

5814(f) of this title. Energy Research and Development Administration terminated and functions vested by law in Administrator thereof transferred to Secretary of Energy (unless otherwise specifically provided) by sections 7151(a) and 7293 this title.

§ 5554. Solar energy resource determination and assessment program; objectives; implementation

(a) The Chairman shall initiate a solar energy resource determination and assessment program with the objective of making a regional and national appraisal of all solar energy resources, including data on insolation, wind, sea thermal gradients, and potentials for photosynthetic conversion. The program shall emphasize identification of promising areas for commercial exploitation and development. The specific goals shall include—

- (1) the development of better methods for predicting the availability of all solar energy resources, over long time periods and by geographic location;
- (2) the development of advanced meteorological, oceanographic, and other instruments, methodology, and procedures necessary to measure the quality and quantity of all solar resources on periodic bases;
- (3) the development of activities, arrangements, and procedures for the collection, evaluation, and dissemination of information and data relating to solar energy resource assessment.

(b) The Chairman, acting through the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, and other appropriate agencies, shall—

- (1) develop and carry out a general plan for inventorying all forms of solar energy resources associated with Federal lands and (where consistent with property rights) non-Federal lands;
- (2) conduct regional surveys based upon such general plan, using innovative meteorological, oceanographic, and space-related techniques, in sufficient numbers to lead to a national inventory of solar energy resources in the United States;
- (3) publish and make available maps, reports, and other documents developed from such surveys to encourage and facilitate the commercial development of solar energy resources; and
- (4) make such recommendations for legislation as may appear to be necessary to establish policies for solar resources involving Federal lands and waters, consistent with known inventories of various resource types, with the state of technologies for solar energy development, and with evaluation of the environmental impacts of such development.

(Pub. L. 93-473, § 5, Oct. 26, 1974, 88 Stat. 1433.)

§ 5555. Research and development program

(a) Purpose

The Chairman shall initiate a research and development program for the purpose of resolving the major technical problems inhibiting commercial utilization of solar energy in the United States.

(b) Implementation

In connection with or as a part of such program, the Chairman shall—

- (1) conduct, encourage, and promote scientific research and studies to develop effective and economical processes and equipment for the purpose of utilizing solar energy in an acceptable manner for beneficial uses;
- (2) carry out systems, economic, social, and environmental studies to provide a basis for research, development and demonstration planning and phasing; and
- (3) perform or cause to be performed technology assessments relevant to the utilization of solar energy.

(c) Scope

The specific solar energy technologies to be addressed or dealt with in the program shall include—

- (1) direct solar heat as a source for industrial processes, including the utilization of low-level heat for process and other industrial purposes;
- (2) thermal energy conversion, and other methods, for the generation of electricity and the production of chemical fuels;
- (3) the conversion of cellulose and other organic materials (including wastes) to useful energy or fuels;
- (4) photovoltaic and other direct conversion processes;
- (5) sea thermal gradient conversion;
- (6) windpower conversion;
- (7) solar heating and cooling of housing and of commercial and public buildings; and
- (8) energy storage.

(Pub. L. 93-473, § 6, Oct. 26, 1974, 88 Stat. 1433.)

§ 5556. Solar energy demonstration facilities program

(a) Authorization for design and construction of facilities; objectives

The Chairman is authorized to initiate a program to design and construct, in specific solar energy technologies (including, but not limited to, those listed in section 5555(c) of this title,¹ facilities or powerplants of sufficient size to demonstrate the technical and economic feasibility of utilizing the various forms of solar energy. The specific goals of such programs shall include—

- (1) production of electricity from a number of powerplants, on the order of one to ten megawatts each;
- (2) production of synthetic fuels in commercial quantities;
- (3) large-scale utilization of solar energy in the form of direct heat;
- (4) utilization of thermal and all other by-products of the solar facilities;
- (5) design and development of hybrid systems involving the concomitant utilization of solar and other energy sources; and
- (6) the continuous operation of such plants and facilities for a period of time.

¹So in original. Probably should be preceded by a closing parenthesis.

(b) Criteria for determination to proceed from development program to demonstration

For each of the technologies for which a successful and appropriate development program is completed, the Chairman shall make a determination to proceed to demonstration based on criteria including, but not necessarily limited to, the following:

- (1) the technological feasibility of the project;
- (2) the costs and benefits of the project, as determined by an economic assessment;
- (3) the immediate and the potential uses of the solar energy utilized in the project;
- (4) long-term national need for the technology;
- (5) environmental impact;
- (6) potential for technology transfer to other applications; and
- (7) the nature and extent of Federal participation, if any, in the project.

(c) Establishment of one or more projects utilizing each form of solar energy

In carrying out his responsibilities under this section, the Chairman, acting through the appropriate Federal agencies, may provide for the establishment of one or more demonstration projects utilizing each form of solar energy, which shall include, as appropriate, the specific research, development, pilot plant construction and operation, demonstration plant construction and operation, and other facilities and activities which may be necessary to show commercial viability of the specific solar technology.

(d) Investigation and agreements for cooperative development of demonstration facilities

The Chairman, acting through the appropriate Federal agencies, is authorized to investigate and enter into agreements for the cooperative development of facilities to demonstrate solar technologies. The responsible Federal agency may consider—

- (1) cooperative agreements with non-Federal entities for construction of facilities and equipment to demonstrate solar energy technologies; and
- (2) cooperative agreements with other Federal agencies for the construction of facilities and equipment and operation of facilities to produce energy for direct Federal utilization.

(e) Construction and operation of demonstration projects without cooperative agreements

The Chairman, acting through appropriate Federal agencies is authorized to 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 specific demonstration project offers opportunities to make important contributions to the general knowledge of solar resources, the techniques of its development, or public confidence in the technology; and
- (2) there is no opportunity for cooperative agreements with any non-Federal entity will-

ing and able to cooperate in the demonstration project under subsection (d)(1) of this section, and there is no opportunity for cooperative agreements with other Federal agencies under subsection (d)(2) of this section.

(f) Additional appropriations for projects exceeding maximum amount

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 \$20,000,000, no amount may be appropriated for such project except as specifically authorized by legislation hereafter enacted by the Congress.

(g) Disposition of Federal property interests, electricity, synthetic fuels, and other byproducts upon completion of project

(1) At the conclusion of any demonstration project established 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 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 electricity, synthetic fuels, and other byproducts of the project administered by such agency.

(Pub. L. 93-473, § 7, Oct. 26, 1974, 88 Stat. 1434.)

§ 5556a. Solar photovoltaic energy systems studies and acquisitions by Secretary of Energy; scope, contents, and submission dates for reports; acquisition authority and requirements; authorization of appropriations

(a) The Secretary of Energy shall—

(1) initiate and conduct an “application and system design study”, cooperatively with appropriate Federal agencies, to determine the potential for the use of solar photovoltaic systems at specific Federal installations; and this study shall—

(A) include an analysis of those sites that are currently cost-effective for solar photovoltaic energy systems, using life-cycle costing techniques, as well as those which would be cost-effective at expected future market prices;

(B) identify potential sites and uses of solar photovoltaic energy systems at the following agencies as well as any others which the Secretary of Energy deems necessary:

- (i) the Department of Defense;
- (ii) the Department of Transportation (including the United States Coast Guard, the Federal Aviation Administration, and the Federal Highway Administration);
- (iii) the Department of Commerce;
- (iv) the Department of Agriculture; and
- (v) the Department of the Interior;

(C) provide a preliminary report to Congress within nine months following February 25, 1978;

(D) include the presentation of a detailed plan for the implementation of solar photovoltaic energy systems for power generation