

§ 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;

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

(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.

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

(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 at specific sites in Federal Government agencies to Congress within twelve months following February 25, 1978;

(2) initiate and conduct a study of the options available to the Federal Government to provide for the adequate growth of the solar photovoltaic industry and to include such possible incentives as government funding, loan guarantees, tax incentives, the operation of pilot plants or production lines and other incentives deemed worthy of consideration by the Secretary of Energy. A preliminary report shall be submitted to Congress within six months following February 25, 1978;

(3) initiate and conduct a study involving the prospects for applications of solar photovoltaic energy systems for power generation in foreign countries, particularly lesser developed countries, and the potential for the exportation of these energy systems. This study shall involve the cooperation of the Department of State and the Department of Commerce, as well as other Federal agencies which the Secretary of Energy deems appropriate. A final report shall be submitted to the Congress, as well as a preliminary report within twelve months of February 25, 1978; and

(4) be authorized to acquire up to an additional 4.0 megawatts (peak) of solar photovoltaic energy systems. The sum of \$13,000,000 is hereby authorized to be appropriated (in addition to any other amounts authorized by this Act to be appropriated) for the fiscal year ending September 30, 1978, and for delivery in the following twelve months. Such sums shall remain available until expended. The solar photovoltaic energy systems acquired shall be available for use for power generation by Federal agencies, provided that no procurement takes place until their application on Federal sites is determined to be life cycle cost effective.

(b) For technology development, particularly for engineering design and development of the manufacturing process of solar photovoltaic energy systems (primarily for the implementation of automated processes and other cost reducing production technologies), the sum of \$6,000,000 is hereby authorized by this Act to be appropriated for the fiscal year ending September 30, 1978.

(Pub. L. 95-238, title II, §208, Feb. 25, 1978, 92 Stat. 75.)

REFERENCES IN TEXT

This Act, referred to in subsec. (a)(4), means Pub. L. 95-238, Feb. 25, 1978, 92 Stat. 47, as amended, known as the Department of Energy Act of 1978—Civilian Applications. For complete classification of this Act to the Code, see Tables.

CODIFICATION

Section was enacted as part of the Department of Energy Act of 1978—Civilian Applications, and not as part