

ABANDONED WELL REMEDIATION RESEARCH AND  
DEVELOPMENT ACT

OCTOBER 7, 2022.—Committed to the Committee of the Whole House on the State  
of the Union and ordered to be printed

Ms. JOHNSON of Texas, from the Committee on Science, Space, and  
Technology, submitted the following

R E P O R T

together with

MINORITY VIEWS

[To accompany H.R. 4270]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 4270) 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.

CONTENTS

	Page
I. Amendment .....	3
II. Purpose of the Bill .....	3
III. Background and Need for the Legislation .....	3
IV. Committee Hearings .....	3
V. Committee Consideration and Votes .....	4
VI. Summary of Major Provisions of the Bill .....	4
VII. Section-By-Section Analysis (By Title and Section) .....	4
VIII. Committee Views .....	5
IX. Cost Estimate .....	5
X. Congressional Budget Office Cost Estimate .....	5
XI. Compliance with Public Law 104-4 (Unfunded Mandates) .....	6
XII. Committee Oversight Findings and Recommendations .....	6
XIII. Statement on General Performance Goals and Objectives .....	6
XIV. Federal Advisory Committee Statement .....	6

XV. Duplication of Federal Programs .....	7
XVI. Earmark Identification .....	7
XVII. Applicability to the Legislative Branch .....	7
XVIII. Statement on Preemption of State, Local, or Tribal Law .....	7
XIX. Changes in Existing Law Made by the Bill, As Reported .....	7
XX. Minority Views .....	10
XXI. Proceedings of Full Committee Markup .....	11

The amendment is as follows:

Strike 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.**

The Energy Policy Act of 2005 is amended—

(1) in subtitle F of title IX (42 U.S.C. 16291 et seq.), by inserting after section 969D the following:

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

“(a) ESTABLISHMENT.—Not later than 120 days after the date of enactment of the Abandoned Well Remediation Research and Development Act, 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 in (a), the Secretary shall ensure coordination of these activities with institutions of higher education, the Department of Energy National Laboratories, and the private sector.

“(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) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for purposes of this section—

“(1) \$30,000,000 for fiscal year 2022;

“(2) \$31,250,000 for fiscal year 2023;

“(3) \$32,500,000 for fiscal year 2024;

“(4) \$33,750,000 for fiscal year 2025; and

“(5) \$35,000,000 for fiscal year 2026.”; and

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

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

## II. PURPOSE OF THE BILL

The purpose of the bill is to amend the Energy Act of 2005 to create an abandoned wells research, development, and demonstration program at the Department of Energy (DOE) with respect to abandoned wells, and for other purposes. H.R. 4270 is sponsored by Mr. Lamb and co-sponsored by Chairwoman Johnson, Ranking Member Lucas, and Mrs. Bice.

## III. BACKGROUND AND NEED FOR THE LEGISLATION

Abandoned oil and gas wells are a growing problem in the U.S. as we transition to a 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.

## IV. COMMITTEE HEARINGS

Pursuant to clause 3(c)(6) of rule XIII of the Rules of the House of Representatives, the Committee designates the following hearings as having been used to develop or consider the legislation:

On May 27th, 2021, the Full Committee held a hearing titled “*Overview of the Science and Energy Research Enterprise of the U.S. Department of Energy*,” that examined the research, development, demonstration, and commercialization programs and activities carried out by DOE. This included a discussion on how DOE can best address abandoned oil and gas wells through Research and Development to locate abandoned wells, improve the plugging and remediation process, mitigate environmental harms, and reduce methane emissions.

The following witness testified:

- The Honorable Jennifer Granholm, Secretary of Energy, U.S. Department of Energy.

## V. COMMITTEE CONSIDERATION AND VOTES

The Committee on Science, Space, and Technology met to consider H.R. 4270 on January 19, 2022.

Mr. Weber offered an amendment to clarify the focus of research and development on strategies to mitigate potential environmental impacts of abandoned wells. *The amendment was agreed to by a voice vote.*

Mr. McNerney offered an amendment to improve the understanding of how abandoned wells impact groundwater quality and contamination as an authorized activity. *The amendment was agreed to by a voice vote.*

Mr. Perlmutter offered an amendment to expand relevant stakeholders in the abandoned well program to specifically include universities, national labs, and the private sector. *The amendment was agreed to by a voice vote.*

Chairwoman Johnson moved that the Committee favorably report the bill, H.R. 4270, as amended, to the House of Representatives with the recommendation that the bill be approved. *The motion was agreed to by a voice vote.*

## VI. SUMMARY OF MAJOR PROVISIONS OF THE BILL

The Abandoned Well Remediation Research and Development Act directs the Secretary of Energy to establish a program of research, development, and demonstration of technologies, methods, and mitigation strategies to support and accelerate the remediation of abandoned wells. This is in order to reduce emissions, mitigate environmental harms, and assist the mapping of abandoned wells.

## VII. SECTION-BY-SECTION ANALYSIS (BY TITLE AND SECTION)

### *Sec. 1. Short title*

Abandoned Well Remediation Research and Development Act.

### *Sec. 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 the appropriation of \$30 million for this program in FY22, rising to \$35 million in FY26.

## VIII. COMMITTEE VIEWS

It is the view of the Committee that in carrying out the directive laid out in the bill to improve understanding of how certain parameters of abandoned wells affect methane emission rates of such wells, that special attention is paid to super emitters, or wells that emit much more methane than other similar wells. A deeper understanding of what causes super emitters would help limit methane emissions, as super emitters account for a high percentage of abandoned well emissions.

## IX. COST ESTIMATE

Pursuant to clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, the Committee adopts as its own the estimate of new budget authority, entitlement authority, or tax expenditures or revenues contained in the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

## X. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,  
CONGRESSIONAL BUDGET OFFICE,  
*Washington, DC, May 5, 2022.*

Hon. EDDIE BERNICE JOHNSON,  
*Chairwoman, Committee on Science, Space, and Technology,  
House of Representatives, Washington, DC.*

DEAR MADAM CHAIRWOMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 4270, the Abandoned Well Remediation Research and Development Act.

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

Sincerely,

PHILLIP L. SWAGEL,  
*Director.*

Enclosure.

<b>H.R. 4270, Abandoned Well Remediation Research and Development Act</b>			
As ordered reported by the House Committee on Science, Space, and Technology on January 19, 2022			
By Fiscal Year, Millions of Dollars	2022	2022-2026	2022-2031
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	0	69	133
Statutory pay-as-you-go procedures apply?	No	<b>Mandate Effects</b>	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

H.R. 4270 would authorize the appropriation of specific amounts each year from 2022 through 2026, totaling \$163 million, for the Department of Energy (DOE), in coordination with other federal and state agencies, to establish an abandoned oil and gas well research and demonstration program. Under the program, DOE would focus on developing technologies and strategies to improve abandoned well identification, increase the efficiency of abandoned well plugging and repurposing, and mitigate the effects of abandoned wells on the environment.

For this estimate, CBO assumes that the bill will be enacted near the end of fiscal year 2022 and that the specified amounts will be appropriated each year. However, the Infrastructure Investment and Jobs Act (Public Law 117–58) appropriated \$30 million to DOE for similar activities in 2022—an amount equal to what H.R. 4270 would authorize for that same year. Accordingly, CBO’s estimate of the budgetary effects of the bill reflects authorizations totaling \$133 million over the 2022–2026 period—the difference between the amounts specified in the bill and the amounts provided under current law.

Based on historical spending patterns for similar programs, CBO estimates that implementing H.R. 4270 would cost \$69 million over the 2022–2026 period and \$64 million after 2026.

The costs of the legislation, detailed in Table 1, largely fall within budget function 270 (energy).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER H.R. 4270

	By fiscal year, millions of dollars—											
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022–2026	2022–2031
Authorization <sup>a</sup> .....	0	31	33	34	35	0	0	0	0	0	133	133
Estimated Outlays .....	0	5	14	22	28	26	19	11	6	2	69	133

<sup>a</sup>H.R. 4270 would authorize the appropriation of \$30 million in 2022 for the Department of Energy to conduct the activities required under the bill. However, the Infrastructure Investment and Jobs Act (Public Law 117–58) appropriated that amount in 2022 for similar activities. As a result, CBO estimates that H.R. 4270 would not affect spending subject to appropriation in 2022.

The CBO staff contact for this estimate is Aaron Krupkin. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

#### XI. COMPLIANCE WITH PUBLIC LAW 104–4 (UNFUNDED MANDATES)

H.R. 4270 contains no unfunded mandates.

#### XII. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

The Committee’s oversight findings and recommendations are reflected in the body of this report.

#### XIII. STATEMENT ON GENERAL PERFORMANCE GOALS AND OBJECTIVES

Pursuant to clause (3)(c) of rule XIII of the Rules of the House of Representatives, the goals of H.R. 4270 are to accelerate the remediation of abandoned wells.

#### XIV. FEDERAL ADVISORY COMMITTEE STATEMENT

No Federal Advisory Committees are created by H.R. 4270.

## XV. DUPLICATION OF FEDERAL PROGRAMS

Pursuant to clause 3(c)(5) of rule XIII of the Rules of the House of Representatives, the Committee finds that no provision of H.R. 4270 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 the most recent Catalog of Federal Domestic Assistance.

## XVI. EARMARK IDENTIFICATION

Pursuant to clauses 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 4270 contains no earmarks, limited tax benefits, or limited tariff benefits.

## XVII. APPLICABILITY TO THE LEGISLATIVE BRANCH

The Committee finds that H.R. 4270 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).

## XVIII. STATEMENT ON PREEMPTION OF STATE, LOCAL, OR TRIBAL LAW

This bill is not intended to preempt any state, local, or tribal law.

## XIX. 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 (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.

\* \* \* \* \*

## TITLE IX—RESEARCH AND DEVELOPMENT

\* \* \* \* \*

## Subtitle F—Fossil Energy

\* \* \* \* \*

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

\* \* \* \* \*

## TITLE IX—RESEARCH AND DEVELOPMENT

\* \* \* \* \*

### Subtitle F—Fossil Energy

\* \* \* \* \*

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

(a) *ESTABLISHMENT.*—Not later than 120 days after the date of enactment of the Abandoned Well Remediation Research and Development Act, 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 in (a), the Secretary shall ensure coordination of these activities with institutions of higher education, the Department of Energy National Laboratories, and the private sector.

(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) *AUTHORIZATION OF APPROPRIATIONS.*—There are authorized to be appropriated for purposes of this section—

- (1) \$30,000,000 for fiscal year 2022;
- (2) \$31,250,000 for fiscal year 2023;
- (3) \$32,500,000 for fiscal year 2024;
- (4) \$33,750,000 for fiscal year 2025; and
- (5) \$35,000,000 for fiscal year 2026.

\* \* \* \* \*

## XX. MINORITY VIEWS

It is the view of Representative Bice that both operating and orphaned wells can involve confidential business information and proprietary data that belongs to the property holder or well owner. As the Department undertakes new research to understand emissions of wells and associated monitoring technologies, it is the view of the Minority that these activities should not include or lead to mapping, monitoring, or collection of data associated with privately owned wells without the consent of the necessary companies or parties.

STEPHANIE I. BICE.

XXI. PROCEEDINGS OF THE FULL COMMITTEE MARKUP

**MARKUP: H.R. 847, THE PROMOTING DIGITAL PRIVACY TECHNOLOGIES ACT; H.R. 4270, THE ABANDONED WELL REMEDIATION RESEARCH AND DEVELOPMENT ACT; H.R. 4521, THE BIOECONOMY RESEARCH AND DEVELOPMENT ACT OF 2021; H.R. 4819, THE NATIONAL NUCLEAR UNIVERSITY RESEARCH INFRASTRUCTURE REINVESTMENT ACT OF 2021; H.R. 6291, THE MICROELECTRONICS RESEARCH FOR ENERGY INNOVATION ACT OR "MICRO ACT"**

---

---

**MARKUP**

BEFORE THE

COMMITTEE ON SCIENCE, SPACE,  
AND TECHNOLOGY

OF THE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

JANUARY 19, 2022

**Serial No. CP: 117-10**

Printed for the use of the Committee on Science, Space, and Technology



Available via the World Wide Web: <http://science.house.gov>

U.S. GOVERNMENT PUBLISHING OFFICE

## COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HON. EDDIE BERNICE JOHNSON, Texas, *Chairwoman*

ZOE LOFGREN, California	FRANK LUCAS, Oklahoma,
SUZANNE BONAMICI, Oregon	<i>Ranking Member</i>
AMI BERA, California	MO BROOKS, Alabama
HALEY STEVENS, Michigan,	BILL POSEY, Florida
<i>Vice Chair</i>	RANDY WEBER, Texas
MIKIE SHERRILL, New Jersey	BRIAN BABIN, Texas
JAMAAL BOWMAN, New York	ANTHONY GONZALEZ, Ohio
MELANIE A. STANSBURY, New Mexico	MICHAEL WALTZ, Florida
BRAD SHERMAN, California	JAMES R. BAIRD, Indiana
ED PERLMUTTER, Colorado	DANIEL WEBSTER, Florida
JERRY MCNERNEY, California	MIKE GARCIA, California
PAUL TONKO, New York	STEPHANIE I. BICE, Oklahoma
BILL FOSTER, Illinois	YOUNG KIM, California
DONALD NORCROSS, New Jersey	RANDY FEENSTRA, Iowa
DON BEYER, Virginia	JAKE LATURNER, Kansas
CHARLIE CRIST, Florida	CARLOS A. GIMENEZ, Florida
SEAN CASTEN, Illinois	JAY OBERNOLTE, California
CONOR LAMB, Pennsylvania	PETER MELJER, Michigan
DEBORAH ROSS, North Carolina	JAKE ELLZEY, TEXAS
GWEN MOORE, Wisconsin	MIKE CAREY, OHIO
DAN KILDEE, Michigan	
SUSAN WILD, Pennsylvania	
LIZZIE FLETCHER, Texas	

**MARKUP:  
H.R. 847, THE PROMOTING DIGITAL PRIVACY  
TECHNOLOGIES ACT**

---

**H.R. 4270, THE ABANDONED WELL REMEDI-  
ATION RESEARCH AND DEVELOPMENT ACT**

---

**H.R. 4521, THE BIOECONOMY RESEARCH AND  
DEVELOPMENT ACT OF 2021**

---

**H.R. 4819, THE NATIONAL NUCLEAR UNIVER-  
SITY RESEARCH INFRASTRUCTURE REIN-  
VESTMENT ACT OF 2021**

---

**H.R. 6291, THE MICROELECTRONICS RE-  
SEARCH FOR ENERGY INNOVATION ACT OR  
MICRO ACT**

---

**WEDNESDAY, JANUARY 19, 2022**

HOUSE OF REPRESENTATIVES,  
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,  
*Washington, D.C.*

The Committee met, pursuant to notice, at 10:04 a.m., via Zoom, Hon. Eddie Bernice Johnson [Chairwoman of the Committee] presiding.

Chairwoman JOHNSON. Good morning, and happy New Year. The Committee will come to order. And without objection, the Chair is authorized to declare recess at any time.

Pursuant to Committee rule 2(e) and House rule XI, the Committee announces that we may postpone any request for roll call votes.

Today, the Committee is meeting virtually. I want to announce a couple of reminders to our Members about the conduct of this meeting. First, Members should keep their video feed on as long as they are present in the meeting. Members are responsible for their own microphones. Please also keep your microphones muted unless you are speaking. And finally, if Members have documents they

wish to submit to the record, please email them to the Committee Clerk, whose email address was circulated prior to this meeting.

Pursuant to notice, the Committee meets to consider the following measures: H.R. 4521, the *Bioeconomy Research and Development Act of 2021*; H.R. 847, the *Promoting Digital Privacy—Privacy Technologies Act*; H.R. 4270, the *Abandoned Well Remediation Research and Development Act*; H.R. 4819, the *National Nuclear University Research Infrastructure Reinvestment Act of 2021*; H.R. 6291, the *Microelectronics Research for Energy Innovation Act*, or the *Micro Act*.

Let me welcome all of you to the first Science Committee markup of 2022. Today, we're marking up those five good bipartisan bills. The first bill to be considered is the *Bioeconomy Research and Development Act*. I want to first thank Ranking Member Lucas for partnering with me on this bill. This legislation creates a national engineering biology initiative in support of U.S. leadership in the 21st century bioeconomy. Advances in engineering biology will drive innovation across nearly all sectors of our economy. Europe and China long ago took steps to implement a bioeconomy strategy. Our own efforts have progressed in fits and starts. The time to implement a coherent national strategy is now. I'll speak more about this bill when it's called up.

The next item we will take up today is *Promoting Digital Privacy Technologies Act*. I want to thank Representative Stevens and Gonzalez for their thoughtful work on this legislation. Privacy-enhancing technologies have the potential to vastly improve the way we protect people's privacy when processing information about them. This bill seeks to accelerate the development of these technologies. It would fund research into privacy-enhancing technologies at the National Science Foundation (NSF). It would also authorize outreach and standards-setting activities at the National Institute of Standards and Technology (NIST). And finally, the bill promotes coordination on the development of these technologies across the Federal Government. Getting privacy right in a way that allows for effective use of information is a difficult challenge. This bill will promote new avenues of research to strike that balance.

I'm happy to be an original cosponsor, along with Ranking Member Lucas, on the next bill we're marking up, *Abandoned Well Remediation Research and Development Act*, introduced by Mr. Lamb and Mrs. Bice. The bipartisan bill creates a research, development, and demonstration program at the Department of Energy to tackle the ever-growing problem of advanced oil and gas well pumps—oil and gas wells in the United States. It would increase the efficiency of remediation, mitigate environmental harms, and reduce methane emissions. It would also improve technologies to enable the widespread mapping of unrecorded abandoned wells across the country, some of which can date back as far as 1850's. As we transition to a clean energy economy, it is critical that we have sound and proven technologies to mitigate the harmful methane emissions of hundreds of thousands if not millions of abandoned wells in our communities.

The next bill we will consider is the *National Nuclear University Research Infrastructure Reinvestment Act of 2021* introduced by Representatives Gonzalez, Foster, Casten, and Meijer. This bill

builds off historic nuclear energy research and development (R&D) legislation enacted into law as a part of the *Energy Act of 2020*. The bill has two major thrusts: first, to ensure existing nuclear energy university infrastructure is well-maintained and potentially upgraded; and second, to build new nuclear science and engineering university facilities. And the bill also places strong emphasis on ensuring all activities included—include a wide variety of participants beyond those who already have established nuclear science capabilities, including historically Black colleges and universities (HBCU), tribal colleges, or universities of other minority-serving institutions.

And finally, the last bill we'll consider today is the *Microelectronics Research for Energy Innovation Act*, which was sponsored by Representatives Tonko and Ellzey. This legislation seeks to leverage the unique capabilities and technical expertise of the Department of Energy to accelerate transformative advancements in the field of microelectronics, which play an increasingly significant role in our daily lives and which are essential to maintaining U.S. national security and global economic and scientific leadership. Specifically, this bill would direct the Secretary of Energy to carry out a crosscutting initiative in microelectronics, including research activities aimed at driving progress in related scientific fields, as well as large-scale center-based efforts focused on addressing specific challenges. The bill also includes an emphasis on work force development, education, and outreach to ensure that we're engaging students of all ages in this exciting field and laying the groundwork for the microelectronics work force of the future. I urge my colleagues to support this important legislation.

And finally, I want to address a topic that came up very late in this process. Groups approached us yesterday afternoon asking to add the Davis-Bacon prevailing wage requirements to three of the bills we are marking up today. This was much too late in the process to try and deal with this issue. While I am a supporter of Davis-Bacon, some of my friends on the other side of the aisle are not. Trying to address this issue while maintaining strong bipartisan support is something that simply cannot be done in a hasty fashion. I know the gentleman from New Jersey is a strong advocate for Davis-Bacon, and I'd like to try and find a path forward on this issue as we move forward. However, I don't want to sugarcoat how difficult addressing this issue will be while maintaining bipartisan support of the legislation.

Now, let me just say a little bit about my history with labor. My first job as a supervisor at the VA (Veterans Affairs) hospital in Dallas, Texas, I organized a union when I could not be a member. I support unions. I am a dues-paying member of a union right now. I am not antiunion, but we do have to consider timeliness and appropriateness as we move forth in this scientific direction of our responsibilities in this Committee.

[The prepared statement of Chairwoman Johnson follows:]

Welcome to the first Science Committee markup of 2022. Today we are marking up five good bipartisan bills.

The first bill to be considered is the *Bioeconomy Research and Development Act*. I first want to thank Ranking Member Lucas for partnering with me on this bill. This legislation creates a national engineering biology initiative in support of U.S. leadership in the 21st Century Bioeconomy.

Advances in engineering biology will drive innovation across nearly all sectors of our economy. Europe and China long ago took steps to implement a bioeconomy strategy. Our own efforts have progressed in fits and starts. The time to implement a coherent national strategy is now. I'll speak more about this bill when we call it up.

The next item we will take up today is the *Promoting Digital Privacy Technologies Act*. I want to thank Representatives Stevens and Gonzalez for their thoughtful work on this legislation. Privacy-enhancing technologies (PETs) have the potential to vastly improve the way we protect peoples' privacy when processing information about them. This bill seeks to accelerate the development of these technologies. It would fund research into privacy-enhancing technologies at the National Science Foundation. It would also authorize outreach and standard-setting activities at the National Institute of Standards and Technology. Finally, the bill promotes coordination on the development of these technologies across the Federal government. Getting privacy right in a way that allows for the effective use of information is a difficult challenge. This bill will promote new avenues of research to strike that balance.

I am happy to be an original cosponsor, along with Ranking Member Lucas, on the next bill we are marking up: the *Abandoned Well Remediation Research and Development Act*, introduced by Mr. Lamb and Ms. Bice. This bipartisan bill creates a research, development, and demonstration program at the Department of Energy to tackle the ever-growing problem of abandoned oil and gas wells in the U.S. It would increase the efficiency of remediation, mitigate environmental harms, and reduce methane emissions. It would also improve technologies to enable the widespread mapping of unrecorded abandoned wells around the country, some of which can date back as far as the 1850s. As we transition to a clean energy economy, it is critical that we have sound and proven technologies to mitigate the harmful methane emissions of hundreds of thousands, if not millions of abandoned wells in our communities.

The next bill we will consider is the *National Nuclear University Research Infrastructure Reinvestment Act of 2021*, introduced by Representatives Gonzalez, Foster, Casten, and Meijer. This bill builds off historic nuclear energy research and development legislation enacted into law as part of the *Energy Act of 2020*.

The bill has two major thrusts - first, to ensure existing nuclear energy university infrastructure is well-maintained and potentially upgraded; and second, to build new nuclear science and engineering university facilities. And the bill also places strong emphasis on ensuring all activities include a wide variety of participants beyond those who already have established nuclear science capabilities, including historically Black colleges and universities, Tribal colleges or universities, and other minority-serving institutions.

Finally, the last bill we will consider to today is the *Microelectronics Research for Energy Innovation Act*, which was sponsored by Representatives Tonko and Ellzey. This legislation seeks to leverage the unique capabilities and technical expertise of the Department of Energy to accelerate transformational advancements in the field of microelectronics, which play an increasingly significant role in our daily lives, and which are essential to maintaining U.S. national security and global economic and scientific leadership. Specifically, this bill would direct the Secretary of Energy to carry out a crosscutting initiative in microelectronics, including research activities aimed at driving progress in related scientific fields as well as large-scale, center-based efforts focused on addressing specific challenges. The bill also includes an emphasis on workforce development, education, and outreach to ensure that we are engaging students of all ages in this exciting field and laying the groundwork for the microelectronics workforce of the future. I urge my colleagues to support this important legislation.

Finally, I want to address a topic that came up very late in the process. Groups approached us yesterday afternoon asking to add in Davis Bacon prevailing wage requirements to three of the bills we are marking up today. This was much too late in the process to try and deal with this issue. While I am a supporter of Davis Bacon, some of my friends on the other side of the aisle are not. Trying to address this issue while maintaining strong bipartisan support is something that simply could not be done in a hasty fashion.

I know the gentleman from New Jersey is a strong advocate for Davis Bacon, and I would like to try and find a path forward on this issue as we move forward. However, I don't want to sugar coat how difficult addressing this issue will be while maintaining bipartisan support for the legislation.

Chairwoman JOHNSON. Now, I will recognize our Ranking Member, Mr. Lucas, for his opening remarks.

Mr. LUCAS. Thank you, Chairwoman Johnson, for holding today's markup. This morning we will consider five bipartisan bills. The first, the *Bioeconomy Research and Development Act of 2021*, is a bill I am proud to sponsor with the Chairwoman. I'll discuss this legislation further when the Chair brings it up for debate and I'll offer an amendment.

The second bill is H.R. 847, the *Promoting Digital Privacy Technologies Act*. This legislation supports research activities to advance innovative technologies to safeguard every individuals' privacy. As advanced technologies like AI (artificial intelligence) begin accessing and analyzing large data sets, it will be critical we have technologies to ensure people's personally identity information is protected.

The legislation also directs NIST to work with stakeholders to develop voluntary consensus standards for incorporating these technologies into Federal and commercial applications. I want to thank Chairwoman Stevens and Representative Gonzalez for leading this important legislation. I encourage my colleagues to support the bill.

The third bill is H.R. 4270, the *Abandoned Well Remediation Research and Development Act*. This legislation authorizes DOE (Department of Energy) to conduct research on issues surrounding abandoned wells. The bill will allow us to improve data on the location of abandoned wells; identify better processes for plugging, reclaiming, and repurposing wells; and help us mitigate the potential environmental impacts of leaking wells.

This is a major issue for Oklahoma and my district. Drive across the State and you'll see countless wells sitting on top of some of the world's largest gas and oil fields. This bill will help give producers, landowners, and State and local governments the tools they need to manage these wells. I applaud my fellow Oklahoman, Representative Stephanie Bice, for working with Representative Lamb on this important bipartisan legislation.

The fourth bill we'll consider is H.R. 4819, the *National Nuclear University Research Infrastructure Reinvestment Act of 2021*. The bill, authored by Representative Anthony Gonzalez, builds off of improvements to the Nuclear Energy University Program included in the *Energy Act of 2020*. It will establish up to four new university-based research reactors, which would be able to collaborate and help the Advanced Reactor Demonstration Program and the Low-Dose Radiation Program.

I thank Representative Gonzalez and Representative Foster for working together on this bipartisan bill to advance our Nation's nuclear energy capacities. Nuclear energy is critical to our Nation's energy security and independence. This bill will help ensure we are developing the work force and advanced reactors of the future to make this a reality.

Finally, we'll consider H.R. 6291, the *Microelectronics Research for Energy Innovation Act*, or the *Micro Act*. The bill directs DOE to carry out a crosscutting research, development, and demonstration program on microelectronics to accelerate U.S. global competitiveness in this critical technology area. DOE possesses unique technical expertise and research infrastructure that can help drive the development of the next generation of microelectronics. The De-

partment and its world-leading national laboratory system must play a significant role in our Federal strategy to shore up our international competitiveness in the microelectronics field and confront related national security threats.

The legislation complements the *CHIPS Act*, signed into law last year, to address the decline of domestic semiconductor manufacturing and promote advanced semiconductor development in the United States. The *Micro Act* will help ensure DOE's critical participation in this work and should be considered alongside *DOE Science for the Future Act* as an essential component of a U.S. competitiveness legislation package. I want to thank Representative Tonko and Representative Ellzey for working on this important bipartisan piece of legislation.

Each of these bills harnesses America's incredible scientific and technological prowess to address pressing challenges and improve our future. This is a great example of what the Science Committee can do when we work together.

I want to thank Chairwoman Johnson and her staff for working collaboratively on getting these bills ready for the markup and for working through the amendments we'll consider today. I have every expectation this will be both a productive and a collegial markup.

And with that, I enthusiastically yield back, Madam Chair.

Chairwoman JOHNSON. Thank you very much, Mr. Lucas.

I see that Mr. Norcross has his hand up. I recognize you.

Mr. NORCROSS. Thank you, Madam Chairwoman, and appreciate the recognition to you and the Ranking Member. The issue of Davis-Bacon coming up at the last moment certainly is something that we wish we could get with much earlier. There is nothing new about Davis-Bacon. But if we look to expand the standards across the board, nontraditional, education, things of that nature, Davis-Bacon is incredibly important. We are finding trouble getting those working men and women into the trades right now. This will only make things worse when we exclude those. So I very much appreciate the fact that we're having the discussion.

And in fact, I would suggest it's not an either/or but it is both. We need the best research and we need the best people to help build those things, so moving forward, very much want to have the conversation where it's a win-win and not trying to limit those and build these facilities and hurting them. So, again, I appreciate—and I've spoken to many Members of the Committee. We'll try to address this earlier on but very much appreciate because on the other side of the Capitol, the Senate has included Davis-Bacon in much of the things that are going to be included, so I think we're going to have an opportunity and just wanted to again thank the Ranking Member and Chairwoman for working with us.

Chairwoman JOHNSON. Thank you very much.

We will now consider H.R. 4521, the *Bioeconomy Research and Development Act of 2021*. The Clerk will report the bill.

STAFF. She's muted. I don't know if she knows she's muted. You're muted, Clerk.

We will now consider H.R. 4270, the *Abandoned Well Remediation Research and Development Act*. The Clerk will report the bill.  
The CLERK. H.R. 4270, to amend the *Energy Policy Act of 2005* to direct the Secretary of Energy to carry out a research, develop-

ment, and demonstration program with respect to abandoned wells and for other purposes.

[The bill follows:]

117TH CONGRESS  
1ST SESSION

# H. R. 4270

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.

---

## IN THE HOUSE OF REPRESENTATIVES

JUNE 30, 2021

Mr. LAMB (for himself, Mrs. BICE of Oklahoma, Ms. JOHNSON of Texas, and Mr. LUCAS) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

---

## A BILL

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.

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 “Abandoned Well Reme-  
5 diation Research and Development Act”.

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

7 The Energy Policy Act of 2005 is amended—

1 (1) in subtitle F of title IX (42 U.S.C. 16291  
2 et seq.), by inserting after section 969D the fol-  
3 lowing:

4 **“SEC. 969E. ABANDONED WELLS RESEARCH, DEVELOP-**  
5 **MENT, AND DEMONSTRATION PROGRAM.**

6 “(a) ESTABLISHMENT.—Not later than 120 days  
7 after the date of enactment of the Abandoned Well Reme-  
8 diation Research and Development Act, the Secretary of  
9 Energy shall, in coordination with relevant Federal and  
10 state agencies and entities, establish a research, develop-  
11 ment, and demonstration program to improve—

12 “(1) data collection on the location of aban-  
13 doned wells;

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

16 “(3) mitigating potential environmental impacts  
17 of documented and undocumented abandoned wells.

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

21 “(1) remote sensor capabilities, LiDAR capa-  
22 bilities, optical gas imaging, magnetic survey tech-  
23 nology, and any other technologies relevant to the ef-  
24 ficient identification of abandoned wells;

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

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

9                   “(A) improvement of processes and tech-  
10                  nologies for the unique challenges associated  
11                  with plugging remote abandoned wells;

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

15                   “(C) repurposing of abandoned wells for  
16                  alternative uses, including geothermal power  
17                  production or carbon capture, utilization, and  
18                  storage.

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

1       “(d) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated for purposes of this sec-  
3 tion—

4           “(1) \$30,000,000 for fiscal year 2022;

5           “(2) \$31,250,000 for fiscal year 2023;

6           “(3) \$32,500,000 for fiscal year 2024;

7           “(4) \$33,750,000 for fiscal year 2025; and

8           “(5) \$35,000,000 for fiscal year 2026.”; and

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

“Sec. 969E. Abandoned wells research, development, and demonstration pro-  
gram.”.

○

Chairwoman JOHNSON. Without objection, the bill is considered as read and open to amendment at any point.

Does anyone wish to be recognized to speak on this underlying bill?

Mr. LAMB. Madam Chair, Mr. Lamb.

Chairwoman JOHNSON. Mr. Lamb, you're recognized.

Mr. LAMB. Thank you, Madam Chair.

I want to thank all my colleagues for the support for this important bill, particularly Mrs. Bice of Oklahoma, who has helped make it bipartisan. It affects both our States deeply.

One of the big problems here in terms of plugging abandoned oil and gas wells of course is locating where they are and how many of them. And estimates right now range anywhere from 700 to 300—or to 3 million of these wells, which is an enormous range of uncertainty. In my backyard in western Pennsylvania the National Energy Technology Lab undertook a study in Washington County where we have a lot of these, or we believe we have a lot. And they found that using lidar technology and drones to do a survey of the land, only about 35 percent of the wells that they found were actually in the State of Pennsylvania's data base as existing wells. So obviously if we don't know how many or where they are, it's going to be difficult for us to plug them.

The other big area that our bill would address is trying to figure out why certain of these wells seem to be super-emitters of methane, much, much more than other maybe nearby wells of a similar size. Obviously, if we could figure out which ones were super-emitters and find out how to prioritize them, we could take care of a big part of the methane emissions by plugging a smaller number of these wells. So there are other unanswered questions as well that would be addressed by this research program involving materials used to plug the well, how to bring down the cost of it, how to repurpose these sites for future use. This bill will make a big difference as we try to tackle this next frontier of methane emissions.

And I also just want to say I agree with Mr. Norcross about the importance of Davis-Bacon. It was not really our intent in this bill to address that issue. This was really more of a research side bill, but I certainly would be a partner with him and anyone else looking to make sure that we cover demonstration construction work being done with Federal dollars by Davis-Bacon provisions.

And with that, Madam Chair, I yield back.

Chairwoman JOHNSON. Thank you very much.

Anyone requesting time?

Mrs. BICE. Madam Chair, I request time.

Chairwoman JOHNSON. Mrs. Bice is recognized for 5 minutes.

Mrs. BICE. Thank you, Madam Chairwoman Johnson.

I want to thank Representative Lamb for introducing legislation with me. I also want to thank Chairwoman Johnson and Ranking Member Lucas for cosponsoring this legislation.

*The Abandoned Well Remediation Research and Development Act* is the perfect example of using innovation to solve a pressing issue. Simply put, this legislation would improve our ability to locate, plug, and repurpose oil and gas wells that are no longer in use. Close to half a million wells have been drilled in my home State

of Oklahoma, and while they support hundreds of thousands of jobs while active, legacy sites and abandoned wells have become a problem for landowners. When a well runs dry or a company stops operating at a site, it must be plugged to prevent leaks of gas, oil, or water. Some of the wells are found in very remote terrain, and some are abandoned under financial crisis at undocumented locations.

As we come to better understand the problem, we've discovered that many wells are slowly leaking harmful gases or chemicals into the local ecosystem. That is due to some wells being left untouched and exposed, but most leaks are simply the result of plugging procedures, poor materials used in the past that haven't been able to withstand the test of time.

To remedy the issue, different States have implemented plugging and cleanup programs with varying levels of success. For example, the Oklahoma Energy Resource Board has invested \$132 million to successfully cleanup over 18,000 sites across the State of Oklahoma. And while the *Infrastructure and Jobs Investment Act* contained \$4.7 billion for the Department of Interior to assist in these plugging efforts, there is little to no focus on decreasing the actual cost States endure and the effectiveness of plugging—the plugging process. Unless we want to continue to spend exorbitant amounts of money on temporary solutions, we must include a focus on innovation as an answer.

That's the knowledge gap that H.R. 4270 seeks to fill. There is no entity better at developing creative solutions to solve a problem than the Department of Energy. Through the research, development, and demonstration program authorized by this bill, DOE will improve the data on location of abandoned wells, the process for plugging, reclaiming, and repurpose wells, and the ability to mitigate potential environmental impacts of the leaking wells.

Just last week, the DOE issued a \$1.7 million award to the University of Oklahoma to establish new geothermal energy and heat production from abandoned oil and gas wells. This is just one example of the many potential uses a repurposed abandoned well can offer. The legislation will expand upon that idea and identify new purposes.

It is also the type of forward-looking research and development that will solve our legacy challenges while allowing responsible environmental stewardship to continue into the next generation. We don't have to villainize certain energy sources or spend billions to be labeled green. We can support a clean environment and clean energy production through bipartisan support for innovation.

Again, I want to thank my colleague, Representative Lamb, for leading on this issue, and I urge my colleagues to support the bill. And I yield back the balance of my time.

Mr. PERLMUTTER. Would the gentlelady yield?

Mrs. BICE. I would.

Mr. PERLMUTTER. I have a question for you and the other author, Mr. Lamb. In Colorado we have lots of abandoned wells, and then we have these orphaned gas lines coming from them. We had a terrible tragedy, blew up a house as our suburbs grow out into the oil fields. Would this bill—is this bill broad enough to also include

these orphaned gas lines coming from the abandoned wells? And I yield back to the lady.

Mrs. BICE. I believe that this is specific to the oil wells themselves. It doesn't actually address the gas lines. But certainly something we can look at maybe trying to address in subsequent legislation. I'd be happy to work with you on that.

Mr. PERLMUTTER. Thank you.

Chairwoman JOHNSON. Any other—

Mrs. BICE. I yield back, Madam Chair.

Chairwoman JOHNSON. Thank you.

Any other requests for time?

Mr. WEBER. Madam Chair?

Chairwoman JOHNSON. Yes.

Mr. WEBER. Is it time for amendments? I have an amendment at the desk.

Chairwoman JOHNSON. Well, we—yes. We are going to you next. I was just checking to see if anybody else needed time.

Mr. WEBER. OK.

Chairwoman JOHNSON. The first amendment on the roster is an amendment offered by the gentleman from Texas, Mr. Weber. You're recognized to offer your amendment.

Mr. WEBER. Madam Chair, I still have that amendment at the desk.

Chairwoman JOHNSON. OK. The Clerk will report the amendment.

The CLERK. Amendment No. 1, amendment to H.R. 4270 offered by Mr. Weber of Texas.

[The amendment of Mr. Weber follows:]

28

73

**AMENDMENT TO H.R. 4270**

**OFFERED BY MR. WEBER OF TEXAS**

Page 2, line 16, strike “mitigating” and insert  
“strategies to mitigate”.



Chairwoman JOHNSON. I ask unanimous consent to dispense with the reading. Without objection, so ordered.

I recognize the gentleman from Texas for 5 minutes to explain his amendment.

Mr. WEBER. Thank you, Chairwoman Johnson.

This amendment provides a small but meaningful update to the underlying language. It ensures that the Department of Energy, DOE, is focused on researching and developing strategies to mitigate the potential environmental impacts of documented, as well as undocumented, abandoned wells rather than just attempting to mitigate these impacts themselves. The purpose here of this amendment is to clarify that the Department of Interior (DOI) and the Environmental Protection Agency (EPA) are the lead Federal agencies tasked with putting boots on the ground to carry out environmental mitigation work.

Make no mistake, as Energy Subcommittee Ranking Member, I am a long time vocal DOE supporter. The Department has some of the world's brightest minds and offers first-class research facilities as well as instruments. DOE can help develop innovative strategies for DOI and EPA to use, but I want to make sure we're not tasking it with the responsibilities that are actually outside of its mission.

This amendment is just that simple. Let DOE research what they know best, and let other agencies continue to work at what they do best. We don't need to reinvent the wheel to make the best use of our own taxpayers' dollars.

I'm also proud to support the underlying bill. It promotes the continued use of reliable energy sources while using cutting-edge technology to minimize legacy environmental impacts. Far too often, fossil fuels are villainized. Some folks are now trying to say that poor environmental stewardship is an unavoidable consequence of their continued use. Nothing could be further from the truth, Madam Chair. The villain is not any single energy source. It is the greenhouse gases that get put into the air when using them.

The *Abandoned Wells Remediation R&D Act* takes aim at that very issue. This legislation will help eliminate the harmful effects of fossil-generated methane by supporting the development of advanced technologies to locate and effectively plug previously unknown abandoned oil and gas wells. This is the kind of big-picture energy solution that will get the job done without causing American families to change the way they live day by day.

There are very few problems we cannot innovate our way around. This bill is just another example of the Science Committee trusting Federal research to lead the way.

If you hear that clock chiming, it's because it supports my amendment, Chairwoman, just saying.

I urge my colleagues to support this amendment along with the underlying bill, and I reserve the balance of my time.

Chairwoman JOHNSON. Well, thank you very much. I recognize myself to speak on the amendment.

I support this amendment, as it was certainly the intent of the underlying legislative text to authorize research, development, and demonstration strategies to mitigate environmental impacts of abandoned wells while the deployment of available technologies is

in the jurisdiction of other Committees. This is consistent with the work we do here on this Committee, the Science Committee, as we pursue the best ways to utilize the scientific expertise of our agencies. I urge my colleagues to support this amendment, and I yield back the balance of my time.

Anyone seeking time?

If there's no further discussion, a vote occurs on the amendment.

All those in favor, say aye.

Those opposed, say no.

The ayes have it, and the amendment is agreed to.

The next amendment on the roster is an amendment offered by the gentleman from California, Mr. McNerney. Mr. McNerney, you're recognized to offer your amendment.

Mr. MCNERNEY. Madam Chair, I have an amendment at the desk.

Chairwoman JOHNSON. The Clerk will report the amendment.

The CLERK. Amendment No. 2, amendment to H.R. 4270 offered by Mr. McNerney of California.

[The amendment of Mr. McNerney follows:]

**AMENDMENT TO H.R. 4270**

**OFFERED BY MR. MCNERNEY OF CALIFORNIA**

Page 3, line 5, strike "and".

Page 3, line 18, strike the period and insert "; and".

Page 3, after line 18, insert the following:

- 1           “(4) understanding of the impacts of aban-
- 2           doned wells on groundwater quality and contamina-
- 3           tion.”.



Chairwoman JOHNSON. I ask unanimous consent to dispense with the reading. Without objection, so ordered.

I recognize the gentleman for 5 minutes to explain your amendment.

Mr. MCNERNEY. I thank the Chair.

Across the country, countless abandoned wells have been left to leak methane and other harmful substances, accelerating climate change and contaminating groundwater and other portions of the environment. And I say countless because we don't really know how many abandoned wells are out there. And that has already been pointed out by my colleague Mr. Lamb.

I support the effort of the *Abandoned Well Remediation Research and Development Act* to improve our scientific understanding of the atmosphere and environmental impacts of abandoned wells and to study the processes and technologies to address them, especially as we ramp up the efforts to properly plug up these wells.

My amendment makes explicit that the activities conducted under the DOE's newly established research development and demonstration program include studying the impacts of abandoned wells on groundwater and how these wells cause contamination. It's critically important that more work is done to understand and to quantify the effect of critical groundwater resources like underground aquifers in California's Central Valley. Those thousands of abandoned wells have been left in California, and many of them are in the Central Valley where my district is located. And research has shown that nearly 1/5 of the State's wells are close to Central Valley water aquifers, the same water sources that supply drinking water systems and are used to grow crops in a major agricultural region.

Abandoned oil and gas wells put groundwater across the country at risk since old wells may be—may have degraded castings or cement that allow pollutants like brine, benzene, and arsenic to leak. These contaminants could permanently impact these water sources and cause long-term, long-lasting, or fatal effects. The bill helps make explicit the need to investigate the causes and effects of methane emissions of abandoned wells in order to quantify the impacts and improve remediation strategies. The same effort must be given to monitor and protect our groundwater resources.

And I will urge support of the amendment and yield back.

Chairwoman JOHNSON. Thank you very much.

Any further discussion on this amendment, any requests for time?

If there's no further discussion, the vote occurs on the amendment.

All those in favor, say aye.

Those opposed, nay.

The ayes have it, and the amendment is agreed to.

The next amendment on the roster is an amendment offered by the gentleman from Colorado, Mr. Perlmutter. Mr. Perlmutter, you are recognized for your amendment.

Mr. PERLMUTTER. Thanks, Madam Chair. I have an amendment at the desk.

Chairwoman JOHNSON. The Clerk will report the amendment.

33

78

The CLERK. Amendment No. 3, amendment to H.R. 4270 offered  
by Mr. Perlmutter of Colorado.  
[The amendment of Mr. Perlmutter follows:]

**AMENDMENT TO H.R. 4270****OFFERED BY MR. PERLMUTTER OF COLORADO**

Page 3, after line 18, insert the following:

1       (c) COORDINATION.—In carrying out the program es-  
2       tablished in (a), the Secretary shall ensure coordination  
3       of these activities with institutions of higher education, the  
4       Department of Energy National Laboratories, and the pri-  
5       vate sector.



Chairwoman JOHNSON. I ask unanimous consent to dispense with the reading, and without objection, so ordered.

I recognize the gentleman for 5 minutes to explain the amendment.

Mr. PERLMUTTER. Thanks, Madam Chair.

First, I want to commend my friend and classmate Mr. McNerney for bringing his math and science and engineering background to this Committee and to the Congress of the United States. He and I will be riding off into the sunset together, and I just wanted to thank him for his amendment and his service to this Committee and to the Congress.

Chairwoman JOHNSON. Where are you going?

Mr. PERLMUTTER. My amendment—pardon me?

Chairwoman JOHNSON. Where are you going?

Mr. PERLMUTTER. Me? I'm going back to Colorado eventually but at the end of this year, so you're still going to have to put up with me for a long time and I'll make a lot of trouble between now and then since I don't have to campaign. And I intend to really give Mr. Weber a hard time is much as I possibly can.

Mr. WEBER. Will the gentleman yield?

Chairwoman JOHNSON. We won't count that against your time. Mr. Weber, we'll count yours when you get ready to give your remarks.

Mr. WEBER. Thank you.

Mr. PERLMUTTER. All right. I—thanks, Madam Chair. My amendment—and thank you for cutting off Mr. Weber.

My amendment expands the definition of relevant, stakeholders, and DOE's abandoned well program to include universities, national labs, and the private sector. And as Mr. Lamb and Mrs. Bice said, it's hard to estimate how many abandoned wells there are in this country, let alone in an individual State. For Colorado, the estimate is anywhere between 500 and 60,000. This discrepancy illustrates the lack of information we have when it comes to abandoned oil and gas wells in this country and how important it is for us—for us to use all the tools at our disposal to better understand the scope of this issue.

And as I said earlier, in Colorado we had a tragedy a couple years ago where, as the suburbs expand, they move into the oil and gas fields. We had an abandoned well that really hadn't been pinpointed with this orphaned gas line. It blew up a house, killed about two or three people, and we've got to watch out for that, along with the various environmental damages that we can see.

We need all hands on deck to understand how many of these wells exist, where they are located, the extent of their environmental damage, and how to properly remediate or repurpose them. The Colorado School of Mines, located in Golden, Colorado, consistently ranks among the world's best petroleum engineering schools, and it has a long history of developing new earth resource-related technologies for the benefit of society. The School of Mines is already leading in this space through its Responsible Gas Initiative, which is focused on continuous well monitoring and responsibly producing gas. The School of Mines has also been working closely with the Department of the Interior and the Bureau of Land Management to create a pilot program for remote sensing, monitoring,

remediation, and data analysis of methane emissions for orphaned, abandoned, and idle wells on Federal lands.

We must include university stakeholders like the School of Mines, our DOE national labs, and the private sector with the wealth of data and experience to effectively address the growing issue of abandoned wells. With that, I urge my colleagues to support this amendment and the underlying bill, and I yield back to the Chair.

Chairwoman JOHNSON. Thank you very much.

Anyone seeking time?

Mr. WEBER. Madam Chairman—Chairwoman?

Chairwoman JOHNSON. Mr. Weber is recognized.

Mr. WEBER. Well, I want to respond to my colleague's remarks about riding off into the sunset with Jerry McNerney. I don't—I just wanted to inquire of the gentleman, has he seen Mr. McNerney's tie today? He might want to reconsider that. So we're sorry to see you go—and both of you really, but I just want to make sure you do know that you and both Mr. McNerney know that I am an equal-opportunity insulter, and so we really appreciate you guys and the spirit in which you've served, and we're going to miss you. And I yield back.

Mr. PERLMUTTER. Thank you.

Chairwoman JOHNSON. Thank you very much. Any further discussion or request for time?

Mr. MCNERNEY. Well, yes, I'd like to make a comment on Mr. Weber's testimony just now. He's not only—

Chairwoman JOHNSON. Mr.—

Mr. MCNERNEY. He's not only an equal-opportunity insulter but he's an equal-opportunity poor joke teller.

Chairwoman JOHNSON. Any further discussion?

The vote occurs on the amendment.

All those in favor, say aye.

Those opposed, no.

The ayes have it, and the amendment is agreed to.

A reporting quorum being present, I move that the Committee on Science, Space, and Technology report H.R. 4270, as amendment—amended to the House with the recommendation that the bill be approved.

Those in favor of the motion will signify by saying aye.

Those opposed, no.

The ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider is laid upon the table. I ask unanimous consent that the staff be authorized to make any necessary technical and conforming changes to the bill. Without objection, so ordered.

All Members will have 2 subsequent calendar days in which to submit supplemental, minority, or additional views on this measure.