

AMENDMENT NO. _____ Calendar No. _____

Purpose: In the nature of a substitute.

IN THE SENATE OF THE UNITED STATES—116th Cong., 1st Sess.

S. 1317

To facilitate the availability, development, and environmentally responsible production of domestic resources to meet national material or critical mineral needs, and for other purposes.

Referred to the Committee on _____ and
ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT IN THE NATURE OF A SUBSTITUTE intended
to be proposed by _____

Viz:

1 Strike all after the enacting clause and insert the fol-
2 lowing:

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) **SHORT TITLE.**—This Act may be cited as the
5 “American Mineral Security Act”.

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

Sec. 1. Short title; table of contents.

TITLE I—AMERICAN MINERAL SECURITY

Sec. 101. Definitions.

Sec. 102. Policy.

Sec. 103. Critical mineral designations.

Sec. 104. Resource assessment.

Sec. 105. Permitting.

- Sec. 106. Federal Register process.
- Sec. 107. Recycling, efficiency, and alternatives.
- Sec. 108. Analysis and forecasting.
- Sec. 109. Education and workforce.
- Sec. 110. National geological and geophysical data preservation program.
- Sec. 111. Administration.
- Sec. 112. Authorization of appropriations.

TITLE II—RARE EARTH ELEMENT ADVANCED COAL
TECHNOLOGIES

- Sec. 201. Program for extraction and recovery of rare earth elements and minerals from coal and coal byproducts.
- Sec. 202. Report.

1 **TITLE I—AMERICAN MINERAL**
2 **SECURITY**

3 **SEC. 101. DEFINITIONS.**

4 In this title:

5 (1) BYPRODUCT.—The term “byproduct”
6 means a critical mineral—

7 (A) the recovery of which depends on the
8 production of a host mineral that is not des-
9 ignated as a critical mineral; and

10 (B) that exists in sufficient quantities to
11 be recovered during processing or refining.

12 (2) CRITICAL MINERAL.—

13 (A) IN GENERAL.—The term “critical min-
14 eral” means any mineral, element, substance, or
15 material designated as critical by the Secretary
16 under section 103.

17 (B) EXCLUSIONS.—The term “critical
18 mineral” does not include—

1 (i) fuel minerals, including oil, natural
2 gas, or any other fossil fuels; or

3 (ii) water, ice, or snow.

4 (3) CRITICAL MINERAL MANUFACTURING.—The
5 term “critical mineral manufacturing” means—

6 (A) the exploration, development, mining,
7 production, processing, refining, alloying, sepa-
8 ration, concentration, magnetic sintering, melt-
9 ing, or beneficiation of critical minerals within
10 the United States;

11 (B) the fabrication, assembly, or produc-
12 tion, within the United States, of equipment,
13 components, or other goods with energy tech-
14 nology-, defense-, agriculture-, consumer elec-
15 tronics-, or health care-related applications; or

16 (C) any other value-added, manufacturing-
17 related use of critical minerals undertaken with-
18 in the United States.

19 (4) INDIAN TRIBE.—The term “Indian tribe”
20 has the meaning given the term in section 4 of the
21 Indian Self-Determination and Education Assistance
22 Act (25 U.S.C. 5304).

23 (5) SECRETARY.—The term “Secretary” means
24 the Secretary of the Interior.

25 (6) STATE.—The term “State” means—

- 1 (A) a State;
- 2 (B) the District of Columbia;
- 3 (C) the Commonwealth of Puerto Rico;
- 4 (D) Guam;
- 5 (E) American Samoa;
- 6 (F) the Commonwealth of the Northern
7 Mariana Islands; and
- 8 (G) the United States Virgin Islands.

9 **SEC. 102. POLICY.**

10 (a) IN GENERAL.—Section 3 of the National Mate-
11 rials and Minerals Policy, Research and Development Act
12 of 1980 (30 U.S.C. 1602) is amended in the second sen-
13 tence—

14 (1) by striking paragraph (3) and inserting the
15 following:

16 “(3) establish an analytical and forecasting ca-
17 pability for identifying critical mineral demand, sup-
18 ply, and other factors to allow informed actions to
19 be taken to avoid supply shortages, mitigate price
20 volatility, and prepare for demand growth and other
21 market shifts;”;

22 (2) in paragraph (6), by striking “and” after
23 the semicolon at the end; and

24 (3) by striking paragraph (7) and inserting the
25 following:

1 “(7) facilitate the availability, development, and
2 environmentally responsible production of domestic
3 resources to meet national material or critical min-
4 eral needs;

5 “(8) avoid duplication of effort, prevent unnec-
6 essary paperwork, and minimize delays in the ad-
7 ministration of applicable laws (including regula-
8 tions) and the issuance of permits and authoriza-
9 tions necessary to explore for, develop, and produce
10 critical minerals and to construct critical mineral
11 manufacturing facilities in accordance with applica-
12 ble environmental and land management laws;

13 “(9) strengthen—

14 “(A) educational and research capabilities
15 at not lower than the secondary school level;
16 and

17 “(B) workforce training for exploration
18 and development of critical minerals and critical
19 mineral manufacturing;

20 “(10) bolster international cooperation through
21 technology transfer, information sharing, and other
22 means;

23 “(11) promote the efficient production, use, and
24 recycling of critical minerals;

1 “(12) develop alternatives to critical minerals;
2 and

3 “(13) establish contingencies for the production
4 of, or access to, critical minerals for which viable
5 sources do not exist within the United States.”.

6 (b) CONFORMING AMENDMENT.—Section 2(b) of the
7 National Materials and Minerals Policy, Research and De-
8 velopment Act of 1980 (30 U.S.C. 1601(b)) is amended
9 by striking “(b) As used in this Act, the term” and insert-
10 ing the following:

11 “(b) DEFINITIONS.—In this Act:

12 “(1) CRITICAL MINERAL.—The term ‘critical
13 mineral’ means any mineral, element, substance, or
14 material designated as critical by the Secretary
15 under section 103 of the American Mineral Security
16 Act.

17 “(2) MATERIALS.—The term”.

18 **SEC. 103. CRITICAL MINERAL DESIGNATIONS.**

19 (a) DRAFT METHODOLOGY AND LIST.—The Sec-
20 retary, acting through the Director of the United States
21 Geological Survey (referred to in this section as the “Sec-
22 retary”), shall publish in the Federal Register for public
23 comment—

24 (1) a description of the draft methodology used
25 to identify a draft list of critical minerals;

1 (2) a draft list of minerals, elements, sub-
2 stances, and materials that qualify as critical min-
3 erals; and

4 (3) a draft list of critical minerals recovered as
5 byproducts.

6 (b) AVAILABILITY OF DATA.—If available data is in-
7 sufficient to provide a quantitative basis for the method-
8 ology developed under this section, qualitative evidence
9 may be used to the extent necessary.

10 (c) FINAL METHODOLOGY AND LIST.—After review-
11 ing public comments on the draft methodology and the
12 draft list of critical minerals published under subsection
13 (a) and updating the methodology and list as appropriate,
14 not later than 45 days after the date on which the public
15 comment period with respect to the draft methodology and
16 draft list closes, the Secretary shall publish in the Federal
17 Register—

18 (1) a description of the final methodology for
19 determining which minerals, elements, substances,
20 and materials qualify as critical minerals; and

21 (2) the final list of critical minerals.

22 (d) DESIGNATIONS.—

23 (1) IN GENERAL.—For purposes of carrying out
24 this section, the Secretary shall maintain a list of
25 minerals, elements, substances, and materials des-

1 ignated as critical, pursuant to the final method-
2 ology published under subsection (c), that the Sec-
3 retary determines—

4 (A) are essential to the economic or na-
5 tional security of the United States;

6 (B) the supply chain of which is vulnerable
7 to disruption (including restrictions associated
8 with foreign political risk, abrupt demand
9 growth, military conflict, violent unrest, anti-
10 competitive or protectionist behaviors, and other
11 risks throughout the supply chain); and

12 (C) serve an essential function in the man-
13 ufacturing of a product (including energy tech-
14 nology-, defense-, currency-, agriculture-, con-
15 sumer electronics-, and health care-related ap-
16 plications), the absence of which would have
17 significant consequences for the economic or na-
18 tional security of the United States.

19 (2) INCLUSIONS.—Notwithstanding the criteria
20 under subsection (c), the Secretary may designate
21 and include on the list any mineral, element, sub-
22 stance, or material determined by another Federal
23 agency to be strategic and critical to the defense or
24 national security of the United States.

1 (3) REQUIRED CONSULTATION.—The Secretary
2 shall consult with the Secretaries of Defense, Com-
3 merce, Agriculture, and Energy and the United
4 States Trade Representative in designating minerals,
5 elements, substances, and materials as critical under
6 this subsection.

7 (e) SUBSEQUENT REVIEW.—

8 (1) IN GENERAL.—The Secretary, in consulta-
9 tion with the Secretaries of Defense, Commerce, Ag-
10 riculture, and Energy and the United States Trade
11 Representative, shall review the methodology and list
12 under subsection (c) and the designations under sub-
13 section (d) at least every 3 years, or more frequently
14 as the Secretary considers to be appropriate.

15 (2) REVISIONS.—Subject to subsection (d)(1),
16 the Secretary may—

17 (A) revise the methodology described in
18 this section;

19 (B) determine that minerals, elements,
20 substances, and materials previously determined
21 to be critical minerals are no longer critical
22 minerals; and

23 (C) designate additional minerals, ele-
24 ments, substances, or materials as critical min-
25 erals.

1 (f) NOTICE.—On finalization of the methodology and
2 the list under subsection (c), or any revision to the meth-
3 odology or list under subsection (e), the Secretary shall
4 submit to Congress written notice of the action.

5 **SEC. 104. RESOURCE ASSESSMENT.**

6 (a) IN GENERAL.—Not later than 4 years after the
7 date of enactment of this Act, in consultation with applica-
8 ble State (including geological surveys), local, academic,
9 industry, and other entities, the Secretary shall complete
10 a comprehensive national assessment of each critical min-
11 eral that—

12 (1) identifies and quantifies known critical min-
13 eral resources, using all available public and private
14 information and datasets, including exploration his-
15 tories; and

16 (2) provides a quantitative and qualitative as-
17 sessment of undiscovered critical mineral resources
18 throughout the United States, including probability
19 estimates of tonnage and grade, using all available
20 public and private information and datasets, includ-
21 ing exploration histories.

22 (b) SUPPLEMENTARY INFORMATION.—In carrying
23 out this section, the Secretary may carry out surveys and
24 field work (including drilling, remote sensing, geophysical
25 surveys, topographical and geological mapping, and geo-

1 chemical sampling and analysis) to supplement existing in-
2 formation and datasets available for determining the exist-
3 ence of critical minerals in the United States.

4 (c) PUBLIC ACCESS.—Subject to applicable law, to
5 the maximum extent practicable, the Secretary shall make
6 all data and metadata collected from the comprehensive
7 national assessment carried out under subsection (a) pub-
8 lically and electronically accessible.

9 (d) TECHNICAL ASSISTANCE.—At the request of the
10 Governor of a State or the head of an Indian tribe, the
11 Secretary may provide technical assistance to State gov-
12 ernments and Indian tribes conducting critical mineral re-
13 source assessments on non-Federal land.

14 (e) PRIORITIZATION.—

15 (1) IN GENERAL.—The Secretary may sequence
16 the completion of resource assessments for each crit-
17 ical mineral such that critical minerals considered to
18 be most critical under the methodology established
19 under section 103 are completed first.

20 (2) REPORTING.—During the period beginning
21 not later than 1 year after the date of enactment of
22 this Act and ending on the date of completion of all
23 of the assessments required under this section, the
24 Secretary shall submit to Congress on an annual
25 basis an interim report that—

1 (A) identifies the sequence and schedule
2 for completion of the assessments if the Sec-
3 retary sequences the assessments; or

4 (B) describes the progress of the assess-
5 ments if the Secretary does not sequence the
6 assessments.

7 (f) UPDATES.—The Secretary may periodically up-
8 date the assessments conducted under this section based
9 on—

10 (1) the generation of new information or
11 datasets by the Federal Government; or

12 (2) the receipt of new information or datasets
13 from critical mineral producers, State geological sur-
14 veys, academic institutions, trade associations, or
15 other persons.

16 (g) ADDITIONAL SURVEYS.—The Secretary shall
17 complete a resource assessment for each additional min-
18 eral or element subsequently designated as a critical min-
19 eral under section 103(e)(2) not later than 2 years after
20 the designation of the mineral or element.

21 (h) REPORT.—Not later than 2 years after the date
22 of enactment of this Act, the Secretary shall submit to
23 Congress a report describing the status of geological sur-
24 veying of Federal land for any mineral commodity—

1 (1) for which the United States was dependent
2 on a foreign country for more than 25 percent of the
3 United States supply, as depicted in the report
4 issued by the United States Geological Survey enti-
5 tled “Mineral Commodity Summaries 2019”; but

6 (2) that is not designated as a critical mineral
7 under section 103.

8 **SEC. 105. PERMITTING.**

9 (a) SENSE OF CONGRESS.—It is the sense of Con-
10 gress that—

11 (1) critical minerals are fundamental to the
12 economy, competitiveness, and security of the United
13 States;

14 (2) to the maximum extent practicable, the crit-
15 ical mineral needs of the United States should be
16 satisfied by minerals responsibly produced and recy-
17 cled in the United States; and

18 (3) the Federal permitting process has been
19 identified as an impediment to mineral production
20 and the mineral security of the United States.

21 (b) PERFORMANCE IMPROVEMENTS.—To improve
22 the quality and timeliness of decisions, the Secretary (act-
23 ing through the Director of the Bureau of Land Manage-
24 ment) and the Secretary of Agriculture (acting through
25 the Chief of the Forest Service) (referred to in this section

1 as the “Secretaries”) shall, to the maximum extent prac-
2 ticable, with respect to critical mineral production on Fed-
3 eral land, complete Federal permitting and review proc-
4 esses with maximum efficiency and effectiveness, while
5 supporting vital economic growth, by—

6 (1) establishing and adhering to timelines and
7 schedules for the consideration of, and final deci-
8 sions regarding, applications, operating plans, leases,
9 licenses, permits, and other use authorizations for
10 mineral-related activities on Federal land;

11 (2) establishing clear, quantifiable, and tem-
12 poral permitting performance goals and tracking
13 progress against those goals;

14 (3) engaging in early collaboration among agen-
15 cies, project sponsors, and affected stakeholders—

16 (A) to incorporate and address the inter-
17 ests of those parties; and

18 (B) to minimize delays;

19 (4) ensuring transparency and accountability by
20 using cost-effective information technology to collect
21 and disseminate information regarding individual
22 projects and agency performance;

23 (5) engaging in early and active consultation
24 with State, local, and Indian tribal governments to
25 avoid conflicts or duplication of effort, resolve con-

1 cerns, and allow for concurrent, rather than sequen-
2 tial, reviews;

3 (6) providing demonstrable improvements in the
4 performance of Federal permitting and review proc-
5 esses, including lower costs and more timely deci-
6 sions;

7 (7) expanding and institutionalizing permitting
8 and review process improvements that have proven
9 effective;

10 (8) developing mechanisms to better commu-
11 nicate priorities and resolve disputes among agencies
12 at the national, regional, State, and local levels; and

13 (9) developing other practices, such as
14 preapplication procedures.

15 (c) REVIEW AND REPORT.—Not later than 1 year
16 after the date of enactment of this Act, the Secretaries
17 shall submit to Congress a report that—

18 (1) identifies additional measures (including
19 regulatory and legislative proposals, as appropriate)
20 that would increase the timeliness of permitting ac-
21 tivities for the exploration and development of do-
22 mestic critical minerals;

23 (2) identifies options (including cost recovery
24 paid by permit applicants) for ensuring adequate
25 staffing and training of Federal entities and per-

1 sonnel responsible for the consideration of applica-
2 tions, operating plans, leases, licenses, permits, and
3 other use authorizations for critical mineral-related
4 activities on Federal land;

5 (3) quantifies the amount of time typically re-
6 quired (including range derived from minimum and
7 maximum durations, mean, median, variance, and
8 other statistical measures or representations) to
9 complete each step (including those aspects outside
10 the control of the executive branch, such as judicial
11 review, applicant decisions, or State and local gov-
12 ernment involvement) associated with the develop-
13 ment and processing of applications, operating
14 plans, leases, licenses, permits, and other use au-
15 thorizations for critical mineral-related activities on
16 Federal land, which shall serve as a baseline for the
17 performance metric under subsection (d); and

18 (4) describes actions carried out pursuant to
19 subsection (b).

20 (d) PERFORMANCE METRIC.—Not later than 90 days
21 after the date of submission of the report under subsection
22 (c), the Secretaries, after providing public notice and an
23 opportunity to comment, shall develop and publish a per-
24 formance metric for evaluating the progress made by the
25 executive branch to expedite the permitting of activities

1 that will increase exploration for, and development of, do-
2 mestic critical minerals, while maintaining environmental
3 standards.

4 (e) ANNUAL REPORTS.—Beginning with the first
5 budget submission by the President under section 1105
6 of title 31, United States Code, after publication of the
7 performance metric required under subsection (d), and an-
8 nually thereafter, the Secretaries shall submit to Congress
9 a report that—

10 (1) summarizes the implementation of rec-
11 ommendations, measures, and options identified in
12 paragraphs (1) and (2) of subsection (c);

13 (2) using the performance metric under sub-
14 section (d), describes progress made by the executive
15 branch, as compared to the baseline established pur-
16 suant to subsection (c)(3), on expediting the permit-
17 ting of activities that will increase exploration for,
18 and development of, domestic critical minerals; and

19 (3) compares the United States to other coun-
20 tries in terms of permitting efficiency and any other
21 criteria relevant to the globally competitive critical
22 minerals industry.

23 (f) INDIVIDUAL PROJECTS.—Using data from the
24 Secretaries generated under subsection (e), the Director
25 of the Office of Management and Budget shall prioritize

1 inclusion of individual critical mineral projects on the
2 website operated by the Office of Management and Budget
3 in accordance with section 1122 of title 31, United States
4 Code.

5 (g) REPORT OF SMALL BUSINESS ADMINISTRA-
6 TION.—Not later than 1 year and 300 days after the date
7 of enactment of this Act, the Administrator of the Small
8 Business Administration shall submit to the applicable
9 committees of Congress a report that assesses the per-
10 formance of Federal agencies with respect to—

11 (1) complying with chapter 6 of title 5, United
12 States Code (commonly known as the “Regulatory
13 Flexibility Act”), in promulgating regulations appli-
14 cable to the critical minerals industry; and

15 (2) performing an analysis of regulations appli-
16 cable to the critical minerals industry that may be
17 outmoded, inefficient, duplicative, or excessively bur-
18 densome.

19 (h) APPLICATION.—Section 41001(6)(A) of the
20 FAST Act (42 U.S.C. 4370m(6)(A)) is amended in the
21 matter preceding clause (i) by inserting “(including crit-
22 ical mineral manufacturing (as defined in section 101 of
23 the American Mineral Security Act))” after “manufac-
24 turing”.

1 **SEC. 106. FEDERAL REGISTER PROCESS.**

2 (a) DEPARTMENTAL REVIEW.—Absent any extraor-
3 dinary circumstance, and except as otherwise required by
4 law, the Secretary and the Secretary of Agriculture shall
5 ensure that each Federal Register notice described in sub-
6 section (b) shall be—

7 (1) subject to any required reviews within the
8 Department of the Interior or the Department of
9 Agriculture; and

10 (2) published in final form in the Federal Reg-
11 ister not later than 45 days after the date of initial
12 preparation of the notice.

13 (b) PREPARATION.—The preparation of Federal Reg-
14 ister notices required by law associated with the issuance
15 of a critical mineral exploration or mine permit shall be
16 delegated to the organizational level within the agency re-
17 sponsible for issuing the critical mineral exploration or
18 mine permit.

19 (c) TRANSMISSION.—All Federal Register notices re-
20 garding official document availability, announcements of
21 meetings, or notices of intent to undertake an action shall
22 be originated in, and transmitted to the Federal Register
23 from, the office in which, as applicable—

24 (1) the documents or meetings are held; or

25 (2) the activity is initiated.

1 **SEC. 107. RECYCLING, EFFICIENCY, AND ALTERNATIVES.**

2 (a) ESTABLISHMENT.—The Secretary of Energy (re-
3 ferred to in this section as the “Secretary”) shall conduct
4 a program of research and development—

5 (1) to promote the efficient production, use,
6 and recycling of critical minerals throughout the
7 supply chain; and

8 (2) to develop alternatives to critical minerals
9 that do not occur in significant abundance in the
10 United States.

11 (b) COOPERATION.—In carrying out the program, the
12 Secretary shall cooperate with appropriate—

13 (1) Federal agencies and National Laboratories;

14 (2) critical mineral producers;

15 (3) critical mineral processors;

16 (4) critical mineral manufacturers;

17 (5) trade associations;

18 (6) academic institutions;

19 (7) small businesses; and

20 (8) other relevant entities or individuals.

21 (c) ACTIVITIES.—Under the program, the Secretary
22 shall carry out activities that include the identification and
23 development of—

24 (1) advanced critical mineral extraction, pro-
25 duction, separation, alloying, or processing tech-
26 nologies that decrease the energy consumption, envi-

1 ronmental impact, and costs of those activities, in-
2 cluding—

3 (A) efficient water and wastewater man-
4 agement strategies;

5 (B) technologies and management strate-
6 gies to control the environmental impacts of
7 radionuclides in ore tailings;

8 (C) technologies for separation and proc-
9 essing; and

10 (D) technologies for increasing the recov-
11 ery rates of byproducts from host metal ores;

12 (2) technologies or process improvements that
13 minimize the use, or lead to more efficient use, of
14 critical minerals across the full supply chain;

15 (3) technologies, process improvements, or de-
16 sign optimizations that facilitate the recycling of
17 critical minerals, and options for improving the rates
18 of collection of products and scrap containing critical
19 minerals from post-consumer, industrial, or other
20 waste streams;

21 (4) commercial markets, advanced storage
22 methods, energy applications, and other beneficial
23 uses of critical minerals processing byproducts;

24 (5) alternative minerals, metals, and materials,
25 particularly those available in abundance within the

1 United States and not subject to potential supply re-
2 strictions, that lessen the need for critical minerals;
3 and

4 (6) alternative energy technologies or alter-
5 native designs of existing energy technologies, par-
6 ticularly those that use minerals that—

7 (A) occur in abundance in the United
8 States; and

9 (B) are not subject to potential supply re-
10 strictions.

11 (d) REPORTS.—Not later than 2 years after the date
12 of enactment of this Act, and annually thereafter, the Sec-
13 retary shall submit to Congress a report summarizing the
14 activities, findings, and progress of the program.

15 **SEC. 108. ANALYSIS AND FORECASTING.**

16 (a) CAPABILITIES.—In order to evaluate existing crit-
17 ical mineral policies and inform future actions that may
18 be taken to avoid supply shortages, mitigate price vola-
19 tility, and prepare for demand growth and other market
20 shifts, the Secretary, in consultation with the Energy In-
21 formation Administration, academic institutions, and oth-
22 ers in order to maximize the application of existing com-
23 petencies related to developing and maintaining computer-
24 models and similar analytical tools, shall conduct and pub-
25 lish the results of an annual report that includes—

1 (1) as part of the annually published Mineral
2 Commodity Summaries from the United States Geo-
3 logical Survey, a comprehensive review of critical
4 mineral production, consumption, and recycling pat-
5 terns, including—

6 (A) the quantity of each critical mineral
7 domestically produced during the preceding
8 year;

9 (B) the quantity of each critical mineral
10 domestically consumed during the preceding
11 year;

12 (C) market price data or other price data
13 for each critical mineral;

14 (D) an assessment of—

15 (i) critical mineral requirements to
16 meet the national security, energy, eco-
17 nomic, industrial, technological, and other
18 needs of the United States during the pre-
19 ceding year;

20 (ii) the reliance of the United States
21 on foreign sources to meet those needs
22 during the preceding year; and

23 (iii) the implications of any supply
24 shortages, restrictions, or disruptions dur-
25 ing the preceding year;

1 (E) the quantity of each critical mineral
2 domestically recycled during the preceding year;

3 (F) the market penetration during the pre-
4 ceding year of alternatives to each critical min-
5 eral;

6 (G) a discussion of international trends as-
7 sociated with the discovery, production, con-
8 sumption, use, costs of production, prices, and
9 recycling of each critical mineral as well as the
10 development of alternatives to critical minerals;
11 and

12 (H) such other data, analyses, and evalua-
13 tions as the Secretary finds are necessary to
14 achieve the purposes of this section; and

15 (2) a comprehensive forecast, entitled the “An-
16 nual Critical Minerals Outlook”, of projected critical
17 mineral production, consumption, and recycling pat-
18 terns, including—

19 (A) the quantity of each critical mineral
20 projected to be domestically produced over the
21 subsequent 1-year, 5-year, and 10-year periods;

22 (B) the quantity of each critical mineral
23 projected to be domestically consumed over the
24 subsequent 1-year, 5-year, and 10-year periods;

25 (C) an assessment of—

1 (i) critical mineral requirements to
2 meet projected national security, energy,
3 economic, industrial, technological, and
4 other needs of the United States;

5 (ii) the projected reliance of the
6 United States on foreign sources to meet
7 those needs; and

8 (iii) the projected implications of po-
9 tential supply shortages, restrictions, or
10 disruptions;

11 (D) the quantity of each critical mineral
12 projected to be domestically recycled over the
13 subsequent 1-year, 5-year, and 10-year periods;

14 (E) the market penetration of alternatives
15 to each critical mineral projected to take place
16 over the subsequent 1-year, 5-year, and 10-year
17 periods;

18 (F) a discussion of reasonably foreseeable
19 international trends associated with the dis-
20 covery, production, consumption, use, costs of
21 production, and recycling of each critical min-
22 eral as well as the development of alternatives
23 to critical minerals; and

24 (G) such other projections relating to each
25 critical mineral as the Secretary determines to

1 be necessary to achieve the purposes of this sec-
2 tion.

3 (b) PROPRIETARY INFORMATION.—In preparing a re-
4 port described in subsection (a), the Secretary shall en-
5 sure, consistent with section 5(f) of the National Materials
6 and Minerals Policy, Research and Development Act of
7 1980 (30 U.S.C. 1604(f)), that—

8 (1) no person uses the information and data
9 collected for the report for a purpose other than the
10 development of or reporting of aggregate data in a
11 manner such that the identity of the person or firm
12 who supplied the information is not discernible and
13 is not material to the intended uses of the informa-
14 tion;

15 (2) no person discloses any information or data
16 collected for the report unless the information or
17 data has been transformed into a statistical or ag-
18 gregate form that does not allow the identification of
19 the person or firm who supplied particular informa-
20 tion; and

21 (3) procedures are established to require the
22 withholding of any information or data collected for
23 the report if the Secretary determines that with-
24 holding is necessary to protect proprietary informa-

1 tion, including any trade secrets or other confiden-
2 tial information.

3 **SEC. 109. EDUCATION AND WORKFORCE.**

4 (a) WORKFORCE ASSESSMENT.—Not later than 1
5 year and 300 days after the date of enactment of this Act,
6 the Secretary of Labor (in consultation with the Secretary,
7 the Director of the National Science Foundation, institu-
8 tions of higher education with substantial expertise in
9 mining, institutions of higher education with significant
10 expertise in minerals research, including fundamental re-
11 search into alternatives, and employers in the critical min-
12 erals sector) shall submit to Congress an assessment of
13 the domestic availability of technically trained personnel
14 necessary for critical mineral exploration, development, as-
15 sessment, production, manufacturing, recycling, analysis,
16 forecasting, education, and research, including an analysis
17 of—

18 (1) skills that are in the shortest supply as of
19 the date of the assessment;

20 (2) skills that are projected to be in short sup-
21 ply in the future;

22 (3) the demographics of the critical minerals in-
23 dustry and how the demographics will evolve under
24 the influence of factors such as an aging workforce;

1 (4) the effectiveness of training and education
2 programs in addressing skills shortages;

3 (5) opportunities to hire locally for new and ex-
4 isting critical mineral activities;

5 (6) the sufficiency of personnel within relevant
6 areas of the Federal Government for achieving the
7 policies described in section 3 of the National Mate-
8 rials and Minerals Policy, Research and Develop-
9 ment Act of 1980 (30 U.S.C. 1602); and

10 (7) the potential need for new training pro-
11 grams to have a measurable effect on the supply of
12 trained workers in the critical minerals industry.

13 (b) CURRICULUM STUDY.—

14 (1) IN GENERAL.—The Secretary and the Sec-
15 retary of Labor shall jointly enter into an arrange-
16 ment with the National Academy of Sciences and the
17 National Academy of Engineering under which the
18 Academies shall coordinate with the National
19 Science Foundation on conducting a study—

20 (A) to design an interdisciplinary program
21 on critical minerals that will support the critical
22 mineral supply chain and improve the ability of
23 the United States to increase domestic, critical
24 mineral exploration, development, production,

1 manufacturing, research, including fundamental
2 research into alternatives, and recycling;

3 (B) to address undergraduate and grad-
4 uate education, especially to assist in the devel-
5 opment of graduate level programs of research
6 and instruction that lead to advanced degrees
7 with an emphasis on the critical mineral supply
8 chain or other positions that will increase do-
9 mestic, critical mineral exploration, develop-
10 ment, production, manufacturing, research, in-
11 cluding fundamental research into alternatives,
12 and recycling;

13 (C) to develop guidelines for proposals
14 from institutions of higher education with sub-
15 stantial capabilities in the required disciplines
16 for activities to improve the critical mineral
17 supply chain and advance the capacity of the
18 United States to increase domestic, critical min-
19 eral exploration, research, development, produc-
20 tion, manufacturing, and recycling; and

21 (D) to outline criteria for evaluating per-
22 formance and recommendations for the amount
23 of funding that will be necessary to establish
24 and carry out the program described in sub-
25 section (c).

1 (2) REPORT.—Not later than 2 years after the
2 date of enactment of this Act, the Secretary shall
3 submit to Congress a description of the results of
4 the study required under paragraph (1).

5 (c) PROGRAM.—

6 (1) ESTABLISHMENT.—The Secretary and the
7 Secretary of Labor shall jointly conduct a competi-
8 tive grant program under which institutions of high-
9 er education may apply for and receive 4-year grants
10 for—

11 (A) startup costs for newly designated fac-
12 ulty positions in integrated critical mineral edu-
13 cation, research, innovation, training, and work-
14 force development programs consistent with
15 subsection (b);

16 (B) internships, scholarships, and fellow-
17 ships for students enrolled in programs related
18 to critical minerals;

19 (C) equipment necessary for integrated
20 critical mineral innovation, training, and work-
21 force development programs; and

22 (D) research of critical minerals and their
23 applications, particularly concerning the manu-
24 facture of critical components vital to national
25 security.

1 (2) RENEWAL.—A grant under this subsection
2 shall be renewable for up to 2 additional 3-year
3 terms based on performance criteria outlined under
4 subsection (b)(1)(D).

5 **SEC. 110. NATIONAL GEOLOGICAL AND GEOPHYSICAL DATA**
6 **PRESERVATION PROGRAM.**

7 Section 351(k) of the Energy Policy Act of 2005 (42
8 U.S.C. 15908(k)) is amended by striking “\$30,000,000
9 for each of fiscal years 2006 through 2010” and inserting
10 “\$5,000,000 for each of fiscal years 2020 through 2029,
11 to remain available until expended”.

12 **SEC. 111. ADMINISTRATION.**

13 (a) IN GENERAL.—The National Critical Materials
14 Act of 1984 (30 U.S.C. 1801 et seq.) is repealed.

15 (b) CONFORMING AMENDMENT.—Section 3(d) of the
16 National Superconductivity and Competitiveness Act of
17 1988 (15 U.S.C. 5202(d)) is amended in the first sentence
18 by striking “, with the assistance of the National Critical
19 Materials Council as specified in the National Critical Ma-
20 terials Act of 1984 (30 U.S.C. 1801 et seq.),”.

21 (c) SAVINGS CLAUSES.—

22 (1) IN GENERAL.—Nothing in this title or an
23 amendment made by this title modifies any require-
24 ment or authority provided by—

1 (A) the matter under the heading “**GEO-**
2 **LOGICAL SURVEY**” of the first section of the
3 Act of March 3, 1879 (43 U.S.C. 31(a)); or

4 (B) the first section of Public Law 87–626
5 (43 U.S.C. 31(b)).

6 (2) EFFECT ON DEPARTMENT OF DEFENSE.—

7 Nothing in this title or an amendment made by this
8 title affects the authority of the Secretary of De-
9 fense with respect to the work of the Department of
10 Defense on critical material supplies in furtherance
11 of the national defense mission of the Department of
12 Defense.

13 (3) SECRETARIAL ORDER NOT AFFECTED.—

14 This title shall not apply to any mineral described
15 in Secretarial Order No. 3324, issued by the Sec-
16 retary on December 3, 2012, in any area to which
17 the order applies.

18 (d) APPLICATION OF CERTAIN PROVISIONS.—

19 (1) IN GENERAL.—Sections 105 and 106 shall
20 apply to—

21 (A) an exploration project in which the
22 presence of a byproduct is reasonably expected,
23 based on known mineral companionship, geo-
24 logic formation, mineralogy, or other factors;
25 and

1 (B) a project that demonstrates that the
2 byproduct is of sufficient grade that, when com-
3 bined with the production of a host mineral, the
4 byproduct is economic to recover, as determined
5 by the applicable Secretary in accordance with
6 paragraph (2).

7 (2) REQUIREMENT.—In making the determina-
8 tion under paragraph (1)(B), the applicable Sec-
9 retary shall consider the cost effectiveness of the by-
10 products recovery.

11 **SEC. 112. AUTHORIZATION OF APPROPRIATIONS.**

12 There is authorized to be appropriated to carry out
13 this title \$50,000,000 for each of fiscal years 2020
14 through 2029.

15 **TITLE II—RARE EARTH ELE-**
16 **MENT ADVANCED COAL**
17 **TECHNOLOGIES**

18 **SEC. 201. PROGRAM FOR EXTRACTION AND RECOVERY OF**
19 **RARE EARTH ELEMENTS AND MINERALS**
20 **FROM COAL AND COAL BYPRODUCTS.**

21 (a) IN GENERAL.—The Secretary of Energy, acting
22 through the Assistant Secretary for Fossil Energy (re-
23 ferred to in this title as the “Secretary”), shall carry out
24 a program under which the Secretary shall develop ad-
25 vanced separation technologies for the extraction and re-

1 recovery of rare earth elements and minerals from coal and
2 coal byproducts.

3 (b) AUTHORIZATION OF APPROPRIATIONS.—There is
4 authorized to be appropriated to the Secretary to carry
5 out the program described in subsection (a) \$23,000,000
6 for each of fiscal years 2020 through 2027.

7 **SEC. 202. REPORT.**

8 Not later than 1 year after the date of enactment
9 of this Act, the Secretary shall submit to the Committee
10 on Energy and Natural Resources of the Senate and the
11 Committee on Energy and Commerce of the House of
12 Representatives a report evaluating the development of ad-
13 vanced separation technologies for the extraction and re-
14 recovery of rare earth elements and minerals from coal and
15 coal byproducts, including acid mine drainage from coal
16 mines.