


(Original Signature of Member)

112TH CONGRESS
2D SESSION

H. R. 6603

To authorize research, development, and demonstration activities that increase energy security and affordability by enabling the safe and responsible production of the United States vast domestic unconventional oil and gas resources.

IN THE HOUSE OF REPRESENTATIVES

Mr. HALL introduced the following bill; which was referred to the Committee
on _____

A BILL

To authorize research, development, and demonstration activities that increase energy security and affordability by enabling the safe and responsible production of the United States vast domestic unconventional oil and gas resources.

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 "Tapping America's En-
5 ergy Potential through Research and Development Act of
6 2012".

1 **SEC. 2. ACTIVITIES.**

2 The Secretary, acting through the Assistant Sec-
3 retary, shall carry out under this Act research, develop-
4 ment, and demonstration activities of technologies that in-
5 crease energy security and affordability by enabling the
6 safe and responsible production of the vast domestic un-
7 conventional oil and gas resources of the United States.
8 In carrying out the activities, the Secretary may conduct
9 research and shall provide grants, cooperative agreements,
10 contracts, or other assistance through a competitive selec-
11 tion process to eligible entities.

12 **SEC. 3. OIL SHALE RESEARCH AND DEVELOPMENT ACTIVI-**
13 **TIES.**

14 (a) **IN GENERAL.**—The Secretary, acting through the
15 Assistant Secretary, shall carry out research, development,
16 and demonstration activities to facilitate commercial appli-
17 cation of energy technologies related to the exploration,
18 development, and production of oil shale resources.

19 (b) **OBJECTIVES.**—The objectives of such activities
20 shall be—

21 (1) to address scientific and technological bar-
22 riers to enable economically feasible production of oil
23 shale; and

24 (2) to minimize potential associated environ-
25 mental impacts.

26 (c) **IMPLEMENTATION PLAN.**—

1 (1) IN GENERAL.—Not later than 9 months
2 after the date of enactment of this Act, the Sec-
3 retary shall transmit to the Committee on Science,
4 Space, and Technology of the House of Representa-
5 tives and the Committee on Energy and Natural Re-
6 sources of the Senate a program implementation
7 plan that—

8 (A) details constraints and opportunities
9 affecting oil shale development;

10 (B) identifies strategies to enable such de-
11 velopment; and

12 (C) identifies and prioritizes research, de-
13 velopment, and demonstration activities nec-
14 essary to advance program objectives.

15 (2) CONSULTATION.—The Assistant Secretary
16 shall consult with a broad range of stakeholders in
17 the development and implementation of the plan.

18 (d) ACTIVITIES.—The Assistant Secretary may con-
19 duct research and shall make awards to eligible entities
20 for research, development, and demonstration activities in
21 areas that include the following:

22 (1) Oil shale resource characterization.

23 (2) Modeling and simulation of oil shale explo-
24 ration and production technologies, including—

1 (A) advanced diagnostics and imaging sys-
2 tems; and

3 (B) advanced computing applied to the
4 physics and chemistry of oil shale production.

5 (3) Minimization and re-use of water, includ-
6 ing—

7 (A) benchmarking of current water use
8 rates for multiple production methods;

9 (B) potential reduction in water volume
10 needed for operations; and

11 (C) recovery, utilization, reduction, and im-
12 proved management of produced water from ex-
13 ploration and production activities.

14 (4) Efficient use of energy in exploration and
15 production activities.

16 (5) Utilization of exploration and production
17 methods and materials that reduce the potential im-
18 pact of such activities on the environment, including
19 improved production methods for in-situ mining and
20 ex-situ mining.

21 (e) ACTIVITY UPDATE.—Not later than 3 years after
22 the date of enactment of this Act, the Secretary shall
23 transmit to the Committee on Science, Space, and Tech-
24 nology of the House of Representatives and the Committee

1 on Energy and Natural Resources of the Senate a report
2 on the progress of the activities under this section.

3 (f) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated to the Assistant Sec-
5 retary to carry out the activities of this section
6 \$10,000,000 for each of fiscal years 2013 through 2017.

7 **SEC. 4. SHALE EXTRACTION RESEARCH AND DEVELOP-**
8 **MENT ACTIVITIES.**

9 (a) IN GENERAL.—The Secretary, acting through the
10 Assistant Secretary, shall carry out research, development,
11 and demonstration activities to facilitate commercial appli-
12 cation of energy technologies related to the exploration,
13 development, and production of oil, natural gas, and other
14 liquid resources from shale formations.

15 (b) OBJECTIVES.—The objectives of such activities
16 shall be—

17 (1) to maximize the benefits of the United
18 States shale oil and natural gas resources by ad-
19 vancing safe and responsible exploration, develop-
20 ment, and production of these resources;

21 (2) to minimize surface impacts from activities
22 related to shale oil and natural gas production;

23 (3) to focus on areas that provide benefits to
24 the public and to industry; and

1 (4) to advance the scientific and technological
2 foundation available to producers, Federal and state
3 government agencies, and other stakeholders in iden-
4 tified research areas.

5 (c) ACTIVITIES.—The Assistant Secretary may con-
6 duct research and shall make awards to eligible entities
7 for research, development, and demonstration activities in
8 areas that include the following:

9 (1) Water use and demand, which may in-
10 clude—

11 (A) potential reduction in the volume of
12 water utilized for shale oil and natural gas pro-
13 duction; and

14 (B) alternative materials, substances, or
15 ingredients for use in shale oil and natural gas
16 operations that could mitigate the need for or
17 volume of water used.

18 (2) Water sourcing, which may include—

19 (A) expanding options for sources of water
20 used in shale oil and natural gas operations;
21 and

22 (B) alternatives to groundwater or fresh-
23 water, such as water recovered from industrial
24 or agricultural operations, brackish water, or

1 surface water unsuitable for human or agricul-
2 tural use, in areas with water supply concerns.

3 (3) Materials used in shale oil and natural gas
4 operations, which may include—

5 (A) increasing the efficiency of shale oil
6 and natural gas operations by minimizing fluid
7 use;

8 (B) improving the understanding of the re-
9 lationship between additives used in fracturing
10 and the chemical and physical properties of dif-
11 ferent shale formations; and

12 (C) enhancing permeability through im-
13 proved proppants and other materials.

14 (4) Diagnostic imaging and monitoring, which
15 may include—

16 (A) increasing understanding of the propa-
17 gation of fractures within target zones; and

18 (B) advancing fundamental technologies
19 that enable improved tracking and enhanced
20 understanding of fracture movements.

21 (d) AUTHORIZATION OF APPROPRIATIONS.—There
22 are authorized to be appropriated to the Assistant Sec-
23 retary to carry out the activities of this section
24 \$12,000,000 for each of fiscal years 2013 through 2015.

1 **SEC. 5. PRODUCED WATER UTILIZATION RESEARCH AND**
2 **DEVELOPMENT ACTIVITIES.**

3 (a) IN GENERAL.—The Secretary, acting through the
4 Assistant Secretary, shall carry out research, development,
5 and demonstration activities to facilitate commercial appli-
6 cation of energy technologies for environmentally sustain-
7 able utilization of produced water for agricultural,
8 irrigational, recreational, power generation, municipal,
9 and industrial uses, or other environmentally sustainable
10 purposes.

11 (b) ACTIVITIES.—The Assistant Secretary may con-
12 duct research and shall make awards to eligible entities
13 for research, development, and demonstration activities,
14 including improving safety and minimizing environmental
15 impacts of activities, in areas that include the following:

16 (1) Produced water recovery, including research
17 for desalination and demineralization to reduce total
18 dissolved solids in the produced water.

19 (2) Produced water utilization for agricultural,
20 irrigational, recreational, power generation, munic-
21 ipal, and industrial uses, or other environmentally
22 sustainable purposes.

23 (3) Re-injection of produced water into sub-
24 surface geological formations to increase energy pro-
25 duction.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Assistant Sec-
3 retary to carry out the activities of this section \$5,000,000
4 for each of fiscal years 2013 through 2017.

5 **SEC. 6. ELIGIBLE ENTITIES.**

6 To be eligible for a grant, cooperative agreement,
7 contract, or other assistance under this Act, an applicant
8 shall be—

- 9 (1) an institution of higher education;
- 10 (2) a National laboratory;
- 11 (3) a private sector entity;
- 12 (4) a nonprofit organization; or
- 13 (5) a consortium of two or more entities de-
14 scribed in paragraphs (1) through (4).

15 **SEC. 7. ADMINISTRATION.**

16 In carrying out the activities under this Act, the Sec-
17 retary may enter into an agreement with a consortium
18 whose members have collectively demonstrated capabilities
19 and experience in planning and managing research, devel-
20 opment, demonstration, and commercial application pro-
21 grams for unconventional natural gas and other petroleum
22 production and produced water utilization.

23 **SEC. 8. COORDINATION.**

24 To the maximum extent practicable, the Secretary
25 shall ensure that the activities under this Act are coordi-

1 nated with, and do not duplicate the efforts of, programs
2 at the Department of Energy and other Government agen-
3 cies.

4 **SEC. 9. COST SHARING.**

5 All activities authorized by this Act shall adhere to
6 the cost sharing guidelines established by section 988 of
7 the Energy Policy Act of 2005 (42 U.S.C. 16352).

8 **SEC. 10. LIMITATIONS.**

9 (a) **IN GENERAL.**—All research, development, dem-
10 onstration, and commercial application activities author-
11 ized by this Act shall be limited to technology areas that
12 industry by itself is not likely to undertake because of
13 technical and financial uncertainty.

14 (b) **EFFECT ON REGULATION.**—Nothing in this Act
15 creates any new authority for any Federal agency, or may
16 be used by any Federal agency, to support the establish-
17 ment of regulatory standards or regulatory requirements.

18 **SEC. 11. DEFINITIONS.**

19 In this Act:

20 (1) **ASSISTANT SECRETARY.**—The term “Assist-
21 ant Secretary” means the Assistant Secretary of En-
22 ergy for Fossil Energy.

23 (2) **INSTITUTION OF HIGHER EDUCATION.**—The
24 term “institution of higher education” has the

1 meaning given such term in section 2 of the Energy
2 Policy Act of 2005 (42 U.S.C. 15801).

3 (3) NATIONAL LABORATORY.—The term “Na-
4 tional laboratory” has the meaning given such term
5 in section 2 of the Energy Policy Act of 2005 (42
6 U.S.C. 15801).

7 (4) OIL SHALE.—The term “oil shale” means
8 the geologic deposits in which the petroleum compo-
9 nent kerogen has not fully transformed into oil or
10 gas.

11 (5) PRODUCED WATER.—The term “produced
12 water” means water from an underground source
13 that is brought to the surface as a part of the proc-
14 ess of exploration for or development of coalbed
15 methane, oil, natural gas, or any other substance to
16 be used as an energy source.

17 (6) SECRETARY.—The term “Secretary” means
18 the Secretary of Energy.

19 (7) SHALE OIL AND NATURAL GAS.—The term
20 “shale oil and natural gas” means oil, natural gas,
21 and other liquid resources produced from shale for-
22 mations.