

116TH CONGRESS
2D SESSION

H. R. 5864

To establish and support the research, development, and demonstration of advanced carbon capture and utilization technologies at the Department of Energy, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 12, 2020

Mr. CRENSHAW introduced the following bill; which was referred to the
Committee on Science, Space, and Technology

A BILL

To establish and support the research, development, and demonstration of advanced carbon capture and utilization technologies at the Department of Energy, and for other purposes.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “New Energy Frontiers
5 Through Carbon Innovation Act of 2020”.

1 **SEC. 2. CARBON UTILIZATION RESEARCH AND DEVELOP-**
2 **MENT PROGRAM AND INFRASTRUCTURE.**

3 (a) Section 963 of the Energy Policy Act of 2005 (42
4 U.S.C. 16293) is amended to read as follows:

5 **“SEC. 963. CARBON UTILIZATION RESEARCH AND DEVELOP-**
6 **MENT INFRASTRUCTURE.**

7 “(a) IN GENERAL.—The Secretary shall carry out a
8 program to conduct basic and fundamental research in
9 materials science, chemistry, subsurface instrumentation,
10 and data analysis to inform the research, development,
11 and demonstration of carbon capture, storage, and utiliza-
12 tion technologies and techniques, and to facilitate the
13 translation of basic research results to industry.

14 “(b) COORDINATION.—In carrying out the program
15 under subsection (a), the Secretary shall leverage expertise
16 and resources and facilitate collaboration and coordination
17 between—

18 “(1) the Office of Fossil Energy; and

19 “(2) the Office of Science.

20 “(c) CARBON UTILIZATION ENERGY INNOVATION
21 HUB.—In carrying out the program under subsection (a),
22 the Secretary shall establish and operate a national Car-
23 bon Utilization Energy Innovation Hub (referred to in this
24 section as the ‘Hub’), which shall focus on early stage re-
25 search and development activities including—

1 “(1) post-combustion and pre-combustion cap-
2 ture of carbon dioxide;

3 “(2) advanced compression technologies for new
4 and existing fossil fuel-fired power plants;

5 “(3) technologies to convert carbon dioxide to
6 valuable products and commodities; and

7 “(4) advanced carbon dioxide storage tech-
8 nologies that consider a range of storage regimes.

9 “(d) SELECTION.—The Secretary shall select the
10 Hub under this section on a competitive, merit-reviewed
11 basis. The Secretary shall consider applications from Na-
12 tional Laboratories, institutions of higher education,
13 multi-institutional collaborations, and other appropriate
14 entities.

15 “(e) DURATION.—The Hub established under this
16 section shall receive support for a period of not more than
17 5 years, subject to the availability of appropriations.

18 “(f) RENEWAL.—Upon the expiration of any period
19 of support of the Hub, the Secretary may renew support
20 for the Hub, on a merit-reviewed basis, for a period of
21 not more than 5 years.

22 “(g) TERMINATION.—Consistent with the existing
23 authorities of the Department, the Secretary may termi-
24 nate the Hub for cause during the performance period.

1 “(h) FUNDING.—For each of fiscal years 2020
 2 through 2025, out of any amounts appropriated to the De-
 3 partment to carry out fossil energy research and develop-
 4 ment activities and not otherwise obligated, the Secretary
 5 may use to carry out the Hubs under this section not more
 6 than \$25,000,000.”.

7 (b) Section 1(b) of the Energy Policy Act of 2005
 8 (42 U.S.C. 15801) by amending the item relating to sec-
 9 tion 963 to read as follows:

“Sec. 963. Carbon Utilization Research and Development Infrastructure.”.

10 **SEC. 3. NATURAL GAS CARBON CAPTURE RESEARCH, DE-**
 11 **VELOPMENT, AND DEMONSTRATION PRO-**
 12 **GRAM.**

13 (a) IN GENERAL.—Subtitle F of title IX of the En-
 14 ergy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is
 15 amended by adding at the end the following:

16 **“SEC. 969. NATURAL GAS CARBON CAPTURE RESEARCH,**
 17 **DEVELOPMENT, AND DEMONSTRATION PRO-**
 18 **GRAM.**

19 “(a) DEFINITIONS.—In this section:

20 “(1) NATURAL GAS.—The term ‘natural gas’
 21 includes any fuel consisting in whole or in part of—

22 “(A) natural gas;

23 “(B) liquid petroleum gas;

24 “(C) synthetic gas derived from petroleum
 25 or natural gas liquids;

1 “(D) any mixture of natural gas and syn-
2 thetic gas; or

3 “(E) any product derived directly from
4 natural gas, including hydrogen.

5 “(2) QUALIFYING ELECTRIC GENERATION FA-
6 CILITY.—The term ‘qualifying electric generation fa-
7 cility’ means a facility that generates electric energy
8 through the use of natural gas.

9 “(3) QUALIFYING TECHNOLOGY.—The term
10 ‘qualifying technology’ means any technology to cap-
11 ture carbon dioxide produced during the generation
12 of electricity from natural gas power systems.

13 “(b) ESTABLISHMENT OF RESEARCH, DEVELOP-
14 MENT, AND DEMONSTRATION PROGRAM.—

15 “(1) IN GENERAL.—The Secretary shall estab-
16 lish a program under which the Secretary shall,
17 through a competitive, merit-reviewed process, award
18 grants to eligible entities to conduct research, devel-
19 opment, and demonstration of qualifying tech-
20 nologies.

21 “(2) OBJECTIVES.—The objectives of the pro-
22 gram established under paragraph (1) shall be—

23 “(A) to conduct research to accelerate the
24 development of qualifying technologies to reduce
25 the quantity of carbon dioxide emissions re-

1 leased from qualifying electric generation facili-
2 ties, including—

3 “(i) pre- and post-combustion capture
4 technologies; and

5 “(ii) technologies to improve the ther-
6 modynamics, kinetics, scalability, dura-
7 bility, and flexibility of carbon capture
8 technologies for use during the generation
9 of electricity from natural gas power sys-
10 tems;

11 “(B) to expedite and carry out demonstra-
12 tion projects (including pilot projects) for quali-
13 fying technologies in partnership with quali-
14 fying electric generation facilities in order to
15 demonstrate the technical feasibility and eco-
16 nomic potential for commercial deployment of
17 technologies developed pursuant to subpara-
18 graph (A); and

19 “(C) to identify any barriers to the com-
20 mercial deployment of any qualifying tech-
21 nologies under development pursuant to re-
22 search conducted pursuant to subparagraph
23 (A).

24 “(3) ELIGIBLE ENTITIES.—An entity eligible to
25 receive a grant under this subsection is—

1 “(A) a National Laboratory;
2 “(B) an institution of higher education;
3 “(C) a research facility;
4 “(D) a multi-institutional collaboration; or
5 “(E) another appropriate entity or com-
6 bination of any of the entities specified in sub-
7 paragraphs (A) through (D).

8 “(c) CARBON CAPTURE FACILITIES DEMONSTRATION
9 PROGRAM.—

10 “(1) ESTABLISHMENT.—As part of the pro-
11 gram established under paragraph (1), the Secretary
12 shall establish a demonstration program under which
13 the Secretary shall, through a competitive, merit-re-
14 viewed process, enter into cooperative agreements
15 with entities that submit applications pursuant to
16 paragraph (4) for demonstration or pilot projects to
17 construct and operate, by not later than September
18 30, 2025, up to five facilities to capture carbon diox-
19 ide from qualifying electric generation facilities. The
20 Secretary shall, to the maximum extent practicable,
21 provide technical assistance to any entity seeking to
22 enter into such a cooperative agreement in obtaining
23 any necessary permits and licenses to demonstrate
24 qualifying technologies.

1 “(2) COOPERATIVE AGREEMENTS.—The Sec-
2 retary may enter into a cooperative agreement under
3 this subsection with industry stakeholders, including
4 any such industry stakeholder operating in partner-
5 ship with National Laboratories, institutions of high-
6 er education, multi-institutional collaborations, and
7 other appropriate entities.

8 “(3) GOALS.—Each demonstration or pilot
9 project carried out pursuant to the demonstration
10 program under this subsection shall—

11 “(A) be designed to further the develop-
12 ment of qualifying technologies that may be
13 used by a qualifying electric generation facility;

14 “(B) be financed in part by the private
15 sector;

16 “(C) if necessary, secure agreements for
17 the offtake of carbon dioxide emissions captured
18 by qualifying technologies during the project;
19 and

20 “(D) support energy production in the
21 United States.

22 “(4) REQUEST FOR APPLICATIONS.—Not later
23 than 120 days after the date of enactment of this
24 Act, the Secretary shall solicit applications for coop-
25 erative agreements for projects—

1 “(A) to demonstrate qualifying tech-
2 nologies at up to five qualifying electric genera-
3 tion facilities; and

4 “(B) to construct and operate three or
5 more facilities to capture carbon dioxide from a
6 qualifying electric generation facility.

7 “(5) REVIEW OF APPLICATIONS.—In consid-
8 ering applications submitted under paragraph (4),
9 the Secretary, to the maximum extent practicable,
10 shall—

11 “(A) ensure a broad geographic distribu-
12 tion of project sites;

13 “(B) ensure that a broad selection of
14 qualifying electric generation facilities are rep-
15 resented;

16 “(C) ensure that a broad selection of quali-
17 fying technologies are represented;

18 “(D) require information and knowledge
19 gained by each participant in the demonstration
20 program to be transferred and shared among
21 all participants in the demonstration program;
22 and

23 “(E) leverage existing—

24 “(i) public-private partnerships; and

25 “(ii) Federal resources.

1 “(d) COST SHARING.—In carrying out this section,
2 the Secretary shall require cost sharing in accordance with
3 section 988.

4 “(e) FEE TITLE.—The Secretary may vest fee title
5 or other property interests acquired under cooperative
6 agreements entered into under subsection (b)(4) in any
7 entity, including the United States.

8 “(f) REPORT.—Not later than 180 days after the
9 date on which the Secretary solicits applications under
10 subsection (c)(3), and annually thereafter, the Secretary
11 shall submit to the appropriate committees of jurisdiction
12 of the Senate and the House of Representatives a report
13 that includes—

14 “(1) a detailed description of how applications
15 for cooperative agreements under subsection (b) will
16 be solicited and evaluated, including—

17 “(A) a list of any activities carried out by
18 the Secretary to solicit or evaluate applications;
19 and

20 “(B) a process for ensuring that any
21 projects carried out under a cooperative agree-
22 ment are designed to result in the development
23 or demonstration of qualifying technologies;

24 “(2)(A) in the case of the first report under
25 this subsection, a detailed list of technical milestones

1 for the development and demonstration of each
2 qualifying technology pursued under subsection (b);
3 and

4 “(B) in the case of each subsequent report
5 under this subsection, the progress made towards
6 achieving such technical milestones during the pe-
7 riod covered by the report; and

8 “(3) with respect to the demonstration program
9 established under subsection (c), includes—

10 “(A) an estimate of the cost of licensing,
11 permitting, constructing, and operating each
12 carbon capture facility expected to be con-
13 structed under that demonstration program;

14 “(B) a schedule for the planned construc-
15 tion and operation of each demonstration or
16 pilot project; and

17 “(C) an estimate of any financial assist-
18 ance, compensation, or incentives proposed to
19 be paid by the host State, Indian Tribe, or local
20 government with respect to each facility.

21 “(g) FUNDING.—For each of fiscal years 2020
22 through 2025, out of any amounts appropriated to the De-
23 partment to carry out fossil energy research and develop-
24 ment activities and not otherwise obligated, the Secretary

1 may use to carry out this section not more than
2 \$50,000,000.”.

3 (b) CLERICAL AMENDMENT.—The table of contents
4 for the Energy Policy Act of 2005 (Public Law 109–58;
5 119 Stat. 600) is amended by inserting after the item re-
6 lating to section 968 the following:

“Sec. 969. Natural gas carbon capture research, development, and demonstra-
tion program.”.

