

with section 13541 of this title, to pursue an aggressive national program of research, development, demonstration, and commercial application of renewable energy and energy efficiency technologies in order to ensure a stable and secure future energy supply by—

(1) achieving as soon as practicable cost competitive use of those technologies without need of Federal financial incentives;

(2) establishing long-term Federal research goals and multiyear funding levels;

(3) directing the Secretary to undertake initiatives to improve the ability of the private sector to commercialize in the near term renewable energy and energy efficiency technologies; and

(4) fostering collaborative efforts involving the private sector through government support of a program of demonstration and commercial application projects.

**(c) General authority**

The Secretary, acting in accordance with section 13541 of this title, is authorized and directed to—

(1) pursue a program of research, development, demonstration, and commercial application with the private sector, to achieve the purpose of this chapter, including the goals established under section 12003 of this title; and

(2) undertake demonstration and commercial application projects as provided in section 12005 of this title.

(Pub. L. 101-218, §2, Dec. 11, 1989, 103 Stat. 1859; Pub. L. 102-486, title XII, §1202(d)(1)-(3), Oct. 24, 1992, 106 Stat. 2959, 2960.)

REFERENCES IN TEXT

This chapter, referred to in subssecs. (b) and (c)(1), was in the original “this Act”, meaning Pub. L. 101-218, Dec. 11, 1989, 103 Stat. 1859, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note below and Tables.

AMENDMENTS

1992—Subsec. (b). Pub. L. 102-486, §1202(d)(1), substituted “section 13541 of this title” for “authority contained in the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901-5920) and other law applicable to the Secretary” and “demonstration, and commercial application” for “and demonstration”.

Subsec. (b)(4). Pub. L. 102-486, §1202(d)(2), substituted “efforts” for “research and development efforts” and “demonstration and commercial application projects” for “joint ventures”.

Subsec. (c). Pub. L. 102-486, §1202(d)(3), substituted “section 13541 of this title, is authorized and directed to—” and pars. (1) and (2) for “the authority contained in the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901-5920) and other law applicable to the Secretary—

“(1) is authorized and directed to—

“(A) pursue a program of research, development, and demonstration, including the use of joint ventures with the private sector, to achieve the purpose of this chapter, including the goals established under section 12003 of this title; and

“(B) undertake joint ventures as provided in section 12005 of this title; and

“(2) is authorized to undertake, from time to time, joint ventures in technology areas other than those set forth in section 12005(c) of this title, subject to the conditions set forth in section 12005(b) of this title.”

SHORT TITLE

Pub. L. 101-218, §1, Dec. 11, 1989, 103 Stat. 1859, provided: “That this Act [enacting this chapter and amending sections 6276 and 8243 of this title, section 2857 of Title 10, Armed Forces, and section 2194 of Title 22, Foreign Relations and Intercourse] may be referred to as the ‘Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989’.”

**§ 12002. Definitions**

As used in this chapter—

(1) the term “invention” means an invention or discovery that is patented or for which a patent may be obtained under title 35, or any novel variety of plant that is protected or for which plant variety protection may be obtained under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.) and that is conceived or reduced to practice as a result of work under an agreement entered into under this chapter;

(2) the term “non-Federal person” means an entity located in the United States, the controlling interest (as defined by the Secretary) of which is held by persons of the United States, including—

(A) a for-profit business;

(B) a private foundation;

(C) a nonprofit organization such as a university;

(D) a trade or professional society; and

(E) a unit of State or local government;

(3) the term “Secretary” means the Secretary of Energy;

(4) the term “small business”, with respect to a participant in any demonstration and commercial application project under this chapter, means a private firm that does not exceed the numerical size standard promulgated by the Small Business Administration under section 632(a) of title 15 for the Standard Industrial Classification (SIC) code designated by the Secretary of Energy as the primary business activity to be undertaken in the demonstration and commercial application project;

(5) the term “source reduction” means any practice which—

(A) reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment, including fugitive emissions, prior to recycling, treatment, or disposal; and

(B) reduces the hazards to the public health and the environment associated with the release of such substances, pollutants, or contaminants,

including equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, and inventory control, but not including any practice which alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service;<sup>1</sup>

<sup>1</sup> So in original. Probably should be “; and”.

(6) the term “United States” means the several States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other Commonwealth, territory, or possession of the United States.

(Pub. L. 101-218, § 3, Dec. 11, 1989, 103 Stat. 1859; Pub. L. 102-486, title XII, § 1202(d)(4), Oct. 24, 1992, 106 Stat. 2960.)

#### REFERENCES IN TEXT

This chapter, referred to in introductory provisions and pars. (1) and (4), was in the original “this Act”, meaning Pub. L. 101-218, Dec. 11, 1989, 103 Stat. 1859, known as the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 12001 of this title and Tables.

The Plant Variety Protection Act, referred to in par. (1), is Pub. L. 91-577, Dec. 24, 1970, 84 Stat. 1542, as amended, which is classified principally to chapter 57 (§ 2321 et seq.) of Title 7, Agriculture. For complete classification of this Act to the Code, see Short Title note set out under section 2321 of Title 7 and Tables.

#### AMENDMENTS

1992—Pars. (2) to (5). Pub. L. 102-486 redesignated pars. (3) to (5) as (2) to (4), respectively, in par. (4) substituted “any demonstration and commercial application project” for “any joint venture” and “in the demonstration and commercial application project;” for “in the venture; and”, added par. (5), and struck out former par. (2) which read as follows: “‘joint venture’ means any agreement entered into under this chapter by the Secretary with more than one or a consortium of non-Federal persons (including a joint venture under the National Cooperative Research Act of 1984 (15 U.S.C. 4301 et seq.)) for cost-shared research, development, or demonstration of technologies, but does not include procurement contracts, grant agreements, or cooperative agreements as those terms are used in sections 6303, 6304, and 6305 of title 31;”.

### § 12003. National goals and multi-year funding for Federal wind, photovoltaics, and solar thermal programs

#### (a) National goals

The following are declared to be the national goals for the wind, photovoltaics, and solar thermal energy programs being carried out by the Secretary:

##### (1) Wind

(A) In general, the goals for the Wind Energy Research Program include improving design methodologies and developing more reliable and efficient wind turbines to increase the cost competitiveness of wind energy. Research efforts shall emphasize—

- (i) activities that address near-term technical problems and assist private sector exploitation of market opportunities of the wind energy industry;
- (ii) developing technologies such as advanced airfoils and variable speed generators to increase wind turbine output and reduce maintenance costs by decreasing structural stress and fatigue;
- (iii) increasing the basic knowledge of aerodynamics, structural dynamics, fatigue, and electrical systems interactions as applied to wind energy technology; and

(iv) improving the compatibility of electricity produced from wind farms with conventional utility needs.

(B) Specific goals for the Wind Energy Research Program shall be to—

- (i) reduce average wind energy costs to 3 to 5 cents per kilowatt hour by 1995;
- (ii) reduce capital costs of new wind energy systems to \$500 to \$750 per kilowatt of installed capacity by 1995;
- (iii) reduce operation and maintenance costs for wind energy systems to less than one cent per kilowatt hour by 1995; and
- (iv) increase capacity factors for new wind energy systems to 25 to 35 percent by 1995.

#### (2) Photovoltaics

(A) In general, the goals of the Photovoltaic Energy Systems Program shall include improving the reliability and conversion efficiencies of and lowering the costs of photovoltaic conversion. Research efforts shall emphasize advancements in the performance, stability, and durability of photovoltaic materials.

(B) Specific goals of the Photovoltaic Energy Systems Program shall be to—

- (i) improve operational reliability of photovoltaic modules to 30 years by 1995;
- (ii) increase photovoltaic conversion efficiencies by 20 percent by 1995;
- (iii) decrease new photovoltaic module direct manufacturing costs to \$800 per kilowatt by 1995; and
- (iv) increase cost efficiency of photovoltaic power production to 10 cents per kilowatt hour by 1995.

#### (3) Solar thermal

(A) In general, the goal of the Solar Thermal Energy Systems Program shall be to advance research and development to a point where solar thermal technology is cost-competitive with conventional energy sources, and to promote the integration of this technology into the production of industrial process heat and the conventional utility network. Research and development shall emphasize development of a thermal storage technology to provide capacity for shifting power to periods of demand when full insolation is not available; improvement in receivers, energy conversion devices, and innovative concentrators using stretch membranes, lenses, and other materials; and exploration of advanced manufacturing techniques.

(B) Specific goals of the Solar Thermal Energy Systems Program shall be to—

- (i) reduce solar thermal costs for industrial process heat to \$9.00 per million Btu by 1995; and
- (ii) reduce average solar thermal costs for electricity to 4 to 5 cents per kilowatt hour by 1995.

#### (4) Alcohol from biomass

(A) In general, the goal of the Alcohol From Biomass Program shall be to advance research and development to a point where alcohol from biomass technology is cost-competitive with conventional hydrocarbon transportation fuels, and to promote the integration of this