

ABANDONED WELL REMEDIATION RESEARCH AND
DEVELOPMENT ACT

SEPTEMBER 22, 2023.—Committed to the Committee of the Whole House on the
State of the Union and ordered to be printed

Mr. LUCAS, from the Committee on Science, Space, and Technology,
submitted the following

R E P O R T

[To accompany H.R. 4877]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 4877) to amend the Energy Policy Act of 2005 to direct the Secretary of Energy to carry out a research, development, and demonstration program with respect to abandoned wells, and for other purposes, having considered the same, reports favorably thereon with an amendment and recommends that the bill as amended do pass.

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The amendment is as follows:

Strike out all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the “Abandoned Well Remediation Research and Development Act”.

SEC. 2. AMENDMENT TO THE ENERGY POLICY ACT OF 2005.

(a) IN GENERAL.—The Energy Policy Act of 2005 is amended—

(1) by adding at the end of subtitle F of title IX (42 U.S.C. 16291 et seq.) the following new section:

“SEC. 969E. ABANDONED WELLS RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

“(a) ESTABLISHMENT.—Not later than 120 days after the date of the enactment of this section, the Secretary of Energy shall, in coordination with relevant Federal and state agencies and entities, establish a research, development, and demonstration program to improve—

“(1) data collection on the location of abandoned wells;

“(2) the plugging, remediation, reclamation, and repurposing of abandoned wells; and

“(3) strategies to mitigate potential environmental impacts of documented and undocumented abandoned wells.

“(b) ACTIVITIES.—The research, development, and demonstration under subsection (a) shall include activities to improve—

“(1) remote sensor capabilities, LiDAR capabilities, optical gas imaging, magnetic survey technology, and any other technologies relevant to the efficient identification of abandoned wells;

“(2) understanding of how certain parameters of abandoned wells affect methane emission rates of such wells, including parameters such as well age, well depth, geology, construction, case material, and geographic region;

“(3) the efficiency and cost-efficacy of processes for plugging, remediating, reclaiming, and repurposing abandoned wells, including—

“(A) improvement of processes and technologies for the unique challenges associated with plugging remote abandoned wells;

“(B) use of low carbon, lightweight cement or use of alternative materials and additives for plugging purposes; and

“(C) repurposing of abandoned wells for alternative uses, including geothermal power production or carbon capture, utilization, and storage; and

“(4) understanding of the impacts of abandoned wells on groundwater quality and contamination.

“(c) COORDINATION.—In carrying out the program established under subsection (a), the Secretary shall ensure coordination of these activities with State and local governments, institutions of higher education, the Department of Energy National Laboratories, the private sector, and impacted communities, including landowners within such communities.

“(d) ABANDONED WELL DEFINED.—In this section, the term ‘abandoned well’ means a well originally drilled in connection with oil and gas operations that is not being used, has not been plugged, and has no anticipated use in oil and gas operations.

“(e) FUNDING.—There is authorized to be appropriated to the Secretary to carry out this section amounts authorized pursuant to section 10771 of subtitle O of title VI of the Research and Development, Competition, and Innovation Act (enacted as division B of Public Law 117–167), as follows:

“(1) For fiscal year 2024, \$30,000,000.

“(2) For fiscal year 2025, \$31,250,000.

“(3) For fiscal year 2026, \$32,500,000.

“(4) For fiscal year 2027, \$33,750,000.

“(5) For fiscal year 2028, \$35,000,000.

“(f) SUNSET.—This section shall terminate five years after the date of the enactment of this section.”; and

(2) in the table of contents in section 1(b) (42 U.S.C. 15801 note), by inserting after the matter relating to section 969D the following new item:

“Sec. 969E. Abandoned wells research, development, and demonstration program.”.

(b) CONFORMING AMENDMENT.—Paragraph (6) of section 10771 of subtitle O of title VI of the Research and Development, Competition, and Innovation Act (enacted as division B of Public Law 117–167) is amended—

(1) in the matter preceding subparagraph (A), by striking “2026” and inserting “2028”;

(2) in subparagraph (A), by striking “\$600,000,000” and inserting “\$507,500,000”;

(3) in subparagraph (B), by striking “and” after the semicolon;

- (4) in subparagraph (C)—
 (A) by striking “\$1,000,000,000” and inserting “\$930,000,000”; and
 (B) by striking the period and inserting “; and”; and
 (5) by adding at the end the following new subparagraph:
 “(D) \$162,500,000 to carry out abandoned wells research, development,
 and demonstration activities under section 969E of the Energy Policy Act
 of 2005, in accordance with such section.”.

PURPOSE AND SUMMARY

The purpose of this bill is to amend the Energy Policy Act of 2005 to direct the Secretary of Energy to carry out a research, development, and demonstration program at the Department of Energy (DOE) to support and accelerate the remediation of abandoned or orphaned oil and gas wells.

H.R. 4877 was introduced by Representative Summer Lee (D-PA), with Representative Stephanie Bice (R-OK) as the original cosponsor. Additional cosponsors include Representative Deborah Ross (D-NC) and Representative Haley Stevens (D-MI).

BACKGROUND AND NEED FOR LEGISLATION

Abandoned oil and gas wells are a growing problem for the U.S. and its clean energy economy. Some unplugged wells date back as early as the 1850s and continually emit methane and cause environmental damage. It is unclear how many abandoned wells there are in the country with estimates ranging from 700,000 to 3,000,000. The current plugging and remediation process is challenging due to factors such as difficulty locating wells, minimal understanding of methane emission rates, and cost barriers. There is a need for federal investment to address these challenges, and the Department of Energy is well equipped to carry out this research utilizing the Fossil Energy and Carbon Management Office and through the national lab network. Improving the plugging and remediation process for abandoned wells could reduce the costs of plugging these wells—which currently range between \$30,000 to \$1,000,000 per well, improve the efficiency of remediation, mitigate environmental harms, and reduce methane emissions. This includes improving the process for plugging remote wells, developing a greater understanding of what causes “super emitters”, researching use of low carbon cement for plugging, and repurposing abandoned wells for geothermal power production and carbon capture, utilization, and storage. The program will also improve technology to pinpoint and map the location of wells, as an understanding of location and number of abandoned wells in the country would be essential to developing a broad plugging program.

LEGISLATIVE HISTORY

On July 25, 2023, Representative Summer Lee (D-PA), introduced H.R. 4877 with Representative Stephanie Bice (R-OK) as the original cosponsor.

On July 27, 2023, the Committee on Science, Space, and Technology met to consider H.R. 4877. Representatives McClellan (VA) and Sykes (OH) proposed an amendment which sought to add “impacted communities, state and local governments, and landowners” to the list of stakeholders for consultation. The amendment passed via voice vote.

Chairman Lucas moved that Committee favorably report the bill, H.R. 4877, as amended, to the House of Representatives with the recommendation that the bill be approved. The motion was agreed to by a vote of 35–0.

SECTION-BY-SECTION

Section 1. Short title

This section establishes that this legislation may be referred to as the “Abandoned Well Remediation Research and Development Act”.

Section 2. Amendment to the Energy Policy Act of 2005

This section authorizes a DOE research, development, and demonstration program to improve data collection on the location of abandoned wells, the plugging, remediation, reclamation, and repurposing of abandoned wells, and strategies to mitigate potential environmental impacts of abandoned wells. It authorizes research, development, and demonstration activities to improve relevant technologies to the efficient identification of abandoned wells. This section also authorizes activities to improve understanding of how certain parameters of abandoned wells affect methane emission rates of such wells. It authorizes activities to address the efficiency and cost-efficacy of processes for plugging, remediating, reclaiming, and repurposing abandoned wells. Finally, the program authorizes activities to improve understanding of the impacts of abandoned wells on groundwater quality and contamination. It authorizes \$30 million for this program in fiscal year (FY) 2024, rising to \$35 million in FY28 and includes a full offset of this authorization through a reduction in spending for relevant activities authorized in Subtitle O of title VI of the Research and Development, Competition, and Innovation Act.

RELATED COMMITTEE HEARINGS

On July 26, 2023, Chairman Frank Lucas presiding, the House Committee on Science, Space, and Technology held a hearing titled, “Unearthing Innovation: The Future of Subsurface Science and Technology in the United States,” to explore the status of U.S. subsurface science and technology research including in the areas of fundamental scientific discovery, clean energy production and storage, waste management strategies, and next generation mining technologies. This hearing specifically examined research and development activities carried out or supported by the U.S. Department of Energy (DOE).

Witnesses

- Dr. Alexandra Hakala, Senior Fellow, Geologic and Environmental Systems, National Energy Technology Laboratory, U.S. Department of Energy
- Mr. Ben Serrurier, Government Affairs and Policy Manager, Fervo Energy
- Dr. Kevin M. Rosso, Associate Director, Physical Sciences Division, Pacific Northwest National Laboratory
- Dr. Haruko Murakami Wainwright, Norman C. Rasmussen Career Development Professor, Assistant Professor of Nuclear Science and Engineering, and Assistant Professor of

Civil and Environmental Engineering, Massachusetts Institute of Technology

- Ms. Allyson Book, Chief Sustainability Officer, Baker Hughes

COMMITTEE CONSIDERATION

On July 27, 2023, the Committee met in open session and ordered reported favorably the bill, H.R. 4877, as amended, by a recorded vote of 35 yeas to 0 nays, a quorum being present.

ROLL CALL VOTES

Clause 3(b) of rule XIII requires the Committee to list the record votes on the motion to report legislation and amendments thereto. The following reflects the record votes taken during the Committee consideration:

House Committee on Science, Space, and Technology
 118th Congress
 Full Committee Markup

Bill # HR 4877

Motion to report HR 4877 to the House, as amended

Majority	Aye	No	Present
Frank Lucas, Oklahoma	1		
Bill Posey, Florida	1		
Randy Weber, Texas	1		
Brian Babin, Texas	1		
Jim Baird, Indiana	1		
Daniel Webster, Florida			
Mike Garcia, California	1		
Stephanie Bice, Oklahoma			
Jay Obernolte, California	1		
Chuck Fleischmann, Tennessee	1		
Darrell Issa, California	1		
Rick Crawford, Arkansas	1		
Claudia Tenney, New York	1		
Ryan Zinke, Montana			
Scott Franklin, Florida	1		
Dale Strong, Alabama	1		
Max Miller, Ohio	1		
Rich McCormick, Georgia	1		
Mike Collins, Georgia	1		
Brandon Williams, New York			
Tom Kean, New Jersey	1		
Minority	Aye	No	Present
Zoe Lofgren, California	1		
Suzanne Bonamici, Oregon	1		
Haley Stevens, Michigan	1		
Jamaal Bowman, New York	1		
Deborah Ross, New Carolina	1		
Eric Sorensen, Illinois	1		
Andrea Salinas, Oregon	1		
Val Foushee, North Carolina	1		
Kevin Mullin, California	1		
Jeff Jackson, North Carolina	1		
Emilia Sykes, Ohio	1		
Maxwell Frost, Florida	1		
Yadira Caraveo, Colorado	1		
Summer Lee, Pennsylvania	1		
Jennifer McClellan, Virginia	1		
Ted Lieu, California	1		
Sean Casten, Illinois	1		
Paul Tonko	1		
Total	35	0	

Date: 7/27/23

Result?	Agreed To: [X]		
	Not Agreed To: []		
	Withdrawn: []		
<i>Voice Vote</i>	<i>Ayes</i>	<i>Nays</i>	<i>Present</i>
	35	0	

APPLICATION OF LAW TO THE LEGISLATIVE BRANCH

The Committee finds that H.R. 4877 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

STATEMENT OF OVERSIGHT FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

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

STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

Pursuant to clause (3)(c)(4) of rule XIII, the goal of H.R. 4877 is to amend the Energy Policy Act of 2005 to direct the Secretary of Energy to carry out a research, development, and demonstration program at the Department of Energy (DOE) to support and accelerate the remediation of abandoned or orphaned oil and gas wells.

DUPLICATION OF FEDERAL PROGRAMS

Pursuant to clause 3(c)(5) of rule XIII, the Committee finds that no provision of H.R. 4877 establishes or reauthorizes a program of the Federal Government known to be duplicative of another Federal program, including any program that was included in a report to Congress pursuant to section 21 of Public Law 111–139 or identified in the most recent Catalog of Federal Domestic Assistance.

FEDERAL ADVISORY COMMITTEE ACT

The Committee finds that the legislation does not establish or authorize the establishment of an advisory committee within the definition of section 5(b) of the Federal Advisory Committee Act.

UNFUNDED MANDATE STATEMENT

The Committee adopts as its own the estimate of Federal mandates prepared by the Director of the Congressional Budget Office pursuant to section 423 of the Unfunded Mandates Reform Act.

EARMARK IDENTIFICATION

Pursuant to clauses 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 4877 does not include any congressional earmarks, limited tax benefits, or limited tariff benefits.

COMMITTEE COST ESTIMATE

Pursuant to clause 3(d)(1) of rule XIII, the Committee adopts as its own the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974. At the time this report was filed, the estimate was not available.

NEW BUDGET AUTHORITY, ENTITLEMENT AUTHORITY, AND TAX
EXPENDITURES

Pursuant to clause 3(c)(2) of rule XIII, the Committee finds that H.R. 4877 would result in no new or increased budget authority, entitlement authority, or tax expenditures or revenues.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

Pursuant to clause 3(c)(3) of rule XIII, at the time this report was filed, the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974 was not available.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

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

ENERGY POLICY ACT OF 2005

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This Act may be cited as the “Energy Policy Act of 2005”.

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

Sec. 1. Short title; table of contents.

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TITLE IX—RESEARCH AND DEVELOPMENT

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Subtitle F—Fossil Energy

Sec. 961. Fossil energy.

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Sec. 969E. Abandoned wells research, development, and demonstration program.

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**TITLE IX—RESEARCH AND
DEVELOPMENT**

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Subtitle F—Fossil Energy

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SEC. 969E. ABANDONED WELLS RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

(a) **ESTABLISHMENT.**—*Not later than 120 days after the date of the enactment of this section, the Secretary of Energy shall, in coordination with relevant Federal and state agencies and entities, es-*

establish a research, development, and demonstration program to improve—

- (1) data collection on the location of abandoned wells;
- (2) the plugging, remediation, reclamation, and repurposing of abandoned wells; and
- (3) strategies to mitigate potential environmental impacts of documented and undocumented abandoned wells.

(b) **ACTIVITIES.**—The research, development, and demonstration under subsection (a) shall include activities to improve—

(1) remote sensor capabilities, LiDAR capabilities, optical gas imaging, magnetic survey technology, and any other technologies relevant to the efficient identification of abandoned wells;

(2) understanding of how certain parameters of abandoned wells affect methane emission rates of such wells, including parameters such as well age, well depth, geology, construction, case material, and geographic region;

(3) the efficiency and cost-efficacy of processes for plugging, remediating, reclaiming, and repurposing abandoned wells, including—

(A) improvement of processes and technologies for the unique challenges associated with plugging remote abandoned wells;

(B) use of low carbon, lightweight cement or use of alternative materials and additives for plugging purposes; and

(C) repurposing of abandoned wells for alternative uses, including geothermal power production or carbon capture, utilization, and storage; and

(4) understanding of the impacts of abandoned wells on groundwater quality and contamination.

(c) **COORDINATION.**—In carrying out the program established under subsection (a), the Secretary shall ensure coordination of these activities with State and local governments, institutions of higher education, the Department of Energy National Laboratories, the private sector, and impacted communities, including landowners within such communities.

(d) **ABANDONED WELL DEFINED.**—In this section, the term “abandoned well” means a well originally drilled in connection with oil and gas operations that is not being used, has not been plugged, and has no anticipated use in oil and gas operations.

(e) **FUNDING.**—There is authorized to be appropriated to the Secretary to carry out this section amounts authorized pursuant to section 10771 of subtitle O of title VI of the Research and Development, Competition, and Innovation Act (enacted as division B of Public Law 117–167), as follows:

(1) For fiscal year 2024, \$30,000,000.

(2) For fiscal year 2025, \$31,250,000.

(3) For fiscal year 2026, \$32,500,000.

(4) For fiscal year 2027, \$33,750,000.

(5) For fiscal year 2028, \$35,000,000.

(f) **SUNSET.**—This section shall terminate five years after the date of the enactment of this section.

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RESEARCH AND DEVELOPMENT, COMPETITION, AND INNOVATION ACT

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DIVISION B—RESEARCH AND INNOVATION

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TITLE VI—MISCELLANEOUS SCIENCE AND TECHNOLOGY PROVISIONS

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Subtitle O—Department of Energy Research, Development, and Demonstration Activities

SEC. 10771. DEPARTMENT OF ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION ACTIVITIES.

For the purpose of carrying out research, development, and demonstration activities and addressing energy-related supply chain activities in the key technology focus areas (as described in section 10387), there are authorized to be appropriated the following amounts:

(1) OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY.—In addition to amounts otherwise authorized to be appropriated or made available, there are authorized to be appropriated to the Secretary of Energy (referred to in this section as the “Secretary”), acting through the Office of Energy Efficiency and Renewable Energy, for the period of fiscal years 2023 through 2026—

(A) \$1,200,000,000 to carry out building technologies research, development, and demonstration activities;

(B) \$1,200,000,000 to carry out sustainable transportation research, development, and demonstration activities;

(C) \$1,000,000,000 to carry out advanced manufacturing research, development, and demonstration activities, excluding activities carried out pursuant to subparagraph (D);

(D) \$1,000,000,000 to carry out section 454 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17113);

(E) \$600,000,000 to carry out advanced materials research, development, and demonstration activities, including relating to upcycling, recycling, and biobased materials; and

(F) \$800,000,000 to carry out renewable power research, development, and demonstration activities.

(2) OFFICE OF ELECTRICITY.—In addition to amounts otherwise authorized to be appropriated or made available, there is authorized to be appropriated to the Secretary, acting through

the Office of Electricity, for the period of fiscal years 2023 through 2026, \$1,000,000,000 to carry out electric grid modernization and security research, development, and demonstration activities.

(3) OFFICE OF CYBERSECURITY, ENERGY SECURITY, AND EMERGENCY RESPONSE.—In addition to amounts otherwise authorized to be appropriated or made available, there is authorized to be appropriated to the Secretary, acting through the Office of Cybersecurity, Energy Security, and Emergency Response, for the period of fiscal years 2023 through 2026, \$800,000,000 to carry out cybersecurity and energy system physical security research, development, and demonstration activities.

(4) OFFICE OF NUCLEAR ENERGY.—In addition to amounts otherwise authorized to be appropriated or made available, there is authorized to be appropriated to the Secretary, acting through the Office of Nuclear Energy, for the period of fiscal years 2023 through 2026, \$400,000,000 to carry out advanced materials research, development, and demonstration activities.

(5) OFFICE OF ENVIRONMENTAL MANAGEMENT.—In addition to amounts otherwise authorized to be appropriated or made available, there is authorized to be appropriated to the Secretary, acting through the Office of Environmental Management, for the period of fiscal years 2023 through 2026, \$200,000,000 to carry out research, development, and demonstration activities, including relating to artificial intelligence and information technology.

(6) OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT.—In addition to amounts otherwise authorized to be appropriated or made available, there are authorized to be appropriated to the Secretary, acting through the Office of Fossil Energy and Carbon Management, for the period of fiscal years 2023 through ~~2026~~ 2028—

(A) ~~[\$600,000,000]~~ *\$507,500,000* to carry out clean industrial technologies research, development, and demonstration activities pursuant to section 454 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17113);

(B) \$200,000,000 to carry out alternative fuels research, development, and demonstration activities; ~~and~~

(C) ~~[\$1,000,000,000]~~ *\$930,000,000* to carry out carbon removal research, development, and demonstration activities~~].~~; *and*

(D) *\$162,500,000 to carry out abandoned wells research, development, and demonstration activities under section 969E of the Energy Policy Act of 2005, in accordance with such section.*

(7) ADVANCED RESEARCH PROJECTS AGENCY—ENERGY.—In addition to amounts otherwise authorized to be appropriated or made available, there is authorized to be appropriated to the Secretary, acting through the Director of the Advanced Research Projects Agency—Energy established under section 5012 of the America COMPETES Act (42 U.S.C. 16538), for the period of fiscal years 2023 through 2026, \$1,200,852,898 to

carry out activities of the Advanced Research Projects Agency—Energy.

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