximum extent practicable,—

16 “(1) industrial production processes, including
 17 technologies and processes that—

18 “(A) achieve emissions reduction in high-
 19 emissions industrial materials production proc-
 20 esses, including production processes for iron,
 21 steel, steel mill products, aluminum, cement, con-
 22 crete, glass, pulp, paper, and industrial ceram-
 23 ics;

1 “(B) achieve emissions reduction in
2 medium- and high-temperature heat generation,
3 including—

4 “(i) through electrification of heating
5 processes;

6 “(ii) through renewable heat generation
7 technology;

8 “(iii) through combined heat and
9 power; and

10 “(iv) by switching to alternative fuels,
11 including hydrogen;

12 “(C) achieve emissions reduction in chem-
13 ical production processes;

14 “(D) leverage smart manufacturing tech-
15 nologies and principles, digital manufacturing
16 technologies, and advanced data analytics to de-
17 velop advanced technologies and practices in in-
18 formation, automation, monitoring, computa-
19 tion, sensing, modeling, and networking that—

20 “(i) simulate manufacturing produc-
21 tion lines;

22 “(ii) monitor and communicate pro-
23 duction line status;

1 “(iii) manage and optimize energy
2 productivity and cost throughout produc-
3 tion; and

4 “(iv) model, simulate, and optimize the
5 energy efficiency of manufacturing proc-
6 esses;

7 “(E) leverage the principles of sustainable
8 manufacturing and sustainable chemistry to
9 minimize the negative environmental impacts of
10 manufacturing while conserving energy and re-
11 sources, including—

12 “(i) by designing products that enable
13 reuse, refurbishment, remanufacturing, and
14 recycling;

15 “(ii) by minimizing waste from indus-
16 trial processes; and

17 “(iii) by reducing resource intensity;
18 and

19 “(F) increase the energy efficiency of indus-
20 trial processes;

21 “(2) alternative materials that produce fewer
22 emissions during production and result in fewer emis-
23 sions during use, including—

24 “(A) high-performance lightweight mate-
25 rials; and

1 “(B) substitutions for critical materials and
2 minerals;

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

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

8 “(5) carbon capture technologies for industrial
9 processes;

10 “(6) high-performance computing to develop ad-
11 vanced materials and manufacturing processes con-
12 tributing to the focus areas described in paragraphs
13 (1) through (5), including—

14 “(A) modeling, simulation, and optimiza-
15 tion to design energy efficient and sustainable
16 products; and

17 “(B) the use of digital prototyping and ad-
18 ditive manufacturing to enhance product design;

19 “(7) other technologies that achieve net-zero
20 emissions in nonpower industrial sectors as deter-
21 mined by Secretary in coordination with the Direc-
22 tor;

23 “(8) incorporation of sustainable and green
24 chemistry and engineering principles, practices, and

1 *methodologies, as the Secretary determines appro-*
2 *priate; and*

3 *“(9) other research or technology areas identified*
4 *in the Emissions Reduction Roadmap authorized in*
5 *section 455.*

6 *“(d) GRANTS, CONTRACTS, COOPERATIVE AGREE-*
7 *MENTS, AND DEMONSTRATION PROJECTS.—*

8 *“(1) GRANTS.—In carrying out the program, the*
9 *Secretary shall award grants on a competitive basis*
10 *to eligible entities for projects that the Secretary de-*
11 *termines would best achieve the goals of the program.*

12 *“(2) CONTRACTS AND COOPERATIVE AGREE-*
13 *MENTS.—In carrying out the program, the Secretary*
14 *may enter into contracts and cooperative agreements*
15 *with eligible entities and Federal agencies for projects*
16 *that the Secretary determines would further the pur-*
17 *poses of the program.*

18 *“(3) DEMONSTRATION PROJECTS.—In sup-*
19 *porting technologies developed under this section, the*
20 *Secretary shall fund demonstration projects that test*
21 *and validate technologies described in subsection (c).*

22 *“(4) COST SHARING.—In awarding funds under*
23 *this section, the Secretary shall require cost sharing*
24 *in accordance with section 988 of the Energy Policy*
25 *Act of 2005 (42 U.S.C. 16352).*

1 “(e) *AUTHORIZATION OF APPROPRIATIONS.—There are*
 2 *authorized to be appropriated to the Secretary to carry out*
 3 *the demonstration projects authorized in subsection*
 4 *(d)(3)—*

5 “(1) \$20,000,000 for fiscal year 2020;

6 “(2) \$80,000,000 for fiscal year 2021;

7 “(3) \$100,000,000 for fiscal year 2022;

8 “(4) \$150,000,000 for fiscal year 2023; and

9 “(5) \$150,000,000 for fiscal year 2024.

10 “(f) *COORDINATION.—The Secretary shall carry out*
 11 *the activities authorized in this section in accordance with*
 12 *section 203 of the Department of Energy Research and In-*
 13 *novation Act (42 U.S.C. 18631).”.*

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

“Sec. 454. Industrial emissions reduction technology development program.”.

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

20 “(a) *IN GENERAL.—The Energy Independence and Se-*
 21 *curity Act of 2007 is amended by inserting after section*
 22 *454 (as added by section 3(a)) the following:*

23 **“SEC. 455. INDUSTRIAL TECHNOLOGY INNOVATION ADVI-**
 24 **SORY COMMITTEE.**

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

1 “(1) *COMMITTEE.*—*The term ‘Committee’ means*
 2 *the Industrial Technology Innovation Advisory Com-*
 3 *mittee established under subsection (b).*

4 “(2) *DIRECTOR.*—*The term ‘Director’ means the*
 5 *Director of the Office of Science and Technology Pol-*
 6 *icy.*

7 “(3) *EMISSIONS REDUCTION.*—*The term ‘emis-*
 8 *sions reduction’ has the meaning given the term in*
 9 *section 454(a).*

10 “(4) *PROGRAM.*—*The term ‘program’ means the*
 11 *industrial emissions reduction technology development*
 12 *program established under section 454(b)(1).*

13 “(b) *ESTABLISHMENT.*—*Not later than 180 days after*
 14 *the date of enactment of the CIT Act of 2019, the Secretary,*
 15 *in coordination with the Director, shall establish an advi-*
 16 *sory committee, to be known as the ‘Industrial Technology*
 17 *Innovation Advisory Committee’.*

18 “(c) *MEMBERSHIP.*—

19 “(1) *APPOINTMENT.*—*The Committee shall be*
 20 *comprised of not fewer than 15 members, who shall be*
 21 *appointed by the Secretary, in coordination with the*
 22 *Director.*

23 “(2) *REPRESENTATION.*—*Members appointed*
 24 *pursuant to paragraph (1) shall include—*

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

4 “(B) not less than 2 representatives of labor
5 groups;

6 “(C) not less than 3 representatives of the
7 research community, which shall include aca-
8 demia and National Laboratories;

9 “(D) not less than 2 representatives of non-
10 governmental organizations;

11 “(E) not less than 6 representatives of in-
12 dustry, the collective expertise of which shall
13 cover every focus area described in section
14 454(c);

15 “(F) not less than 1 representative of a
16 State government; and

17 “(G) any other individual whom the Sec-
18 retary, in coordination with the Director, deter-
19 mines to be necessary to ensure that the Com-
20 mittee is comprised of a diverse group of rep-
21 resentatives of industry, academia, independent
22 researchers, and public and private entities.

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

25 “(d) DUTIES.—

1 “(1) *IN GENERAL.*—*The Committee shall—*

2 “(A) *in consultation with the Secretary and*
3 *the Director, develop the missions and goals of*
4 *the program, which shall be consistent with the*
5 *purposes of the program described in section*
6 *454(b)(1);*

7 “(B) *advise the Secretary and the Director*
8 *with respect to the program—*

9 “(i) *by identifying and evaluating any*
10 *technologies being developed by the private*
11 *sector or other Federal agencies relating to*
12 *the focus areas described in section 454(c);*

13 “(ii) *by identifying technology gaps in*
14 *the private sector in those focus areas, and*
15 *making recommendations to address those*
16 *gaps;*

17 “(iii) *by surveying and analyzing fac-*
18 *tors that prevent the adoption of emissions*
19 *reduction technologies by the private sector;*
20 *and*

21 “(iv) *by recommending technology*
22 *screening criteria for technology developed*
23 *under the program to encourage adoption of*
24 *the technology by the private sector; and*

1 “(C) develop the roadmap described in
2 paragraph (2).

3 “(2) EMISSIONS REDUCTION ROADMAP.—

4 “(A) PURPOSE.—The purpose of the road-
5 map developed under paragraph (1)(C) is to set
6 forth a plan for achieving the goals of the pro-
7 gram established in section 454(b)(1), including
8 for the focus areas described in section 454(c).

9 “(B) CONTENTS.—The roadmap developed
10 under paragraph (1)(C) shall—

11 “(i) specify near-term and long-term
12 qualitative and quantitative objectives relat-
13 ing to each focus area described in section
14 454(c), including research, development,
15 demonstration, and commercial application
16 objectives;

17 “(ii) leverage existing roadmaps rel-
18 evant to the program in section 454(b)(1)
19 and the focus areas in section 454(c);

20 “(iii) specify the anticipated time-
21 frame for achieving the objectives specified
22 under clause (i);

23 “(iv) include plans for developing
24 emissions reduction technologies that are
25 globally cost-competitive; and

1 “(v) *identify the appropriate role for*
2 *investment by the Federal Government, in*
3 *coordination with the private sector, to*
4 *achieve the objectives specified under clause*
5 *(i).*

6 “(e) *MEETINGS.—*

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

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

14 “(f) *COMMITTEE REPORT.—*

15 “(1) *IN GENERAL.—Not later than 2 years after*
16 *the date of enactment of the CIT Act of 2019, and not*
17 *less frequently than once every 3 years thereafter, the*
18 *Committee shall submit to the Secretary a report on*
19 *the progress of achieving the purposes of the program.*

20 “(2) *CONTENTS.—The report under paragraph*
21 *(1) shall include—*

22 “(A) *a description of any technology inno-*
23 *vation opportunities identified by the Committee;*

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

4 “(C) a review of the management, tech-
5 nology screening, coordination, and industry
6 utility of the program;

7 “(D) an evaluation of the progress of the
8 program and the research, development, and
9 demonstration activities funded under the pro-
10 gram;

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

13 “(F) a description of the manner in which
14 the Committee has carried out the duties de-
15 scribed in subsection (d)(1) and any relevant
16 findings as a result of carrying out those duties;

17 “(G) the roadmap developed by the Com-
18 mittee under subsection (d)(1)(C);

19 “(H) the progress made in achieving the
20 goals set out in that roadmap;

21 “(I) an assessment of the extent to which
22 progress has been made under the program in
23 developing commercial, cost-competitive tech-
24 nologies in each focus area described in section
25 454(c); and

1 “(J) an assessment of the effectiveness of the
 2 program in coordinating efforts within the De-
 3 partment and with other Federal agencies to
 4 achieve the purposes of the program.

5 “(g) *REPORT TO CONGRESS.*—Not later than 60 days
 6 after receiving a report from the Committee under sub-
 7 section (f), the Secretary shall submit a copy of that report
 8 to the Committee on Science, Space, and Technology of the
 9 House of Representatives, and the Committee on Energy
 10 and Natural Resources of the Senate.

11 “(h) *APPLICABILITY OF FEDERAL ADVISORY COM-*
 12 *MITTEE ACT.*—Except as otherwise provided in this section,
 13 the Federal Advisory Committee Act (5 U.S.C. App.) shall
 14 apply to the Committee.”.

15 (b) *TECHNICAL AMENDMENT.*—The table of contents of
 16 the Energy Independence and Security Act of 2007 (Public
 17 Law 110–140; 121 Stat. 1494) (as amended by section 3(b))
 18 is amended by inserting after the item relating to section
 19 454 the following:

“Sec. 455. Industrial Technology Innovation Advisory Committee.”.

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

22 (a) *IN GENERAL.*—The Energy Independence and Se-
 23 curity Act of 2007 is amended by inserting after section
 24 455 (as added by section 4(a)) the following:

1 **“SEC. 456. TECHNICAL ASSISTANCE PROGRAM TO IMPE-**
2 **MENT INDUSTRIAL EMISSIONS REDUCTION.**

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

4 “(1) *ELIGIBLE ENTITY.—The term ‘eligible enti-*
5 *ty’ means—*

6 “(A) *a State;*

7 “(B) *a unit of local government;*

8 “(C) *a territory or possession of the United*
9 *States;*

10 “(D) *a relevant State or local office, includ-*
11 *ing an energy office;*

12 “(E) *a tribal organization (as defined in*
13 *section 3765 of title 38, United States Code);*

14 “(F) *an institution of higher education;*

15 “(G) *a private entity; and*

16 “(H) *a trade association or technical soci-*
17 *ety.*

18 “(2) *EMISSIONS REDUCTION.—The term ‘emis-*
19 *sions reduction’ has the meaning given the term in*
20 *section 454(a).*

21 “(3) *INSTITUTION OF HIGHER EDUCATION.—The*
22 *term ‘institution of higher education’ has the meaning*
23 *given the term in section 101 of the Higher Education*
24 *Act of 1965 (20 U.S.C. 1001).*

25 “(4) *PROGRAM.—The term ‘program’ means the*
26 *program established under subsection (b).*

1 “(b) *ESTABLISHMENT.*—Not later than one year after
 2 the date of enactment of the CIT Act of 2019, the Secretary
 3 shall establish a program to provide technical assistance to
 4 eligible entities to promote the commercial application of
 5 emission reduction technologies developed through the pro-
 6 gram established in section 454(b).

7 “(c) *APPLICATIONS.*—

8 “(1) *APPLICATION PROCESS.*—The Secretary
 9 shall seek applications for technical assistance under
 10 the program on a periodic basis, but not less fre-
 11 quently than once every 12 months.

12 “(2) *PRIORITIES.*—In selecting eligible entities
 13 for technical assistance under the program, the Sec-
 14 retary shall give priority to an eligible entity—

15 “(A) carrying out a commercial application
 16 of technology that has the greatest potential for
 17 emissions reduction in nonpower industrial sec-
 18 tors;

19 “(B) located in a State that has historically
 20 relied on industrial sectors for a substantial por-
 21 tion of the State economy, as determined by the
 22 Secretary, taking into account employment data,
 23 per capita income, and other indicators of eco-
 24 nomic output in the State; or

1 “(C) located in a State that has experienced
2 significant decline in the economic contribution
3 of industry to the State.”.

4 (b) *TECHNICAL AMENDMENT.*—*The table of contents of*
5 *the Energy Independence and Security Act of 2007 (Public*
6 *Law 110–140; 121 Stat. 1494) (as amended by section 4(b))*
7 *is amended by inserting after the item relating to section*
8 *455 the following:*

“Sec. 456. Technical assistance program to implement industrial emissions reduction.”.

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

12 Section 6(a) of the American Energy Manufacturing
13 Technical Corrections Act (42 U.S.C. 6351(a)) is amend-
14 ed—

15 (1) by striking “Industrial Technologies Pro-
16 gram” each place it appears and inserting “Advanced
17 Manufacturing Office”; and

18 (2) in the matter preceding paragraph (1), by
19 striking “Office of Energy” and all that follows
20 through “Office of Science” and inserting “Depart-
21 ment of Energy”.

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