

Boulder County's ClimateSmart Loan Program: Funding Energy Efficiency and Renewable Energy on a Countywide Scale

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ABSTRACT

In 2009 Boulder County launched the nationally groundbreaking ClimateSmart™ Loan Program, funding hundreds of residential renewable energy and energy efficiency projects throughout Boulder County. The ClimateSmart Loan Program provides a voluntary mechanism for property owners to obtain financing for renewable energy and/or energy efficiency improvements to properties in Boulder County. In the first 6 months of operation, the ClimateSmart Loan Program funded 612 energy efficiency and renewable energy projects throughout Boulder County totaling nearly \$10 million. This program is the first countywide financing mechanism for renewable energy and energy efficiency in the United States with multi-jurisdictional support from all Boulder County municipalities and the first program to comprehensively address renewable energy and energy efficiency measures. The ClimateSmart Loan Program not only offers affordable financing for county residents and business owners wishing to implement energy improvements to their properties, but it will also help reduce Boulder County's overall greenhouse gas emissions – a major goal of Boulder County's Sustainable Energy Plan and long-term goal of carbon neutrality. Ultimately, encouraging energy efficiency improvements and renewable energy systems will generate green-collar jobs and stimulate the local economy, putting Boulder County's ClimateSmart Loan Program at the forefront of Colorado's new energy economy.

Introduction: Boulder County's Sustainable Energy Plan

In 2005 Boulder County adopted, through resolution, a long-term carbon neutrality goal and an interim Kyoto Protocol target. Achieving this vision requires a significant reduction in the current level of countywide greenhouse gas emissions. In 2008, the Sustainable Energy Plan (SEP) was passed by the Consortium of Cities, the County, and ten of the eleven municipalities in the county. The Sustainable Energy Plan outlines strategies and a path for implementation that will keep the county moving toward carbon neutrality. The key strategies include voluntary and support actions as well as statewide and local regulatory programs.

Combined, and accounting for overlap between strategies, these key strategies are projected to result in:

- Emissions reductions in 2012 of more than 1.3 million metric tons of carbon dioxide equivalent, bringing the county nearly halfway (46%) toward achieving the Kyoto Protocol target.
- Emissions reductions in 2020 of more than 3.6 million metric tons carbon dioxide equivalent
- Annual cost savings in 2020 of more than \$445 million dollars
- Nine year payback for all 20 actions (5 years for all actions except vehicle-to-grid)

Putting this in terms of the state of Colorado's Climate Action goal (which uses a 2005 baseline) the SEP will result in a reduction of emissions 40% below 2005 levels in the year 2020. This is a reduction nearly twice that called for by the Governor.

One important aspect of the Sustainable Energy Plan relates to creating a financing mechanism that will accelerate the implementation of energy efficiency and renewable energy measures in both the residential and commercial building sectors (which account for over half of the countywide emissions). The ClimateSmart Loan Program responds to the needs identified in the Sustainable Energy Plan and will leverage significant private sector investment through a County managed financing program with no direct financial impact on those who do not wish to participate in the program. Furthermore, clean energy municipal financing mechanisms "also deliver benefits beyond emissions reductions, including a new source of job growth, reduced strain on the electric power system, and more comfortable and well-maintained buildings" (Fuller, Portis & Kammen, 2009).

History of the ClimateSmart Loan Program

In late 2007, the Board of Boulder County Commissioners and staff took note of a pilot program proposed by Berkeley, California that would create funding for solar photovoltaic systems in the city. In 2008, Boulder County staff worked with Representative Alice Madden, the Governor's Energy Office, Environment Colorado, and others to ensure the passage of HB 08-1350, which created the necessary state-level authority to run a local financing program like the ClimateSmart Loan Program. HB 08-1350 allowed for the support of both energy efficiency and renewable energy measures as well as the use of tax-exempt bonds – important expansions on the Berkeley model. In November of 2008 the voters of Boulder County approved Ballot Measure 1A, referred by the Board of County Commissioners, which permits the county to sell up to \$40 million in bonds to fund the ClimateSmart Loan Program. This \$40 million includes more than \$14 million in tax-exempt bonds, with bonding capacity dedicated to the program by the City of Boulder, the City of Longmont, and Boulder County (Boulder County also obtained an additional \$15 million in tax-exempt capacity in December 2008 that is dedicated to the ClimateSmart Loan Program, but can be spent in 2010). The Board of County Commissioners held meetings on February 19 and March 5, 2009, to approve the structure of the ClimateSmart Loan Program for the residential sector and encouraged stakeholder involvement in the creation of this program.

Upon approval by the Board of County Commissioners, Boulder County launched the first phase of the nationally groundbreaking ClimateSmart Loan Program, targeting \$28 million in funding for residential energy efficiency and renewable energy measures. The remaining \$12 million in funding is targeted for funding energy efficiency and renewable energy measures for the commercial sector. Through the ClimateSmart Loan Program, owners of residential and commercial properties in most of Boulder County are able to apply for financing for up to the full up front costs of specified energy efficiency and renewable energy measures. The loans are funded by the sale of bonds and will be repaid through special assessments, included in individual property owner's property tax statements. The special assessments will remain with the property when the property is sold, unless the seller and buyer agree to some other arrangement.

Summary of the Program Procedure

Boulder County property owners can opt into the program on an individual basis. Each property owner who receives financing through the program will be responsible for repaying the loan through a special assessment that will appear on his or her property tax bill. The debt for the energy improvement project will remain with the property rather than the individual property owner, unless seller and buyer negotiate otherwise. Thus subsequent property owners will continue paying down the property's debt via payments included with the property tax. Since the renewable energy and/or energy efficiency improvements will remain on the property and will presumably lower the energy usage reflected on utility bills, it is expected that there will be some offsetting benefits to the property owner for the assessment payments that are undertaken.

To participate in the residential program, property owners must first attend a Home Energy 101 workshop to better understand the approved measures and ClimateSmart Loan Program process. The workshops educate potential participants on the benefits of increasing home efficiency and 2,900 people have attended a workshop in the last year. In addition, the workshop helps guide property owners on which energy efficiency and/or renewable energy measures to implement from a list of eligible measures. This list, created by local and national experts in the field of energy efficiency and renewable energy, highlights a suite of renewable energy and energy efficiency measures as well as the minimum efficiency requirements for each measure. Commercial property owners are encouraged, but not required, to attend briefing sessions on the program structure. There are over 40 technologies permitted for residential structures and over 70 permitted for commercial structures. Once property owners decide which energy efficiency improvements and/or renewable energy measures they would like to implement, they must obtain project bids by contractors certified or licensed in their respective trade. After estimates and/or bids are received, a residential property owner can apply for a loan ranging from a minimum of \$3,000 to a maximum of \$50,000 (or 20% of the latest valuation of the property by the County Assessor, whichever is less). For residential loans, the Board of County Commissioners set not to exceed interest rates of 6.75% for income qualified assessments (for households with up to 115% of area median income) and 8.75% for all other assessments. In 2009 the interest rates for the two rounds of residential funding were 5.2% and 5.8% for income-qualified, and 6.68% and 6.8% for the non-qualified category. For commercial loans, estimated assessment rates are between 5% and 6.5% (with some properties qualifying for lower estimated rates of 5% to 5.5%). The current third round of funding anticipates lower interest rates estimated to be 4.5%; however Boulder County will not know the final rate until the bonds are sold in June 2010.

In addition, participating property owners can collect any rebates available, including utility, local, state, or federal rebates. Local and federal tax credits are also available for homeowners wishing to undertake renewable energy and energy efficiency projects. Lists of these rebates and incentives are provided by the County for all properties, regardless of which of the six utilities in the county provide service to the property.

After property owners are pre-qualified for the program by County staff, they verify the information in the application by submitting copies of their bids or written estimates, proof of income qualification (if applicable), and sign documents acknowledging that they understand that a special assessment will be placed on the property. Bonds are then issued and participants receive notification from the County that they can begin work on their projects. Once the work is completed a final invoice, copies of permit/inspection paperwork, and a property owner's

acknowledgement letter indicating that work has been completed are submitted with a request for payment to the County, and the County issues checks directly to the contractors/vendors/installers that performed the work. To date, the County has cut checks to just under 300 unique contractors/vendors/installers, totaling over \$9 million. The top measures funded in the first two rounds of funding included approximately \$3.6 million to solar PV (229 projects), \$2 million dollars to window replacements, just over \$1 million to insulation and air sealing measures and \$600,000 for high efficiency furnaces.

Project costs are funded by the sale of bonds to private investors. In turn, property owners who receive financing repay over a 15-year period (5 or 10 for commercial properties) via a special assessment on their property tax bill. Investments are chosen such that their useful lives should outlast the term of the assessment, allowing participants to save on their energy bills as they pay down the assessment. These special liens are senior to most other debt, including mortgages.

Given the economic barriers to improving resource use in buildings, such as lack of information, uncertainty of savings, split incentives and length of paybacks, PACE financing mechanisms such as the ClimateSmart Loan Program eliminate significant barriers to investment in renewable energy and energy efficiency technologies (Fuller, Kunkel & Kammen, 2009). First, the program allows property owners to pay little up-front (\$75 application fee), directly addressing the barrier of upfront capital costs needed to implement renewable energy and energy efficiency measures. In addition, the program's long term (15 years) spreads the investment cost out and allows property owners to use energy savings to repay it. Moreover, in combination with Boulder County's energy concierge service the Residential Energy Action Program (REAP) property owners can receive one on one counseling to help understand their energy usage and receive a personalized set of recommendations to lower energy usage and subsequent utility bills. Through this service, property owners also receive information on payback, utility savings and rebate and incentives. This concierge service helps combat homeowner misinformation and makes implementation more convenient. In sum, offering a unique financing mechanism in combination with property owner education and counseling is Boulder County's holistic approach to overcoming barriers that property owner's face when trying to implement energy efficiency and renewable energy measures.

In sum, the program works in the following sequence:

1. Property owner attends a mandatory ClimateSmart Loan Program workshop highlighting the program's approved list of appropriate renewable energy and energy efficiency investments.
2. Property owner solicits and receives bids from private contractors. If property owners need help with implementation, they call the Residential Energy Action Program.
3. Property owner applies online to fund the improvements.
4. County staff pre-qualifies property owner for assessment.
5. Property owner visits with a loan originator to verify application information by submitting copies of bids, proof of income qualification (if applicable), and signed documents acknowledging that they understand that a special assessment will be placed on the property.
6. The county issues bonds, and participants receive notification that they can begin work on their projects.

7. Once work is completed to property owner’s satisfaction, they provide certification of the work and request payment from the County. The County issues checks to the contractors/vendors/installers that performed the work.

Program Costs

The table below describes the costs to run a countywide PACE financing program. As shown, the bulk of the expenses are derived from the cost of issuance for the residential round of ClimateSmart funding. Borrowers cover these costs through a \$75 dollar application fee and fees (approximately 4%) added to their principle. Therefore, the cost of the program covers itself and no general funds are used to administer the program

Table 1. Program Costs

Item	Expense	Description
Cost of issuance for residential rounds of ClimateSmart funding <i>*Paid for by Program Fees</i>	\$523,000	This expense funds loan origination, bond rating, special bond council and trustee fees. This sum depends on the number of applicants and the amount of the bond.
Finance Staff <i>*Paid for by Program Fees</i>	\$105,000	This expense funds two Boulder County Employees who cut checks, run loan origination, and keep track of all financials under this program. This sum also includes benefits.
Advertising/Printing/Supplies <i>*Paid for by Program Fees</i>	\$50,000	This expense funds all advertising and printing for educational materials, brochures and applications.
Homeowner Educational Workshops <i>*Paid for by Program Fees</i>	\$18,000	These funds support up to 40 mandatory educational workshops that homeowners attend in order to apply for the ClimateSmart Loan Program.
Program Staff <i>*Paid for by Program Fees</i>	\$60,000	This funds 1 FTE and a part-time employee dedicated to managing the program, talking to homeowners, outreaching to municipalities and general program management.
Total Expenses	\$756,000	

Program Success

Given that over half of Boulder County’s greenhouse gas emissions come from existing buildings (both homes and businesses), the ClimateSmart Loan Program is an effective voluntary based approach to reducing our greenhouse gas emissions—a major goal of the countywide Sustainable Energy Plan. Boulder County in collaboration with Symbiotic Engineering, a Boulder-based energy-engineering firm, is tracking the greenhouse gas emission savings and utility savings for each household. This information, proposed to be complete by summer 2010,

will unveil the role the ClimateSmart Loan Program plays in reducing greenhouse gas emission, especially those spelled out in Boulder County’s Sustainable Energy Plan. Boulder County looks forward to having publishing this report in mid-July 2010. In addition, the ClimateSmart Loan Program does more than just encourage property owners to implement energy efficiency and renewable energy measures; it also generates green-collar jobs and stimulates the local economy. Nearly \$6 million of the total money distributed in 2009 funded energy efficiency upgrades and almost \$4 million went to renewable energy projects, which boosted the local economy and provided job opportunities for more than 290 installers, contractors and vendors. Table 2 below highlights these program benefits.

Table 2. Benefits and Success of Program

	CSLP Benefits
Investments	\$9.8 million invested in local economy
Emissions Benefits (associated)	Estimated total GHG Saved (CO ₂ tons) 2,325 ¹
Job Creation / Economic Development	370-520 job-years of employment
Innovation	First countywide program nationally – led to almost \$10 million invested in energy efficiency and renewables, well-designed program, minimal County cost.
Education	3,000 attendees at “Home Energy 101” workshops

In addition to the direct economic impacts, we are currently assessing the indirect impacts derived from the renewable energy and energy efficiency measures implemented through this program. Given that a vast majority of the work was completed by local contractors, vendors and installers, it is likely recirculation of project dollars within our community occurred (as compared to the approximately 75 cents on the dollar that leaves the community when residents and businesses pay their utility bills). Moreover, it is likely that the program generated homeowner interest in EE/RE measures, creating a ripple effect of work completed by property owners who were motivated by the ClimateSmart Loan Program educational workshops, but found other ways to finance their upgrades. Finally, 75% of the ClimateSmart Loan Program bonds were sold locally, providing excellent local green investment opportunities. Working closely with economists at the National Renewable Energy Lab, Boulder County will be tracking both the direct and indirect benefits to the local economy. A full report on the economic benefits of this program is proposed to be complete by mid-July 2010.

Finally, the success of the ClimateSmart Loan Program has helped initiate similar PACE (Property Assessed Clean Energy) programs across Colorado and beyond. Such programs have also received strong federal support, as Vice President Biden recently announced over \$80 million in stimulus funds to support local pilot programs around the nation. As similar PACE financing programs burgeon across the U.S., other counties are looking to Boulder as a model for launching a PACE program. Due to Boulder County’s success, the program has been labeled Boulder County’s “Brightest Idea of 2009” by *The Boulder Weekly* and has received positive attention from *The Denver Post*, *USA Today*, National Public Radio and President Obama’s Office of Energy and Climate Change Policy.

¹ Estimated average GHG saved per HH (CO₂ tons) 2.02

Summary and Conclusion

Boulder County's ClimateSmart Loan Program has become a nationally recognized model for financing renewable energy and energy efficiency measures. Thus far the ClimateSmart Loan Program is the largest loan program in the country, and is at the forefront of national trends among communities that are seeking to improve energy efficiency and renewable energy installation in their neighborhoods. Numerous communities across the country are considering launching similar programs in effort to reduce greenhouse gas emissions and propel a strong green economy.

References

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