§ 17173. Daylighting systems and direct solar light pipe technology

(a) Establishment

The Secretary shall establish a program of research and development to provide assistance in the demonstration and commercial application of direct solar renewable energy sources to provide alternatives to traditional power generation for lighting and illumination, including light pipe technology, and to promote greater energy conservation and improved efficiency. All direct solar renewable energy devices supported under this program shall have the capability to provide measurable data on the amount of kilowatt-hours saved over the traditionally powered light sources they have replaced.

(b) Reporting

The Secretary shall transmit to Congress an annual report assessing the measurable data derived from each project in the direct solar renewable energy sources program and the energy savings resulting from its use.

(c) Definitions

For purposes of this section—

(1) the term ''direct solar renewable energy'' means energy from a device that converts sunlight into useable light within a building, tunnel, or other enclosed structure, replacing artificial light generated by a light fixture and doing so without the conversion of the sunlight into another form of energy; and

(2) the term ''light pipe'' means a device designed to transport visible solar radiation from its collection point to the interior of a building while excluding interior heat gain in the nonheating season.

(d) Authorization of appropriations

There are authorized to be appropriated to the Secretary for carrying out this section $3,500,000 for each of the fiscal years 2008 through 2012.

(Pub. L. 110–140, title VI, § 605, Dec. 19, 2007, 121 Stat. 1676.)

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

§§ 17174, 17175. Repealed. Pub. L. 116–260, div. Z, title III, § 3006(g)(1), Dec. 27, 2020, 134 Stat. 2513

Section 17174, Pub. L. 110–140, title VI, § 606, Dec. 19, 2007, 121 Stat. 1676, related to solar air conditioning research and development program.

Section 17175, Pub. L. 110–140, title VI, § 607, Dec. 19, 2007, 121 Stat. 1677, related to photovoltaic demonstration program.

PART B—GEOTHERMAL ENERGY

§ 17191. Definitions

For purposes of this part:

(1) Engineered

When referring to enhanced geothermal systems, the term ''engineered'' means designed to access subsurface heat, including stimulation and nonstimulation technologies to address one or more of the following issues:

(A) Lack of effective permeability, porosity or open fracture connectivity within the heat reservoir.

(B) Insufficient contained geofluid in the heat reservoir.

(C) A low average geothermal gradient which necessitates deeper drilling, or the use of alternative heat sources or heat generation processes.

(2) Eligible entity

The term ''eligible entity'' means any of the following entities:

(A) An institution of higher education.

(B) A National laboratory.

(C) A Federal research agency.

(D) A State research agency.

(E) A nonprofit research organization.

(F) An industrial entity.

(G) A consortium of 2 or more entities described in subparagraphs (A) through (F).

(3) Enhanced geothermal systems

The term ''enhanced geothermal systems'' means geothermal reservoir systems that are engineered, as opposed to occurring naturally.

(4) Geofluid

The term ''geofluid'' means any fluid used to extract thermal energy from the Earth which is transported to the surface for direct use or electric power generation, except that such term shall not include oil or natural gas.

(5) Geopressured resources

The term ''geopressured resources'' mean geothermal deposits found in sedimentary rocks under higher than normal pressure and saturated with gas or methane.

(6) Geothermal

The term ''geothermal'' refers to heat energy stored in the Earth's crust that can be accessed for direct use or electric power generation.

(7) Hydrothermal

The term ''hydrothermal'' refers to naturally occurring subsurface reservoirs of hot water or steam.

(8) Systems approach

The term ''systems approach'' means an approach to solving problems or designing systems that attempts to optimize the performance of the overall system, rather than a particular component of the system.

(Pub. L. 110–140, title VI, § 612, Dec. 19, 2007, 121 Stat. 1679; Pub. L. 116–260, div. Z, title III, § 3002(a), Dec. 27, 2020, 134 Stat. 2487.)

Editorial Notes

AMENDMENTS

2020—Par. (1). Pub. L. 116–260, § 3002(a), amended par. (1) generally. Prior to amendment, par. (1) defined the term ''engineered''.

Pars. (2) to (8). Pub. L. 116–260, § 3002(a)(2), (3), added par. (2) and redesignated former pars. (2) to (7) as (3) to (8), respectively.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

SHORT TITLE

This part known as the ''Advanced Geothermal Energy Research and Development Act of 2007'', see Short Title note set out under section 17001 of this title.

§ 17192. Hydrothermal research and development

(a) In general

The Secretary shall carry out a program of research, development, demonstration, and commercial application for geothermal energy production from hydrothermal systems.

(b) Programs

The program authorized in subsection (a) shall include the following:

(1) Advanced hydrothermal resource tools

The research and development of advanced geologic tools to assist in locating hydrothermal resources, and to increase the reliability of site characterization, including the development of new imaging and sensing technologies and techniques to assist in prioritization of targets for characterization;

(2) Exploratory drilling for geothermal resources

The demonstration of advanced technologies and techniques of siting and exploratory drilling for undiscovered resources in a variety of geologic settings, carried out in collaboration with industry partners that will assist in the acquisition of high quality data sets relevant for hydrothermal subsurface characterization activities.

(Pub. L. 110–140, title VI, § 613, Dec. 19, 2007, 121 Stat. 1679; Pub. L. 116–260, div. Z, title III, § 3002(b), Dec. 27, 2020, 134 Stat. 2487.)

Editorial Notes

AMENDMENTS

2020—Pub. L. 116–260 amended section generally. Prior to amendment, section related to hydrothermal research and development.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

§ 17193. General geothermal systems research and development

(a) Subsurface components and systems

The Secretary shall support a program of research, development, demonstration, and commercial application of components and systems capable of withstanding geothermal environments and necessary to develop, produce, and monitor geothermal reservoirs and produce geothermal energy.

(b) Environmental impacts

The Secretary shall—

(1) support a program of research, development, demonstration, and commercial application of technologies and practices designed to mitigate or preclude potential adverse environmental impacts of geothermal energy development, production or use;

(2) support a research program to identify potential environmental impacts, including induced seismicity, and environmental benefits of geothermal energy development, production, and use, and ensure that the program described in paragraph (1) addresses such impacts, including water use and effects on groundwater and local hydrology;

(3) support a program of research to compare the potential environmental impacts and environmental benefits identified as part of the development, production, and use of geothermal energy with the potential emission reductions of greenhouse gases gained by geothermal energy development, production, and use; and

(4) in carrying out this section, the Secretary shall,[1] to the maximum extent practicable, consult with relevant federal agencies, including the Environmental Protection Agency.

(c) Reservoir thermal energy storage

The Secretary shall support a program of research, development, and demonstration of reservoir thermal energy storage, emphasizing cost-effective improvements through deep direct use engineering, design, and systems research.

(d) Oil and gas technology transfer initiative

(1) In general

The Secretary shall support an initiative among the Office of Fossil Energy, the Office of Energy Efficiency and Renewable Energy, and the private sector to research, develop, and demonstrate relevant advanced technologies and operation techniques used in the oil and gas sector for use in geothermal energy development.

(2) Priorities

In carrying out paragraph (1), the Secretary shall prioritize technologies with the greatest potential to significantly increase the use and lower the cost of geothermal energy in the United States, including the cost and speed of geothermal drilling surface technologies, large- and small-scale drilling, and well construction.

(e) Coproduction of geothermal energy and minerals production research and development initiative

(1) In general

The Secretary shall carry out a research and development initiative under which the Secretary shall provide financial assistance to demonstrate the coproduction of critical minerals from geothermal resources.

(2) Requirements

An award made under paragraph (1) shall—

(A) improve the cost effectiveness of removing minerals from geothermal brines as part of the coproduction process;

[1] So in original. The words ''The Secretary shall'' appear in introductory provisions.