

(2) the costs, benefits, and economic feasibility of using coal products in the chemical and materials industries, including value-added chemicals, carbon-based products, coke, and waste derived from coal;

(3) the economics of coproduction of products from coal in conjunction with the production of electric power, thermal energy, and fuel;

(4) the economics of the refining of coal and coal byproducts to produce nonfuel products;

(5) the economics of coal utilization in comparison with other feedstocks that might be used for the same purposes;

(6) the steps that can be taken by the public and private sectors to bring about commercialization of technologies developed under the program recommended; and

(7) the past development, current status, and future potential of coal products and processes associated with nonfuel uses of coal.

(Pub. L. 102-486, title XIII, § 1304, Oct. 24, 1992, 106 Stat. 2973.)

§ 13335. Coal refinery program

(a) Program

The Secretary shall conduct a program of research, development, demonstration, and commercial application for coal refining technologies.

(b) Objectives

The program shall include technologies for refining high sulfur coals, low sulfur coals, sub-bituminous coals, and lignites to produce clean-burning transportation fuels, compliance boiler fuels, fuel additives, lubricants, chemical feedstocks, and carbon-based manufactured products, either alone or in conjunction with the generation of electricity or process heat, or the manufacture of a variety of products from coal. The objectives of such program shall be to achieve—

(1) the timely commercial application of technologies, including mild gasification, hydrocracking and other hydrolysis processes, and other energy production processes or systems to produce coal-derived fuels and coproducts, which achieve greater efficiency and economy in the conversion of coal to electrical energy and coproducts than currently available technology;

(2) the production of energy, fuels, and products which, on a complete energy system basis, will result in environmental emissions no greater than those produced by existing comparable energy systems utilized for the same purpose;

(3) the capability to produce a range of coal-derived transportation fuels, including oxygenated hydrocarbons, boiler fuels, turbine fuels, and coproducts, which can reduce dependence on imported oil by displacing conventional petroleum in the transportation sector and other sectors of the economy;

(4) reduction in the cost of producing such coal-derived fuels and coproducts;

(5) the control of emissions from the combustion of coal-derived fuels; and

(6) the availability for commercial use of such technologies by the year 2000.

(Pub. L. 102-486, title XIII, § 1305, Oct. 24, 1992, 106 Stat. 2973.)

§ 13336. Coalbed methane recovery

(a) Study of barriers and environmental and safety aspects

The Secretary, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of the Interior, shall conduct a study of—

(1) technical, economic, financial, legal, regulatory, institutional, or other barriers to coalbed methane recovery, and of policy options for eliminating such barriers; and

(2) the environmental and safety aspects of flaring coalbed methane liberated from coal mines.

Within two years after October 24, 1992, the Secretary shall submit a report to the Congress detailing the results of such study.

(b) Information dissemination

Beginning one year after October 24, 1992, the Secretary, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of the Interior, shall disseminate to the public information on state-of-the-art coalbed methane recovery techniques, including information on costs and benefits.

(c) Demonstration and commercial application program

The Secretary, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of the Interior, shall establish a coalbed methane recovery demonstration and commercial application program, which shall emphasize gas enrichment technology. Such program shall address—

(1) gas enrichment technologies for enriching medium-quality methane recovered from coal mines to pipeline quality;

(2) technologies to use mine ventilation air in nearby power generation facilities, including gas turbines, internal combustion engines, or other coal fired powerplants;

(3) technologies for cofiring methane recovered from mines, including methane from ventilation systems and degasification systems, together with coal in conventional or clean coal technology boilers; and

(4) other technologies for producing and using methane from coal mines that the Secretary considers appropriate.

(Pub. L. 102-486, title XIII, § 1306, Oct. 24, 1992, 106 Stat. 2974.)

§ 13337. Metallurgical coal development

(a) The Secretary shall establish a research, development, demonstration, and commercial application program on metallurgical coal utilization for the purpose of developing techniques that will lead to the greater and more efficient utilization of the Nation's metallurgical coal resources.

(b) The program referred to in subsection (a) shall include the use of metallurgical coal—

(1) as a boiler fuel for the purpose of generating steam to produce electricity, including blending metallurgical coal with other coals

in order to enhance its efficient application as a boiler fuel;

(2) as an ingredient in the manufacturing of steel; and

(3) as a source of pipeline quality coalbed methane.

(Pub. L. 102-486, title XIII, § 1307, Oct. 24, 1992, 106 Stat. 2975.)

§ 13338. Utilization of coal wastes

(a) Coal waste utilization program

The Secretary, in consultation with the Secretary of the Interior, shall establish a research, development, demonstration, and commercial application program on coal waste utilization for the purpose of developing techniques that will lead to the greater and more efficient utilization of coal wastes from mining and processing, other than coal ash.

(b) Use as boiler fuel

The program referred to in subsection (a) shall include projects to facilitate the use of coal wastes from mining and processing as a boiler fuel for the purpose of generating steam to produce electricity.

(Pub. L. 102-486, title XIII, § 1308, Oct. 24, 1992, 106 Stat. 2975.)

§ 13339. Underground coal gasification

(a) Program

The Secretary shall conduct a research, development, demonstration, and commercial application program for underground coal gasification technology for in-situ conversion of coal to a cleaner burning, easily transportable gaseous fuel. The goal and objective of this program shall be to accelerate the development and commercialization of underground coal gasification. In carrying out this program, the Secretary shall give equal consideration to all ranks of coal.

(b) Demonstration projects

As part of the program authorized in subsection (a), the Secretary may solicit proposals for underground coal gasification technology projects to fulfill the goal and objective of subsection (a).

(Pub. L. 102-486, title XIII, § 1309, Oct. 24, 1992, 106 Stat. 2975.)

§ 13340. Low-rank coal research and development

The Secretary shall pursue a program of research and development with respect to the technologies needed to expand the use of low-rank coals which take into account the unique properties of lignites and sub-bituminous coals, including, but not limited to, the following areas—

- (1) high value-added carbon products;
- (2) fuel cell applications;
- (3) emissions control and combustion efficiencies;
- (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.)

PART B—CLEAN COAL TECHNOLOGY PROGRAM

§ 13351. Additional clean coal technology solicitations

(a) Program design

Additional clean coal technology solicitations described in subsection (b) shall be designed to