

sion of title I of Pub. L. 102-154, set out as a note under section 31 of Title 43, Public Lands.

§ 1124. Research and development

(a) The Chairman, acting through the appropriate Federal agencies and in cooperation with non-Federal entities, shall initiate a research and development program for the purpose of resolving all major technical problems inhibiting the fullest possible commercial utilization of geothermal resources in the United States. The specific goals of such programs shall include—

(1) the development of effective and efficient drilling methods to operate at high temperatures in formations of geothermal interest;

(2) the development of reliable predictive methods and control techniques for the production of geothermal resources from reservoirs;

(3) the exploitation of new concepts for fracturing rock to permit recovery of contained heat reserves;

(4) the improvement of equipment and technology for the extraction of geothermal resources from reservoirs;

(5) the development of improved methods for converting geothermal resources and byproducts to useful forms;

(6) the development of improved methods for controlling emissions and wastes from geothermal utilization facilities, including new monitoring methods to any extent necessary;

(7) the development and evaluation of waste disposal control technologies and the evaluation of surface and subsurface environmental effects of geothermal development;

(8) the improvement of the technical capability to predict environmental impacts resulting from the development of geothermal resources, the preparation of environmental impact statements, and the assuring of compliance with applicable standards and criteria;

(9) the identification of social, legal, and economic problems associated with geothermal development (both locally and regionally) for the purpose of developing policy and providing a framework of policy alternatives for the commercial utilization of geothermal resources;

(10) the provision for an adequate supply of scientists to perform required geothermal research and development activities; and

(11) the establishment of a program to encourage States to establish and maintain geothermal resources clearinghouses, which shall serve to (A) provide geothermal resources developers with information with respect to applicable local, State, and Federal laws, rules, and regulations, (B) coordinate the processing of permit applications, impact statements, and other information which geothermal resources developers are required to provide, (C) encourage uniformity with respect to local and State laws, rules, and regulations with respect to geothermal resources development, and (D) encourage establishment of land use plans, which would include zoning for geothermal resources development and which would assure that geothermal resources developers will be able to carry out development programs to the production stage.

(b) The Chairman, acting through the appropriate Federal agencies and in cooperation with non-Federal entities, shall implement a coordinated program of research and development in order to demonstrate the technical means for the extraction and utilization of the resource base, including any by-products of such base, and in order to accomplish the goals established by subsection (a). Research authorized by this chapter having potential applications in matters other than geothermal energy may be pursued to the extent that the findings of such research can be published in a form for utilization by others.

(Pub. L. 93-410, title I, §104, Sept. 3, 1974, 88 Stat. 1083.)

§ 1125. Geothermal demonstration plants and projects

(a) Design and construction

The Chairman, acting through the appropriate Federal agencies and in cooperation with non-Federal entities, shall initiate a program to design and construct geothermal demonstration plants. The specific goals of such program shall include—

(1) the development of economical geothermal resources production systems and components which meet environmental standards;

(2) the design of plants to produce electric power and, where appropriate, the large-scale production and utilization of any useful by-products;

(3) the involvement of engineers, analysts, technicians, and managers from industry field and powerplant development, which shall lead to the early industrial exploitation of advanced geothermal resources;

(4) the provision for an adequate supply of trained geothermal engineers and technicians;

(5) the provision of experimental test beds for component testing an evaluation by laboratories operated by the Federal Government, industry, or institutions of higher education;

(6) the construction and operation of pilot plants; and

(7) the construction and operation of demonstration plants.

(b) Establishment of demonstration projects

In carrying out his responsibilities under this section, the Chairman, acting through the appropriate Federal agencies, and in cooperation with non-Federal entities, may provide for the establishment of one or more demonstration projects utilizing each geothermal resource base involved, which shall include, as appropriate, all of the exploration, siting, drilling, pilot plant construction and operation, demonstration plant construction and operation, and other facilities and activities which may be necessary for the generation of electric energy and the utilization of geothermal resource byproducts.

(c) Agreements for the cooperative development of facilities for demonstration

The Chairman, acting through the appropriate Federal agencies, is authorized to investigate and enter into agreements for the cooperative

development of facilities to demonstrate the production of energy from geothermal resources. The responsible Federal agency may consider—

- (1) cooperative agreements with utilities and non-Federal governmental entities for construction of facilities to produce energy for commercial disposition; and
- (2) cooperative agreements with other Federal agencies for the construction and operation of facilities to produce energy for direct Federal consumption.

(d) Construction of demonstration projects without entering into agreements

The responsible Federal agency is authorized to investigate the feasibility of, construct, and operate, demonstration projects without entering into cooperative agreements with respect to such projects, if the Chairman finds that—

- (1) the nature of the resource, the geographical location, the scale and engineering design of the facilities, the techniques of production, or any other significant factor of the proposal offers opportunities to make important contributions to the general knowledge of geothermal resources, the techniques of its development, or public confidence in the technology; and
- (2) there is no opportunity for cooperative agreements with any utility or non-Federal governmental entity willing and able to cooperate in the demonstration project under subsection (c)(1), and there is no opportunity for cooperative agreements with other Federal agencies under subsection (c)(2).

(e) Factors considered for entry into agreements

Before favorably considering proposals under subsection (c), the responsible Federal agency must find that—

- (1) the nature of the resource, the geographical location, the scale and engineering design of the facilities, the techniques of production, or any other significant factor of the proposal offers opportunities to make important contributions to the general knowledge of geothermal resources, the techniques of its development, or public confidence in the technology;
- (2) the development of the practical benefits as set forth in paragraph (1) of this subsection are unlikely to be accomplished without such cooperative development; and
- (3) where non-Federal participants are involved, the proposal is not eligible for adequate Federal assistance under the loan guaranty provisions of subchapter II of this chapter or such assistance would not be adequate to satisfy the goals and requirements of the demonstration program under this section.

(f) Limits on project costs

If the estimate of the Federal investment with respect to construction and operation costs of any demonstration project proposed to be established under this section exceeds \$10,000,000, no amount may be appropriated for such project except as specifically authorized by legislation hereafter enacted by the Congress.

(g) Disposal of Federal property interests and resource byproducts

(1) At the conclusion of the program under this section or as soon thereafter as may be

practicable, the responsible Federal agencies shall, by sale, lease, or otherwise, dispose of all Federal property interests which they have acquired pursuant to this section (including mineral rights) in accordance with existing law and the terms of the cooperative agreements involved.

(2) The agency involved shall, under appropriate agreements or other arrangements, provide for the disposition of geothermal resource byproducts of the project administered by such agency.

(Pub. L. 93-410, title I, §105, Sept. 3, 1974, 88 Stat. 1084; Pub. L. 95-238, title V, §504, Feb. 25, 1978, 92 Stat. 86.)

AMENDMENTS

1978—Subsec. (e)(3). Pub. L. 95-238 inserted provisions relating to goals and requirements of the demonstration program.

§ 1126. Scientific and technical education

(a) Congressional declaration of policy

It is the policy of the Congress to encourage the development and maintenance of programs through which there may be provided the necessary trained personnel to perform required geothermal research, development, and demonstration activities under sections 1123, 1124, and 1125 of this title.

(b) Support of educational programs in science and engineering

The National Science Foundation is authorized to support programs of education in the sciences and engineering to carry out the policy of subsection (a). Such support may include fellowships, traineeships, technical training programs, technologist training programs, and summer institute programs.

(c) Selection of programs of education; coordination with National Science Foundation

The National Science Foundation is authorized and directed to coordinate its actions, to the maximum extent practicable, with the Project or any permanent Federal organization or agency having jurisdiction over the energy research and development functions of the United States, in determining the optimal selection of programs of education to carry out the policy of subsection (a).

(d) International participation and cooperation

The National Science Foundation is authorized to encourage, to the maximum extent practicable international participation and cooperation in the development and maintenance of programs of education to carrying out the policy of subsection (a).

(Pub. L. 93-410, title I, §106, Sept. 3, 1974, 88 Stat. 1085.)

TRANSFER OF FUNCTIONS

Functions of National Science Foundation relating to geothermal power development transferred to Administrator of Energy Research and Development Administration (unless otherwise specifically provided) by section 5814 of Title 42, The Public Health and Welfare. Energy Research and Development Administration terminated and functions vested by law in Administrator thereof transferred to Secretary of Energy (unless