

cial assistance for costs in excess of those estimated as of the date of award of original financial assistance may not be provided in excess of the proportion of costs borne by the Government in the original agreement and only up to 25 percentum of the original financial assistance: *Provided further*, That revenues or royalties from prospective operation of projects beyond the time considered in the award of financial assistance, or proceeds from prospective sale of the assets of the project, or revenues or royalties from replication of technology in future projects or plants are not cost-sharing for the purposes of this appropriation: *Provided further*, That other appropriated Federal funds are not cost-sharing for the purposes of this appropriation: *Provided further*, That existing facilities, equipment, and supplies, or previously expended research or development funds are not cost-sharing for the purposes of this appropriation, except as amortized, depreciated, or expensed in normal business practice.

(Pub. L. 99-190, §101(d) [title II, §201], Dec. 19, 1985, 99 Stat. 1224, 1251.)

#### REFERENCES IN TEXT

The Federal Nonnuclear Energy Research and Development Act of 1974, referred to in text, is Pub. L. 93-577, Dec. 31, 1974, 88 Stat. 1878, as amended, which is classified generally to this chapter (§5901 et seq.). For complete classification of this Act to the Code, see Short Title note set out under section 5901 of this title and Tables.

#### CODIFICATION

Section was not enacted as part of the Federal Nonnuclear Energy Research and Development Act of 1974 which comprises this chapter.

#### PROVISIONS RELATING TO PROJECTS USING CLEAN COAL TECHNOLOGIES

Provisions relating to projects using clean coal technologies were contained in the following appropriations acts:

Pub. L. 102-154, title II, Nov. 13, 1991, 105 Stat. 1019; Pub. L. 103-211, title II, Feb. 12, 1994, 108 Stat. 18.

Pub. L. 101-512, title II, Nov. 5, 1990, 104 Stat. 1944; Pub. L. 103-211, title II, Feb. 12, 1994, 108 Stat. 18.

Pub. L. 101-121, title II, Oct. 23, 1989, 103 Stat. 728.

Pub. L. 100-446, title II, Sept. 27, 1988, 102 Stat. 1811.

Pub. L. 100-202, §101(g) [title II], Dec. 22, 1987, 101 Stat. 1329-213, 1329-240.

Pub. L. 99-500, §101(h) [title II], Oct. 18, 1986, 100 Stat. 1783-242, 1783-272, and Pub. L. 99-591, §101(h) [title II], Oct. 30, 1986, 100 Stat. 3341-242, 3341-272.

#### § 5904. Research, development, and demonstration program governing principles

(a) The Congress authorizes and directs that the comprehensive program in research, development, and demonstration required by this chapter shall be designed and executed according to the following principles:

(1) Energy conservation shall be a primary consideration in the design and implementation of the Federal nonnuclear energy program. For the purposes of this chapter, energy conservation means both improvement in efficiency of energy production and use, and reduction in energy waste.

(2) The environmental and social consequences of a proposed program shall be analyzed and considered in evaluating its potential.

(3) Any program for the development of a technology which may require significant consumptive use of water after the technology has reached the stage of commercial application shall include thorough consideration of the impacts of such technology and use on water resources pursuant to the provisions of section 5912 of this title.

(4) Heavy emphasis shall be given to those technologies which utilize renewable or essentially inexhaustible energy sources.

(5) The potential for production of net energy by the proposed technology at the stage of commercial application shall be analyzed and considered in evaluating proposals.

(b) The Congress further directs that the execution of the comprehensive research, development, and demonstration program shall conform to the following principles:

(1) Research and development of nonnuclear energy sources shall be pursued in such a way as to facilitate the commercial availability of adequate supplies of energy to all regions of the United States.

(2) In determining the appropriateness of Federal involvement in any particular research and development undertaking, the Secretary shall give consideration to the extent to which the proposed undertaking satisfies criteria including, but not limited to, the following:

(A) The urgency of public need for the potential results of the research, development, or demonstration effort is high, and it is unlikely that similar results would be achieved in a timely manner in the absence of Federal assistance.

(B) The potential opportunities for non-Federal interests to recapture the investment in the undertaking through the normal commercial utilization of proprietary knowledge appear inadequate to encourage timely results.

(C) The extent of the problems treated and the objectives sought by the undertaking are national or widespread in their significance.

(D) There are limited opportunities to induce non-Federal support of the undertaking through regulatory actions, end use controls, tax and price incentives, public education, or other alternatives to direct Federal financial assistance.

(E) The degree of risk of loss of investment inherent in the research is high, and the availability or risk capital to the non-Federal entities which might otherwise engage in the field of the research is inadequate for the timely development of the technology.

(F) The magnitude of the investment appears to exceed the financial capabilities of potential non-Federal participants in the research to support effective efforts.

(Pub. L. 93-577, §5, Dec. 31, 1974, 88 Stat. 1880; Pub. L. 95-91, title III, §301(a), title VII, §§703, 707, Aug. 4, 1977, 91 Stat. 577, 606, 607.)

#### TRANSFER OF FUNCTIONS

“Secretary”, meaning Secretary of Energy, substituted in text for “Administrator”, meaning Administrator of Energy Research and Development Adminis-

tration, pursuant to sections 301(a), 703, and 707 of Pub. L. 95-91, which are classified to sections 7151(a), 7293, and 7297 of this title and which terminated Energy Research and Development Administration and transferred its functions and functions of Administrator thereof (with certain exceptions) to Secretary of Energy.

#### NATIONAL ALCOHOL FUELS COMMISSION

Pub. L. 95-599, title I, §170, Nov. 6, 1978, 92 Stat. 2724, as amended by Pub. L. 96-106, §20, Nov. 9, 1979, 93 Stat. 799, established the National Alcohol Fuels Commission, directed the Commission to make a full and complete investigation and study of the long- and short-term potential for alcohol fuels, from biomass (including but not limited to, animal, crop and wood waste, municipal and industrial waste, sewage sludge, and ocean and terrestrial crops) and coal, to contribute to meeting the Nation's energy needs, and provided that, not later than eighteen months after being established, the Commission submit to the President and the Congress its final report including its recommendations and findings, with the Commission to cease to exist six months after submission of such report.

#### § 5905. Comprehensive planning and programming

(a) Pursuant to the authority and directions of this chapter and the Energy Reorganization Act of 1974 (Public Law 93-438) [42 U.S.C. 5801 et seq.], the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), and titles XX through XXIII of the Energy Policy Act of 1992 [42 U.S.C. 13401 et seq., 13451 et seq., 13501 et seq., 13521 et seq.], the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992 [42 U.S.C. 13522], shall transmit to the Congress, on or before June 30, 1975, a comprehensive plan for energy research, development, and demonstration. This plan shall be appropriately revised annually as provided in section 5914(a)<sup>1</sup> of this title. Such plan shall be designed to achieve—

(1) solutions to immediate and short-term (the period up to 5 years after submission of the plan or its annual revision) energy supply system and associated environmental problems;

(2) solutions to middle-term (the period from 5 years to 10 years after submission of the plan or its annual revision) energy supply system and associated environmental problems; and

(3) solutions to long-term (the period beyond 10 years after submission of the plan or its annual revision) energy supply system and associated environmental problems.

(b)(1) Based on the comprehensive energy research, development, and demonstration plan developed under subsection (a) of this section, the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992 [42 U.S.C. 13522], shall develop and transmit to the Congress, on or before June 30, 1975, a comprehensive nonnuclear energy research, development, and demonstration program to implement the nonnuclear research, development, and demonstration aspects of the comprehensive plan. Such program shall be updated and transmitted to the Congress annually as part of the report required under section 5914<sup>1</sup> of this title.

<sup>1</sup> See References in Text note below.

(2) This program shall be designed to achieve solutions to the energy supply and associated environmental problems in the immediate and short-term, middle-term, and long-term time intervals described in subsection (a)(1) through (3) of this section. In formulating the nonnuclear aspects of this program, the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992 [42 U.S.C. 13522], shall evaluate the economic, environmental, and technological merits of each aspect of the program.

(3) The Secretary shall assign program elements and activities in specific nonnuclear energy technologies, to the short-term, middle-term, and long-term time intervals, and shall present full and complete justification for these assignments and the degree of emphasis for each. These program elements and activities shall include, but not be limited to, research, development, and demonstrations designed—

(A) to advance energy conservation technologies, including but not limited to—

(i) productive use of waste, including garbage, sewage, agricultural wastes, and industrial waste heat;

(ii) reuse and recycling of materials and consumer products;

(iii) improvements in automobile design for increased efficiency and lowered emissions, including investigation of the full range of alternatives to the internal combustion engine and systems of efficient public transportation; and

(iv) advanced urban and architectural design to promote efficient energy use in the residential and commercial sectors, improvements in home design and insulation technologies, small thermal storage units and increased efficiency in electrical appliances and lighting fixtures;

(B) to accelerate the commercial demonstration of technologies for producing low-sulfur fuels suitable for boiler use;

(C) to demonstrate improved methods for the generation, storage, and transmission of electrical energy through (i) advances in gas turbine technologies, combined power cycles, the use of low British thermal unit gas and, if practicable, magnetohydrodynamics; (ii) storage systems to allow more efficient load following, including the use of inertial energy storage systems; and (iii) improvement in cryogenic transmission methods;

(D) to accelerate the commercial demonstration of technologies for producing substitutes for natural gas, including coal gasification: *Provided*, That the Secretary shall invite and consider proposals from potential participants based upon Federal assistance and participation in the form of a joint Federal-industry corporation, and recommendations pursuant to this clause shall be accompanied by a report on the viability of using this form of Federal assistance or participation;

(E) to accelerate the commercial demonstration of technologies for producing syncrude and liquid petroleum products from coal: *Provided*, That the Secretary shall invite and consider proposals from potential participants based upon Federal assistance and participa-