

111<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 5805

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

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## IN THE HOUSE OF REPRESENTATIVES

JULY 21, 2010

Ms. MCCOLLUM (for herself, Mr. INSLEE, and Mr. TONKO) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Ways and Means and Oversight and Government Reform, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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## 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.

Sec. 102. Federal purchase requirement amendments.

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

1 from renewable sources such as biomass, geothermal,  
2 and solar energy;

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

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

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

11 (B) stable, predictable energy costs for  
12 businesses and industry;

13 (C) reduction in reliance on fossil fuels;

14 (D) reduction in emissions of greenhouse  
15 gases; and

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

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

22 (A) meeting air conditioning demand  
23 through delivery of chilled water produced with  
24 heat from combined heat and power or other  
25 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) MODIFICATION OF DEFINITION OF OPEN-LOOP  
23 BIOMASS.—

24 (1) IN GENERAL.—Paragraph (3) of section  
25 45(c) of the Internal Revenue Code of 1986 is

1 amended by adding at the end the following new  
2 subparagraph:

3 “(C) SPECIAL RULE FOR THERMAL FACILI-  
4 TIES.—In the case of a qualified facility which  
5 produces thermal energy with respect to which  
6 the taxpayer makes an election under sub-  
7 section (f), the term ‘open-loop biomass’ has the  
8 meaning given the term in section 203(b) of the  
9 Energy Policy Act of 2005, as amended.”.

10 (2) CONFORMING AMENDMENT.—Subparagraph  
11 (A) of section 45(c)(3) of such Code is amended by  
12 striking “The” and inserting “Except as provided in  
13 subparagraph (C), the”.

14 (f) EFFECTIVE DATE.—The amendments made by  
15 this section shall apply to energy produced and sold after  
16 the date of the enactment of this Act.

17 **SEC. 102. FEDERAL PURCHASE REQUIREMENT AMEND-**  
18 **MENTS.**

19 Section 203 of the Energy Policy Act of 2005 (42  
20 U.S.C. 15852) is amended by striking subsection (b) and  
21 inserting the following:

22 “(b) DEFINITIONS.—In this section:

23 “(1) BIOMASS.—The term ‘biomass’ means the  
24 following types of nonhazardous organic materials:

1           “(A) Residues and byproducts from milled  
2 logs.

3           “(B) Wood, paper products that are not  
4 commonly recyclable, and vegetation (including  
5 trees and trimmings, yard waste, pallets, rail-  
6 road ties, crates, and solid-wood manufacturing  
7 and construction debris), if diverted from or  
8 separated from other waste out of a municipal  
9 waste stream.

10           “(C) Hazard trees, trimmings, and brush  
11 that are necessary to remove in order to main-  
12 tain a utility right-of-way or a public road (not  
13 including any unpaved road on Federal land).

14           “(D) Trees, trimmings, and brush har-  
15 vested from the immediate vicinity of any build-  
16 ing, campground, or other structure in wildfire  
17 prone areas to reduce the risk to the structure  
18 or campground or to human life from wildfires.

19           “(E) Invasive species (as defined in Execu-  
20 tive Order 13112 (42 U.S.C. 4321 note; relat-  
21 ing to invasive species)) removed to control or  
22 eradicate the invasive species.

23           “(F) Animal waste and animal byproducts  
24 (including biogas and any solid produced by  
25 micro-organisms).

1 “(G) Food waste.

2 “(H) Algae.

3 “(I) Slash, brush, trees, and other vegeta-  
4 tion that is harvested from non-Federal land or  
5 Indian land—

6 “(i) that is, at the time of harvest—

7 “(I) naturally regenerated forest  
8 land;

9 “(II) forest land that was planted  
10 for the purpose of restoring land to a  
11 naturally regenerated forest; or

12 “(III) if harvested in quantities  
13 and through practices that maintain  
14 or contribute toward the restoration  
15 of the species, ecological systems, and  
16 ecological communities for which the  
17 conservation forest land was identi-  
18 fied, conservation forest land; or

19 “(ii) that is—

20 “(I) at the time of harvest, plant-  
21 ed forest land; and

22 “(II) on the date of enactment of  
23 the Thermal Renewable Energy and  
24 Efficiency Act of 2010, cropland (in-

1 including fallow land), pastureland, or  
2 planted forest land.

3 “(J) Crops, crop byproducts, and crop resi-  
4 dues from non-Federal land or Indian land that  
5 is—

6 “(i) at the time of harvest, not forest  
7 land; and

8 “(ii) on the date of enactment of the  
9 Thermal Renewable Energy and Efficiency  
10 Act of 2010—

11 “(I) cropland (including fallow  
12 land and not including planted forest  
13 land); or

14 “(II) pastureland.

15 “(K) If harvested from Federal land in ac-  
16 cordance with applicable law and land manage-  
17 ment plans and in quantities and through prac-  
18 tices that maintain or contribute toward the  
19 restoration of ecological sustainability—

20 “(i) slash; and

21 “(ii) brush and trees that are byprod-  
22 ucts of ecological restoration, disease or in-  
23 sect infestation control, or hazardous fuels  
24 reduction treatments and—

25 “(I) are from stands that—

1                   “(aa) were killed by an in-  
2                   sect or disease epidemic or a nat-  
3                   ural disaster; and

4                   “(bb) do not meet the utili-  
5                   zation standards for sawtimber;  
6                   or

7                   “(II) do not exceed the minimum  
8                   size standards for sawtimber.

9                   “(2) CONSERVATION FOREST LAND.—

10                   “(A) IN GENERAL.—The term ‘conserva-  
11                   tion forest land’ means forest land that con-  
12                   tains a species, or includes all or part of an eco-  
13                   logical system or community, that is at risk of  
14                   extinction or elimination within a State or glob-  
15                   ally.

16                   “(B) IDENTIFICATION.—Conservation for-  
17                   est land shall be identified based on the best  
18                   available science and data by any of—

19                   “(i) the State in which the land is lo-  
20                   cated, unless the land is under the jurisdic-  
21                   tion of an Indian tribe;

22                   “(ii) an Indian tribe with jurisdiction  
23                   over the land; or



1           “(iii) in consultation with the State in  
2           which the land is located or the Indian  
3           tribe with jurisdiction over the land—

4                       “(I) the Secretary of Agriculture;  
5                       or

6                       “(II) the Secretary of the Inte-  
7                       rior.

8           “(C) EXCEPTIONS.—A tract of conserva-  
9           tion forest land may not be removed from con-  
10          servation forest land status under this section  
11          as a result of land management practices on the  
12          tract that—

13                       “(i) occurred on or after the Thermal  
14                       Renewable Energy and Efficiency Act of  
15                       2010; and

16                       “(ii) contributed toward the elimi-  
17                       nation of the species, or all or part of an  
18                       ecological system or ecological community  
19                       for which the land was identified as con-  
20                       servation forest land.

21          “(3) FEDERAL LAND.—

22                       “(A) IN GENERAL.—The term ‘Federal  
23                       land’ means—

24                       “(i) National Forest System land; and

1           “(ii) public lands (as defined in sec-  
2           tion 103 of the Federal Land Policy and  
3           Management Act of 1976 (43 U.S.C.  
4           1702)).

5           “(B) EXCLUSIONS.—

6           “(i) IN GENERAL.—The term ‘Federal  
7           land’ does not include—

8                   “(I) any area designated by Con-  
9                   gress to be administered for conserva-  
10                  tion purposes; or

11                  “(II) a National Monument pro-  
12                  claimed by the President.

13           “(ii) OLD GROWTH OR LATE SUCCES-  
14           SIONAL FOREST STANDS.—The term ‘Fed-  
15           eral land’ does not include an old growth  
16           or late successional forest stand unless bio-  
17           mass from the stand does not exceed the  
18           minimum size standards for sawtimber and  
19           is a byproduct of an ecological restoration  
20           treatment that fully maintains, or contrib-  
21           utes toward the restoration of, the struc-  
22           ture and composition of an old growth for-  
23           est stand in accordance with the old  
24           growth conditions characteristic of the for-

1 est type and retains the large trees con-  
2 tributing to old growth structure.

3 “(4) INDIAN LAND.—The term ‘Indian land’  
4 has the meaning given the term ‘Indian country’ in  
5 section 1151 of title 18, United States Code.

6 “(5) INDIAN TRIBE.—The term ‘Indian tribe’  
7 has the meaning given the term in section 4 of the  
8 Indian Self-Determination and Education Assistance  
9 Act (25 U.S.C. 450b).

10 “(6) NON-FEDERAL LAND.—The term ‘non-  
11 Federal land’ means land that is not owned by the  
12 Federal Government.

13 “(7) RENEWABLE ENERGY.—The term ‘renew-  
14 able energy’ means energy generated from solar,  
15 wind, biomass, landfill gas, ocean (including tidal,  
16 wave, current, and thermal), geothermal, municipal  
17 solid waste, or new hydroelectric generation capacity  
18 achieved from increased efficiency or additions of  
19 new capacity at an existing hydroelectric project.

20 “(8) SECRETARY CONCERNED.—The term ‘Sec-  
21 retary concerned’ means—

22 “(A) the Secretary of Agriculture, with re-  
23 gard to—

24 “(i) National Forest System land; and

1 “(ii) except as provided by subpara-  
2 graph (B), non-Federal land; and

3 “(B) the Secretary of the Interior, with re-  
4 gard to—

5 “(i) public lands (as defined in section  
6 103 of the Federal Land Policy and Man-  
7 agement Act of 1976 (43 U.S.C. 1702));  
8 and

9 “(ii) Indian land.”

## 10 **TITLE II—EXEMPT FACILITY** 11 **BONDS**

### 12 **SEC. 201. EXEMPT FACILITY BONDS.**

13 (a) DEFINITION OF LOCAL DISTRICT HEATING AND  
14 COOLING FACILITIES.—Subparagraph (A) of section  
15 142(g)(2) of the Internal Revenue Code of 1986 is amend-  
16 ed by striking “a pipeline or network (which may be con-  
17 nected to a heating or cooling source) providing hot water,  
18 chilled water, or steam” and inserting “equipment for pro-  
19 ducing thermal energy in the form of hot water, chilled  
20 water or steam, distributing that thermal energy in pipe-  
21 lines and transferring the thermal energy”.

22 (b) PUBLIC USE REQUIREMENT.—The Secretary  
23 shall promulgate regulations establishing that a local dis-  
24 trict heating or cooling facility will be treated in all events

1 as serving a general public use for purposes of the Internal  
2 Revenue Code of 1986.

3 **TITLE III—ENERGY SUSTAIN-**  
4 **ABILITY AND EFFICIENCY**  
5 **GRANTS FOR INSTITUTIONS**

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

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

11 **SEC. 302. AVAILABILITY OF GRANTS.**

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

14 (1) in paragraph (2)—

15 (A) in subparagraph (A)(i), by striking  
16 “\$50,000” and inserting “\$90,000”;

17 (B) in subparagraph (B)(i), by striking  
18 “\$90,000” and inserting “\$150,000”; and

19 (C) in subparagraph (C)(i), by striking  
20 “\$250,000” and inserting “\$600,000”; and

21 (2) in paragraph (3)—

22 (A) in subparagraph (A), by striking  
23 “\$1,000,000” and inserting “\$20,000,000”;

24 and

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

3 **SEC. 303. AUTHORIZATION OF APPROPRIATIONS FOR**  
4 **GRANTS.**

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

○