Calendar No. 176

116TH CONGRESS
1ST SESSION

S. 1052

[Report No. 116–74]

To authorize the Office of Fossil Energy to develop advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 4, 2019

Mr. MANCHIN (for himself, Mrs. CAPITO, and Ms. MURKOWSKI) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

AUGUST 16, 2019

Reported under authority of the order of the Senate of August 1, 2019, by Ms. MURKOWSKI, with an amendment

[Strike out all after the enacting clause and insert the part printed in italic]

A BILL

To authorize the Office of Fossil Energy to develop advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts, 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.

This Act may be cited as the ''Rare Earth Element Advanced Coal Technologies Act''.

SEC. 2. FINDINGS.

Congress finds that—

(1) the United States is largely dependent on foreign imports for the domestic supply of rare earth elements and critical minerals in the United States;

(2) as of the date of enactment of this Act, the United States does not have domestic production capability for, or a guaranteed supply chain of, rare earth elements and critical minerals;

(3) access to certain rare earth elements and minerals is critical for the national security of the United States;

(4) China maintains a near monopoly of the global supply chain of rare earth elements and critical minerals;

(5) the successful development of commercially viable refining methods of rare earth elements from coal byproducts could lead to new economic development opportunities in parts of the United States most affected by the downturn of the coal industry;

(6) rare earth elements—

(A) comprise elements on the periodic table, including—

(i) the lanthanides, which are lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), and lutetium (Lu); and

(ii) transition elements, which are scandium (Sc) and yttrium (Y); and

(B) can be divided into—

(i) light rare earth elements, which are lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), and samarium (Sm); and

(ii) heavy rare earth elements, which are scandium (Sc), yttrium (Y), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), and lutetium (Lu); and

(7) it is in the interest of the Federal Government—

(A) to guide responsible domestic production methods of rare earth elements and minerals to ensure industry and consumers in the

United States have access to a reliable domestic supply of valuable rare earth elements and minerals; and

(B)(i) to identify the areas of highest potential interruption in the global supply chain of rare earth elements and minerals; and

(ii) to strengthen the position of the United States in that supply chain by mitigating potential interruptions through the development of advanced separation technologies for coal and coal byproducts.

SEC. 3. PROGRAM FOR EXTRACTION AND RECOVERY OF RARE EARTH ELEMENTS AND MINERALS FROM COAL AND COAL BYPRODUCTS.

(a) IN GENERAL.—The Secretary of Energy, acting through the Assistant Secretary for Fossil Energy (referred to in this Act as the ''Secretary''), shall carry out a program under which the Secretary shall develop advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts.

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

SEC. 4. ASSESSMENT AND REPORT.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with the Secretary of Defense and the Secretary of the Interior, shall carry out, and submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives—

(1) an assessment—

(A) identifying and ranking the rare earth elements that—

(i) are most important to consumers in the United States;

(ii) are most jeopardized in the global supply chain; and

(iii) will have the greatest impact to consumers in the United States in the event of a disruption in the global supply chain;

(B) evaluating the development of advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts (referred to in this subsection as the ''technologies'');

~~(C) identifying and evaluating the results of the development of the technologies, including the results with respect to the extraction and recovery of each rare earth element;~~

~~(D) determining what the technologies are capable of producing;~~

~~(E) evaluating the performance of the technologies, including what the technologies—~~

~~(i) succeed and fail at accomplishing; and~~

~~(ii) can and cannot do cost-effectively; and~~

~~(F)(i) evaluating the market impact on each rare earth mineral of the penetration of commercially viable technologies; and~~

~~(ii) how the penetration of commercially viable coal-based technology will impact the global supply chain; and~~

~~(2) a report analyzing—~~

~~(A) the additional resources required for the development of commercial-ready deployment of technologies that are second generation and transformational; and~~

~~(B) the market impact of processes to treat and recover rare earth elements and minerals from acid mine drainage from coal mines.~~

~~(b) REQUIREMENT.—In carrying out the assessment and report under subsection (a), the Secretary shall focus on the rare earth elements determined by the Secretary to be most critical to the national security of the United States.~~

SECTION 1. SHORT TITLE.

This Act may be cited as the "Rare Earth Element Advanced Coal Technologies Act".

SEC. 2. PROGRAM FOR EXTRACTION AND RECOVERY OF RARE EARTH ELEMENTS AND MINERALS FROM COAL AND COAL BYPRODUCTS.

(a) IN GENERAL.—The Secretary of Energy, acting through the Assistant Secretary for Fossil Energy (referred to in this Act as the "Secretary"), shall carry out a program under which the Secretary shall develop advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts.

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

SEC. 3. REPORT.

Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report evaluating the development of advanced separation technologies for the extraction and recovery of rare earth elements and minerals from coal and coal byproducts, including acid mine drainage from coal mines.

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