

(17) commercial application of solar photovoltaic energy technologies can be expedited by early commercial demonstration under practical conditions;

(18) photovoltaic energy systems are currently adaptable on a life cycle, cost-justified basis for certain of the energy needs of the Federal Government, and will find additional applications as continued refinements improve performance and reduce unit costs;

(19) the Federal Government can stimulate innovation and economic efficiency in the production of photovoltaic energy systems through the development and implementation of policies to promote diversity and maximum competition between firms engaged in the research, manufacture, installation, and/or maintenance of these systems;

(20) innovation and creativity in the development of solar photovoltaic energy components and systems can be fostered through encouraging direct contact between the manufacturers of such systems and the architects, engineers, developers, contractors, and other persons interested in utilizing such systems; and

(21) it is contemplated that the ten-year program established by this subchapter will require the expenditure of \$1,500,000,000 by the Federal Government.

(b) It is therefore declared to be the policy of the United States and the purpose of this subchapter to establish during the next decade an aggressive research, development, and demonstration program involving solar photovoltaic energy systems and in the long term, to have as an objective the production of electricity from photovoltaic systems cost competitive with utility-generated electricity from conventional sources. Further, it is declared to be the policy of the United States and the purpose of this subchapter that the objectives of this research, development, and demonstration program are—

(1) to double the production of solar photovoltaic energy systems each year during the decade starting with fiscal year 1979, measured by the peak generating capacity of the systems produced, so as to reach a total annual United States production of solar photovoltaic energy systems of approximately two million peak kilowatts, and a total cumulative production of such systems of approximately four million peak kilowatts by fiscal year 1988;

(2) to reduce the average cost of installed solar photovoltaic energy systems to \$1 per peak watt by fiscal year 1988; and

(3) to stimulate the purchase by private buyers of at least 90 per centum of all solar photovoltaic energy systems produced in the United States during fiscal year 1988.

(Pub. L. 95-590, § 2, Nov. 4, 1978, 92 Stat. 2513.)

SHORT TITLE

For short title of this subchapter as the "Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978", see section 1 of Pub. L. 95-590, set out as a note under section 5501 of this title.

§ 5582. Definitions

For purposes of this subchapter—

(1) a "solar photovoltaic energy system" is a system of components which generates electricity from incident sunlight by means of the photovoltaic effect, and which shall include all components, including energy storage devices where appropriate, necessary to provide electricity for individual, industrial, agricultural, or governmental use;

(2) the term "solar photovoltaic energy system" may be used interchangeably with the term "photovoltaic system";

(3) a "hybrid solar photovoltaic energy system" is a system of components that generates electricity from incident sunlight by means of the photovoltaic effect and, in conjunction with electronic and, if appropriate, optical, thermal and storage devices, provides electricity, as well as heat and/or light for individual, commercial, industrial, agricultural, or governmental use;

(4) "photovoltaic effect" refers to the physical phenomenon exhibited under certain circumstances by some materials in which a portion of the light energy striking the material is directly converted to electrical energy;

(5) "facility" means any building, agricultural, commercial or industrial complex or other device constructively employing photovoltaic systems; and

(6) "Secretary" means the Secretary of Energy.

(Pub. L. 95-590, § 3, Nov. 4, 1978, 92 Stat. 2515.)

§ 5583. Establishment and promotion of research, development, and demonstration programs

The Secretary is directed to establish immediately and carry forth such research, development, and demonstration programs as may be necessary to meet the objectives of this subchapter as set forth in section 5581(b) of this title, and as a part of any such program shall—

(a) conduct, and promote the coordination and acceleration of, research, development, and demonstrations relating to solar photovoltaic energy systems and components thereof, and

(b) conduct, and promote the coordination and acceleration of, research, development, and demonstrations for systems and components to be used in applications that are dependent for their energy on solar photovoltaic energy systems.

(Pub. L. 95-590, § 4, Nov. 4, 1978, 92 Stat. 2515.)

§ 5584. Federal assistance application procedures; selection of applicants; agreements; financial assistance; observation and monitoring of photovoltaic systems; reports; projects and activities

(a) In carrying out the provisions of section 5583 of this title, the Secretary is authorized—

(1) to establish procedures whereby any public or private entity wishing to install solar photovoltaic components and systems in any new or existing facility may apply for Federal assistance in purchasing and installing, in such facility, photovoltaic components or systems;

(2) to select, as soon as he deems it feasible, a number of the applicants under paragraph (1)

and enter into agreements with them for the design, purchase, fabrication, testing, installation, and demonstration of photovoltaic components and systems. Such selection shall be based on the need to obtain scientific, technological, and economic information from a variety of such systems under a variety of circumstances and conditions; and

(3) to arrange, as part of any agreement entered into under paragraph (2), to provide up to 75 per centum of the purchase and installation costs of photovoltaic components or systems, taking into account relevant considerations involving the relative stage of consumer and industry interest and development at the time of the financial assistance action. Such arrangements shall be contingent upon terms and conditions prescribed by the Secretary, including an express agreement that the entity with whom the agreement is entered into shall, in such manner and form and on such terms and conditions as the Secretary may prescribe, observe and monitor (or permit the Secretary or his agents to observe and monitor) the performance and operation of such system for a period of five years, and that such entity (including any subsequent owner of the property) shall regularly furnish the Secretary with such reports thereon as the agreement may require.

(b) The Secretary shall, as he deems appropriate, undertake any projects or activities (including demonstration projects) to further the attainment of the objectives of this section.

(Pub. L. 95-590, § 5, Nov. 4, 1978, 92 Stat. 2516.)

CODIFICATION

Section 5583 of this title, referred to in subsec. (a), was in the original "section (4)" and was translated section 5583 of this title as the probable intent of Congress.

§ 5585. Contracts, grants and arrangements

(a) Selection of photovoltaic components and systems, design concepts, and designs

The Secretary is authorized to select on the basis of open competitions—

(1) a number of readily available photovoltaic components and systems;

(2) a number of design concepts for various types of applications which demonstrate adaptability to the utilization of photovoltaic components and systems; and

(3) a number of designs for applications selected under paragraph (2), so that each design includes specific provisions for the utilization of solar photovoltaic components and systems selected under paragraph (1).

(b) Commercial production and utilization of photovoltaic components and systems; selection of components and systems compatible with chosen design concepts; procurement of components and systems

The Secretary, in accordance with the applicable provisions of sections 5906, 5907, and 5908 of this title and with such program guidelines as the Secretary may establish, shall—

(1) enter into such contracts and grants as may be necessary or appropriate for the devel-

opment for commercial production and utilization of photovoltaic components and systems, including any further planning and design which may be required to conform with the specifications set forth in any applicable criteria;

(2) select, as being compatible with the design concepts chosen under subsection (a)(2) of this section, a reasonable number of photovoltaic components and systems; and

(3) enter into contracts with a number of persons or firms for the procurement of photovoltaic components and systems, including adequate numbers of spare and replacement parts for such systems.

(c) Design integration; demonstration of prototype photovoltaic systems; utilization of systems in existing facilities; terms and conditions upon transfer of facilities and systems

The Secretary is authorized to award contracts for the design integration between the application concepts and the photovoltaic systems procured by the Secretary under subsection (b)(3), and for the demonstration of prototype solar photovoltaic systems, and, when appropriate, for the utilization of such systems in existing facilities. Title to and ownership of the facilities so constructed and of photovoltaic systems installed hereunder may be conveyed to purchasers of such facilities under terms and conditions prescribed by the Secretary, including an express agreement that any such purchaser shall, in such manner and form and on such terms and conditions as the Secretary may prescribe, observe and monitor (or permit the Secretary to observe and monitor) the performance and operation of such systems for a period of five years, and that such purchaser (including any subsequent owner) shall regularly furnish the Secretary with such reports thereon as the agreement may require.

(d) Arrangements with Federal agencies for demonstration of systems in Federal buildings and facilities

The Secretary, in consultation with the Administrator of General Services or the Secretary of Defense or both (as may be appropriate) shall enter into arrangements with appropriate Federal agencies concurrently with the conduct of the programs under this section and section 5586 of this title, to carry out such projects and activities (including demonstration projects), with respect to Federal buildings and facilities, as may be appropriate for the demonstration of photovoltaic systems suitable and effective for use in such applications.

(e) Projects and activities

The Secretary shall, as he deems appropriate, undertake any projects or activities (including demonstration projects) to further the attainment of the objectives of this section.

(Pub. L. 95-590, § 6, Nov. 4, 1978, 92 Stat. 2516.)

§ 5586. Test procedures and performance criteria

(a) Testing program

The Secretary shall conduct a testing program for photovoltaic systems to assist in the development and demonstration of prototype photo-