



AMENDMENT NO. _____ Calendar No. _____

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

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

 S. 1790

To

 AMENDMENT N^o 0313

 By MURKOWSKI

To: _____

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Page(s)

GPO: 2018 33-682 (mac)

 AMENDMENT intended to be proposed by MURKOWSKI

Viz:

1 At the appropriate place in title _____, insert the
2 following:

3 **Subtitle _____—Minerals Security**
4 **and Technology**

5 **PART I—AMERICAN MINERAL SECURITY**

6 SEC. 01. **DEFINITIONS.**

7 In this part:

8 (1) BYPRODUCT.—The term “byproduct”
9 means a critical mineral—

Manchin
Tillis
Cramer
Capito
Sullivan
Risch
Jones

1 (A) the recovery of which depends on the
2 production of a host mineral that is not des-
3 ignated as a critical mineral; and

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

6 (2) CRITICAL MINERAL.—

7 (A) IN GENERAL.—The term “critical min-
8 eral” means any mineral, element, substance, or
9 material designated as critical by the Secretary
10 under section ____ 03.

11 (B) EXCLUSIONS.—The term “critical
12 mineral” does not include—

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

15 (ii) water, ice, or snow.

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

18 (A) the exploration, development, mining,
19 production, processing, refining, alloying, sepa-
20 ration, concentration, magnetic sintering, melt-
21 ing, or beneficiation of critical minerals within
22 the United States;

23 (B) the fabrication, assembly, or produc-
24 tion, within the United States, of equipment,
25 components, or other goods with energy tech-

1 nology-, defense-, agriculture-, consumer elec-
2 tronics-, or health care-related applications; or

3 (C) any other value-added, manufacturing-
4 related use of critical minerals undertaken with-
5 in the United States.

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

10 (5) SECRETARY.—The term “Secretary” means
11 the Secretary of the Interior.

12 (6) STATE.—The term “State” means—

13 (A) a State;

14 (B) the District of Columbia;

15 (C) the Commonwealth of Puerto Rico;

16 (D) Guam;

17 (E) American Samoa;

18 (F) the Commonwealth of the Northern

19 Mariana Islands; and

20 (G) the United States Virgin Islands.

21 **SEC. ____ 02. POLICY.**

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

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

3 “(3) establish an analytical and forecasting ca-
4 pability for identifying critical mineral demand, sup-
5 ply, and other factors to allow informed actions to
6 be taken to avoid supply shortages, mitigate price
7 volatility, and prepare for demand growth and other
8 market shifts;”;

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

11 (3) by striking paragraph (7) and inserting the
12 following:

13 “(7) facilitate the availability, development, and
14 environmentally responsible production of domestic
15 resources to meet national material or critical min-
16 eral needs;

17 “(8) avoid duplication of effort, prevent unnec-
18 essary paperwork, and minimize delays in the ad-
19 ministration of applicable laws (including regula-
20 tions) and the issuance of permits and authoriza-
21 tions necessary to explore for, develop, and produce
22 critical minerals and to construct critical mineral
23 manufacturing facilities in accordance with applica-
24 ble environmental and land management laws;

25 “(9) strengthen—

1 “(A) educational and research capabilities
2 at not lower than the secondary school level;
3 and

4 “(B) workforce training for exploration
5 and development of critical minerals and critical
6 mineral manufacturing;

7 “(10) bolster international cooperation through
8 technology transfer, information sharing, and other
9 means;

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

12 “(12) develop alternatives to critical minerals;
13 and

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

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

22 “(b) DEFINITIONS.—In this Act:

23 “(1) CRITICAL MINERAL.—The term ‘critical
24 mineral’ means any mineral, element, substance, or
25 material designated as critical by the Secretary

1 under section ____03 of the National Defense Au-
2 thorization Act for Fiscal Year 2020.

3 “(2) MATERIALS.—The term”.

4 **SEC. ____03. CRITICAL MINERAL DESIGNATIONS.**

5 (a) DRAFT METHODOLOGY AND LIST.—The Sec-
6 retary, acting through the Director of the United States
7 Geological Survey (referred to in this section as the “Sec-
8 retary”), shall publish in the Federal Register for public
9 comment—

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

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

15 (3) a draft list of critical minerals recovered as
16 byproducts.

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

21 (c) FINAL METHODOLOGY AND LIST.—After review-
22 ing public comments on the draft methodology and the
23 draft list of critical minerals published under subsection
24 (a) and updating the methodology and list as appropriate,
25 not later than 45 days after the date on which the public

1 comment period with respect to the draft methodology and
2 draft list closes, the Secretary shall publish in the Federal
3 Register—

4 (1) a description of the final methodology for
5 determining which minerals, elements, substances,
6 and materials qualify as critical minerals; and

7 (2) the final list of critical minerals.

8 (d) DESIGNATIONS.—

9 (1) IN GENERAL.—For purposes of carrying out
10 this section, the Secretary shall maintain a list of
11 minerals, elements, substances, and materials des-
12 ignated as critical, pursuant to the final method-
13 ology published under subsection (c), that the Sec-
14 retary determines—

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

17 (B) the supply chain of which is vulnerable
18 to disruption (including restrictions associated
19 with foreign political risk, abrupt demand
20 growth, military conflict, violent unrest, anti-
21 competitive or protectionist behaviors, and other
22 risks throughout the supply chain); and

23 (C) serve an essential function in the man-
24 ufacturing of a product (including energy tech-
25 nology-, defense-, currency-, agriculture-, con-

1 sumer electronics-, and health care-related ap-
2 plications), the absence of which would have
3 significant consequences for the economic or na-
4 tional security of the United States.

5 (2) INCLUSIONS.—Notwithstanding the criteria
6 under subsection (c), the Secretary may designate
7 and include on the list any mineral, element, sub-
8 stance, or material determined by another Federal
9 agency to be strategic and critical to the defense or
10 national security of the United States.

11 (3) REQUIRED CONSULTATION.—The Secretary
12 shall consult with the Secretaries of Defense, Com-
13 merce, Agriculture, and Energy and the United
14 States Trade Representative in designating minerals,
15 elements, substances, and materials as critical under
16 this subsection.

17 (e) SUBSEQUENT REVIEW.—

18 (1) IN GENERAL.—The Secretary, in consulta-
19 tion with the Secretaries of Defense, Commerce, Ag-
20 riculture, and Energy and the United States Trade
21 Representative, shall review the methodology and list
22 under subsection (c) and the designations under sub-
23 section (d) at least every 3 years, or more frequently
24 as the Secretary considers to be appropriate.

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

3 (A) revise the methodology described in
4 this section;

5 (B) determine that minerals, elements,
6 substances, and materials previously determined
7 to be critical minerals are no longer critical
8 minerals; and

9 (C) designate additional minerals, ele-
10 ments, substances, or materials as critical min-
11 erals.

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

16 **SEC. ____ 04. RESOURCE ASSESSMENT.**

17 (a) IN GENERAL.—Not later than 4 years after the
18 date of enactment of this Act, in consultation with applica-
19 ble State (including geological surveys), local, academic,
20 industry, and other entities, the Secretary shall complete
21 a comprehensive national assessment of each critical min-
22 eral that—

23 (1) identifies and quantifies known critical min-
24 eral resources, using all available public and private

1 information and datasets, including exploration his-
2 tories; and

3 (2) provides a quantitative and qualitative as-
4 sessment of undiscovered critical mineral resources
5 throughout the United States, including probability
6 estimates of tonnage and grade, using all available
7 public and private information and datasets, includ-
8 ing exploration histories.

9 (b) SUPPLEMENTARY INFORMATION.—In carrying
10 out this section, the Secretary may carry out surveys and
11 field work (including drilling, remote sensing, geophysical
12 surveys, topographical and geological mapping, and geo-
13 chemical sampling and analysis) to supplement existing in-
14 formation and datasets available for determining the exist-
15 ence of critical minerals in the United States.

16 (c) PUBLIC ACCESS.—Subject to applicable law, to
17 the maximum extent practicable, the Secretary shall make
18 all data and metadata collected from the comprehensive
19 national assessment carried out under subsection (a) pub-
20 lically and electronically accessible.

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

1 (e) PRIORITIZATION.—

2 (1) IN GENERAL.—The Secretary may sequence
3 the completion of resource assessments for each crit-
4 ical mineral such that critical minerals considered to
5 be most critical under the methodology established
6 under section ____ 03 are completed first.

7 (2) REPORTING.—During the period beginning
8 not later than 1 year after the date of enactment of
9 this Act and ending on the date of completion of all
10 of the assessments required under this section, the
11 Secretary shall submit to Congress on an annual
12 basis an interim report that—

13 (A) identifies the sequence and schedule
14 for completion of the assessments if the Sec-
15 retary sequences the assessments; or

16 (B) describes the progress of the assess-
17 ments if the Secretary does not sequence the
18 assessments.

19 (f) UPDATES.—The Secretary may periodically up-
20 date the assessments conducted under this section based
21 on—

22 (1) the generation of new information or
23 datasets by the Federal Government; or

24 (2) the receipt of new information or datasets
25 from critical mineral producers, State geological sur-

1 veys, academic institutions, trade associations, or
2 other persons.

3 (g) **ADDITIONAL SURVEYS.**—The Secretary shall
4 complete a resource assessment for each additional min-
5 eral or element subsequently designated as a critical min-
6 eral under section ____03(e)(2) not later than 2 years
7 after the designation of the mineral or element.

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

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

17 (2) that is not designated as a critical mineral
18 under section ____03.

19 **SEC. ____05. PERMITTING.**

20 (a) **SENSE OF CONGRESS.**—It is the sense of Con-
21 gress that—

22 (1) critical minerals are fundamental to the
23 economy, competitiveness, and security of the United
24 States;

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

5 (3) the Federal permitting process has been
6 identified as an impediment to mineral production
7 and the mineral security of the United States.

8 (b) PERFORMANCE IMPROVEMENTS.—To improve
9 the quality and timeliness of decisions, the Secretary (act-
10 ing through the Director of the Bureau of Land Manage-
11 ment) and the Secretary of Agriculture (acting through
12 the Chief of the Forest Service) (referred to in this section
13 as the “Secretaries”) shall, to the maximum extent prac-
14 ticable, with respect to critical mineral production on Fed-
15 eral land, complete Federal permitting and review proc-
16 esses with maximum efficiency and effectiveness, while
17 supporting vital economic growth, by—

18 (1) establishing and adhering to timelines and
19 schedules for the consideration of, and final deci-
20 sions regarding, applications, operating plans, leases,
21 licenses, permits, and other use authorizations for
22 mineral-related activities on Federal land;

23 (2) establishing clear, quantifiable, and tem-
24 poral permitting performance goals and tracking
25 progress against those goals;

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

3 (A) to incorporate and address the inter-
4 ests of those parties; and

5 (B) to minimize delays;

6 (4) ensuring transparency and accountability by
7 using cost-effective information technology to collect
8 and disseminate information regarding individual
9 projects and agency performance;

10 (5) engaging in early and active consultation
11 with State, local, and Indian tribal governments to
12 avoid conflicts or duplication of effort, resolve con-
13 cerns, and allow for concurrent, rather than sequen-
14 tial, reviews;

15 (6) providing demonstrable improvements in the
16 performance of Federal permitting and review proc-
17 esses, including lower costs and more timely deci-
18 sions;

19 (7) expanding and institutionalizing permitting
20 and review process improvements that have proven
21 effective;

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

1 (9) developing other practices, such as
2 preapplication procedures.

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

6 (1) identifies additional measures (including
7 regulatory and legislative proposals, as appropriate)
8 that would increase the timeliness of permitting ac-
9 tivities for the exploration and development of do-
10 mestic critical minerals;

11 (2) identifies options (including cost recovery
12 paid by permit applicants) for ensuring adequate
13 staffing and training of Federal entities and per-
14 sonnel responsible for the consideration of applica-
15 tions, operating plans, leases, licenses, permits, and
16 other use authorizations for critical mineral-related
17 activities on Federal land;

18 (3) quantifies the amount of time typically re-
19 quired (including range derived from minimum and
20 maximum durations, mean, median, variance, and
21 other statistical measures or representations) to
22 complete each step (including those aspects outside
23 the control of the executive branch, such as judicial
24 review, applicant decisions, or State and local gov-
25 ernment involvement) associated with the develop-

1 ment and processing of applications, operating
2 plans, leases, licenses, permits, and other use au-
3 thorizations for critical mineral-related activities on
4 Federal land, which shall serve as a baseline for the
5 performance metric under subsection (d); and

6 (4) describes actions carried out pursuant to
7 subsection (b).

8 (d) PERFORMANCE METRIC.—Not later than 90 days
9 after the date of submission of the report under subsection
10 (c), the Secretaries, after providing public notice and an
11 opportunity to comment, shall develop and publish a per-
12 formance metric for evaluating the progress made by the
13 executive branch to expedite the permitting of activities
14 that will increase exploration for, and development of, do-
15 mestic critical minerals, while maintaining environmental
16 standards.

17 (e) ANNUAL REPORTS.—Beginning with the first
18 budget submission by the President under section 1105
19 of title 31, United States Code, after publication of the
20 performance metric required under subsection (d), and an-
21 nually thereafter, the Secretaries shall submit to Congress
22 a report that—

23 (1) summarizes the implementation of rec-
24 ommendations, measures, and options identified in
25 paragraphs (1) and (2) of subsection (c);

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

7 (3) compares the United States to other coun-
8 tries in terms of permitting efficiency and any other
9 criteria relevant to the globally competitive critical
10 minerals industry.

11 (f) INDIVIDUAL PROJECTS.—Using data from the
12 Secretaries generated under subsection (e), the Director
13 of the Office of Management and Budget shall prioritize
14 inclusion of individual critical mineral projects on the
15 website operated by the Office of Management and Budget
16 in accordance with section 1122 of title 31, United States
17 Code.

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

24 (1) complying with chapter 6 of title 5, United
25 States Code (commonly known as the “Regulatory

1 Flexibility Act”), in promulgating regulations appli-
2 cable to the critical minerals industry; and

3 (2) performing an analysis of regulations appli-
4 cable to the critical minerals industry that may be
5 outmoded, inefficient, duplicative, or excessively bur-
6 densome.

7 (h) APPLICATION.—Section 41001(6)(A) of the
8 FAST Act (42 U.S.C. 4370m(6)(A)) is amended in the
9 matter preceding clause (i) by inserting “(including crit-
10 ical mineral manufacturing (as defined in section ____ 01
11 of the National Defense Authorization Act for Fiscal Year
12 2020))” after “manufacturing”.

13 **SEC. ____ 06. FEDERAL REGISTER PROCESS.**

14 (a) DEPARTMENTAL REVIEW.—Absent any extraor-
15 dinary circumstance, and except as otherwise required by
16 law, the Secretary and the Secretary of Agriculture shall
17 ensure that each Federal Register notice described in sub-
18 section (b) shall be—

19 (1) subject to any required reviews within the
20 Department of the Interior or the Department of
21 Agriculture; and

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

1 (b) PREPARATION.—The preparation of Federal Reg-
2 ister notices required by law associated with the issuance
3 of a critical mineral exploration or mine permit shall be
4 delegated to the organizational level within the agency re-
5 sponsible for issuing the critical mineral exploration or
6 mine permit.

7 (c) TRANSMISSION.—All Federal Register notices re-
8 garding official document availability, announcements of
9 meetings, or notices of intent to undertake an action shall
10 be originated in, and transmitted to the Federal Register
11 from, the office in which, as applicable—

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

13 (2) the activity is initiated.

14 **SEC. ____ 07. RECYCLING, EFFICIENCY, AND ALTERNATIVES.**

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

18 (1) to promote the efficient production, use,
19 and recycling of critical minerals throughout the
20 supply chain; and

21 (2) to develop alternatives to critical minerals
22 that do not occur in significant abundance in the
23 United States.

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

- 1 (1) Federal agencies and National Laboratories;
- 2 (2) critical mineral producers;
- 3 (3) critical mineral processors;
- 4 (4) critical mineral manufacturers;
- 5 (5) trade associations;
- 6 (6) academic institutions;
- 7 (7) small businesses; and
- 8 (8) other relevant entities or individuals.

9 (c) ACTIVITIES.—Under the program, the Secretary
10 shall carry out activities that include the identification and
11 development of—

12 (1) advanced critical mineral extraction, pro-
13 duction, separation, alloying, or processing tech-
14 nologies that decrease the energy consumption, envi-
15 ronmental impact, and costs of those activities, in-
16 cluding—

17 (A) efficient water and wastewater man-
18 agement strategies;

19 (B) technologies and management strate-
20 gies to control the environmental impacts of
21 radionuclides in ore tailings;

22 (C) technologies for separation and proc-
23 essing; and

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

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

4 (3) technologies, process improvements, or de-
5 sign optimizations that facilitate the recycling of
6 critical minerals, and options for improving the rates
7 of collection of products and scrap containing critical
8 minerals from post-consumer, industrial, or other
9 waste streams;

10 (4) commercial markets, advanced storage
11 methods, energy applications, and other beneficial
12 uses of critical minerals processing byproducts;

13 (5) alternative minerals, metals, and materials,
14 particularly those available in abundance within the
15 United States and not subject to potential supply re-
16 strictions, that lessen the need for critical minerals;
17 and

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

21 (A) occur in abundance in the United
22 States; and

23 (B) are not subject to potential supply re-
24 strictions.

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

5 **SEC. ____ 08. ANALYSIS AND FORECASTING.**

6 (a) CAPABILITIES.—In order to evaluate existing crit-
7 ical mineral policies and inform future actions that may
8 be taken to avoid supply shortages, mitigate price vola-
9 tility, and prepare for demand growth and other market
10 shifts, the Secretary, in consultation with the Energy In-
11 formation Administration, academic institutions, and oth-
12 ers in order to maximize the application of existing com-
13 petencies related to developing and maintaining computer-
14 models and similar analytical tools, shall conduct and pub-
15 lish the results of an annual report that includes—

16 (1) as part of the annually published Mineral
17 Commodity Summaries from the United States Geo-
18 logical Survey, a comprehensive review of critical
19 mineral production, consumption, and recycling pat-
20 terns, including—

21 (A) the quantity of each critical mineral
22 domestically produced during the preceding
23 year;

1 (B) the quantity of each critical mineral
2 domestically consumed during the preceding
3 year;

4 (C) market price data or other price data
5 for each critical mineral;

6 (D) an assessment of—

7 (i) critical mineral requirements to
8 meet the national security, energy, eco-
9 nomic, industrial, technological, and other
10 needs of the United States during the pre-
11 ceding year;

12 (ii) the reliance of the United States
13 on foreign sources to meet those needs
14 during the preceding year; and

15 (iii) the implications of any supply
16 shortages, restrictions, or disruptions dur-
17 ing the preceding year;

18 (E) the quantity of each critical mineral
19 domestically recycled during the preceding year;

20 (F) the market penetration during the pre-
21 ceding year of alternatives to each critical min-
22 eral;

23 (G) a discussion of international trends as-
24 sociated with the discovery, production, con-
25 sumption, use, costs of production, prices, and

1 recycling of each critical mineral as well as the
2 development of alternatives to critical minerals;
3 and

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

7 (2) a comprehensive forecast, entitled the “An-
8 nual Critical Minerals Outlook”, of projected critical
9 mineral production, consumption, and recycling pat-
10 terns, including—

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

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

17 (C) an assessment of—

18 (i) critical mineral requirements to
19 meet projected national security, energy,
20 economic, industrial, technological, and
21 other needs of the United States;

22 (ii) the projected reliance of the
23 United States on foreign sources to meet
24 those needs; and

1 (iii) the projected implications of po-
2 tential supply shortages, restrictions, or
3 disruptions;

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

7 (E) the market penetration of alternatives
8 to each critical mineral projected to take place
9 over the subsequent 1-year, 5-year, and 10-year
10 periods;

11 (F) a discussion of reasonably foreseeable
12 international trends associated with the dis-
13 covery, production, consumption, use, costs of
14 production, and recycling of each critical min-
15 eral as well as the development of alternatives
16 to critical minerals; and

17 (G) such other projections relating to each
18 critical mineral as the Secretary determines to
19 be necessary to achieve the purposes of this sec-
20 tion.

21 (b) PROPRIETARY INFORMATION.—In preparing a re-
22 port described in subsection (a), the Secretary shall en-
23 sure, consistent with section 5(f) of the National Materials
24 and Minerals Policy, Research and Development Act of
25 1980 (30 U.S.C. 1604(f)), that—

1 (1) no person uses the information and data
2 collected for the report for a purpose other than the
3 development of or reporting of aggregate data in a
4 manner such that the identity of the person or firm
5 who supplied the information is not discernible and
6 is not material to the intended uses of the informa-
7 tion;

8 (2) no person discloses any information or data
9 collected for the report unless the information or
10 data has been transformed into a statistical or ag-
11 gregate form that does not allow the identification of
12 the person or firm who supplied particular informa-
13 tion; and

14 (3) procedures are established to require the
15 withholding of any information or data collected for
16 the report if the Secretary determines that with-
17 holding is necessary to protect proprietary informa-
18 tion, including any trade secrets or other confiden-
19 tial information.

20 **SEC. ____ 09. EDUCATION AND WORKFORCE.**

21 (a) **WORKFORCE ASSESSMENT.**—Not later than 1
22 year and 300 days after the date of enactment of this Act,
23 the Secretary of Labor (in consultation with the Secretary,
24 the Director of the National Science Foundation, institu-
25 tions of higher education with substantial expertise in

1 mining, institutions of higher education with significant
2 expertise in minerals research, including fundamental re-
3 search into alternatives, and employers in the critical min-
4 erals sector) shall submit to Congress an assessment of
5 the domestic availability of technically trained personnel
6 necessary for critical mineral exploration, development, as-
7 sessment, production, manufacturing, recycling, analysis,
8 forecasting, education, and research, including an analysis
9 of—

10 (1) skills that are in the shortest supply as of
11 the date of the assessment;

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

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

17 (4) the effectiveness of training and education
18 programs in addressing skills shortages;

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

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

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

4 (b) CURRICULUM STUDY.—

5 (1) IN GENERAL.—The Secretary and the Sec-
6 retary of Labor shall jointly enter into an arrange-
7 ment with the National Academy of Sciences and the
8 National Academy of Engineering under which the
9 Academies shall coordinate with the National
10 Science Foundation on conducting a study—

11 (A) to design an interdisciplinary program
12 on critical minerals that will support the critical
13 mineral supply chain and improve the ability of
14 the United States to increase domestic, critical
15 mineral exploration, development, production,
16 manufacturing, research, including fundamental
17 research into alternatives, and recycling;

18 (B) to address undergraduate and grad-
19 uate education, especially to assist in the devel-
20 opment of graduate level programs of research
21 and instruction that lead to advanced degrees
22 with an emphasis on the critical mineral supply
23 chain or other positions that will increase do-
24 mestic, critical mineral exploration, develop-
25 ment, production, manufacturing, research, in-

1 including fundamental research into alternatives,
2 and recycling;

3 (C) to develop guidelines for proposals
4 from institutions of higher education with sub-
5 stantial capabilities in the required disciplines
6 for activities to improve the critical mineral
7 supply chain and advance the capacity of the
8 United States to increase domestic, critical min-
9 eral exploration, research, development, produc-
10 tion, manufacturing, and recycling; and

11 (D) to outline criteria for evaluating per-
12 formance and recommendations for the amount
13 of funding that will be necessary to establish
14 and carry out the program described in sub-
15 section (c).

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

20 (c) PROGRAM.—

21 (1) ESTABLISHMENT.—The Secretary and the
22 Secretary of Labor shall jointly conduct a competi-
23 tive grant program under which institutions of high-
24 er education may apply for and receive 4-year grants
25 for—

1 (A) startup costs for newly designated fac-
2 ulty positions in integrated critical mineral edu-
3 cation, research, innovation, training, and work-
4 force development programs consistent with
5 subsection (b);

6 (B) internships, scholarships, and fellow-
7 ships for students enrolled in programs related
8 to critical minerals;

9 (C) equipment necessary for integrated
10 critical mineral innovation, training, and work-
11 force development programs; and

12 (D) research of critical minerals and their
13 applications, particularly concerning the manu-
14 facture of critical components vital to national
15 security.

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

20 **SEC. ____10. NATIONAL GEOLOGICAL AND GEOPHYSICAL**
21 **DATA PRESERVATION PROGRAM.**

22 Section 351(k) of the Energy Policy Act of 2005 (42
23 U.S.C. 15908(k)) is amended by striking “\$30,000,000
24 for each of fiscal years 2006 through 2010” and inserting

1 “\$5,000,000 for each of fiscal years 2020 through 2029,
2 to remain available until expended”.

3 **SEC. ____ 11. ADMINISTRATION.**

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

6 (b) CONFORMING AMENDMENT.—Section 3(d) of the
7 National Superconductivity and Competitiveness Act of
8 1988 (15 U.S.C. 5202(d)) is amended in the first sentence
9 by striking “, with the assistance of the National Critical
10 Materials Council as specified in the National Critical Ma-
11 terials Act of 1984 (30 U.S.C. 1801 et seq.),”.

12 (c) SAVINGS CLAUSES.—

13 (1) IN GENERAL.—Nothing in this part or an
14 amendment made by this part modifies any require-
15 ment or authority provided by—

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

19 (B) the first section of Public Law 87–626
20 (43 U.S.C. 31(b)).

21 (2) EFFECT ON DEPARTMENT OF DEFENSE.—
22 Nothing in this part or an amendment made by this
23 part affects the authority of the Secretary of De-
24 fense with respect to the work of the Department of
25 Defense on critical material supplies in furtherance

1 of the national defense mission of the Department of
2 Defense.

3 (3) SECRETARIAL ORDER NOT AFFECTED.—

4 This part shall not apply to any mineral described
5 in Secretarial Order No. 3324, issued by the Sec-
6 retary of the Interior on December 3, 2012, in any
7 area to which the order applies.

8 (d) APPLICATION OF CERTAIN PROVISIONS.—

9 (1) IN GENERAL.—Sections ____05 and ____06
10 shall apply to—

11 (A) an exploration project in which the
12 presence of a byproduct is reasonably expected,
13 based on known mineral companionship, geo-
14 logic formation, mineralogy, or other factors;
15 and

16 (B) a project that demonstrates that a by-
17 product will be recovered in salable quantities,
18 as determined by the applicable Secretary in ac-
19 cordance with paragraph (2).

20 (2) REQUIREMENT.—In making the determina-
21 tion under paragraph (1)(B), the applicable Sec-
22 retary shall consider the cost effectiveness of the by-
23 products recovery.

1 **SEC. ____12. AUTHORIZATION OF APPROPRIATIONS.**

2 There is authorized to be appropriated to carry out
3 this part \$50,000,000 for each of fiscal years 2020
4 through 2029.

5 **PART II—RARE EARTH ELEMENT ADVANCED**
6 **COAL TECHNOLOGIES**

7 **SEC. ____21. PROGRAM FOR EXTRACTION AND RECOVERY**
8 **OF RARE EARTH ELEMENTS AND MINERALS**
9 **FROM COAL AND COAL BYPRODUCTS.**

10 (a) IN GENERAL.—The Secretary of Energy, acting
11 through the Assistant Secretary for Fossil Energy (re-
12 ferred to in this part as the “Secretary”), shall carry out
13 a program under which the Secretary shall develop ad-
14 vanced separation technologies for the extraction and re-
15 covery of rare earth elements and minerals from coal and
16 coal byproducts.

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

21 **SEC. ____22. REPORT.**

22 Not later than 1 year after the date of enactment
23 of this Act, the Secretary shall submit to the Committee
24 on Energy and Natural Resources of the Senate and the
25 Committee on Energy and Commerce of the House of
26 Representatives a report evaluating the development of ad-

1 vanced separation technologies for the extraction and re-
2 covery of rare earth elements and minerals from coal and
3 coal byproducts, including acid mine drainage from coal
4 mines.