

- (4) coal water fuels and underground coal gasification;
- (5) distillates; and
- (6) any other technologies which will assist in the development of niche markets for lignites and sub-bituminous coals.

(Pub. L. 102-486, title XIII, § 1310, Oct. 24, 1992, 106 Stat. 2975.)

§ 13341. Magnetohydrodynamics

(a) Program

The Secretary shall carry out a research, development, demonstration, and commercial application program in magnetohydrodynamics. The purpose of this program shall be to determine the adequacy of the engineering and design information completed to date under Department of Energy contracts related to magnetohydrodynamics retrofit systems and to determine whether any further Federal investment in this technology is warranted.

(b) Solicitation of proposals

In order to carry out the program authorized in subsection (a), the Secretary may solicit proposals from the private sector and seek to enter into an agreement with appropriate parties.

(Pub. L. 102-486, title XIII, § 1311, Oct. 24, 1992, 106 Stat. 2976.)

§ 13342. Oil substitution through coal liquefaction

(a) Program direction

The Secretary shall conduct a program of research, development, demonstration, and commercial application for the purpose of developing economically and environmentally acceptable advanced technologies for oil substitution through coal liquefaction.

(b) Program goals

The goals of the program established under subsection (a) shall include—

- (1) improved resource selection and product quality;
- (2) the development of technologies to increase net yield of liquid fuel product per ton of coal;
- (3) an increase in overall thermal efficiency; and
- (4) a reduction in capital and operating costs through technology improvements.

(c) Proposals

Within 180 days after October 24, 1992, the Secretary shall solicit proposals for conducting activities under this section.

(Pub. L. 102-486, title XIII, § 1312, Oct. 24, 1992, 106 Stat. 2976.)

§ 13343. Authorization of appropriations

There are authorized to be appropriated to the Secretary for carrying out this part \$278,139,000 for fiscal year 1993 and such sums as may be necessary for fiscal years 1994 through 1997.

(Pub. L. 102-486, title XIII, § 1313, Oct. 24, 1992, 106 Stat. 2976.)

§ 13344. Rare earth elements

(a) Research program

(1) In general

The Secretary of Energy, acting through the Assistant Secretary for Fossil Energy (referred to in this section as the “Secretary”), shall conduct a program of research and development—

(A) to develop and assess advanced separation technologies for the extraction and recovery of rare earth elements and other critical materials from coal and coal byproducts; and

(B) to determine if there are, and mitigate, any potential environmental or public health impacts that could arise from the recovery of rare earth elements from coal-based resources.

(2) Authorization of appropriations

There is authorized to be appropriated to the Secretary to carry out the program described in paragraph (1)—

(A) \$23,000,000 for each of fiscal years 2021 and 2022;

(B) \$24,200,000 for fiscal year 2023;

(C) \$25,400,000 for fiscal year 2024;

(D) \$26,600,000 for fiscal year 2025; and

(E) \$27,800,000 for fiscal year 2026.

(b) Report

Not later than 1 year after December 27, 2020, and annually thereafter while the facility established under subsection (c) remains in operation, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committees on Science, Space, and Technology and 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 other critical materials from coal and coal byproducts, including acid mine drainage from coal mines.

(c) Rare earth demonstration facility

(1) Establishment

In coordination with the research program under subsection (a)(1)(A), the Secretary shall fund, through an agreement with an academic partner, the design, construction, and build-out of a facility to demonstrate the commercial feasibility of a full-scale integrated rare earth element extraction and separation facility and refinery.

(2) Facility activities

The facility established under paragraph (1) shall—

(A) provide environmental benefits through use of feedstock derived from acid mine drainage, mine waste, or other deleterious material;

(B) separate mixed rare earth oxides into pure oxides of each rare earth element;

(C) refine rare earth oxides into rare earth metals; and

(D) provide for separation of rare earth oxides and refining into rare earth metals at a single site.

(3) Authorization of appropriations

There is authorized to be appropriated to the Secretary to carry out this subsection