

113TH CONGRESS  
1ST SESSION

# H. R. 1022

To develop 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

MARCH 6, 2013

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

---

## A BILL

To develop 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; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the  
5 “Securing Energy Critical Elements and American Jobs  
6 Act of 2013”.

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

Sec. 1. Short title; table of contents.

Sec. 2. Definitions.

## TITLE I—ENERGY CRITICAL ELEMENTS

- Sec. 101. Energy critical elements program.  
Sec. 102. Policy Coordination Committee.  
Sec. 103. Rare earth materials loan guarantee program.

TITLE II—NATIONAL MATERIALS AND MINERALS POLICY,  
RESEARCH, AND DEVELOPMENT

- Sec. 201. Amendments to National Materials and Minerals Policy, Research  
and Development Act of 1980.  
Sec. 202. Repeal.

**1 SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) APPROPRIATE CONGRESSIONAL COMMIT-  
4 TEES.—The term “appropriate Congressional com-  
5 mittees” means the Committee on Science, Space,  
6 and Technology of the House of Representatives and  
7 the Committee on Commerce, Science, and Trans-  
8 portation and the Committee on Energy and Natural  
9 Resources of the Senate.

10 (2) CENTER.—The term “Center” means the  
11 Research and Development Information Center es-  
12 tablished in section 101(b).

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

15 (4) ENERGY CRITICAL ELEMENT.—The term  
16 “energy critical element” means any of a class of  
17 chemical elements that are critical to one or more  
18 new, energy-related technologies such that a short-  
19 age of such element would significantly inhibit large-

1 scale deployment of technologies that produce, trans-  
2 mit, store, or conserve energy.

3 (5) PROGRAM.—The term “program” means  
4 the program of research, development, demonstra-  
5 tion, and commercial application to assure the long-  
6 term, secure, and sustainable supply of energy crit-  
7 ical elements sufficient to satisfy the national secu-  
8 rity, economic well-being, and industrial production  
9 needs of the United States established in section  
10 101(a).

11 (6) RARE EARTH MATERIALS.—The term “rare  
12 earth materials” means any of the following chem-  
13 ical elements in any of their physical forms or chem-  
14 ical combinations:

- 15 (A) Scandium.
- 16 (B) Yttrium.
- 17 (C) Lanthanum.
- 18 (D) Cerium.
- 19 (E) Praseodymium.
- 20 (F) Neodymium.
- 21 (G) Promethium.
- 22 (H) Samarium.
- 23 (I) Europium.
- 24 (J) Gadolinium.
- 25 (K) Terbium.

1 (L) Dysprosium.

2 (M) Holmium.

3 (N) Erbium.

4 (O) Thulium.

5 (P) Ytterbium.

6 (Q) Lutetium.

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

9 **TITLE I—ENERGY CRITICAL**  
10 **ELEMENTS**

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

12 (a) ESTABLISHMENT OF PROGRAM.—

13 (1) IN GENERAL.—There is established in the  
14 Department a program of research, development,  
15 demonstration, and commercial application to assure  
16 the long-term, secure, and sustainable supply of en-  
17 ergy critical elements sufficient to satisfy the na-  
18 tional security, economic well-being, and industrial  
19 production needs of the United States.

20 (2) PROGRAM ACTIVITIES.—The program shall  
21 support activities to—

22 (A) better characterize and quantify virgin  
23 stocks of energy critical elements using theo-  
24 retical geochemical research;

1 (B) explore, discover, and recover energy  
2 critical elements using advanced science and  
3 technology;

4 (C) improve methods for the extraction,  
5 processing, use, recovery, and recycling of en-  
6 ergy critical elements;

7 (D) improve the understanding of the per-  
8 formance, processing, and adaptability in engi-  
9 neering designs of energy critical elements;

10 (E) identify and test alternative materials  
11 that can be substituted for energy critical ele-  
12 ments in particular applications; and

13 (F) engineer and test applications that—

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

16 (ii) use alternative materials; or

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

19 (3) IMPROVED PROCESSES AND TECH-  
20 NOLOGIES.—To the maximum extent practicable, the  
21 Secretary shall support new or significantly im-  
22 proved processes and technologies as compared to  
23 those currently in use in the energy critical elements  
24 industry.

1           (4) EXPANDING PARTICIPATION.—In carrying  
2 out the program, the Secretary shall encourage mul-  
3 tidisciplinary collaborations of participants, extensive  
4 opportunities for students at institutions of higher  
5 education, or both.

6           (5) CONSISTENCY.—The program shall be con-  
7 sistent with the policies and programs in the Na-  
8 tional Materials and Minerals Policy, Research and  
9 Development Act of 1980 (30 U.S.C. 1601 et seq.).

10          (6) INTERNATIONAL COLLABORATION.—In car-  
11 rying out the program, the Secretary shall collabo-  
12 rate, to the extent practicable, on activities of mu-  
13 tual interest with the relevant agencies of foreign  
14 countries with interests relating to energy critical  
15 elements.

16          (b) RESEARCH AND DEVELOPMENT INFORMATION  
17 CENTER.—

18           (1) IN GENERAL.—To collect, catalogue, dis-  
19 seminate, and archive information on energy critical  
20 elements, the Secretary shall establish, through a  
21 competitive process, a Research and Development  
22 Information Center.

23           (2) CENTER ACTIVITIES.—

24           (A) IN GENERAL.—The Center shall—

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

5 (ii) assist scientists and engineers in  
6 making the fullest possible use of the Cen-  
7 ter's data holdings;

8 (iii) seek and incorporate other infor-  
9 mation on energy critical elements to en-  
10 hance the Center's utility for program par-  
11 ticipants and other users;

12 (iv) provide advice to the Secretary  
13 concerning the program; and

14 (v) host conferences, at least annually,  
15 for participants in the program and other  
16 interested parties to promote information  
17 sharing and encourage new collaborative  
18 activities.

19 (B) RESTRICTION.—Not more than 2.5  
20 percent of the amounts made available pursuant  
21 to this section may be used for hosting con-  
22 ferences under subparagraph (A)(v).

23 (c) PLAN.—

24 (1) IN GENERAL.—Within 180 days after the  
25 date of enactment of this Act and biennially there-

1 after, the Secretary shall prepare and submit to the  
2 appropriate Congressional committees a plan to  
3 carry out the program and the Center.

4 (2) SPECIFIC REQUIREMENTS.—The plan shall  
5 include a description of—

6 (A) the research and development activities  
7 to be carried out by the program during the  
8 subsequent 2 years;

9 (B) the expected contributions of the pro-  
10 gram and the Center to the creation of innova-  
11 tive methods and technologies for the efficient  
12 and sustainable provision of energy critical ele-  
13 ments to the domestic economy;

14 (C) the technical criteria to be used to  
15 evaluate applications for loan guarantees under  
16 section 1706 of the Energy Policy Act of 2005  
17 (as added by section 103);

18 (D) any projects receiving loan guarantee  
19 support under such section 1706 and the status  
20 of such projects;

21 (E) how the program is promoting the  
22 broadest possible participation by academic, in-  
23 dustrial, and other contributors; and

24 (F) actions taken or proposed that reflect  
25 recommendations from the assessment con-



1           ducted under subsection (d) or the Secretary's  
2           rationale for not taking action pursuant to any  
3           recommendation from such assessment for  
4           plans submitted following the completion of the  
5           assessment under such subsection.

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

13          (d) ASSESSMENT.—

14           (1) IN GENERAL.—After the program has been  
15           in operation for 4 years, the Secretary shall offer to  
16           enter into a contract with the National Academy of  
17           Sciences under which the National Academy shall  
18           conduct an assessment of the program, including the  
19           operations and activities of the Center.

20           (2) INCLUSIONS.—The assessment shall include  
21           the recommendation of the National Academy of  
22           Sciences that the program should be—

23                   (A) continued, accompanied by a descrip-  
24                   tion of any improvements needed in the pro-  
25                   gram; or

1 (B) terminated, accompanied by a descrip-  
2 tion of the lessons learned from the execution of  
3 the program.

4 (3) AVAILABILITY.—The assessment shall be  
5 made available to Congress and the public upon  
6 completion.

7 (e) AUTHORIZATION OF APPROPRIATIONS.—

8 (1) IN GENERAL.—There are authorized to be  
9 appropriated to the Secretary to carry out this sec-  
10 tion the following sums:

11 (A) For fiscal year 2014, \$15,000,000.

12 (B) For fiscal year 2015, \$15,000,000.

13 (C) For fiscal year 2016, \$15,000,000.

14 (D) For fiscal year 2017, \$15,000,000.

15 (E) For fiscal year 2018, \$15,000,000.

16 (2) ASSESSMENT.—From the amounts author-  
17 ized under paragraph (1), there are authorized to be  
18 appropriated to the Secretary \$700,000 to enter into  
19 a contract under subsection (d)(1).

20 (3) AVAILABILITY.—Such sums shall remain  
21 available until expended.

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

23 The President, acting through the Office of Science  
24 and Technology Policy, shall—

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

9           (2) identify energy critical elements and estab-  
10 lish early warning systems for supply problems of  
11 energy critical elements;

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

19           (4) promote and encourage private enterprise in  
20 the development of an economically sound and stable  
21 domestic energy critical elements supply chain;

22           (5) promote and encourage the recycling of en-  
23 ergy critical elements, taking into account the logis-  
24 tics, economic viability, environmental sustainability,

1 and research and development needs for completing  
2 the recycling process;

3 (6) assess the need for and make recommenda-  
4 tions concerning the availability and adequacy of the  
5 supply of technically trained personnel necessary for  
6 energy critical elements research, development, ex-  
7 traction, and industrial production, with a particular  
8 focus on the problem of attracting and maintaining  
9 high quality professionals for maintaining an ade-  
10 quate supply of energy critical elements; and

11 (7) report to Congress on activities and findings  
12 under this section.

13 **SEC. 103. RARE EARTH MATERIALS LOAN GUARANTEE PRO-**  
14 **GRAM.**

15 (a) AMENDMENT.—Title XVII of the Energy Policy  
16 Act of 2005 (42 U.S.C. 16511 et seq.) is amended by add-  
17 ing at the end the following new section:

18 **“SEC. 1706. TEMPORARY PROGRAM FOR RARE EARTH MA-**  
19 **TERIALS REVITALIZATION.**

20 “(a) IN GENERAL.—As part of the program estab-  
21 lished in section 101 of the Securing Energy Critical Ele-  
22 ments and American Jobs Act of 2013, the Secretary is  
23 authorized to make guarantees under this title for the  
24 commercial application of new or significantly improved

1 technologies (compared to technologies currently in use in  
2 the United States) for the following categories of projects:

3 “(1) The separation and recovery of rare earth  
4 materials from ores or other sources.

5 “(2) The preparation of rare earth materials in  
6 oxide, metal, alloy, or other forms needed for na-  
7 tional security, economic well-being, or industrial  
8 production purposes.

9 “(3) The application of rare earth materials in  
10 the production of improved—

11 “(A) magnets;

12 “(B) batteries;

13 “(C) refrigeration systems;

14 “(D) optical systems;

15 “(E) electronics; and

16 “(F) catalysis.

17 “(4) The application of rare earth materials in  
18 other uses, as determined by the Secretary.

19 “(b) TIMELINESS.—The Secretary shall seek to mini-  
20 mize delay in approving loan guarantee applications, con-  
21 sistent with appropriate protection of taxpayer interests.

22 “(c) COOPERATION.—To the maximum extent prac-  
23 ticable, the Secretary shall cooperate with appropriate pri-  
24 vate sector participants to achieve a complete rare earth  
25 materials production capability in the United States with-

1 in 5 years after the date of enactment of the Securing  
2 Energy Critical Elements and American Jobs Act of 2013.

3 “(d) SUNSET.—The authority to enter into guaran-  
4 tees under this section shall expire on September 30,  
5 2021.”.

6 (b) TABLE OF CONTENTS AMENDMENT.—The table  
7 of contents for the Energy Policy Act of 2005 is amended  
8 by inserting after the item relating to section 1705 the  
9 following new item:

“Sec. 1706. Temporary program for rare earth materials revitalization.”.

10 **TITLE II—NATIONAL MATERIALS**  
11 **AND MINERALS POLICY, RE-**  
12 **SEARCH, AND DEVELOPMENT**

13 **SEC. 201. AMENDMENTS TO NATIONAL MATERIALS AND**  
14 **MINERALS POLICY, RESEARCH AND DEVEL-**  
15 **OPMENT ACT OF 1980.**

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

19 (1) by striking “date of enactment of this Act”  
20 each place it appears and inserting “date of enact-  
21 ment of the Securing Energy Critical Elements and  
22 American Jobs Act of 2013”;

23 (2) in subsection (b), by striking “Federal Co-  
24 ordinating Council for Science, Engineering, and

1 Technology” and inserting “National Science and  
2 Technology Council,”;

3 (3) in subsection (c)—

4 (A) by striking “the Federal Emergency”  
5 and all that follows through “Agency, and”;

6 (B) by striking “appropriate shall” and in-  
7 serting “appropriate, shall”;

8 (C) by striking paragraph (1);

9 (D) in paragraph (2), by striking “in the  
10 case” and all that follows through “sub-  
11 section,”;

12 (E) by redesignating paragraph (2) as  
13 paragraph (1);

14 (F) by redesignating paragraph (3) as  
15 paragraph (2); and

16 (G) by amending paragraph (2), as redес-  
17 igned, to read as follows:

18 “(2) assess the adequacy and stability of the  
19 supply of materials necessary to maintain national  
20 security, economic well-being, and industrial produc-  
21 tion.”;

22 (4) by striking subsections (d) and (e); and

23 (5) by redesignating subsection (f) as sub-  
24 section (d).

1 (b) POLICY.—Section 3 of such Act (30 U.S.C. 1602)  
2 is amended—

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

5 (2) by striking “The Congress further declares  
6 that implementation” and inserting “Implementa-  
7 tion”.

8 (c) IMPLEMENTATION.—Section 4 of such Act (30  
9 U.S.C. 1603) is amended—

10 (1) by striking “For the purpose” and all that  
11 follows through “declares that the” and inserting  
12 “The”; and

13 (2) by striking “departments and agencies,”  
14 and inserting “departments and agencies to imple-  
15 ment the policies set forth in section 3”.

16 **SEC. 202. REPEAL.**

17 Title II of Public Law 98–373 (30 U.S.C. 1801; 98  
18 Stat. 1248), also known as the National Critical Materials  
19 Act of 1984, is repealed.

○