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SENATE

{ REPORT
116-38

UTILIZING SIGNIFICANT EMISSIONS WITH INNOVATIVE TECHNOLOGIES ACT

MAY 13, 2019.—Ordered to be printed

Mr. BARRASSO, from the Committee on Environment and Public
Works, submitted the following

R E P O R T

[To accompany S. 383]

[Including cost estimate of the Congressional Budget Office]

The Committee on Environment and Public Works, to which was referred the bill (S. 383) to support carbon dioxide utilization and direct air capture research, to facilitate the permitting and development of carbon capture, utilization, and sequestration projects and carbon dioxide pipelines, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

GENERAL STATEMENT AND BACKGROUND

Carbon capture, utilization and sequestration (CCUS) is a process that involves capturing manmade carbon dioxide (CO₂) and reusing or storing the carbon dioxide to keep it from entering into or persisting in the atmosphere. The beginnings of CCUS can be traced to the early 1970s, when captured carbon dioxide was first injected into oil fields to improve oil recovery.¹ Since then, the process of capturing and storing carbon dioxide has become a proven type of technology used around the world. Eighteen large-scale CCUS projects are in operation globally, nine of which are located in the United States.² While carbon dioxide has been used commercially for decades in enhanced oil recovery operations, other exist-

¹IEA Greenhouse GH R&D Programme, “A Brief History of CCS and Current Status,” http://ieaghg.org/docs/General_Docs/Publications/Information_Sheets_for_CCS_2.pdf.

²Global CCS Institute, “Large Scale CCS facilities,” <http://www.globalccsinstitute.com/projects/large-scale-ccs-projects>.

ing and potential commercial uses and markets continue to develop for the carbon dioxide captured by CCUS projects.³ The number of commercial products that can utilize captured carbon dioxide continues to grow with ongoing research and investments in new processes and technologies.⁴ In short, CCUS can and does work in a variety of applications, which are increasing every day.

Direct air capture (DAC) is a suite of technologies that involves removing carbon dioxide from the ambient air using a mechanical device. The device concentrates carbon dioxide into an easily stored form that can either be sequestered underground or be commercially utilized. DAC technology is still at a nascent stage, with high cost being the main prohibitive aspect, but interest in the technology and its potential to significantly reduce carbon dioxide emissions is growing.⁵

The USE IT Act supports continued research into the capture, use, and storage of carbon dioxide. Specifically, the USE IT Act directs EPA, in consultation with the Department of Energy, to support CCUS research and technologies under existing authority in Clean Air Act Section 103(g). Under this authority, the USE IT Act focuses on three key areas. The first is to support research that reduces carbon dioxide in the air through direct air capture.⁶ The second is to support projects that utilize carbon dioxide generated at an industrial source, including research into existing and emerging commercial uses of captured carbon dioxide.⁷ Similar to the tax credit for carbon oxide sequestration enacted last Congress (26 U.S.C. 45Q), this part of the bill encourages the development of a robust portfolio of carbon uses. It authorizes funding of projects that support existing commercial uses of carbon dioxide as well as those that support emerging, commercially viable uses that develop after passage of the bill. Finally, the bill directs EPA to evaluate

³Mead Gruver, “10 Teams Advance in International Carbon Dioxide Competition” (Apr. 9, 2018), <https://apnews.com/587d7a3ca086441aaaf3b7ad649e0e73>.

⁴Statement of Paul Sukut, Chief Executive Officer and General Manager, Basin Electric Power Cooperative, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Hearing to Examine S.383, the Utilizing Significant Emissions with Innovative Technologies Act, and the State of Current Technologies that Reduce, Capture, and Use Carbon Dioxide” (Feb. 27, 2019), https://www.epw.senate.gov/public/index.cfm/hearings?Id=83DD95E5-8113-4B25-AB8D-F4D484A30AD8&Statement_id=BB0F696B-31A9-4522-AA42-5CCB1DCD0310; Statement of Dr. Feng Jiao, Associate Professor of Chemical & Biomolecular Engineering and Associate Director for the Center for Catalytic Science & Technology, University of Delaware, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Utilizing Significant Emissions with Innovative Technologies Act” (Apr. 11, 2018), <https://www.epw.senate.gov/public/cache/files/8/3/83715232-4c6a-41af-b7bd-96bb6a94612c/2CE181D89487605F0E3BE6A80B201DAB.04.11.2018-jiao-testimony.pdf>.

⁵Carbon 180, Fact Sheet: Direct Air Capture (2019), <https://carbon180.org/fact-sheets>; Statement of Steve Oldham, Chief Executive Officer, Carbon Engineering, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Hearing to Examine S. 383, the Utilizing Significant Emissions with Innovative Technologies Act, and the State of Current Technologies that Reduce, Capture, and Use Carbon Dioxide” (Feb. 27, 2019), https://www.epw.senate.gov/public/index.cfm/hearings?Id=83DD95E5-8113-4B25-AB8D-F4D484A30AD8&Statement_id=14F426A1-EA7B-4E12-9904-6AC61E40EAB9.

⁶Statement of Noah Deich, Executive Director, Center for Carbon Removal, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Utilizing Significant Emissions with Innovative Technologies Act” (Apr. 11, 2018), https://www.epw.senate.gov/public/index.cfm/hearings?Id=55DD866C-BEE0-49C7-8491-E042F051C947&Statement_id=AC1A42A9-4E30-417E-AA72-29F7C5E52F6C.

⁷Statement of Dr. Mark A. Northam, Executive Director, School of Energy Resources, University of Wyoming, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Utilizing Significant Emissions with Innovative Technologies Act” (Apr. 11, 2018), <https://www.epw.senate.gov/public/cache/files/5/3/536c8171-f4fd-4bbe-87de-b128ad309d40/B233F594209CC006B1950528AA5CD8A8.04.11.2018-northam-testimony.pdf>.

potential benefits and risks associated with the increased, long-term storage of captured carbon dioxide in deep saline formations.⁸

Beyond federal research support, adequate infrastructure is critical to accelerate the development of CCUS projects. If more carbon dioxide is to be captured and utilized or stored, a more robust carbon dioxide pipeline network is needed. Permitting of carbon dioxide pipelines can require state and federal involvement, and the types of permits required can vary based on where a pipeline is located. Clarification of the appropriate roles of the federal government versus states, as well as better state and federal coordination, would facilitate the permitting process. In 2015, the Department of Energy concluded the federal government could improve the federal permitting process for carbon dioxide pipelines by taking “a convening role to promote communication, coordination, and sharing of lessons learned and best practices among states that are already involved in siting and regulating CO₂ pipelines or that may have CO₂ pipeline projects proposed within their borders in the future.”⁹

The USE IT Act recognizes the need for greater clarification and coordination regarding CCUS projects (including direct air capture projects) and carbon dioxide pipelines. The bill addresses this issue by clarifying current law, making the statutory language explicit that CCUS projects and carbon dioxide pipelines can be considered “covered projects” under Title XLI of the FAST Act (FAST 41). In that title, Congress authorized the Federal Permitting Improvement Steering Council to improve the efficiency and timeliness of the federal permitting process for large infrastructure projects that are “covered projects.” “Covered projects” are currently defined in the statute to include “construction of infrastructure for renewable or conventional energy production, electricity transmission, surface transportation, aviation, ports and waterways, water resource projects, broadband, pipelines, manufacturing, or any other sector as determined by a majority vote of the Council” that meet other eligibility criteria in the statute. 42 U.S.C. 4370m(6). Under this language, a Wyoming carbon dioxide pipeline, the Riley Ridge to Natrona Project, has already been designated as a “covered project.”¹⁰ While the existing definition of “covered project” is broad enough to include carbon dioxide pipelines and CCUS projects, the legislation would make it clearer by explicitly stating that carbon dioxide pipelines and CCUS projects (including direct air capture projects) are eligible.

The USE IT Act also tasks the Council on Environmental Quality (CEQ) with leading the development of a federal report focused on CCUS projects (including direct air capture projects) and carbon dioxide pipelines. The report would compile federal permitting and review information, commercial uses for captured carbon dioxide, priority CO₂ pipelines, gaps in the current federal regulatory framework, and federal financing mechanisms. After the report is finalized and submitted to Congress, the USE IT Act requires CEQ

⁸See Dr. Julio S. Friedmann, CEO, Carbon Wrangler, LLC, Responses to Questions for the Record, Hearing Before the U.S. Senate Committee on Environment and Public Works entitled “Utilizing Significant Emissions with Innovative Technologies Act” (Apr. 11, 2018).

⁹U.S. Department of Energy, Quadrennial Energy Review, Vol. 1 at 7–26 (2015), <https://www.energy.gov/sites/prod/files/2015/08/f25/QR%20Chapter%20VII%20Environment%20April%202015.pdf>.

¹⁰Federal Permitting Improvement Steering Council, “Denbury Riley Ridge to Natrona Project CO₂,” <https://www.permits.performance.gov/projects/denbury-riley-ridge-natrona-project-co2>.

to develop permitting guidance for CCUS projects (including direct air capture projects) and carbon dioxide pipelines. The guidance must facilitate reviews associated with the deployment of CCUS projects and carbon dioxide pipelines and support the “efficient, orderly, and responsible” development of such projects. That phrase means that development is completed in an expeditious manner while maintaining environmental, health, and safety protections. Before CEQ finalizes the guidance, the Council must notify the public and solicit comment. To improve coordination and ensure that states’ and other interested parties’ input informs the guidance, the USE IT Act establishes regional task forces to review the federal and state regulatory frameworks for CCUS and related issues. The task forces are to report best practices and other data valuable for CCUS permitting processes and provide feedback to the federal government to ensure the permitting process is completed in an expeditious manner while maintaining environmental, health, and safety protections.

OBJECTIVES OF THE LEGISLATION

The objectives of the USE IT Act are to support the accelerated development and deployment of CCUS projects (including direct air capture projects) and carbon dioxide pipelines. The USE IT Act provides federal research support and directs greater federal inter-agency and external stakeholder coordination.

SECTION-BY-SECTION ANALYSIS

TITLE I—ENCOURAGING PROJECTS TO REDUCE EMISSIONS

Section 101. Research, investigation, training, and other activities

Section 103(g) of the Clean Air Act authorizes EPA to support research to reduce carbon dioxide from stationary sources. Section 101 of the bill directs EPA, in consultation with the Department of Energy, to conduct certain carbon dioxide research and development activities under this existing authority.

First, the EPA Administrator is directed to administer a competitive prize program that awards funds to direct air capture research projects. The section establishes a Direct Air Capture Technology Advisory Board of experts to advise the Administrator. The USE IT Act authorizes up to \$35 million in funding and sunsets the program 10 years after enactment of the Act.

Second, the Administrator is directed to provide technical and financial assistance to carbon dioxide utilization projects. This assistance will support projects to transform carbon dioxide generated by industrial facilities in the United States into a commercial product, or as an input to a commercial product. The USE IT Act authorizes up to \$50 million in funding, available until expended. Third, the Administrator is directed to prepare a report that identifies potential risks and benefits to project developers associated with increased storage of carbon dioxide captured from stationary sources in deep saline formations. The Administrator is to evaluate existing research and make recommendations about how to address any identified potential risks.

TITLE II—IMPROVEMENT OF PERMITTING PROCESS FOR CARBON
DIOXIDE CAPTURE AND INFRASTRUCTURE PROJECTS

Section 201. Inclusion of carbon capture infrastructure projects

Section 201 amends existing law to clarify that “covered projects” eligible for the environmental permitting process established by Title XLI of the FAST Act (FAST 41) include construction of carbon capture, utilization, and sequestration (CCUS) projects as well as carbon dioxide pipelines. CCUS projects include direct air capture projects.

Section 202. Development of carbon capture, utilization, and sequestration permitting report, guidance, and regional permitting task force

Section 202 directs the Chair of the Council on Environmental Quality (CEQ) to coordinate preparation of an interagency report on CCUS facilities (including direct air capture projects) and carbon dioxide pipelines. CEQ will then issue permitting guidance informed by that report to expedite the CCUS permitting process while maintaining environmental, health, and safety protections. On an ongoing basis, at least two regional task forces that cover different geographical areas and are comprised of diverse stakeholders are to provide feedback to the Chair on the guidance and related issues.

LEGISLATIVE HISTORY

On February 7, 2019, Senator Barrasso introduced S. 383, the Utilizing Significant Emissions with Innovative Technologies Act, or USE IT Act, with Senators Whitehouse, Capito, Duckworth, Cramer, Smith, Manchin, Carper, and Enzi. The bill was referred to the Senate Committee on Environment and Public Works. Since introduction, Senators Schatz, Rounds, Inhofe, Van Hollen, Coons, and Hoeven have cosponsored the bill.

The text of S. 383 is substantially similar to the text of S. 2602, the USE IT Act, which passed the EPW Committee in the 115th Congress. Senator Barrasso introduced S. 2602 on March 22, 2018. Senators Whitehouse, Capito, and Heitkamp were original cosponsors. Senators Duckworth, Enzi, and Manchin were cosponsors. The EPW Committee reported S. 2602 by voice vote on May 22, 2018.

HEARINGS

A committee hearing was held on S. 383 on February 27, 2019.

ROLLCALL VOTES

On April 10, 2019, the Committee on Environment and Public Works met to consider S. 383. The bill was ordered favorably reported by voice vote. No roll call votes were taken.

REGULATORY IMPACT STATEMENT

In compliance with section 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee finds that S. 383 does not create any additional regulatory burdens, nor will it cause any adverse impact on the personal privacy of individuals.

MANDATES ASSESSMENT

In compliance with the Unfunded Mandates Reform Act of 1995 (Public Law 104-4), the Committee notes that the Congressional Budget Office found, S. 383 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

COST OF LEGISLATION

Section 403 of the Congressional Budget and Impoundment Control Act requires that a statement of the cost of the reported bill, prepared by the Congressional Budget Office, be included in the report. That statement follows:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 6, 2019.

Hon. JOHN BARRASSO,
Chairman, Committee on Environment and Public Works,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 383, the USE IT Act.

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

Sincerely,

KEITH HALL,
Director.

Enclosure.

At a Glance			
S. 383, USE IT Act			
As reported by the Senate Committee on Environment and Public Works on April 10, 2019			
Millions of Dollars	2019	2019-2024	2019-2029
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Deficit Effect	0	0	0
Spending Subject to Appropriation (Outlays)	0	72	n.e.
Pay-as-you-go procedures apply?	No	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2030?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No
n.e. = not estimated.			
The bill would			
<ul style="list-style-type: none"> • Authorize the appropriation of \$50 million for the Environmental Protection Agency (EPA) to provide grants and technical assistance to support research and development on commercializing the use of captured carbon dioxide (CO₂) • Authorize the appropriation of \$35 million for EPA to provide grants to support the capture of CO₂ directly from the air • Expedite federal review and permitting for infrastructure projects that capture, store, transport, or use CO₂ • Require several federal agencies to report on the programs' progress • Require the Council on Environmental Quality to establish two task forces to facilitate the expansion of CO₂ storage projects and infrastructure 			
Estimated budgetary effects would primarily stem from			
<ul style="list-style-type: none"> • Specified authorizations of appropriations • Additional administrative costs at federal agencies 			
Detailed estimate begins on the next page.			

Bill summary: S. 383 would authorize appropriations for the Environmental Protection Agency to support research and development on advanced technologies to capture carbon dioxide from the atmosphere for permanent storage or for use in commercial products or processes. Under the bill, infrastructure projects that capture or transport CO₂ would qualify for expedited review and permitting. Finally, the bill would require the Council on Environmental Quality (CEQ) to support the expansion of CO₂ storage projects and infrastructure by issuing new guidance and reports and establishing new task forces.

Estimated Federal cost: The estimated budgetary effect of S. 383 is shown in Table 1. The costs of the legislation fall within budget function 300 (natural resources and environment).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER S. 383

	By fiscal year, millions of dollars—						
	2019	2020	2021	2022	2023	2024	2019–2024
CO ₂ Utilization Research Program:							
Authorization	0	50	0	0	0	0	50
Estimated Outlays	0	1	1	12	12	12	38
CO ₂ Direct Air Capture Program and Advisory Board:							
Authorization	0	35	0	0	0	0	35
Estimated Outlays	0	1	1	6	9	9	26
Other Costs:							
Estimated Authorization	0	2	1	2	2	2	9
Estimated Outlays	0	1	1	2	2	2	8
Total Changes:							
Estimated Authorization	0	87	1	2	2	2	94
Estimated Outlays	0	3	3	20	23	23	72

CO₂ = carbon dioxide.

Basis of estimate: For this estimate, CBO assumes that S. 383 will be enacted during 2019 and that the authorized and estimated amounts will be appropriated for each fiscal year beginning in 2020.

CO₂ Utilization Research Program: S. 383 would authorize the appropriation of \$50 million for EPA to provide grants and technical assistance to support research and development on technologies for commercial use of captured CO₂. Using information from EPA, CBO estimates that implementing the program would cost about \$38 million over the 2020–2024 period and \$12 million after 2024. Of that amount, CBO estimates, about \$5 million would be required to cover the administrative costs of implementing the program and \$33 million would be provided as grants for projects to use CO₂. CBO expects that the first grants would be made in 2022.

CO₂ Direct Air Capture Program and Advisory Board: S. 383 would authorize the appropriation of \$35 million for EPA to provide competitive financial awards for creators of systems that can economically capture large quantities of CO₂ directly from the air. The bill also would direct EPA to establish a nine-member board to advise the agency on implementing that program.

Using information from EPA, CBO estimates that implementing the program would cost \$26 million over the 2020–2024 period and \$9 million after 2024. Of that amount, CBO estimates, \$4 million would be required to cover the costs of the board and program staff

and \$22 million would be awarded to projects. CBO expects that the first awards—ranging from \$1 million to \$2 million—would be made in 2022.

Other costs: In addition to the amounts specified above, CBO estimates that federal agencies would spend \$8 million over the 2019–2024 period to implement other requirements in the bill; such spending would be subject to appropriation of the necessary amounts.

Under S. 383, infrastructure projects that capture, store, transport, or use CO₂ would qualify for expedited federal review and permitting. Using information from EPA, CBO expects that those procedures, combined with financial assistance for projects authorized by the bill, would probably increase the number of permit applications for underground storage of CO₂. To meet the increase in demand, CBO estimates, EPA’s Office of Water would need to gradually hire five employees over the 2019–2024 period (at a cost of about \$150,000 a year for each employee). Those employees would review permits for underground CO₂ injection and to perform other duties related to protecting the quality of drinking water supplies—at a cost of \$3 million over the 2020–2024 period.

The bill also would require EPA to report every two years on the CO₂ capture technologies supported by the agency’s research programs. EPA also would be required to report on ways to reduce the risks associated with CO₂ storage in deep saline formations. Using information from the agency, CBO estimates that those reports would cost \$2 million over the next five years.

S. 383 also would require the Government Accountability Office to report on federal grant programs that support research on CO₂ capture and utilization technologies and identify areas of overlap or duplication. Based on the costs of similar reports, CBO estimates that the cost would be less than \$500,000.

Finally, the bill would require CEQ to establish two task forces to facilitate the expansion of CO₂ storage projects and infrastructure by streamlining regulatory approaches and providing technical assistance to states. Under the bill, CBO expects, each task force would consist of 10 members who would meet several times per year beginning in 2021; those task forces would disband after 2024. Using information from CEQ, CBO estimates that the agency would require three additional employees to provide administrative support to the task forces and to produce the guidance and biennial reports required by the bill. CBO estimates that those administrative costs and additional costs to operate the task force would total \$3 million over the 2019–2024 period.

Pay-As-You-Go considerations: None.

Increase in long-term deficits: None.

Mandates: None.

Estimate prepared by: Federal costs: Stephen Rabent; Mandates: Zachary Byrum.

Estimate reviewed by: Kim Cawley, Chief, Natural and Physical Resources Cost Estimating Unit; H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

CHANGES IN EXISTING LAW

In compliance with section 12 of rule XXVI of the Standing Rules of the Senate, 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:

* * * * *

CLEAN AIR ACT

* * * * *

TITLE I—AIR POLLUTION PREVENTION AND CONTROL

PART A—AIR QUALITY AND EMISSION LIMITATIONS

FINDINGS AND PURPOSES

SEC. 101. (a)* * *

* * * * *

RESEARCH, INVESTIGATION, TRAINING, AND OTHER ACTIVITIES

SEC. 103. (a)* * *

* * * * *

(c) **AIR POLLUTANT MONITORING, ANALYSIS, MODELING, AND INVENTORY RESEARCH.**—In carrying out subsection (a), the Administrator shall conduct a program of research, testing, and development of methods for sampling, measurement, monitoring, analysis, and modeling of air pollutants. Such program shall include the following elements:

(1)* * *

* * * * *

(3) Development of improved methods and technologies for sampling, measurement, monitoring, analysis, and modeling to increase understanding of the sources of ozone **[precursors]** *precursors*, ozone formation, ozone transport, regional influences on urban ozone, regional ozone trends, and interactions of ozone with other pollutants. Emphasis shall be placed on those techniques which—

* * * * *

(g) **POLLUTION PREVENTION AND EMISSIONS CONTROL.**—**[In carrying out]**

(1) **IN GENERAL.**—*In carrying out* subsection (a), the Administrator shall conduct a basic engineering research and technology program to develop, evaluate, and demonstrate non-regulatory strategies and technologies for air pollution prevention. **[Such strategies and technologies shall be developed]**

(2) **PARTICIPATION REQUIREMENT.**—*Such strategies and technologies described in paragraph (1) shall be developed* with priority on those pollutants which pose a significant risk to human health and the environment, and with opportunities for participation by industry, public interest groups, scientists, *States, institutions of higher education,* and other interested persons in the development of such strategies and technologies. **[Such program]**

(3) **PROGRAM INCLUSIONS.**—*The program under this subsection;*shall include the following elements:

【(1)】

(A) Improvements in nonregulatory strategies and technologies for preventing or reducing multiple air pollutants, including sulfur oxides, nitrogen oxides, heavy metals, PM-10 (particulate matter), carbon monoxide, and carbon dioxide, from stationary sources, including fossil fuel power plants. Such strategies and technologies shall include improvements in the relative cost effectiveness and long-range implications of various air pollutant reduction and nonregulatory control strategies such as energy conservation, including end-use efficiency, and fuel-switching to cleaner fuels. Such strategies and technologies shall be considered for existing and new facilities.

【(2)】

(B) Improvements in nonregulatory strategies and technologies for reducing air emissions from area sources.

【(3)】

(C) Improvements in nonregulatory strategies and technologies for preventing, detecting, and correcting accidental releases of hazardous air pollutants.

【(4)】

(D) Improvements in nonregulatory strategies and technologies that dispose of tires in ways that avoid adverse air quality impacts.

【Nothing】

(4) EFFECT OF SUBSECTION.—Nothing in this subsection shall be construed to authorize the imposition on any person of air pollution control requirements. 【The Administrator】

(5) COORDINATION AND AVOIDANCE OF DUPLICATION.—The Administrator shall consult with other appropriate Federal agencies to ensure coordination and to avoid duplication of activities authorized under this subsection.

(6) CERTAIN CARBON DIOXIDE ACTIVITIES.—

(A) IN GENERAL.—*In carrying out paragraph (3)(A) with respect to carbon dioxide, the Administrator shall carry out the activities described in each of subparagraphs (B), (C), (D), and (E).*

(B) DIRECT AIR CAPTURE RESEARCH.—

(i) DEFINITIONS.—*In this subparagraph:*

(I) BOARD.—*The term ‘Board’ means the Direct Air Capture Technology Advisory Board established by clause (iii)(I).*

(II) DILUTE.—*The term ‘dilute’ means a concentration of less than 1 percent by volume.*

(III) DIRECT AIR CAPTURE.—

(aa) IN GENERAL.—*The term ‘direct air capture’, with respect to a facility, technology, or system, means that the facility, technology, or system uses carbon capture equipment to capture carbon dioxide directly from the air.*

(bb) EXCLUSION.—*The term ‘direct air capture’ does not include any facility, technology, or system that captures carbon dioxide—*

(AA) *that is deliberately released from a naturally occurring subsurface spring; or*

(BB) using natural photosynthesis.

(IV) INTELLECTUAL PROPERTY.—The term ‘intellectual property’ means—

(aa) an invention that is patentable under title 35, United States Code; and

(bb) any patent on an invention described in item (aa).

(ii) TECHNOLOGY PRIZES.—

(I) IN GENERAL.—Not later than 1 year after the date of enactment of the USE IT Act, the Administrator, in consultation with the Secretary of Energy, shall establish a program to provide, and shall provide, financial awards on a competitive basis for direct air capture from media in which the concentration of carbon dioxide is dilute.

(II) DUTIES.—In carrying out this clause, the Administrator shall—

(aa) subject to subclause (III), develop specific requirements for—

(AA) the competition process; and

(BB) the demonstration of performance of approved projects;

(bb) offer financial awards for a project designed—

(AA) to the maximum extent practicable, to capture more than 10,000 tons of carbon dioxide per year; and

(BB) to operate in a manner that would be commercially viable in the foreseeable future (as determined by the Board); and

(cc) to the maximum extent practicable, make financial awards to geographically diverse projects, including at least—

(AA) 1 project in a coastal State; and

(BB) 1 project in a rural State.

(III) PUBLIC PARTICIPATION.—In carrying out subclause (II)(aa), the Administrator shall—

(aa) provide notice of and, for a period of not less than 60 days, an opportunity for public comment on, any draft or proposed version of the requirements described in subclause (II)(aa); and

(bb) take into account public comments received in developing the final version of those requirements.

(iii) DIRECT AIR CAPTURE TECHNOLOGY ADVISORY BOARD.—

(I) ESTABLISHMENT.—There is established an advisory board to be known as the ‘Direct Air Capture Technology Advisory Board’.

(II) COMPOSITION.—The Board shall be composed of 9 members appointed by the Administrator, who shall provide expertise in—

(aa) climate science;

(bb) physics;

(cc) chemistry;
 (dd) biology;
 (ee) engineering;
 (ff) economics;
 (gg) business management; and
 (hh) such other disciplines as the Administrator determines to be necessary to achieve the purposes of this subparagraph.

(III) TERM; VACANCIES.—

(aa) TERM.—A member of the Board shall serve for a term of 6 years.

(bb) VACANCIES.—A vacancy on the Board—
 (AA) shall not affect the powers of the Board; and

(BB) shall be filled in the same manner as the original appointment was made.

(IV) INITIAL MEETING.—Not later than 30 days after the date on which all members of the Board have been appointed, the Board shall hold the initial meeting of the Board.

(V) MEETINGS.—The Board shall meet at the call of the Chairperson or on the request of the Administrator.

(VI) QUORUM.—A majority of the members of the Board shall constitute a quorum, but a lesser number of members may hold hearings.

“(VII) CHAIRPERSON AND VICE CHAIRPERSON.—The Board shall select a Chairperson and Vice Chairperson from among the members of the Board.

(VIII) COMPENSATION.—Each member of the Board may be compensated at not to exceed the daily equivalent of the annual rate of basic pay in effect for a position at level V of the Executive Schedule under section 5316 of title 5, United States Code, for each day during which the member is engaged in the actual performance of the duties of the Board.

(IX) DUTIES.—The Board shall advise the Administrator on carrying out the duties of the Administrator under this subparagraph.

(X) FACAs.—The Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the Board.

(iv) INTELLECTUAL PROPERTY.—

(I) IN GENERAL.—As a condition of receiving a financial award under this subparagraph, an applicant shall agree to vest the intellectual property of the applicant derived from the technology in 1 or more entities that are incorporated in the United States.

(II) RESERVATION OF LICENSE.—The United States—

(aa) may reserve a nonexclusive, non-transferable, irrevocable, paid-up license, to have practiced for or on behalf of the United

States, in connection with any intellectual property described in subclause (I); but

(bb) shall not, in the exercise of a license reserved under item (aa), publicly disclose proprietary information relating to the license.

(III) TRANSFER OF TITLE.—Title to any intellectual property described in subclause (I) shall not be transferred or passed, except to an entity that is incorporated in the United States, until the expiration of the first patent obtained in connection with the intellectual property.

(v) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subparagraph \$35,000,000, to remain available until expended.

(vi) TERMINATION OF AUTHORITY.—The Board and all authority provided under this subparagraph shall terminate not later than 10 years after the date of enactment of the USE IT Act.

(C) CARBON DIOXIDE UTILIZATION RESEARCH.—

(i) DEFINITION OF CARBON DIOXIDE UTILIZATION.—In this subparagraph, the term ‘carbon dioxide utilization’ refers to technologies or approaches that lead to the use of carbon dioxide—

(I) through the fixation of carbon dioxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria;

(II) through the chemical conversion of carbon dioxide to a material or chemical compound in which the carbon dioxide is securely stored; or

(III) through the use of carbon dioxide for any other purpose for which a commercial market exists, as determined by the Administrator.

(ii) PROGRAM.—The Administrator, in consultation with the Secretary of Energy, shall carry out a research and development program for carbon dioxide utilization to promote existing and new technologies that transform carbon dioxide generated by industrial processes into a product of commercial value, or as an input to products of commercial value.

(iii) TECHNICAL AND FINANCIAL ASSISTANCE.—Not later than 2 years after the date of enactment of the USE IT Act, in carrying out this subsection, the Administrator, in consultation with the Secretary of Energy, shall support research and infrastructure activities relating to carbon dioxide utilization by providing technical assistance and financial assistance in accordance with clause (iv).

(iv) ELIGIBILITY.—To be eligible to receive technical assistance and financial assistance under clause (iii), a carbon dioxide utilization project shall—

(I) have access to an emissions stream generated by a stationary source within the United States that is capable of supplying not less than 250 metric tons per day of carbon dioxide for research;

(II) have access to adequate space for a laboratory and equipment for testing small-scale carbon dioxide utilization technologies, with onsite access to larger test bays for scale-up; and

(III) have existing partnerships with institutions of higher education, private companies, States, or other government entities.

(v) COORDINATION.—In supporting carbon dioxide utilization projects under this paragraph, the Administrator shall consult with the Secretary of Energy, and, as appropriate, with the head of any other relevant Federal agency, States, the private sector, and institutions of higher education to develop methods and technologies to account for the carbon dioxide emissions avoided by the carbon dioxide utilization projects.

(vi) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subparagraph \$50,000,000, to remain available until expended.

(D) DEEP SALINE FORMATION REPORT.—

(i) DEFINITION OF DEEP SALINE FORMATION.—

(I) IN GENERAL.—In this subparagraph, the term ‘deep saline formation’ means a formation of subsurface geographically extensive sedimentary rock layers saturated with waters or brines that have a high total dissolved solids content and that are below the depth where carbon dioxide can exist in the formation as a supercritical fluid.

(II) CLARIFICATION.—In this subparagraph, the term ‘deep saline formation’ does not include oil and gas reservoirs.

(ii) REPORT.—In consultation with the Secretary of Energy, and, as appropriate, with the head of any other relevant Federal agency and relevant stakeholders, not later than 1 year after the date of enactment of the USE IT Act, the Administrator shall prepare, submit to Congress, and make publicly available a report that includes—

(I) a comprehensive identification of potential risks and benefits to project developers associated with increased storage of carbon dioxide captured from stationary sources in deep saline formations, using existing research;

(II) recommendations for managing the potential risks identified under subclause (I), including potential risks unique to public land; and

(III) recommendations for Federal legislation or other policy changes to mitigate any potential risks identified under subclause (I).

(E) REPORT ON CARBON DIOXIDE NONREGULATORY STRATEGIES AND TECHNOLOGIES.—

(i) IN GENERAL.—Not less frequently than once every 2 years, the Administrator shall submit to the Committee on Environment and Public Works of the Senate

and the Committee on Energy and Commerce of the House of Representatives a report that describes—

(I) the recipients of assistance under subparagraphs (B) and (C); and

(II) a plan for supporting additional nonregulatory strategies and technologies that could significantly prevent carbon dioxide emissions or reduce carbon dioxide levels in the air, in conjunction with other Federal agencies.

(ii) INCLUSIONS.—The plan submitted under clause (i) shall include—

(I) a methodology for evaluating and ranking technologies based on the ability of the technologies to cost effectively reduce carbon dioxide emissions or carbon dioxide levels in the air; and

(II) a description of any nonair-related environmental or energy considerations regarding the technologies.

(F) GAO REPORT.—The Comptroller General of the United States shall submit to Congress a report that—

(i) identifies all Federal grant programs in which a purpose of a grant under the program is to perform research on carbon capture and utilization technologies, including direct air capture technologies; and

(ii) examines the extent to which the Federal grant programs identified pursuant to clause (i) overlap or are duplicative.

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Fixing America’s Surface Transportation Act

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SEC. 1001. [23 U.S.C. 101 note] DEFINITIONS.

In this division, the following definitions apply:

(1) DEPARTMENT.—* * *

* * * * *

SEC. 41001. [42 U.S.C. 4370m note] DEFINITIONS.

In this title:

(1) AGENCY.—* * *

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(6) COVERED PROJECT.—

(A) IN GENERAL.—The term “covered project” means any activity in the United States that requires authorization or environmental review by a Federal agency involving construction of infrastructure for renewable or conventional energy production, electricity transmission, surface transportation, aviation, ports and waterways, water resource projects, broadband, pipelines, manufacturing, carbon capture, or any other sector as determined by a majority vote of the Council that—

(i)(I) is subject to NEPA;

(II) is likely to require a total investment of more than \$200,000,000; and

(III) does not qualify for abbreviated authorization or environmental review processes under any applicable law; **[or]**

(ii) is covered by a programmatic plan or environmental review developed for the primary purpose of facilitating development of carbon dioxide pipelines; or

* * * * *

[(ii)] *(iii) is subject to NEPA and the size and complexity of which, in the opinion of the Council, make the project likely to benefit from enhanced oversight and coordination, including a project likely to require—*

* * * * *

(B) EXCLUSION.—The term “covered project” does not include—

*(i) * * **

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(C) INCLUSION.—*For purposes of subparagraph (A), construction of infrastructure for carbon capture includes construction of—*

(i) any facility, technology, or system that captures, utilizes, or sequesters carbon dioxide emissions, including projects for direct air capture (as defined in paragraph (6)(B)(i) of section 103(g) of the Clean Air Act (42 U.S.C. 7403(g)); and

(ii) carbon dioxide pipelines.

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