ORDINANCE NO. 6

SERIES 2007

AN ORDINANCE AMENDING ARTICLE 16-4 (ENERGY CONSERVATION CODE) TO INCLUDE REQUIREMENTS FOR THE PARTICIPATION IN A RENEWABLE ENERGY MITIGATION PROGRAM

WHEREAS, the Town of Crested Butte, Colorado (the "**Town**") is a home rule municipality duly and regularly organized and validly existing as a body corporate and politic under and by virtue of the constitution and laws of the State of Colorado;

WHEREAS, it has been widely accepted by the scientific community and governmental authorities worldwide that greenhouse gas emissions are adversely effecting the environment and climate change globally;

WHEREAS, the Town has an Energy Conservation Code (the "**Energy Code**") that contains a system aimed at promoting the utilization of higher energy efficiency construction methods in an effort to improve energy efficiency, reduce energy consumption and ultimately reduce greenhouse gas emissions into the environment;

WHEREAS, the Energy Code contains certain requirements for the installation and operation of snowmelt systems on properties located in the Town;

WHEREAS, such requirements were established so as to ensure that higher energy efficiency construction methods are being utilized in snowmelt systems, and so that those involved in new construction, additions and remodels undertake steps in the installation and operation of such snowmelt systems that will improve energy efficiency and energy conservation and reduce greenhouse gas emissions into the environment;

WHEREAS, on June 25, 2007, the Town Council adopted a moratorium (the "**Moratorium**") on the installation of certain new snowmelt systems within the Town;

WHEREAS, the Town Council imposed the Moratorium on the installation of new snowmelt systems until such time as it completes its study, analysis and debate on the methods of regulation of new snowmelt systems and outdoor pools, hot tubs and spas, and how said methods can reduce greenhouse gas emissions into the environment;

WHEREAS, the Town Council finds that reducing greenhouse gas emissions into the environment through the regulation of outdoor snowmelt systems and outdoor pools, hot tubs and spas is in the best interest of the environment and the health, safety and general welfare of the residents and visitors of the Town;

WHEREAS, the Town Council has completed its study, analysis and debate on the methods of regulation of outdoor snowmelt systems and outdoor pools, hot tubs and spas and how said methods can reduce greenhouse gas emissions into the environment;

WHEREAS, the Town Council finds that amending the Energy Code to include a renewable energy mitigation program will regulate the installation of outdoor snowmelt systems and outdoor pools, hot tubs and spas and have the effect of improving energy efficiency, reduce energy consumption and reduce greenhouse gas emissions into the environment; and

WHEREAS, the Town Council finds that the below amendments achieve the goals of the Town in increasing energy efficiency, energy conservation and reducing greenhouse gas emissions, and are in the best interest of the health, safety and welfare of the residents and visitors of the Town and the environment.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CRESTED BUTTE, COLORADO, THAT,

Section 1. Adding a New Section 16-4-10 – Renewable Energy Mitigation Program (REMP). A new Section 16-4-10, Renewable Energy Mitigation Program (REMP), is hereby added to the Energy Code and shall read as follow:

"**Section 16-4-10. – Renewable Energy Mitigation Program.** All outdoor snowmelt systems, and outdoor pools, hot tubs and spas with a top surface area in excess of 64 square feet, must comply with the following renewable energy mitigation program (REMP) requirements:

1. REMP; Applicability. For purposes hereof, an "outdoor snowmelt system" shall include any heating system installed in any walkway, driveway, roof or any other exterior surface. All energy utilized in operating outdoor snowmelt systems, and outdoor pools, hot tubs and spas with a top surface area in excess of 64 square feet (as determined by the unit's manufacturer), shall be produced by a renewable energy system; or, in lieu thereof, the owner of the property with said outdoor snowmelt system and/or subject pool, hot tub or spa shall make payment to the Town in lieu of providing energy produced by a renewable energy system. The owner of the subject property shall have the right to choose between providing energy from a Town approved renewable energy system or making payment in lieu thereof, or a combination of both, in order to offset energy used by outdoor snowmelt systems and subject pools, hot tubs and spas. For any subject hot tub or spa, only that surface area over said 64 square feet shall be subject to the requirements of this Section 16-4-10. Any outdoor snowmelt system or subject pool, hot tub or spa that has been installed prior to June 25, 2007 shall be exempt from the requirements of this Section 16-4-10. Said exemption shall not apply, however, to any modification to any existing outdoor snowmelt system or outdoor pool increasing the square footage thereof, said modification requiring an Outdoor Energy Usage Permit as defined hereunder.

2. Outdoor Energy Usage Permit. Prior to the installation of any (i) outdoor snowmelt system, and/or (ii) outdoor pool, hot tub or spa with a top surface area in excess of 64 square feet (as determined by the unit's manufacturer), the owner of the property affected by such installation shall obtain an "Outdoor Energy Usage Permit". No outdoor snowmelt system or subject pool, hot tub or spa shall be installed without first obtaining an Outdoor Energy Usage Permit, as well as a plumbing and mechanical permit as applicable, from the Building Official. No Outdoor Energy Usage Permit shall be required for any outdoor snowmelt system or subject pool, hot tub or spa located on public property or any portable outdoor heat lamp. An owner may install up to ten (10) square feet of hydronic heat tape as part of any roof installed snowmelt system and such installation shall not require said owner to obtain an Outdoor Energy Usage Permit.

(A) An Outdoor Energy Usage Permit shall not be issued until the owner of the subject property has complied with the requirements of this Section 16-4-10. All outdoor snowmelt systems shall be in compliance with Section 16-4-9.

(B) An Outdoor Energy Usage Permit shall be obtained by said owner for each outdoor snowmelt system and subject pool, hot tub and spa, or any modification to any outdoor snowmelt system and outdoor pool increasing the square footage thereof. An Outdoor Energy Usage Permit shall include a processing fee that shall cover the cost and expense of the Building Official or its designee of reviewing and processing said Outdoor Energy Usage Permit application.

(C) The Building Official shall review and approve any complete and properly submitted application for an Outdoor Energy Usage Permit within thirty (30) days of its submission; except that, if the installation of any outdoor snowmelt system or subject pool, hot tub or spa is part of any new construction, addition, renovation or remodel that otherwise requires a building permit under the Code, the application for said Outdoor Energy Usage Permit shall be approved, if at all, along with the approval and issuance of said building permit and the installation shall be considered part of the structure for purposes of Section 15-2-25. In such circumstances, the issuance of an Outdoor Energy Usage Permit shall be subject to Board approval as provided in the Code. No Outdoor Energy Usage Permit shall be granted, however, until a Town approved renewable energy system or other Town approved system as described in subsection 3.(B) of this Section 16-4-10 has been selected by the owner of the affected property and/or payment in lieu has been made, as applicable, as further described in subsection 3 of this Section 16-4-10. The owner shall provide the following supporting documentation along with the application for an Outdoor Energy Usage Permit:

(i) the legal description of the affected property;

(ii) the signature of the owner of the property or other person with the written legal authority (e.g., power of attorney) of the owner;

(iii) a site development plan drawn to scale for the building and/or sidewalk, driveway or patio, as applicable, that is the subject of the outdoor snowmelt system or subject pool, hot tub or spa installation;

(iv) a complete set of drawings, plans and specifications, to scale, depicting any outdoor snowmelt system or subject pool, hot tub or spa installation along with the type and efficiency of the same;

(v) if the owner of the affected property elects to incorporate a renewable energy system or other Town approved system, a complete set of drawings, plans and specifications, to scale, of the renewable energy system or other Town approved system and its proposed installation location, along with the type and efficiency of the same;

(vi) owner's election to either utilize a renewable energy system or other Town approved system or make payment in lieu, or a combination of both, as set forth in subsection 3 of this Section 16-4-10; and

(vii) any other information requested by the Building Official or his designee in order to review the application for compliance with this Section 16-4-10 and Section 16-4-9.

Only subsections (i), (ii), (v), (vi) and (vii) hereof shall apply to subject pools, hot tubs and spas. The items listed above are hereby incorporated into the application for the Outdoor Energy Usage Permit.

(D) Outdoor Energy Usage Permit applications, unless otherwise included as part of building permit for any new construction, addition, renovation or remodel as discussed above, shall be submitted only to the Building Official and not the Board for approval.

(E) All installations of outdoor snowmelt systems shall be in strict compliance with the application requirements for an Outdoor Energy Usage Permit. Any deviation from the application requirements shall require a new Outdoor Energy Usage Permit. All installations of outdoor snowmelt systems shall be completed with six (6) months of issuance of a Outdoor Energy Usage Permit; except that, where the installation of an outdoor snowmelt system is otherwise associated with a building permit for any new construction, addition, renovation or remodel as discussed above, such longer permitted of time under the Code as it relates to said building permit shall apply.

(F) Should the Building Official discover the installation of any outdoor snowmelt system or subject pool, hot tub or spa in violation of this Section 16-4-10, the same shall attach a "stop work order" to said installation in a conspicuous place. Where the Building Official discovers any use of property in violation of this Section 16-4-10, the same shall attach a "desist order" to the property and attempt to deliver a copy of the same to the occupier of the property. Any stop work order or desist order shall be signed by the Building Official and

indicate the subject area in which the violations exists. The removal of a stop work order or desist order by any person before the violation is corrected shall constitute a violation of this Section 16-4-10. The continuation of construction or use in violation of a "stop work" or "desist" order shall also constitute a violation of this Section 16-4-10.

(G) An Outdoor Energy Usage Permit shall not be issued in connection with any property until all due and owing fees for sewer, water, sanitation, street or other improvement assessments, real property taxes, real estate transfer taxes and/or other fees or taxes due to the Town in connection with said property have been paid in full and are current in all respects.

3. Calculations; Renewable Energy Systems; Payment in Lieu.

(A) Calculations. The amount of energy used by an outdoor snowmelt system or subject pool, hot tub or spa shall be calculated by the Town using a system adopted by the Town. Said system shall also calculate the payment in lieu of providing energy produced by a renewable energy system or other Town approved system. The Town Shall utilize the Town of Crested Butte Outdoor Energy Worksheet attached as Exhibit "A" to the ordinance codified herein, a copy of which is on file in the Town Clerk's office, to calculate the mitigation required for outdoor energy usage. Said Town of Crested Butte Exterior Energy Worksheet shall also be utilized to calculate the renewable energy mitigation credit proposed to offset the proposed outdoor energy usage. The assumptions and calculations incorporated into the Town of Crested Butte Outdoor Energy Worksheet are incorporated in the Calculation Assumptions attached hereto as Exhibit "B". Once said energy usage and payment in lieu is calculated by the Town, the owner of the property affected by the outdoor snowmelt system or subject pool, hot tub or spa shall select whether it will utilize either a Town approved renewable energy system or other Town approved system to offset energy usage by any outdoor snowmelt system or subject pool, hot tub or spa or make payment in lieu thereof. The owner of the affected property may select use of a combination of both a Town approved renewable energy system or other Town approved system to offset energy usage by any outdoor snowmelt system or subject pool, hot tub or spa and payment in lieu thereof. Such combination shall, however, be approved in advance by the Building Official. No Outdoor Energy Usage Permit may be issued until the owner of the affected property has selected either a Town approved renewable energy system or other Town approved system to offset energy usage by any outdoor snowmelt system or subject pool, hot tub or spa or payment in lieu thereof, or a combination of both as approved by the Town.

(B) Renewable Energy Systems. All renewable energy systems and other systems must be approved in advance by the Building Official or his designee. Said renewable energy systems may be solar or geothermal in nature. Other energy usage mitigation systems may be proposed but must be approved in advance by the Building Official or his designee. Any renewable energy system utilized as mitigation for outdoor energy usage must conform to the requirements set forth in the Project Checklist attached hereto as Exhibit "C", as applicable. Other systems must provide an engineering analysis that calculates the renewable energy mitigation credit for the proposed system and provides all necessary

information as determined by the Building Official or his designee. Review of the system will be at the expense of the owner. No renewable energy system or other system shall be approved which does not cause the mitigation of energy usage to be made within the Town of Crested Butte. All proposed renewable energy mitigation systems and any other systems shall be included as part of the application for an Outdoor Energy Usage Permit. If the proposed renewable energy system is solar in nature, the panels and/or collectors must be approved through the standard building permit process and must be approved by the Board. The type of renewable energy system or other system, the specifications and efficiency thereof, the location of the installation of said renewable energy system or other system and any other additional information requested by the Building Official or his designee must be submitted with the application for an Outdoor Energy Usage Permit.

(C) Payments in Lieu. The Town may accept payment from the owner of an affected property as described in this Section 16-4-10 in lieu of providing energy produced by a Town approved renewable energy system, or, partial payment in lieu from said owner of an affected property providing only partial energy produced by a Town approved renewable energy system, as delineated in this Section 16-4-10. Acceptable payments shall be made by cash or check only. The owner of the affected property shall make payment in lieu at the time of, and as a condition precedent to, issuance of an Outdoor Energy Usage Permit. Such payment requirements shall apply to any addition or modification to any outdoor snowmelt system or outdoor pool where the owner has selected payments in lieu as described in this Section 16-4-10. In the event that an owner of an outdoor snowmelt system, subject pool, hot tub or spa with an Outdoor Energy Usage Permit for such energy usage seeks to make modifications to such usage such that any payment in lieu previously made could otherwise be reduced, no refund shall be given by the Town.

(D) Appropriation of Funds. All payments in lieu received pursuant to this Section 16-4-10 shall be deposited into a separate account with the Town. Funds derived from payments in lieu made pursuant to this Section 16-4-10 shall be utilized by the Town to, in no order of preference, (i) defray any costs and expenses associated with the operation, administration and enforcement of the REMP program described in this Section 16-4-10, (ii) reduce and offset energy consumption in public buildings, (iii) reduce energy consumption in residential affordable housing units, (iv) defray the cost and expense of engineering and education to promote energy consciousness, renewable energy installation and reducing energy use, and/or (iv) cover such other costs and expenses consistent with the goals of the REMP program and the Energy Code, as determined by the Town Council.

(E) Updating and Monitoring. The Building Official or its designee may monitor and, to the extent necessary, update and amend, as determined by the Building Official, the Town of Crested Butte Exterior Energy Worksheet, the Calculation Assumptions and the Project Checklist in order to promote and advance the goals of the REMP program.

4. Violations. Any person who violates any of the provisions of this Section 16-4-10 may be fined an amount not to exceed $1,000.00 for each offense. Each day that such violation continues to exist shall be deemed to be a separate offense."

Section 3. Severability. If any section, sentence, clause, phrase, word or other provision of this ordinance is for any reason held to be unconstitutional or otherwise invalid, such holding shall not affect the validity of the remaining sections, sentences, clauses, phrases, words or other provisions of this ordinance, or the validity of this ordinance as an entirety, it being the legislative intent that this ordinance shall stand notwithstanding the invalidity of any section, sentence, clause, phrase, word or other provision.

Section 4. Savings Clause. The Crested Butte Town Code of 1987, as previously amended and amended hereby, shall remain valid and in full force and effect. Any provision of any ordinance previously adopted by the Town which is in conflict with this ordinance is hereby repealed as of the enforcement date hereof.

INTRODUCED, READ AND SET FOR PUBLIC HEARING THIS 4th DAY OF SEPTEMBER, 2007.

ADOPTED BY THE TOWN COUNCIL UPON SECOND READING IN PUBLIC HEARING THIS 17 DAY OF September, 2007.

TOWN OF CRESTED BUTTE, COLORADO

By: _____
Alan Bernholtz, Mayor

ATTEST:

_____
Eileen Hughes, Town Clerk

(SEAL)

Exhibit A

Town of Crested Butte Outdoor Energy Use Worksheet

Instructions:

Fill in all grey cells that are relevant to your project. Go to page 2 (see tabs at bottom of page) and complete project checklist. Submit pages 1 and 2 with your signature and check made out to "Town of Crested Butte" for the Energy Mitigation Fee, if required. Complex systems using heat recovery strategies may apply for alternative calculation methods. Packaged spas that are 64 sq ft or less do not need to be considered in the calculation.

Project Information:		**Equipment Information:**		
			Select Type	Efficiency
Name:	Your Name	Building Heater type:	Gas	92%
Address:	Project Address	Spa Heater Type:	Electric	92%
Town/County:	Crested Butte	Pool Heater Type:	Gas	92%

Exterior Energy Use

Type of use	sq. ft.	Efficiency	kBtu/yr	Lbs CO_2/yr
Snowmelt	0	92%	*0*	0
Spa	0	100%	*0*	0
Pool	0	92%	*0*	0
		Total Carbon Usage		0

Renewable Energy Production Credit

Type of use	sq. ft. (or Kw for wind)	kBtu/yr	Lbs CO_2/yr
Solar Hot Water Panel	0	*0*	0
Solar Electric (PV) Panel	0	*0*	0
Wind Generation (on-site)	0.0	*0*	0
	Total Carbon Reduction		0

Net Carbon Emissions	0.0	Lbs CO_2/yr
Carbon Mitigation Rate	*$2.35*	$/Lbs CO_2
Mitigation Percentage	100%	
Carbon Mitigation Fee	***$0***	

Name: Your Name

Signature: Date:

EXHIBIT B

Calculation Assumptions

Equipment Assumptions

Electric Heaters

100% efficient

Ground Source Heat Pump

350% efficient

Snowmelt Assumptions

125	Btu/ft2-hr	Design load
600	Hrs/yr	Design run hours
45	Btu/ft2-hr	Clean up load
348	Hrs/yr	Clean up run hours

Solar Hot Water Panel Assumptions

150 Btu/ft2-hr

5 Hrs/day

365 Days/yr

100 $/ft2 install cost

Carbon Assumptions

12 lbs Carbon/CCF

2 lbs carbon/Kwh

80 Kbtu/CCF

3.412 Kbtu/Kwh

2000 Lbs/ton

Spa Assumptions

281 Kbtu/ft2-yr

1 Hour uncovered per day

102 Degree Fahrenheit set point

Based on DOE Smart Pool and OIT Pool Models

Pool Assumptions

359 Kbtu/ft2-yr

8 Hrs uncovered per day June-Sept

8 Hrs uncovered per day Dec 15-30

87 Degree Fahrenheit set point during operation

60 Degree Fahrenheit set point when idle

Based on DOE Smart Pool and OIT Pool Models

PV Assumptions

10 Watts/ft2-hr

5 Hrs/day

365 Days/yr

3.412 Btu/watt

9 $/watt install cost

90 $/ft2 install cost

Wind Assumptions

10 average mph

155 Kwh/month-KW

12 Months/yr

3.142 Kbtu/Kwh

Mitigation Rate Calculation:

Rate w/ Solar Hot Water System:

$$\left(\frac{\$100}{ft^2}\right)\left[\left(\frac{ft^2}{274KBtu}\right)\left(80\frac{KBtu}{CCF}\right)\left(1\frac{CCF}{12lbsCO_2}\right)\right]=\frac{\$2.43}{lb}$$

Rate w/ PV System:

$$\left(\frac{\$90}{ft^2}\right)\left[\left(\frac{ft^2}{68KBtu}\right)\left(3.412\frac{KBtu}{Kwh}\right)\left(\frac{Kwh}{2lbsCO_2}\right)\right]=\frac{\$2.26}{lb}$$

$$AverageRate=\left(\frac{\$2.43+\$2.26}{2}\right)=\frac{\$2.35}{lb}$$

Example Snowmelt Calc:

100 sq ft snow melt with 92% efficient gas boiler

$$Snowmelt(100sqft)\left[\left(125\frac{Btu}{ft^2-hr}\right)\left(600\frac{Hr}{yr}\right)+\left(45\frac{Btu}{ft^2-hr}\right)\left(348\frac{Hrs}{yr}\right)\right]\left(\frac{1KBtu}{1000Btu}\right)\left(\frac{1}{92\%Eff}\right)\left(\frac{1CCF}{80KBtu}\right)\left(\frac{12lbsCO_2}{1CCF}\right)=1478\frac{lbsofCO_2}{yr}$$

EXHIBIT C

Project Checklist

This is to be completed by the owner and/or general contractor. By checking the box and signing this form you are certifying that your project meets the terms specified. Complete only the sections that are relevant to the project.

General Requirements

- ☐ R-4 min. insulation on all hot water piping
- ☐ Sealed combustion gas boiler with 90% or better AFUE rated efficiency

Snowmelt Requirements

- ☐ R-10 min. insulation below snow melted slabs
- ☐ In slab moisture and temperature sensor (no remote snow cup controls allowed)
- ☐ Snowmelt control by all of the following: outdoor temp, slab temp, moisture presence

Solar Hot Water Requirements

- ☐ R-4 min. insulation on all solar hot water piping
- ☐ R-14 min. insulation for all hot water storage tanks
- ☐ Temperature sensors provided at supply and return for panels and storage tank
- ☐ Solar hot water system must provide domestic hot water heating and/or space heating
- ☐ Systems greater than 120 sq ft must provide space and/or pool heating

PV System Requirements

- ☐ PV systems is grid tied to qualify

Pool and Spa Requirements

- ☐ R-10 min. insulated cover for spa
- ☐ Automatic cover for outdoor pool

Name: Your Name

Signature: Date: