

116TH CONGRESS
1ST SESSION

H. R. 4481

To authorize an energy critical elements program, to amend the National Materials and Minerals Policy, Research and Development Act of 1980, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 24, 2019

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

A BILL

To authorize an energy critical elements program, to amend the National Materials and Minerals Policy, Research and Development Act of 1980, 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 “Securing Energy Crit-
5 ical Elements and American Jobs Act of 2019”.

6 **SEC. 2. DEFINITIONS.**

7 In this Act:

8 (1) APPROPRIATE CONGRESSIONAL COMMIT-
9 TEES.—The term “appropriate Congressional com-

mittees” means the Committee on Science, Space,
and Technology of the House of Representatives and
the Committee on Commerce, Science, and Transportation and the Committee on Energy and Natural Resources of the Senate.

(2) CENTER.—The term “Center” means the Critical Materials Information Center established under section 101(d).

(3) DEPARTMENT.—The term “Department” means the Department of Energy.

(4) ENERGY CRITICAL ELEMENT.—The term “energy critical element” means any of a class of chemical elements that have a high risk of a supply disruption and are critical to one or more new, energy-related technologies such that a shortage of such element would significantly inhibit large-scale deployment of technologies that produce, transmit, store, or conserve energy.

(5) INSTITUTION OF HIGHER EDUCATION.—The term “institution of higher education” has the meaning given such term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(6) PROGRAM.—The term “program” means the program authorized in section 101(a).

1 (7) SECRETARY.—The term “Secretary” means
2 the Secretary of Energy.

3 **TITLE I—ENERGY CRITICAL**
4 **ELEMENTS**

5 **SEC. 101. ENERGY CRITICAL ELEMENTS PROGRAM.**

6 (a) AUTHORIZATION OF PROGRAM.—

7 (1) IN GENERAL.—The Secretary shall carry
8 out a program of research, development, demonstra-
9 tion, and commercial application to assure the long-
10 term, secure, and sustainable supply of energy crit-
11 ical elements sufficient to satisfy the national secu-
12 rity, economic well-being, and industrial production
13 needs of the United States. This program may be
14 carried out primarily by an Energy Innovation Hub
15 established under section 206 of the Department of
16 Energy Research Coordination Act (42 U.S.C.
17 18632).

18 (2) PROGRAM ACTIVITIES.—The program shall
19 focus on areas that the private sector by itself is not
20 likely to undertake because of technical and financial
21 uncertainty and support activities to—

22 (A) improve methods for the extraction,
23 processing, use, recovery, and recycling of en-
24 ergy critical elements;

1 (B) improve the understanding of the per-
2 formance, processing, and adaptability in engi-
3 neering designs using energy critical elements;

4 (C) improve the understanding of energy
5 critical element supply chains, risks from supply
6 disruption, supply restriction, volatility in de-
7 mand, and difficulty to substitute;

8 (D) identify and test alternative materials
9 that can be substituted for energy critical ele-
10 ments and maintain or exceed current perform-
11 ance; and

12 (E) engineer and test applications that—

13 (i) use recycled energy critical ele-
14 ments;

15 (ii) use alternative materials; or

16 (iii) seek to minimize energy critical
17 element content.

18 (3) EXPANDING PARTICIPATION.—In carrying
19 out the program, the Secretary shall encourage mul-
20 tidisciplinary collaborations of participants, including
21 opportunities for students and post-doctoral staff at
22 institutions of higher education.

23 (4) CONSISTENCY.—The program shall be con-
24 sistent with the policies and programs in the Na-

1 tional Materials and Minerals Policy, Research and
2 Development Act of 1980 (30 U.S.C. 1601 et seq.).

3 (5) INTERNATIONAL COLLABORATION.—In car-
4 rying out the program, the Secretary shall collabo-
5 rate, to the extent practicable, on activities of mu-
6 tual interest with the relevant agencies of foreign
7 countries with interests relating to energy critical
8 elements.

9 (b) PLAN.—

10 (1) IN GENERAL.—Within 180 days after the
11 date of enactment of this Act and biennially there-
12 after, the Secretary shall prepare and submit to the
13 appropriate Congressional committees a plan to
14 carry out the program.

15 (2) SPECIFIC REQUIREMENTS.—The plan re-
16 quired under paragraph (1) shall include a descrip-
17 tion of—

18 (A) the research and development activities
19 to be carried out by the program during the
20 subsequent 2 years;

21 (B) the expected contributions of the pro-
22 gram to the creation of innovative methods and
23 technologies for the efficient and sustainable
24 provision of energy critical elements to the do-
25 mestic economy; and

1 (C) how the program is promoting the
2 broadest possible participation by academic, in-
3 dustrial, and other contributors.

4 (3) CONSULTATION.—In preparing each plan
5 under paragraph (1), the Secretary shall consult
6 with appropriate representatives of industry, institu-
7 tions of higher education, Department of Energy na-
8 tional laboratories, professional and technical soci-
9 eties, other Federal agencies, and other entities, as
10 determined by the Secretary.

11 (c) COORDINATION AND NONDUPLICATION.—To the
12 maximum extent practicable, the Secretary shall ensure
13 that the activities carried out under this title are coordi-
14 nated with, and do not unnecessarily duplicate the efforts
15 of, other programs within the Federal Government.

16 (d) CRITICAL MATERIALS INFORMATION CENTER.—

17 (1) IN GENERAL.—In carrying out the program
18 established under section 101, the Secretary shall es-
19 tablish and maintain a Critical Materials Informa-
20 tion Center to collect, catalogue, disseminate, and
21 archive information on energy critical elements in
22 coordination with the Office of Scientific and Tech-
23 nical Information of the Department of Energy.

24 (2) CENTER ACTIVITIES.—The Center shall—

1 (A) serve as the repository for scientific
2 and technical data generated by the research
3 and development activities funded under this
4 section;

5 (B) assist scientists and engineers in mak-
6 ing the fullest possible use of the Center's data
7 holdings;

8 (C) seek and incorporate other information
9 on energy critical elements to enhance the Cen-
10 ter's utility for program participants and other
11 users; and

12 (D) provide advice to the Secretary con-
13 cerning the program.

14 (e) AUTHORIZATION OF APPROPRIATIONS.—

15 (1) IN GENERAL.—There are authorized to be
16 appropriated to the Secretary to carry out this Act
17 the following sums:

18 (A) For fiscal year 2020, \$30,000,000.

19 (B) For fiscal year 2021, \$31,500,000.

20 (C) For fiscal year 2022, \$33,075,000.

21 (D) For fiscal year 2023, \$34,728,750.

22 (E) For fiscal year 2024, \$36,465,188.

23 (2) AVAILABILITY.—Such sums shall remain
24 available until expended.

1 **SEC. 102. SUPPLY OF ENERGY CRITICAL ELEMENTS.**

2 The President, acting through the Critical Material
3 Supply Chain Subcommittee of the Committee on Envi-
4 ronment, Natural Resources, and Sustainability of the Na-
5 tional Science and Technology Council, shall—

6 (1) coordinate the actions of applicable Federal
7 agencies to promote an adequate and stable supply
8 of energy critical elements necessary to maintain na-
9 tional security, economic well-being, and industrial
10 production with appropriate attention to a long-term
11 balance between resource production, energy use, a
12 healthy environment, natural resources conservation,
13 and social needs;

14 (2) identify energy critical elements and estab-
15 lish scenario modeling systems for supply problems
16 of energy critical elements;

17 (3) establish a mechanism for the coordination
18 and evaluation of Federal programs with energy crit-
19 ical element needs, including Federal programs in-
20 volving research and development, in a manner that
21 complements related efforts carried out by the pri-
22 vate sector and other domestic and international
23 agencies and organizations;

24 (4) promote and encourage private enterprise in
25 the development of an economically sound and stable
26 domestic energy critical elements supply chain;

1 (5) promote and encourage the recycling of en-
2 ergy critical elements, taking into account the logis-
3 tics, economic viability, environmental sustainability,
4 and research and development needs for completing
5 the recycling process;

6 (6) promote and encourage the development of
7 substitute materials and processes that lower the de-
8 pendence of the United States on energy critical ele-
9 ments;

10 (7) assess the need for, and make recommenda-
11 tions concerning, the availability and adequacy of
12 the supply of technically trained personnel necessary
13 for energy critical elements research, development,
14 extraction, and industrial production, with a par-
15 ticular focus on the problem of attracting and main-
16 taining high-quality professionals for maintaining an
17 adequate supply of energy critical elements; and

18 (8) report to the appropriate Congressional
19 committees on activities and findings under this sec-
20 tion.

1 **TITLE II—NATIONAL MATERIALS**
2 **AND MINERALS POLICY, RE-**
3 **SEARCH, AND DEVELOPMENT**

4 **SEC. 201. AMENDMENTS TO NATIONAL MATERIALS AND**
5 **MINERALS POLICY, RESEARCH AND DEVEL-**
6 **OPMENT ACT OF 1980.**

7 (a) PROGRAM PLAN.—Section 5 of the National Ma-
8 terials and Minerals Policy, Research and Development
9 Act of 1980 (30 U.S.C. 1604) is amended—

10 (1) by striking “date of enactment of this Act”
11 each place it appears and inserting “date of enact-
12 ment of the Securing Energy Critical Elements and
13 American Jobs Act of 2019”;

14 (2) in subsection (b)(1), by striking “Federal
15 Coordinating Council for Science, Engineering, and
16 Technology” and inserting “National Science and
17 Technology Council”;

18 (3) in subsection (c)—

19 (A) in the matter preceding paragraph

20 (1)—

21 (i) by striking “the Federal Emer-
22 gency” and all that follows through “Agen-
23 cy, and”; and

24 (ii) by striking “appropriate shall”
25 and inserting “appropriate, shall”;

1 (B) by striking paragraph (1);

2 (C) in paragraph (2), by striking “in the
3 case” and all that follows through “sub-
4 section,”;

5 (D) by redesignating paragraphs (2) and
6 (3) as paragraphs (1) and (2), respectively; and

7 (E) by amending paragraph (2), as so re-
8 designated, to read as follows:

9 “(2) assess the adequacy and stability of the
10 supply of materials necessary to maintain national
11 security, economic well-being, and industrial produc-
12 tion.”;

13 (4) by striking subsection (d); and

14 (5) by redesignating subsections (e) and (f) as
15 subsections (d) and (e), respectively.

16 (b) POLICY.—Section 3 of the National Materials and
17 Minerals Policy, Research and Development Act of 1980
18 (30 U.S.C. 1602) is amended—

19 (1) by striking “The Congress declares that it”
20 and inserting “It”; and

21 (2) by striking “The Congress further declares
22 that implementation” and inserting “Implementa-
23 tion”.

24 (c) IMPLEMENTATION.—Section 4 of the National
25 Materials and Minerals Policy, Research and Development

1 Act of 1980 (30 U.S.C. 1603) is amended, in the matter
2 preceding paragraph (1)—

3 (1) by striking “For the purpose” and all that
4 follows through “declares that the” and inserting
5 “The”; and

6 (2) by striking “departments and agencies,”
7 and inserting “departments and agencies to imple-
8 ment the policy specified in section 3”.

9 **SEC. 202. CONFORMING REPEAL.**

10 The National Critical Materials Act of 1984 (30
11 U.S.C. 1801 et seq.) is repealed.

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