The Secretary shall give preference to assessments that address multiple elements contained in paragraphs (1) through (8).

(c) Grant awards

Each grant award for demonstration of geothermal technology such as advanced organic rankine cycle systems at oil and gas wells made by the Secretary under subsection (b) shall include—

(1) necessary and appropriate site engineering study;

(2) detailed economic assessment of site specific conditions;

(3) appropriate feasibility studies to determine whether the demonstration can be replicated;

(4) design or adaptation of existing technology for site specific circumstances or conditions;

(5) installation of equipment, service, and support;

(6) operation for a minimum of 1 year and monitoring for the duration of the demonstration; and

(7) validation of technical and economic assumptions and documentation of lessons learned.

(d) Geopressured gas resource recovery and production

(1) The Secretary shall implement a program to support the research, development, demonstration, and commercial application of cost-effective techniques to produce energy from geopressured resources.

(2) The Secretary shall solicit preliminary engineering designs for geopressured resources production and recovery facilities.

(3) Based upon a review of the preliminary designs, the Secretary shall award grants, which may be cost-shared, to support the detailed development and completion of engineering, architectural and technical plans needed to support construction of new designs.

(4) Based upon a review of the final design plans above, the Secretary shall award cost-shared development and construction grants for demonstration geopressured production facilities that show potential for economic recovery of the heat, kinetic energy and gas resources from geopressured resources.

(e) Competitive grant selection

Not less than 90 days after December 19, 2007, the Secretary shall conduct a national solicitation for applications for grants under the programs outlined in subsections (b) and (d). Grant recipients shall be selected on a competitive basis based on criteria in the respective subsection.

(f) Well drilling

No funds may be used under this section for the purpose of drilling new wells.

(Pub. L. 110–140, title VI, §616, Dec. 19, 2007, 121 Stat. 1681.)

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.

§ 17195a. Geothermal heat pumps and direct use research and development

(a) Purposes

The purposes of this section are—

(1) to improve the understanding of related earth sciences, components, processes, and systems used for geothermal heat pumps and the direct use of geothermal energy; and

(2) to increase the energy efficiency, lower the cost, increase the use, and improve and demonstrate the effectiveness of geothermal heat pumps and the direct use of geothermal energy.

(b) Definitions

In this section:

(1) Direct use of geothermal energy

The term ''direct use of geothermal energy'' means geothermal systems that use water directly or through a heat exchanger to provide—

(A) heating and cooling to buildings, commercial districts, residential communities, and large municipal, or industrial projects; or

(B) heat required for industrial processes, agriculture, aquaculture, and other facilities.

(2) Economically distressed area

The term ''economically distressed area'' means an area described in section 3161(a) of this title.

(3) Geothermal heat pump

The term ''geothermal heat pump'' means a system that provides heating and cooling by exchanging heat from shallow geology, groundwater, or surface water using—

(A) a closed loop system, which transfers heat by way of buried or immersed pipes that contain a mix of water and working fluid; or

(B) an open loop system, which circulates ground or surface water directly into the building and returns the water to the same aquifer or surface water source.

(c) Program

(1) In general

The Secretary shall support within the Geothermal Technologies Office a program of research, development, and demonstration for geothermal heat pumps and the direct use of geothermal energy.

(2) Areas

The program under paragraph (1) may include research, development, demonstration, and commercial application of—

(A) geothermal ground loop efficiency improvements, cost reductions, and improved installation and operations methods;

(B) the use of geothermal energy for building-scale energy storage;

(C) the use of geothermal energy as a grid management resource or seasonal energy storage;

(D) geothermal heat pump efficiency improvements;

(E) the use of alternative fluids as a heat exchange medium, such as hot water found

in mines and mine shafts, graywater, or other fluids that may improve the economics of geothermal heat pumps;

(F) heating of districts, neighborhoods, communities, large commercial or public buildings, and industrial and manufacturing facilities;

(G) the use of low temperature groundwater for direct use; and

(H) system integration of direct use with geothermal electricity production.

(3) Environmental impacts

In carrying out the program, the Secretary shall identify and mitigate potential environmental impacts in accordance with section 17193(b) of this title.

(d) Financial assistance

(1) In general

The Secretary shall carry out the program established in subsection (c) by making financial assistance available to State, local, and Tribal governments, institutions of higher education, nonprofit entities, National Laboratories, utilities, and for-profit companies.

(2) Priority

In providing financial assistance under this subsection, the Secretary may give priority to proposals that apply to large buildings, commercial districts, and residential communities that are located in economically distressed areas and areas that the Secretary determines to have high economic potential for geothermal district heating based on the report, ''Geovision: Harnessing the Heat Beneath our Feet'' published by the Department in 2019, or a successor report.

(Pub. L. 110–140, title VI, § 616A, as added Pub. L. 116–260, div. Z, title III, § 3002(e)(1), Dec. 27, 2020, 134 Stat. 2492.)

§ 17196. Organization and administration of programs

(a) Federal share

The Federal share of costs of projects funded under this part shall be in accordance with section 16352 of this title.

(b) Organization and administration of programs

Programs under this part shall incorporate the following elements:

(1) The Secretary shall coordinate with, and where appropriate may provide funds in furtherance of the purposes of this part to, other Department of Energy research and development programs focused on drilling, subsurface characterization, and other related technologies.

(2) The Secretary shall coordinate and consult with the appropriate Federal land management agencies in selecting proposals for funding under this part.

(3) Nothing in this part shall be construed to alter or affect any law relating to the management or protection of Federal lands.

(c) Education and outreach

In carrying out the activities described in this part, the Secretary shall support education and outreach activities to disseminate information on geothermal energy technologies and the geothermal energy workforce, including activities at the Frontier Observatory for Research in Geothermal Energy site or sites.

(d) Technical assistance

In carrying out this part, the Secretary shall also conduct technical assistance and analysis activities with eligible entities for the purpose of supporting the commercial application of advances in geothermal energy systems development and operations, which may include activities that support expanding access to advanced geothermal energy technologies for rural, Tribal, and low-income communities.

(e) Report

Every 5 years after December 27, 2020, the Secretary shall report to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate on advanced concepts and technologies to maximize the geothermal resource potential of the United States.

(f) Progress reports

Not later than 1 year after December 27, 2020, and every 2 years thereafter, the Secretary shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on the results of projects undertaken under this part and other such information the Secretary considers appropriate.

(Pub. L. 110–140, title VI, § 617, Dec. 19, 2007, 121 Stat. 1682; Pub. L. 116–260, div. Z, title III, § 3002(f)(1), Dec. 27, 2020, 134 Stat. 2493.)

Editorial Notes

REFERENCES IN TEXT

This part, referred to in subsec. (f), probably should be a reference to ''this subtitle'', meaning subtitle B of title VI of Pub. L. 110–140, which is classified to this part.

AMENDMENTS

2020—Pub. L. 116–260, § 3002(f)(1)(A), substituted ''Organization and administration of programs'' for ''Cost sharing and proposal evaluation'' in section catchline.

Subsec. (b)(2) to (4). Pub. L. 116–260, § 3002(f)(1)(B), redesignated pars. (3) and (4) as (2) and (3), respectively, and struck out former par. (2) which read as follows: ''In evaluating proposals, the Secretary shall give priority to proposals that demonstrate clear evidence of employing a systems approach.''

Subsecs. (c) to (f). Pub. L. 116–260, § 3002(f)(1)(C), added subsecs. (c) to (f).

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.

§ 17197. Advanced geothermal computing and data science research and development

(a) In general

The Secretary shall carry out a program of research and development of advanced computing and data science tools for geothermal energy.