

AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF PITKIN COUNTY, COLORADO, REPEALING CHAPTER 11.32 OF TITLE 11 (THE ASPEN/PITKIN ENERGY CONSERVATION CODE) AND ADOPTING THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE, WITH AMENDMENTS, AND REINSTATING CHAPTER 11.32 OF TITLE 11 OF THE PITKIN COUNTY CODE AS THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE

ORDINANCE NO. _____-2009

WHEREAS, Pitkin County is nationally recognized as a leader in developing, adopting and administrating progressive energy codes; and

WHEREAS, in 1995 Pitkin County and the City of Aspen were the first jurisdictions in the country to regulate exterior energy use; and

WHEREAS, in 2000 Pitkin County and the City of Aspen were the first jurisdictions in the country to adopt a mandatory Renewable Energy Mitigation Program; and

WHEREAS, the 2009 International Energy Conservation Code embodies the same high standards that Pitkin County has required for many years in the Aspen/Pitkin Energy Conservation Code; and

WHEREAS, the American Recovery and Reinvestment Act requires the 2009 International Energy Conservation Code be adopted to qualify for monies designated for energy rebates; and

WHEREAS, it is in the best interest of the citizens of and visitors to our county to continue and maintain a leadership role in energy code adoption and administration;

NOW THEREFORE BE IT ORDAINED by the Board of County Commissioners of Pitkin County, Colorado that:

1. Chapter 11.32 of Title 11 of the Pitkin County Code (The Aspen/Pitkin Energy Conservation Code) is hereby repealed.
2. The 2009 International Energy Conservation Code, as amended in Exhibit A, is hereby adopted.
3. Chapter 11.32 of Title 11 of the Pitkin County Code is hereby reinstated as the 2009 International Energy Conservation Code.
4. Section 11.20.040 (v) of Title 11 of the Pitkin County Code is hereby amended as written in section (1) of Exhibit B.
5. Section 11.04.040 (f) of Title 11 of the Pitkin County Code is hereby amended as written in section (2) of Exhibit B.
6. Paragraph (e) is hereby added to Section 11.12.050 of Title 11 of the Pitkin County Code as written in section (3) of Exhibit B.

INTRODUCED, FIRST READ, AND SET FOR PUBLIC HEARING ON JUNE 24, 2009.

NOTICE OF PUBLIC HEARING AND THE FULL ORDINANCE PUBLISHED IN THE ASPEN TIMES WEEKLY ON JUNE 7, 2009.

ADOPTED AFTER FINAL READING AND PUBLIC HEARING ON _____, 2010.

PUBLISHED BY TITLE AND SHORT SUMMARY, AFTER ADOPTION, IN THE ASPEN TIMES WEEKLY ON _____, 2010.

ATTEST:

BOARD OF COUNTY COMMISSIONERS

By _____
Jeanette Jones
Deputy County Clerk

By: _____
George Newman, Chair

Date: _____

APPROVED AS TO FORM:

MANAGER APPROVAL

John Ely, County Attorney

Hilary Fletcher, County Manager

EXHIBIT A TO COMMISSIONERS' ORDINANCE NO. _____-2009

**AN ORDINANCE ADOPTING THE 2009 INTERNATIONAL ENERGY
CONSERVATION CODE**

CHAPTER 11.32

AMENDMENTS

The 2009 International Energy Conservation Code is hereby amended to read as follows:

Section 101.1 Title. Insert the name “Pitkin County” for Name of Jurisdiction.

Section 107.1 Fees is hereby amended and shall read as follows: “A permit shall not be valid until all fees as prescribed in the Pitkin County Community Development Fee Ordinance that is in effect at the time of submittal of a permit are paid in full, nor shall an amendment to the permit be released until the additional fees, if any, have been paid.”

Section 107.5 Refunds is hereby amended and shall read as follows:

The building official shall authorize the refund for the full amount of any fee paid which was erroneously paid or collected. Not more than 80% of a permit fee paid may be refunded when no work has been done under a permit issued in accordance with this code. The building official shall not authorize refunding any fee paid except on written application filed by the original permittee not later than six months after the date of payment.

Section 109 Board of Appeals

109.1 General is deleted in its entirety and shall read as follows: Appeals shall be in accordance with Pitkin County Code Title 11, Chapter 11.04, Section 112.1.

Add **Section 110 Liability** to read as follows:

The Building Official, or his authorized representative charged with the enforcement of this code, acting in good faith and without malice in the discharge of his duties, shall not thereby render himself personally liable for any damage that may accrue to persons or property as a result of any act or omission in the discharge of his duties.

This code shall not be construed to relieve or lessen the responsibility of any person owning, operating or controlling any building or structure for any damage to persons or property caused by defects on or in such premises, nor shall the code enforcement agency, any employee thereof, or Pitkin County be held as assuming any such responsibility or liability by reason of the adoption of this code or by the exercise of inspections authorized and carried out thereunder, or by the issuance of any permits or certificates issued pursuant to this code.

Section 301 Climate Zones shall be deleted in its entirety and shall read as follows: “The City of Aspen, Colorado and Pitkin County, Colorado shall use Climate Zone 7 in determining the applicable requirements from Chapters 4 and 5”.

Section 402.4.2 Air sealing and insulation is hereby amended and shall read as follows:

“Building envelope air tightness and insulation installation shall be demonstrated to comply with the testing option section 402.4.2.1.

402.4.2 Air sealing and insulation is hereby amended and shall read as follows:

Building envelope air tightness and insulation shall be demonstrated to comply with the testing option Section 402.4.2.1.

Section 402.4.3 Fireplaces is hereby amended and shall read as follows:

New wood-burning fireplaces and gas log fireplaces shall have gasketed doors and outdoor combustion air.

Add “Appendix A” to read as follows:

“Residential Renewable Energy Mitigation Program”

SECTION 101 SCOPE AND ADMINISTRATION

Section 101.1 Scope. Residential snowmelt, outside pool, or outside spa systems and equipment may be installed only if the supplemental energy meets the requirements of the **Residential Renewable Energy Mitigation Program (RREMP) Appendix A**. This applies to all installations for which an application for a permit or renewal of an existing permit is filed or is by law required to be filed with or without an associated Building Permit that include systems described in section 101.1.

Section 101.2 Residential Renewable Energy Mitigation Program (RREMP) Option – Exterior energy use for residential snowmelt systems, outdoor spas, and outdoor pools are calculated as directed by Section 201.

Section 101.2.1. The maximum area of snowmelt is capped at 6,000 square feet per parcel.

Exception: Residences with Ground Source Heat Pump (GSHP) systems complying with Section 301.3 are exempt from this cap.

Section 101.2.2. R-10 insulation shall be installed under all areas to be snowmelted. R-5 insulation may be used when the insulation extends up the sides of the slab.

Section 101.3 On-site Renewable Credits Option – Renewable credit options are calculated as directed by Section 301.

Section 102 Payment option. The RREMP payment option is the difference in energy use calculated in section 202 and on-site renewable credits calculated in section 302 and shall be paid at the time of issuance of the building permit. The payment, if any, is based on the

amount of energy required, expressed as dollars per square foot, to operate the exterior energy use systems. No payment shall be made to an applicant that exceeds the energy use with on-site renewable credits. All monies collected pursuant to this section shall be recorded in a separate fund and shall be spent in accordance with a joint resolution by the Aspen City Council and Pitkin County Board of County Commissioners.

Section 103 Credits for on-site renewable energy. This RREMP payment option is voluntary. Applicants interested in exterior energy use systems can alternatively choose to produce on-site renewable energy (Section 301) with solar photovoltaics and/or solar hot water or micro-hydro. The energy efficient technology of ground source heat pumps is also permitted for supplemental on-site energy.

Section 104 Pre-existing systems. Pre-existing snowmelt, pools or spas which are being overhauled or renovated qualify for exterior energy credit. This credit can only be applied towards an installation of exterior energy on the same parcel. The calculation of the credit shall be based on section 301.

Section 105 - Residential repairs. Repairs to building components, systems, or equipment which do not increase their pre-existing energy consumption need not comply with RREMP. All replacement mechanical equipment shall be Energy Star© rated.

Section 106 Residential Renewable Energy Mitigation Program (RREMP) for houses 5,000 square feet and more. A new residence 5,000 sq ft or more in area (as defined by the building code), or a residence receiving an addition which brings the area of the residence to 5,000 sq ft or more, is required to offset a portion of its fossil fuel energy consumption through the use of on-site renewable energy or through a fee payment to RREMP. Renewable energy systems installed for this requirement do not qualify for credit for exterior energy use.

Section 106.2. The on-site renewable energy requirement can be met by the installation of a two-kilowatt solar photovoltaic or equivalent renewable energy system. This requirement can alternatively be satisfied off-site by payment of a RREMP fee as follows. The fee for buildings over 4,999 sq ft shall equal the floor area as defined by the building code. For example:

5,000 sq ft	\$5,000
8,255 sq ft	\$8,255

Section 201 Exterior Energy Use Calculations

Section 201.1 Snowmelt energy consumption shall be calculated as a RREMP payment option at \$34.00 per square foot divided by the boiler efficiency (AFUE).

Section 201.2 Outdoor pool energy use shall be calculated as a RREMP payment option at \$136.00 per square foot divided by the boiler efficiency (AFUE).

Section 201.3 Spa energy use shall be calculated as a RREMP payment option at \$176.00 per square foot divided by the boiler efficiency (AFUE). Package spas not more than 64 square feet are exempt.

Section 202 The total RREMP payment option is the total sum of exterior energy use of sections 201.1, 201.2 and 201.3.

Section 301 ON-SITE RENEWABLE CREDITS

Section 301.1 Photovoltaic Systems – On-site renewable credit shall be calculated as \$6,241.20 per 1 kilowatt of the system design. Solar electric (photovoltaic) systems tied to the electric grid, are eligible for on-site renewable credit. Systems must be sited, oriented and installed for solar electric panels to supply at least 90% of rated capacity of the installed KW. System designer/installer must be certified by COSEIA (Colorado Solar Energy Industries Association) or NABCEP, (North American Board of Certified Energy Practitioners).

Section 301.2 Solar Hot Water - On-site renewable credit shall be calculated as \$224.65 per 1 square foot of the system design. The size of solar hot water systems is limited to 500 square feet of collector area.

Section 301.3 Ground Source Heat Pump - On-site renewable credit shall be calculated as \$6.84 per 100,000 BTU per year of the system design. In order to use a GSHP for on-site renewable credit the GSHP system must supply at least 20% of the peak load for heating the house and all the exterior energy uses. Each ground source heat pump system shall be tested and balanced and the design engineer shall certify in writing that it meets a design coefficient of performance of 3.0 inclusive of source pump power.

The ground loop system must be designed by a CGD (Certified GeoExchange Designer certified by the Association of Energy Engineers) or a professional engineer with IGSHPA (International Ground Source Heat Pump Association). The mechanical system must be installed by a certified IGSHPA contractor.

Section 302 The total RREMP on-site renewable credit is the total sum of sections 301.1, 301.2 and 301.3.

PUBLIC DOMAIN SOFTWARE

Section 401 A free calculation program known as RREMP 2009 shall be made available to the public.

EXAMPLE CALCULATION FOR RESIDENTIAL RENEWABLE ENERGY MITIGATION PROGRAM

<p style="text-align: center;">Snowmelt Example (Snowmelt requested 800 sq. ft.) \$34.00*800/ .91 (efficiency rating of boiler) = \$29,890.11 RREMP payment option for exterior energy use will be \$29,890.11</p> <p style="text-align: center;">ON-SITE RENEWABLE CREDITS 96 square feet of solar hot water panels*\$224.65 per square foot = \$21,566.24</p>

RREMP payment option will be \$8,323.87

OR

4.8 KW photovoltaic system *\$6,241.20 per kilowatt = \$29,957.76

RREMP payment option will be \$0

Add “Appendix B” to read as follows:

“Commercial Renewable Energy Mitigation Program”

SECTION 101 SCOPE AND ADMINISTRATION

Section 101.1 Scope. Commercial snowmelt, outside pool, or outside spa systems and equipment may be installed only if the supplemental energy meets the requirements of the **Commercial Renewable Energy Mitigation Program (CREMP)** Appendix B. This applies to all installations for which an application for a permit or renewal of an existing permit is filed or is by law required to be filed with or without an associated Building Permit that include systems described in section 101.1.

Section 101.2 Commercial Renewable Energy Mitigation Program (CREMP) Option – Exterior energy use for commercial snowmelt systems, outdoor spas, and outdoor pools are calculated as directed by Section 201.

Section 101.2.1. R-10 insulation shall be installed under all areas to be snowmelted. R-5 insulation may be used when the insulation extends up the sides of the slab.

Section 101.3 On-site Renewable Credits Option – Renewable credit options are calculated as directed by Section 301.

Section 102 Payment option. The CREMP payment option is the difference in energy use calculated in section 202 and on-site renewable credits calculated in section 302 and shall be paid at the time of issuance of the building permit. The payment, if any, is based on the amount of energy required, expressed as dollars per square foot, to operate the exterior energy use systems. No payment shall be made to an applicant that exceeds the energy use with on-site renewable credits. All monies collected pursuant to this section shall be recorded in a separate fund and shall be spent in accordance with a joint resolution by the Aspen City Council and Pitkin County Board of County Commissioners.

Section 103 Credits for on-site renewable energy. This CREMP payment option is voluntary. Applicants interested in exterior energy use systems can alternatively choose to produce on-site renewable energy (Section 301) with solar photovoltaics and/or solar hot

water or micro-hydro. The energy efficient technology of ground source heat pumps is also permitted for supplemental on-site energy.

Section 104 Pre-existing systems. Pre-existing snowmelt, pools or spas which are being overhauled or renovated qualify for exterior energy credit. This credit can only be applied towards an installation of exterior energy on the same parcel. The calculation of the credit shall be based on section 301.

SECTION 105 - COMMERCIAL REPAIRS. Repairs to building components, systems, or equipment which do not increase their pre-existing energy consumption need not comply with CREMP.

Section 201 Exterior Energy Use Calculations

Section 201.1 Snowmelt energy consumption shall be calculated as a CREMP payment option at \$60.00 per square foot divided by the boiler efficiency (AFUE).

Section 201.2 Outdoor pool energy use shall be calculated as a CREMP payment option at \$170.00 per square foot divided by the boiler efficiency (AFUE).

Section 201.3 Spa energy use shall be calculated as a CREMP payment option at \$176.00 per square foot divided by the boiler efficiency (AFUE). Package spas with not more than 64 square feet of water surface area are exempt.

Section 202 The total CREMP payment option is the total sum of exterior energy use of sections 201.1, 201.2 and 201.3.

Section 301 ON-SITE RENEWABLE CREDITS

Section 301.1 Photovoltaic Systems – On-site renewable credit shall be calculated as \$6,241.20 per 1 kilowatt of the system design. Solar electric (photovoltaic) systems tied to the electric grid are eligible for on-site renewable credit. Systems must be sited, oriented and installed for solar electric panels to supply at least 90% of rated capacity of the installed KW. System designer/installer must be certified by COSEIA (Colorado Solar Energy Industries Association) or NABCEP (North American Board of Certified Energy Practitioners).

Section 301.2 Solar Hot Water - On-site renewable credit shall be calculated as \$224.65 per 1 square foot of the system design. The size of solar hot water systems is limited to 500 square feet of collector area.

Section 301.3 Ground Source Heat Pump - On-site renewable credit shall be calculated as \$6.84 per 100,000 BTU per year of the system design. In order to use a GSHP for on-site renewable credit the GSHP system must supply at least 20% of the peak load for heating the building and all the exterior energy uses. Each ground source heat pump system shall be tested and balanced and the design engineer shall certify in writing that it meets a design coefficient of performance of 3.0 exclusive of source pump power.

The ground loop system must be designed by a CGD (Certified GeoExchange Designer certified by the Association of Energy Engineers) or a professional engineer with IGSHPA (International Ground Source Heat Pump Association). The mechanical system must be installed by a certified IGSHPA contractor.

Section 302 The total CREMP on-site renewable credit is the total sum of sections 301.1, 301.2 and 301.3.

PUBLIC DOMAIN SOFTWARE

Section 401 A free calculation program known as CREMP 2009 shall be made available to the public.

EXAMPLE CALCULATION FOR COMMERCIAL RENEWABLE ENERGY MITIGATION PROGRAM

<p style="text-align: center;">Snowmelt area 1200 sq. ft. \$60.00*1,200/.92 (efficiency rating of boiler) = \$78,260.87</p> <p style="text-align: center;">Pool area 700 sq. ft. \$170.00*700/.92(efficiency rating of boiler)= \$119000.00</p> <p style="text-align: center;">Spa area 80 sq. ft. \$176.00*80/.92(efficiency rating of boiler)=\$15,304.35</p> <p style="text-align: center;">CREMP payment option for exterior energy use will be \$222,913.04</p> <p style="text-align: center;">ON-SITE RENEWABLE CREDITS 448 square feet of solar hot water panels*\$224.65 per square foot = \$100,642.44 20 KW photovoltaic system *\$6,241.20 per kilowatt = \$124,824.00 CREMP payment option will be \$0</p>
--

EXHIBIT B TO COMMISSIONERS' ORDINANCE No. _____-2009

(1) **Section 11.20.040 (v)** of Title 11 of the Pitkin County Code (The 2003 International Residential Code) is hereby amended to read as follows:

(v) **Chapter 11** is deleted in its entirety and is replaced to read as follows:

Chapter 11 Energy Efficiency. The provisions of the 2009 International Energy Conservation Code shall apply to all matters governing the design and construction of buildings for energy efficiency.

(2) **Section 11.04.040 (f)** of Title 11 of the Pitkin County Code (The 2003 International Building Code) is hereby amended to read as follows:

(f) **Section 101.4.7 Energy** is hereby amended to read as follows:

101.4.7 Energy. The provisions of the 2009 International Energy Conservation Code shall apply to all matters governing the design and construction of buildings for energy efficiency.

(3) **Paragraph (e)** is hereby added to Section 11.12.050 of Title 11 of the Pitkin County Code (Amendments to the National Electrical Code), which sets requirements for stand-alone photovoltaic systems, and shall read as follows:

(e) 690.10 Stand-Alone Systems.

The premises wiring system shall be adequate to meet the requirements of this Code for a similar installation connected to a service. The wiring on the supply side of the building or structure disconnecting means shall comply with this Code except as modified by 690.10(A) through (D).

(A) Inverter Output. The ac output from a stand-alone inverter(s) shall be permitted to supply ac power to the building or structure disconnecting means at current levels less than the calculated load connected to that disconnect. The inverter output rating or the rating of an alternate energy source for dwellings less than 1000 square feet shall be equal to or greater than 50% of the load as calculated by NEC 220.40 General.

The calculated load of a feeder or service shall not be less than the sum of the loads on the branch circuits supplied, as determined by Part II of this article, after any applicable demand factors permitted by Part III or IV or required by Part V have been applied.

For all other dwellings NEC 220.40 shall apply

For non-dwellings the calculated load shall be equal to or greater than the load posed by the largest single utilization equipment connected to the system.

(B) No Change

(C) No Change

(D) Energy Storage or Backup Power System Requirements. Except for dwellings energy storage or backup power supplies are not required.