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112TH CONGRESS
1ST SESSION

H. R. 952

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 8, 2011

Mr. MILLER of North Carolina introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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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.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Energy Critical Elements Renewal Act of 2011''.

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

SEC. 2. DEFINITIONS.

In this Act:

(1) APPROPRIATE CONGRESSIONAL COMMITTEES.—The term ''appropriate Congressional committees'' 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 Research and Development Information Center established in section 101(b).

(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 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) RARE EARTH MATERIALS.—The term ''rare earth materials'' means any of the following chemical elements in any of their physical forms or chemical combinations:

(A) Scandium.

(B) Yttrium.

(C) Lanthanum.

(D) Cerium.

(E) Praseodymium.

(F) Neodymium.

(G) Promethium.

(H) Samarium.

(I) Europium.

(J) Gadolinium.

(K) Terbium.

(L) Dysprosium.

(M) Holmium.

(N) Erbium.

(O) Thulium.

(P) Ytterbium.

(Q) Lutetium.

(6) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

TITLE I—ENERGY CRITICAL ELEMENTS

SEC. 101. ENERGY CRITICAL ELEMENTS PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—

(1) IN GENERAL.—There is established in the Department a program of research, development, demonstration, and commercial application to assure the long-term, secure, and sustainable supply of energy critical elements sufficient to satisfy the national security, economic well-being, and industrial production needs of the United States.

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

(A) better characterize and quantify virgin stocks of energy critical elements using theoretical geochemical research;

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

(C) improve methods for the extraction, processing, use, recovery, and recycling of energy critical elements;

(D) improve the understanding of the performance, processing, and adaptability in engineering designs of energy critical elements;

(E) identify and test alternative materials that can be substituted for energy critical elements in particular applications; and

(F) engineer and test applications that—

(i) use recycled energy critical elements;

(ii) use alternative materials; or

(iii) seek to minimize energy critical element content.

(3) IMPROVED PROCESSES AND TECHNOLOGIES.—To the maximum extent practicable, the Secretary shall support new or significantly improved processes and technologies as compared to those currently in use in the energy critical elements industry.

(4) EXPANDING PARTICIPATION.—The Secretary shall encourage multidisciplinary collaborations of participants, extensive opportunities for students at institutions of higher education, or both.

(5) CONSISTENCY.—The program shall be consistent with the policies and programs in the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1601 et seq.).

(6) INTERNATIONAL COLLABORATION.—In carrying out the program, the Secretary may collabo-

rate, to the extent practicable, on activities of mutual interest with the relevant agencies of foreign countries with interests relating to energy critical elements.

(b) RESEARCH AND DEVELOPMENT INFORMATION CENTER.—

(1) IN GENERAL.—To collect, catalogue, disseminate, and archive information on energy critical elements, the Secretary shall establish, through a competitive process, a Research and Development Information Center.

(2) CENTER ACTIVITIES.—

(A) IN GENERAL.—The Center shall—

(i) serve as the repository for scientific and technical data generated by the research and development activities funded under this section;

(ii) assist scientists and engineers in making the fullest possible use of the Center's data holdings;

(iii) seek and incorporate other information on energy critical elements to enhance the Center's utility for program participants and other users;

(iv) provide advice to the Secretary concerning the research and development program under subsection (a); and

(v) host conferences, at least annually, for participants in the energy critical elements program and other interested parties to promote information sharing and encourage new collaborative activities.

(B) RESTRICTION.—Not more than 2.5 percent of the amounts made available pursuant to this section may be used for hosting conferences under subparagraph (A)(v).

(c) PLAN.—

(1) IN GENERAL.—Within 180 days after the date of enactment of this Act and biennially thereafter, the Secretary shall prepare and submit to the appropriate Congressional committees a plan to carry out the program established under subsection (a) and the Center established under subsection (b).

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

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

(B) the expected contributions of the program and the Center to the creation of innovative methods and technologies for the efficient and sustainable provision of energy critical elements to the domestic economy;

(C) the technical criteria to be used to evaluate applications for loan guarantees under section 1706 of the Energy Policy Act of 2005;

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

(E) how the program is promoting the broadest possible participation by academic, industrial, and other contributors; and

(F) actions taken or proposed that reflect recommendations from the assessment conducted under subsection (d) or the Secretary's rationale for not taking action pursuant to any recommendation from such assessment for plans submitted following the completion of the assessment under such subsection.

(3) CONSULTATION.—In preparing each plan under paragraph (1), the Secretary shall consult with appropriate representatives of industry, institutions of higher education, Department of Energy na-

tional laboratories, professional and technical societies, and other entities, as determined by the Secretary.

(d) ASSESSMENT.—

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

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

(A) continued, accompanied by a description of any improvements needed in the program; or

(B) terminated, accompanied by a description of the lessons learned from the execution of the program.

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

(e) AUTHORIZATION OF APPROPRIATIONS.—

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

(A) For fiscal year 2012, $10,000,000.

(B) For fiscal year 2013, $15,000,000.

(C) For fiscal year 2014, $15,000,000.

(D) For fiscal year 2015, $15,000,000.

(E) For fiscal year 2016, $15,000,000.

(2) ASSESSMENT.—From the amounts authorized under paragraph (1), there are authorized to be appropriated to the Secretary $700,000 to enter into a contract under subsection (d)(1).

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

SEC. 102. SUPPLY OF ENERGY CRITICAL ELEMENTS.

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

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

(2) identify energy critical elements and establish early warning systems for supply problems of energy critical elements;

(3) establish a mechanism for the coordination and evaluation of Federal programs with energy critical element needs, including programs involving research and development, in a manner that complements related efforts carried out by the private sector and other domestic and international agencies and organizations;

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

(5) promote and encourage the recycling of energy critical elements, taking into account the logistics, economic viability, environmental sustainability, and research and development needs for completing the recycling process;

(6) assess the need for and make recommendations concerning the availability and adequacy of the supply of technically trained personnel necessary for energy critical elements research, development, extraction, and industrial production, with a particular focus on the problem of attracting and maintaining

high quality professionals for maintaining an adequate supply of energy critical elements; and

(7) report to Congress on activities and findings under this subsection.

SEC. 103. RARE EARTH MATERIALS LOAN GUARANTEE PROGRAM.

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

"SEC. 1706. TEMPORARY PROGRAM FOR RARE EARTH MATERIALS REVITALIZATION.

''(a) IN GENERAL.—As part of the program established in section 101 of the Energy Critical Elements Renewal Act of 2011, the Secretary is authorized to make guarantees under this title for the commercial application of new or significantly improved technologies (compared to technologies currently in use in the United States) for the following categories of projects:

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

''(2) The preparation of rare earth materials in oxide, metal, alloy, or other forms needed for national security, economic well-being, or industrial production purposes.

''(3) The application of rare earth materials in the production of improved—

''(A) magnets;

''(B) batteries;

''(C) refrigeration systems;

''(D) optical systems;

''(E) electronics; and

''(F) catalysis.

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

''(b) TIMELINESS.—The Secretary shall seek to minimize delay in approving loan guarantee applications, consistent with appropriate protection of taxpayer interests.

''(c) COOPERATION.—To the maximum extent practicable, the Secretary shall cooperate with appropriate private sector participants to achieve a complete rare earth materials production capability in the United States within 5 years after the date of enactment of the Energy Critical Elements Renewal Act of 2011.

''(d) SUNSET.—The authority to enter into guarantees under this section shall expire on September 30, 2019.''.

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Policy Act of 2005 is amended

by inserting after the item relating to section 1705 the following new item:

''Sec. 1706. Temporary program for rare earth materials revitalization.''.

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.

(a) PROGRAM PLAN.—Section 5 of the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1604) is amended—

(1) by striking ''date of enactment of this Act'' each place it appears and inserting ''date of enactment of the Energy Critical Elements Renewal Act of 2011'';

(2) in subsection (b), by striking ''Federal Coordinating Council for Science, Engineering, and Technology'' and inserting ''National Science and Technology Council,'';

(3) in subsection (c)—

(A) by striking ''the Federal Emergency'' and all that follows through ''Agency, and'';

(B) by striking ''appropriate shall'' and inserting ''appropriate, shall'';

(C) by striking paragraph (1);

(D) in paragraph (2), by striking ''in the case'' and all that follows through ''subsection,''

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

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

(G) by amending paragraph (2), as redesignated, to read as follows:

''(2) assess the adequacy and stability of the supply of materials necessary to maintain national security, economic well-being, and industrial production.'';

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

(5) by redesignating subsection (f) as subsection (d).

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

(1) by striking ''The Congress declares that it'' and inserting ''It''; and

(2) by striking ''The Congress further declares that implementation'' and inserting ''Implementation''.

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

(1) by striking ''For the purpose'' and all that follows through ''declares that the'' and inserting ''The''; and

(2) by striking ''departments and agencies,'' and inserting ''departments and agencies to implement the policies set forth in section 3''.

SEC. 202. REPEAL.

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

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