

111TH CONGRESS
2D SESSION

S. 3626

To encourage the implementation of thermal energy infrastructure, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 21, 2010

Mr. FRANKEN (for himself and Mr. BOND) introduced the following bill; which was read twice and referred to the Committee on Finance

A BILL

To encourage the implementation of thermal energy infrastructure, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Thermal Renewable Energy and Efficiency Act of 2010”.

6 (b) TABLE OF CONTENTS.—The table of contents of
7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Purpose.
- Sec. 4. Statement of policy.

TITLE I—MODIFICATION OF CREDIT FOR ELECTRICITY
PRODUCED FROM CERTAIN RENEWABLE SOURCES

Sec. 101. Extension of renewable electricity credit to thermal energy.

TITLE II—EXEMPT FACILITY BONDS

Sec. 201. Exempt facility bonds.

TITLE III—ENERGY SUSTAINABILITY AND EFFICIENCY GRANTS FOR INSTITUTIONS

Sec. 301. Definition of institutional entity.

Sec. 302. Availability of grants.

Sec. 303. Authorization of appropriations for grants.

1 **SEC. 2. FINDINGS.**

2 Congress finds that—

3 (1) approximately 30 percent of the total quan-
4 tity of energy consumed in the United States is used
5 to provide thermal energy for heating and cooling
6 building space, domestic hot water, and industrial
7 processes;

8 (2) thermal energy is an essential, but often
9 overlooked, segment of the national energy mix;

10 (3) district energy systems use 1 or more cen-
11 tral plants to provide thermal energy to multiple
12 buildings that range in size from campus applica-
13 tions to systems heating entire towns or cities;

14 (4) district energy systems provide sustainable
15 thermal energy infrastructure by producing and dis-
16 tributing thermal energy from combined heat power,
17 sources of industrial or municipal surplus heat, and
18 from renewable sources such as biomass, geothermal,
19 and solar energy;

1 (5) as of 2009, the United States had approxi-
2 mately 2,500 operating district energy systems;

3 (6) district energy systems provide advantages
4 that support secure, affordable, renewable, and sus-
5 tainable energy for the United States, including—

6 (A) use of local fuels or waste heat sources
7 that keep jobs and energy dollars in local econo-
8 mies;

9 (B) stable, predictable energy costs for
10 businesses and industry;

11 (C) reduction in reliance on fossil fuels;

12 (D) reduction in emissions of greenhouse
13 gases; and

14 (E) flexibility to modify fuel sources in re-
15 sponse to future changes in fuel availability and
16 prices and development of new technologies;

17 (7) district energy helps cut peak power de-
18 mand and reduce power transmission and distribu-
19 tion system constraints by—

20 (A) meeting air conditioning demand
21 through delivery of chilled water produced with
22 heat from combined heat and power or other
23 energy sources; and

1 (B) shifting power demand through ther-
2 mal storage and, with combined heat and
3 power, generating power near load centers;

4 (8) combined heat and power systems increase
5 energy efficiency of power plants by capturing ther-
6 mal energy and using the thermal energy to provide
7 heating and cooling, more than doubling the effi-
8 ciency of conventional power plants;

9 (9) according to the Oak Ridge National Lab-
10 oratory, if the United States was able to increase
11 combined heat and power from approximately 9 per-
12 cent of total electric generation capacity to 20 per-
13 cent by 2030, the increase would—

14 (A) save as much energy as half of all
15 household energy consumption;

16 (B) create approximately 1,000,000 new
17 jobs;

18 (C) avoid more than 800,000,000 metric
19 tons of carbon dioxide emissions annually,
20 which is equivalent to taking half of all United
21 States passenger vehicles off the road; and

22 (D) save hundreds of millions of barrels of
23 oil equivalent; and

24 (10) constraints to significant expansion of dis-
25 trict energy and combined heat and power include—

1 (A) the lack of economic value in the en-
2 ergy marketplace for the environmental, grid
3 support, energy security, and local economic de-
4 velopment benefits of district energy systems;

5 (B) relatively high project development
6 costs due to the variety of institutional, legal,
7 and technical issues that must be addressed;
8 and

9 (C) the high costs of debt service, particu-
10 larly in the early years of systems development
11 before a broad base of customers has connected.

12 **SEC. 3. PURPOSE.**

13 The purpose of this Act is to encourage the imple-
14 mentation of thermal energy infrastructure order to—

- 15 (1) increase energy efficiency;
16 (2) increase use of renewable energy resources;
17 (3) revitalize the infrastructure of the cities and
18 institutions of the United States;
19 (4) reduce local and regional air pollution;
20 (5) reduce emissions of greenhouse gases;
21 (6) reduce emissions of ozone-depleting refrig-
22 erants; and
23 (7) enhance power grid reliability and overall
24 energy supply reliability and energy security.

1 **SEC. 4. STATEMENT OF POLICY.**

2 It is the policy of the United States that, in energy
3 policy development and program implementation, the fol-
4 lowing factors should be considered:

5 (1) Thermal energy represents a significant
6 part of the energy requirements of the United
7 States, providing building heating and cooling, do-
8 mestic hot water, and industrial process energy.

9 (2) There are many opportunities for meeting
10 thermal energy requirements directly through renew-
11 able energy sources or recycled energy (such as re-
12 covered waste heat), without generation of elec-
13 tricity.

14 (3) Policies and incentives for encouraging re-
15 newable energy and energy efficiency should address
16 thermal energy as well as electricity.

17 (4) District energy systems provide an impor-
18 tant means of delivering sustainable thermal energy
19 to consumers, and provide energy security benefits,
20 by—

21 (A) cutting peak power demand;

22 (B) reducing power transmission and dis-
23 tribution system constraints; and

24 (C) providing flexibility to modify fuel
25 sources in response to future changes in fuel

1 availabilities and prices and development of new
2 technologies.

3 **TITLE I—MODIFICATION OF**
4 **CREDIT FOR ELECTRICITY**
5 **PRODUCED FROM CERTAIN**
6 **RENEWABLE SOURCES**

7 **SEC. 101. EXTENSION OF RENEWABLE ELECTRICITY CRED-**
8 **IT TO THERMAL ENERGY.**

9 (a) CREDIT TO INCLUDE PRODUCTION OF THERMAL
10 ENERGY.—Section 45 of the Internal Revenue Code of
11 1986 is amended by adding at the end the following new
12 subsection:

13 “(f) CREDIT FOR PRODUCTION OF THERMAL EN-
14 ERGY.—

15 “(1) IN GENERAL.—In the case of a taxpayer
16 who—

17 “(A) produces thermal energy from a
18 qualified energy resource described in subpara-
19 graph (B), (C), (D), (G), (I), or (J) of sub-
20 section (c)(1) at a qualified facility described in
21 paragraph (2), (3), (4), (6), (7), (11), or (12)
22 of subsection (d), and

23 “(B) makes an election under this sub-
24 section with respect to such facility,

1 subsection (a) shall be applied by substituting ‘each
 2 3,412 Btus of thermal energy (or fraction thereof)’
 3 for ‘the kilowatt hours of electricity’ in paragraph
 4 (2) thereof.

5 “(2) THERMAL ENERGY.—For purposes of this
 6 section, the term ‘thermal energy’ means heat (in
 7 the form of hot water or steam) or cooling (in the
 8 form of chilled water or ice).

9 “(3) ADDITIONAL QUALIFICATIONS.—

10 “(A) COMBINED HEAT AND POWER FACIL-
 11 ITY.—In the case of a facility producing both
 12 electricity and thermal energy, such facility
 13 shall not be treated as a qualified facility unless
 14 such facility—

15 “(i) meets the requirements of section
 16 48(c)(3)(A) (without regard to clause (iv)
 17 thereof), and

18 “(ii) was originally placed in service
 19 after the date of the enactment of the
 20 Thermal Renewable Energy and Efficiency
 21 Act of 2010, and before the date which is
 22 5 years after such date.

23 “(B) THERMAL FACILITY.—In the case of
 24 a facility producing only thermal energy, such

1 facility shall not be treated as a qualified facil-
 2 ity unless such facility—

3 “(i) has an energy efficiency percent-
 4 age (as determined under section
 5 48(c)(3)(C)) in excess of 60 percent, and

6 “(ii) was originally placed in service
 7 after the date of the enactment of the
 8 Thermal Renewable Energy and Efficiency
 9 Act of 2010, and before the date which is
 10 5 years after such date.

11 “(4) DENIAL OF DOUBLE BENEFIT.—If an elec-
 12 tion under this subsection is in effect with respect
 13 to any facility, no credit shall be allowed under sub-
 14 section (a) with respect to the production of elec-
 15 tricity at such facility.

16 “(5) ELECTION.—

17 “(A) IN GENERAL.—An election under this
 18 subsection shall specify the facility to which the
 19 election applies and shall be in such manner as
 20 the Secretary may by regulations prescribe.

21 “(B) ELECTION IRREVOCABLE.—Any elec-
 22 tion made under this subsection may not be re-
 23 voked except with the consent of the Sec-
 24 retary.”.

1 (b) NATURALLY OCCURRING COLD WATER SOURCES
2 TREATED AS QUALIFIED ENERGY RESOURCE.—Para-
3 graph (1) of section 45(c) of the Internal Revenue Code
4 of 1986 is amended—

5 (1) by striking “and” at the end of subpara-
6 graph (H),

7 (2) by striking the period at the end of sub-
8 paragraph (I) and inserting “, and”, and

9 (3) by adding at the end the following new sub-
10 paragraph:

11 “(J) naturally occurring cold water sources
12 which are used to provide thermal energy for
13 air conditioning.”.

14 (c) QUALIFIED FACILITIES.—Section 45(d) of the In-
15 ternal Revenue Code of 1986 is amended by adding at the
16 end the following new paragraph:

17 “(12) NATURAL AIR CONDITIONING SYSTEM FA-
18 CILITY.—In the case of a facility providing thermal
19 energy for air conditioning from naturally occurring
20 cold water sources, the term ‘qualified facility’
21 means any facility owned by the taxpayer which is
22 originally placed in service after the date of the en-
23 actment of the Thermal Renewable Energy and Effi-
24 ciency Act of 2010, and before the date which is 5
25 years after such date.”.

1 (d) CONFORMING AMENDMENTS.—

2 (1) Section 45(b)(4)(A) of the Internal Revenue
3 Code of 1986 is amended by inserting “or thermal
4 energy” after “electricity”.

5 (2) Section 45(c)(2) of such Code is amended
6 by inserting “or thermal energy” after “electricity”.

7 (3) Section 45(d) of such Code is amended by
8 inserting “or thermal energy” after “electricity”
9 each place it appears in paragraphs (2), (3), (4),
10 (6), (7), and (11).

11 (4) Section 45(e) of such Code is amended by
12 inserting “or thermal energy” after “electricity”
13 each place it appears in paragraphs (1), (4), and
14 (9).

15 (5) The heading of section 45 of such Code is
16 amended by inserting “**AND THERMAL ENERGY**”
17 after “**ELECTRICITY**”.

18 (6) The item relating to section 45 in the table
19 of sections for subpart D of part IV of subchapter
20 A of chapter 1 of such Code is amended by inserting
21 “and thermal energy” after “Electricity”.

22 (e) EFFECTIVE DATE.—The amendments made by
23 this section shall apply to energy produced and sold after
24 the date of the enactment of this Act.

1 **TITLE II—EXEMPT FACILITY**
 2 **BONDS**

3 **SEC. 201. EXEMPT FACILITY BONDS.**

4 (a) DEFINITION OF LOCAL DISTRICT HEATING AND
 5 COOLING FACILITIES.—Subparagraph (A) of section
 6 142(g)(2) of the Internal Revenue Code of 1986 is amend-
 7 ed by striking “a pipeline or network (which may be con-
 8 nected to a heating or cooling source) providing hot water,
 9 chilled water, or steam” and inserting “equipment for pro-
 10 ducing thermal energy in the form of hot water, chilled
 11 water or steam, distributing that thermal energy in pipe-
 12 lines and transferring the thermal energy”.

13 (b) PUBLIC USE REQUIREMENT.—The Secretary
 14 shall promulgate regulations establishing that a local dis-
 15 trict heating or cooling facility will be treated in all events
 16 as serving a general public use for purposes of the Internal
 17 Revenue Code of 1986.

18 **TITLE III—ENERGY SUSTAIN-**
 19 **ABILITY AND EFFICIENCY**
 20 **GRANTS FOR INSTITUTIONS**

21 **SEC. 301. DEFINITION OF INSTITUTIONAL ENTITY.**

22 Section 399A(a)(5) of the Energy Policy and Con-
 23 servation Act (42 U.S.C. 6371h–1(a)(5)) is amended by
 24 inserting a “not-for-profit district energy system,” after
 25 “utility,”.

1 **SEC. 302. AVAILABILITY OF GRANTS.**

2 Section 399A(f) of the Energy Policy and Conserva-
 3 tion Act (42 U.S.C. 6371h–1(f)) is amended—

4 (1) in paragraph (2)—

5 (A) in subparagraph (A)(i), by striking
 6 “\$50,000” and inserting “\$90,000”;

7 (B) in subparagraph (B)(i), by striking
 8 “\$90,000” and inserting “\$150,000”; and

9 (C) in subparagraph (C)(i), by striking
 10 “\$250,000” and inserting “\$600,000”; and

11 (2) in paragraph (3)—

12 (A) in subparagraph (A), by striking
 13 “\$1,000,000” and inserting “\$20,000,000”;

14 and

15 (B) in subparagraph (B), by striking “60
 16 percent” and inserting “30 percent”.

17 **SEC. 303. AUTHORIZATION OF APPROPRIATIONS FOR**
 18 **GRANTS.**

19 Section 399A(i)(1) of the Energy Policy and Con-
 20 servation Act (42 U.S.C. 6371h–1(i)(1)) is amended by
 21 striking “\$250,000,000 for each of fiscal years 2009
 22 through 2013” and inserting “\$500,000,000 for each of
 23 fiscal years 2011 through 2015”.

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