

State Report – Colorado

This Appendix furnishes detailed information for Colorado, including:

- Statistical Overview – Key characteristics for Colorado households and housing units.
- Needs Assessment – Statistics for Colorado low-income households and estimates of the need for energy affordability and energy efficiency programs.
- Legal and Regulatory Framework – A description of the legal and regulatory framework for low-income programs and identification of any legal or regulatory barriers to program design enhancements.
- Low-Income Affordability Programs – Information on Colorado’s existing publicly funded affordability programs, the ratepayer-funded affordability programs targeted by this study, and an assessment of the share of need currently being met.
- Affordability Program Evaluation – A summary of the available evaluation findings regarding the performance of Colorado’s ratepayer-funded affordability programs.
- Energy Efficiency Programs – Information on Colorado’s publicly funded energy efficiency programs and the ratepayer-funded energy efficiency programs targeted by this study.
- Energy Efficiency Program Evaluation – A summary of the available evaluation findings regarding the performance of Colorado’s ratepayer-funded energy efficiency programs.

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I. Statistical Overview

Colorado is the 22nd largest state in terms of population. It has relatively high income (12th in median family income in 2005) and has a relatively low poverty rate (36th in individuals below poverty). In 2005, the median housing value was \$223,300 and the median rent was \$757.

Most housing units (91%) in Colorado are heated with regulated fuels, predominantly natural gas (75%). Energy prices are moderate, with natural gas 20% below the national average and electricity 4% below the national average. On average for the state, the weather is cold in the winter (7,410 heating degree days compared to the national average of 4,524) and cool in the summer (273 cooling degree days compared to the national average of 1,242). Households are most at risk from the cold during the months of October through April. The average temperature in the summer for most of the state is moderate. However, there are sections of the state that get very hot at certain times of the year.

The following population and housing statistics were developed using data from the 2005 American Community Survey (ACS).

Population Profile

Total Population.....	4.6 million
Individuals 65 and Over.....	0.4 million (9%)
Individuals Under 18.....	1.2 million (26%)
Individuals 5 & Over Who Speak a Language Other than English at Home....	0.7 million (15%)
Individuals Below Poverty.....	11% (36 th nationally)

Household Profile

Total Households.....	1.8 million
Median Household Income.....	\$50,652 (13 th nationally)
<i>Homeowners</i>	
Total Homeowners.....	1.2 million (68%)
Median Value.....	\$223,300 (13 th nationally)
Median Housing Burden.....	23%
<i>Renters</i>	
Total Renters.....	0.6 million (32%)
Median Rent.....	\$757
Median Rental Burden.....	29%

The following energy statistics were derived from a number of sources, including the 2005 American Community Survey (ACS), the Energy Information Administration's (EIA) supplier data collection, and NOAA's National Climatic Data Center (NCDC).

Energy Profile

Home Heating Fuel (Source: 2005 ACS)

Utility gas.....	75%
Electricity.....	16%
Fuel Oil.....	0%
Other.....	9%

2005 Energy Prices (Source: EIA)

Natural gas, per ccf.....	\$1.029
Electricity, per kWh.....	\$0.0906
Fuel oil, per gallon.....	n/a

Weather (Source: NCDC)

Heating Degree Days.....	7,410
Months of Winter (i.e., average temperature below 50°).....	7
Cooling Degree Days.....	273
Months of Summer (i.e., average temperature above 70°).....	0
Days with Temperatures Over 90°.....	50

[Note: Updates are available for energy prices and weather for 2006. Population statistics updates for 2006 will be available in August 2007.]

II. Profile of Low Income Households

Colorado policymakers have chosen to target the publicly funded and ratepayer-funded low income programs at households with incomes at or below 185% of the HHS Poverty Guideline. For 2005, the income standard for a one-person household was about \$17,705 and the income standard for a four-person household was \$35,800. For the analysis of low-income households in Colorado, we will focus on households with incomes at or below 185% of the HHS Poverty Guideline.

Table 1 furnishes information on the number of Colorado households with incomes that qualify them for the LIHEAP program and the ratepayer-funded programs. About 23% of Colorado households are income-eligible for these programs.

Table 1
Eligibility for Ratepayer Programs (2005)

Poverty Group	Number of Households	Percent of Households
Income at or below 185%	415,150	23%
Income above 185%	1,397,794	77%
ALL HOUSEHOLDS	1,812,944	100%

Source: 2005 ACS

Tables 2A and 2B furnish information on main heating fuels and housing unit type for low-income households. Table 2A shows that about 69% of low-income households use natural gas as their main heating fuel, less than the 75% for all Colorado households. Low-income households are more likely to heat with electricity than the Colorado average. Table 2B shows that one of the reasons for the higher rate of electric main heat is that 31% of low-income households are in buildings with 5 or more units. Many multi-unit buildings use electric space heating rather than natural gas. About 52% of low-income households live in single family homes, while 9% live in buildings with 2-4 units. Eight percent of low-income households live in mobile homes.

Table 2A
Main Heating Fuel for Low-Income Households (2005)

Main Heating Fuel	Number of Households	Percent of Households
Utility Gas	285,936	69%
Electricity	90,783	22%
Other Fuels	36,189	9%
No fuel used	2,242	1%
ALL LOW INCOME	415,150	100%

Source: 2005 ACS

**Table 2B
Housing Unit Type for Low-Income Households (2005)**

Housing Unit Type	Number of Households	Percent of Households
Boat, RV, Van, etc	475	0%
Building with 2-4 units	35,708	9%
Building with 5+	128,777	31%
Mobile Home	34,686	8%
Single Family	215,504	52%
ALL LOW INCOME	415,150	100%

Source: 2005 ACS

About 415,000 Colorado households are categorized as low-income. However, only those households that directly pay an electric bill or a gas bill are eligible for the Colorado ratepayer-funded programs. Table 2C shows that about 88% of low-income households directly pay an electric bill and that about 68% of low-income households directly pay a gas bill.

**Table 2C
Low-Income Households
Direct Payment for Electric and/or Gas Bill (2005)**

Poverty Group	Number of Households	Percent of Households
Electric Bill – Direct Payment	366,735	88%
Gas Bill – Direct Payment	282,504	68%
ALL INCOME ELIGIBLE	415,150	100%

Source: 2005 ACS

Tables 3A and 3B show the distribution of electric bills and burden for low-income households that do not heat with electricity and reported electric expenditures separately from gas expenditures.¹ Table 3A shows the distribution of electric expenditures for households that do not have electricity as their main heating fuel and Table 3B shows the electric energy burden.² Among these households, about 74% have electric bill that is less than \$1,000 per year while about 11% have an annual electric bill of \$1,500 or more. Electric energy burden is less than 5% of income for about 51% of these households, while it is greater than 15% of income for 16% of households.³

¹The ACS allows respondents who have a combined electric and gas bill from one utility to report the total for both fuels. Those households are not included in these tables.

² Electric energy burden is defined as the household's annual electric bill divided by the household's annual income.

³ About 13% of households have their electric usage included in their rent. These households have a nonzero electric energy burden, since part of their rent is used to pay the electric bill. However, since there is no way to measure the share of rent that is used to pay the electric bill, electric energy burden is unknown for these households.

Table 3A
Electric Bills for Low-Income Households without Electric Heat (2005)

Electric Bill	Number of Households	Percent of Households
\$1 to less than \$500	87,727	36%
\$500 to less than \$1,000	91,144	38%
\$1,000 to less than \$1,500	36,752	15%
\$1,500 or more	27,258	11%
TOTAL	242,881	100%

Source: 2005 ACS

Table 3B
Electric Burden for Low-Income Households without Electric Heat (2005)

Electric Burden	Number of Households	Percent of Households
0% to less than 5%	122,814	51%
5% to less than 10%	59,614	25%
10% to less than 15%	20,672	9%
15% or more	39,781	16%
TOTAL	242,881	100%

Source: 2005 ACS

Tables 4A and 4B show the distribution of electric bills and burden for low-income households that heat with electricity. Table 4A shows the distribution of electric expenditures and Table 4B shows the electric energy burden. Among these households, about 67% have an electric bill that is less than \$1,000 per year while about 18% have an annual electric bill of \$1,500 or more. Electric energy burden is less than 5% of income for about 42% of these households, while it is greater than 15% of income for 21%.

Table 4A
Electric Bills for Low-Income Households with Electric Heat (2005)

Electric Bill	Number of Households	Percent of Households
\$1 to less than \$500	25,727	37%
\$500 to less than \$1,000	20,622	30%
\$1,000 to less than \$1,500	9,818	14%
\$1,500 or more	12,505	18%
TOTAL	68,672	100%

Source: 2005 ACS

Table 4B
Electric Burden for Low-Income Households with Electric Heat (2005)

Electric Burden	Number of Households	Percent of Households
0% to less than 5%	29,148	42%
5% to less than 10%	18,172	26%
10% to less than 15%	7,191	10%
15% or more	14,161	21%
TOTAL	68,672	100%

Source: 2005 ACS

Tables 5A and 5B show the distribution of gas bills and burden for low-income households that heat with gas and report their gas bills separately from their electric bills. Table 5A shows the distribution of gas expenditures and Table 5B shows the gas energy burden. Among these households, about 68% have a gas bill that is less than \$1,000 per year while about 13% have an annual gas bill of \$1,500 or more. Gas energy burden is less than 5% of income for about 49% of these households, while it is greater than 15% of income for 17%.

Table 5A
Gas Bills for Low-Income Households (2005)

Gas Bill	Number of Households	Percent of Households
\$1 to less than \$500	86,468	38%
\$500 to less than \$1,000	68,255	30%
\$1,000 to less than \$1,500	42,537	19%
\$1,500 or more	30,062	13%
TOTAL	227,322	100%

Source: 2005 ACS

Table 5B
Gas Burden for Low-Income Households (2005)

Gas Burden	Number of Households	Percent of Households
0% to less than 5%	111,509	49%
5% to less than 10%	57,876	25%
10% to less than 15%	18,693	8%
15% or more	39,244	17%
TOTAL	227,322	100%

Source: 2005 ACS

Tables 6A and 6B show the distribution of total electric and gas expenditures for low-income households that pay bills directly to a utility company. Table 6A shows the distribution of electric and gas expenditures and Table 6B shows the electric and gas energy burden. About 89% of households have an electric bill, a gas bill, or both. Just over one-third of low-income

households have a total electric and gas bill that is less than \$1,000 per year while 9% have an annual bill of \$2,500 or more. Electric and gas energy burden is less than 5% of income for 21% of low-income households, while it is greater than 25% of income for 15% of low income households.

Table 6A
Electric and Gas Bills for Low-Income Households (2005)

Electric and Gas Bill	Number of Households	Percent of Households
\$1 to less than \$500	49,211	12%
\$500 to less than \$1,000	95,471	23%
\$1,000 to less than \$1,500	77,958	19%
\$1,500 to less than \$2,000	60,142	14%
\$2,000 to less than \$2,500	47,109	11%
\$2,500 or more	39,161	9%
No Bill	46,098	11%
ALL INCOME ELIGIBLE	415,150	100%

Source: 2005 ACS

Table 6B
Electric and Gas Burden for Low-Income Households (2005)

Electric and Gas Bill	Number of Households	Percent of Households
0% to less than 5%	87,831	21%
5% to less than 10%	117,228	28%
10% to less than 15%	57,795	14%
15% to less than 20%	28,048	7%
20% to less than 25%	15,690	4%
25% or more	62,460	15%
No Bill	46,098	11%
ALL Income Eligible	415,150	100%

Source: 2005 ACS

We have developed a series of demographic tables for households that pay an electric or gas bill. Table 7 furnishes information on the presence of vulnerable members in the household and illustrates what share of the population might be particularly susceptible to energy-related health risks. Table 8 shows the household structure for these households, and Table 9 presents statistics on the language spoken at home by these households.

Almost one-fourth of the low-income households with utility bills are elderly; more than one-third do not have any vulnerable household members. Some programs choose to target vulnerable households with outreach procedures and may offer priority to these households.

Table 7
Vulnerability Status for Low-Income Households with Utility Bills (2005)

Vulnerability Status	Number of Households	Percent of Households
Disabled	60,455	16%
Elderly	86,798	24%
No Vulnerable	136,510	37%
Young Child	85,289	23%
Total	369,052	100%

Source: 2005 ACS

About two-fifths of the low-income households have children, more than one-fifth are headed by a person 65 or older, while close to two-fifths are other household types. Single parent families with children represent about one-fifth of low-income households with utility bills.

Table 8
Household Type for Low-Income Households with Utility Bills (2005)

Household Type	Number of Households	Percent of Households
Married with Children	72,723	20%
Other	144,705	39%
Senior Head of Household	82,960	22%
Single with Children	68,664	19%
TOTAL	369,052	100%

Source: 2005 ACS

Over one-fifth of low income households speak Spanish and about 3% speak an Indo-European language (e.g., Russian, Polish). In total, program managers might find that almost three out of ten eligible households speak a language other than English at home.

Table 9
Language Spoken at Home by Low-Income Households with Utility Bills (2005)

Language Spoken	Number of Households	Percent of Households
English	265,841	72%
Spanish	82,556	22%
Indo-European	11,626	3%
Other	9,029	2%
TOTAL	369,052	100%

Source: 2005 ACS

III. Legal and Regulatory Framework

Colorado has a mixed history of support for providing energy assistance benefits to its low-income households. In response to a state Supreme Court ruling that rates designed for the exclusive purpose of providing benefits to a needy class were beyond the statutory authority of the Colorado Public Utility Commission (CPUC),⁴ the Commission has consistently refused to adopt permanent programs to redress the unaffordability of energy to low-income customers. Nonetheless, the Commission has adopted a variety of funding mechanisms, along with various experimental and “pilot” programs, to test how low-income customers will respond to affordable rates, under its generic powers. In addition, the CPUC approved an energy efficiency program targeted directly to low-income households. Finally, the Colorado legislature approved, in 2005, an energy assistance program through which each of the state’s utilities were mandated to adopt procedures allowing for “voluntary” customer contributions to low-income energy assistance.

A. The Statutory Voluntary Energy Assistance Program

In 2005, the Colorado legislature approved the Low-Income Energy Assistance Act.⁵ The legislature affirmatively declared “that, in order to serve the best interests of the citizens of Colorado and, in particular, to aid low-income citizens of Colorado, there is a need for an energy assistance program to collect an optional low-income energy assistance contribution from utility customers in Colorado.”⁶ The legislature then found that:

the most efficient way to support such a program is for gas and electric utilities to provide the opportunity for each utility customer to contribute an optional amount on the customer's billing statement for low-income energy assistance that will be displayed monthly on the utility bill until the customer indicates otherwise and that the moneys collected shall be most economically and equitably disbursed through a system in which the contributions collected by electric utilities and gas utilities are transmitted to energy outreach Colorado.⁷

The legislature determined that funds collected through this voluntary program could be used for “financial assistance, residential energy efficiency, and energy conservation assistance.”⁸ The legislation extended to any company, including cooperatives and municipally-owned entities, that “provide[...] retail electric service or retail gas service to customers in Colorado.”⁹

The Colorado program is statutorily directed to be an “opt-in” program. To collect contributions from any particular customer, that customers must “give notice of their intent to participate in the energy assistance program.”¹⁰ Having agreed to make contributions, however, “the appropriate contribution shall be assessed on a monthly basis until the customer notifies the utility of his or her desire to remove the contribution.”¹¹ By statute, utilities will notify customers of

⁴Mountain States Legal Foundation v. Public Utilities Commission of Colorado, 197 Colo. 56, 590 P.2d 495 (Colo. 1979).

⁵ C.R.S., Title 40, §§8.7.101 et seq. (2007).

⁶ C.R.S., Title 40, §8.7.102(1) (2007)

⁷ C.R.S., Title 40, §8.7.102(2) (2007). “Energy Outreach Colorado” is a quasi-public non-profit corporation established pursuant to C.R.S., §40-8.5-104 (2007) (formerly known as the Colorado Energy Assistance Foundation, CEAF). The corporation is under the direction of a “legislative commission on low-income energy assistance” created by statute. C.R.S., §40-8.5.103.5 (2007).

⁸ C.R.S., Title 40, §8.7.103(3) (2007).

⁹ C.R.S., Title 40, §8.7.103(6) (2007); see also, C.R.S., Title 40, §8.7.104(2) (2007).

¹⁰ C.R.S., Title 40, §8.7.105(1) (2007).

¹¹ C.R.S., Title 40, §8.7.105(3) (2007).

recommended check-off amounts for the Energy Assistance Program.¹² Utility customers participating in the program are exempt from the disconnection of service for nonpayment of the energy assistance contribution.

Under the statute, the “reasonable costs” of the program (including any start-up costs) are to be paid from the proceeds generated by the program.¹³ Indeed, the administrative costs of the program are to be paid before any benefits are distributed. While the CPUC initially proposed regulations limiting administrative costs to three percent of total revenues, that specific limitation was abandoned as being contrary to statute.¹⁴ Instead, administrative costs are simply to be “reasonable,” which would be determined on a case-by-case basis. The regulations did provide, however, that start-up costs were to be amortized over time to ensure that some dollars of donations would immediately be available as benefits.¹⁵

B. The Energy Savings Partners Program

The Energy Savings Partners (ESP) program is a demand side management program operated by Public Service Company of Colorado (PSCO). ESP is “designed to provide assistance to low-income members of the residential class of customers by making their homes more energy efficient.”¹⁶

ESP was created in 1992 as part of a settlement of the then-pending proceeding involving PSCO’s general demand side management programs.¹⁷ The Commission approved an extension of ESP as part of the settlement of the proceeding to consider PSCO’s proposed merger with Southwestern Public Service Company.¹⁸ The program was extended again as part of the settlement of the proceeding to consider PSCO’s proposed merger with Northern States Power Company.¹⁹

In 2006, the Colorado Commission considered the merits of the ESP for the first time outside the context of a larger settlement agreement.²⁰ The Commission created the docket because of its expressed concerns about whether the ESP program was legal in light of the Colorado Supreme Court’s decision in the 1979 *Mountain States Legal Foundation* case. According to the Commission, “Public Service seeks to implement an energy (gas) conservation program that will

¹² C.R.S., Title 40, §8.7.105(2) (2007) (“Each utility shall solicit voluntary donations through a check-off mechanism displayed on the monthly remittance device. Recommended check-off categories of five dollars, ten dollars, twenty dollars, and “other amount” shall be displayed.”)

¹³ C.R.S., Title 40, §8.7.104(3) (2007) (“Any reasonable costs that a utility incurs in connection with the program, including the initial costs of setting up the collection mechanism and reformatting its billing systems to solicit the optional contribution, shall be reimbursed from the moneys collected by the program, and this amount shall be approved for each utility by the public utilities commission. The reimbursed amounts shall be transmitted to the utilities before the remaining moneys are distributed to the organization.”)

¹⁴ In the Matter of the proposed Rules Regarding the Gas Utilities Energy Assistance Program, Docket No. 05R-457G, Order Adopting Rules, at para. 20 (February 8, 2006). The regulations applied to both natural gas utilities and combination gas/electric utilities. *Id.*, at para. 13.

¹⁵ *Id.*, at para. 19.

¹⁶ In the Matter of the Application of Public Service Company of Colorado for a Five Year Extension of Its Energy Savings Partners Program, Docket No. 05A-515EG, Order Approving Application in Part, at para. 1 (October 17, 2006). (hereafter 2006 ESP Order).

¹⁷ In the Matter of the Application of Public Service Company of Colorado for Authority to Implement a Low-Income Energy Efficiency Assistance Program, Docket No. 91A-783EG, Commission Order Approving Stipulation, Order C9-1519 (November 25, 1992).

¹⁸ In the Matter of the Application of Public Service Company of Colorado for Commission Authorization (1) to Merge with Southwestern Public Service Company through the Formation of a Registered Public Utility Holding Company and (2) to Implement a Five-Year Regulatory Plan which Includes an Earnings Sharing Mechanism, Docket No. 95A-531E, Decision C96-1235 (August 15, 1996).

¹⁹ In the Matter of the Application of Public Service Company of Colorado for Commission Authorization for New Century Energies, Inc. to Merge with Northern States Power Company, Docket No. 99A-377EG, Decision No. C00-393 (February 16, 2000). (hereafter NSP Merger Order).

²⁰ 2006 ESP Order, at para. 4.

benefit only lower income individuals. This program will not create a disparity in rates between residential customers, but rather, the ESP program provides preferential service.”²¹ The costs of implementing and running the program are paid by all ratepayers.

The lawfulness of the program under *Mountain States* was argued by the Company, the Office of Consumers Counsel, and the Governor’s Office. These parties argued that since the ESP program did not involve rates, the *Mountain States* decision did not apply. Moreover, they said, even if *Mountain States* did apply, the ESP program was not preferential. According to these parties:

ESP provides benefits in reduced gas usage. The reduction in usage caused by the decrease in low income customer gas consumption due to the program benefits the general body of ratepayers, which is a distinguishing factor with respect to *Mountain States*. To the extent that *Mountain States* does apply to the ESP program, since 1992, the Commission has found that as long as the program is cost effective as measured by the [total resource cost] test, then *Mountain States* is not violated.²²

Citing a previous dissenting opinion,²³ the 2006 Commission argued that the statute relied upon in the *Mountain States* decision “poses a substantial hurdle for the parties to overcome.”²⁴ According to the Commission “the solution is a legislative one, and the type of language that could provide the Commission the discretion necessary to approve certain programs that include preferences can be found in other state statutes. . . .”²⁵

The Commission reversed more than a decade of precedent in discussing the cost-effectiveness of the ESP program. Historically, the cost-effectiveness of the utility’s contribution to ESP was measured by comparing the *incremental* costs paid by Public Service against the *total* benefits achieved from the Public Service and federally-funded portions of efficiency investment, “even though the utility funds are not required as a match to obtain the federal funds.”²⁶ The Commission then determined that:

We are concerned that a comparison of incremental costs to total benefits does not properly measure the cost effectiveness of the program. Rather, the incremental costs of the program should be compared to the incremental benefits associated with those contributions.²⁷

The Commission further held that some of the program costs paid by the federal weatherization program should be allocated to Public Service Company, since “the energy savings measures installed from Public Service’s contributions would not be viable if these associated functions were not performed.”²⁸

²¹ 2006 ESP Order, at para. 8.

²² 2006 ESP Order, at para. 10.

²³ Commission Chairman Gifford dissented in the approval of the stipulation extending the ESP program, arguing that “an energy consumption reduction incentive or capital improvement to a specific ratepayers is preferential in exactly the same manner, everyone pays for the greater benefit of a few. . . . Furthermore, DSM constitutes a “social policy” just as a preference for low income elderly or disabled does.” In the Matter of the Application of Public Service Company of Colorado for an Order Determining Whether the Size and Load Impact of the Demand Side Management and Renewable Segments of its 1999 Integrated Resource Plan Maximize the Public Interest, Docket No. 00A-008E, Decision C00-1057, at 50 – 51 (Gifford Dissenting) (September 26, 2000).

²⁴ 2006 ESP Order, at para. 12.

²⁵ Id.

²⁶ 2006 ESP Order, at para. 15.

²⁷ Id.

²⁸ Id. The federal funds are used to market the program, perform initial energy assessments of the homes, and to cover the general administrative costs of the program.

The Commission finally backed away from use of the Total Resource Cost (TRC) test as the measure of the cost-effectiveness of energy efficiency, in favor of a ratepayer impact test. According to the Commission:

We are concerned about the rate impacts of the program. The [. . .] TRC analysis indicates that rates to the general body of ratepayers would increase. The low-income participants are a small percentage of ratepayers, so the ESP program could financially hurt the vast majority of customers to help only a few. Non-participating low-income customers (the majority of low-income customers) will not realize any benefits from the program, but will pay higher rates.²⁹

Ultimately, the Commission approved a one-year extension of the ESP program. The Commission noted that “other existing DSM programs have the flaw of rarely being accessible to low-income customers.”³⁰ The Commission noted that ESP “is the only reasonably accessible DSM program for low-income customers (who, by the way, subsidize all DSM programs, including the ones that primarily benefit well-off customers).”³¹ The Commission finally noted that:

Given the importance of the program in light of current energy costs, we find that it would cause significant damage to the continuity of the program if we abruptly stopped the program. Though we have serious concerns about the legality of the program, we find that if we were to terminate the program while parties pursue a legislative solution, the damage to the ESP program would be irreversible, and would seriously harm low-income customers who are in need of the service.³²

Because “the record . . . is not clear with respect to the legality and merits of the ESP program,” the Commission granted a one-year program extension to allow the proponents of the program to “approach the legislature to find a proper solution.”³³

C. The Mountain States Legal Foundation Court Decision

In 1979, the Colorado supreme court issued a decision that has stalled the implementation of discount utility rates for the poor ever since. In *Mountain States Legal Foundation v. Public Utilities Commission*,³⁴ the state supreme court overturned the PUC’s approval of discount rates for low-income elderly and low-income disabled customers. Such discounts, the court held, violated the statutory prohibition against preferential rates.

The Reasoning in the Court Decision

The Colorado *Mountain States* court recognized the economic difficulties of the target populations, observing “the fact that many of our state’s elderly live on fixed incomes which are severely strained by today’s inflationary economy, as are low-income disabled persons who are often shut out of the employment market.”³⁵ The court held, however:

While efforts to provide economic relief to such needy persons are laudatory, the PUC has limited authority to implement a rate structure which is designed to provide financial assistance as a social policy to a narrow group of utility customers, especially where that low rate is financed by its remaining customers. . . It is clear in

²⁹ 2006 ESP Order, at para. 17.

³⁰ Id., at para. 22.

³¹ Id.

³² Id., at para. 21.

³³ Id., at para. 25.

³⁴ 197 Colo. 56, 590 P.2d 495 (1979).

³⁵ 590 P.2d at 496.

the case before us that the PUC's authority to order preferential rates has, in fact, been restricted by the legislature's enactment of [the no undue preference statute].³⁶

The court ultimately concluded that:

In this instance, the discount rate benefits an unquestionably deserving group, the low-income elderly and the low-income disabled. This, unfortunately, does not make the rate less preferential. . . [A]lthough the PUC has been granted broad rate making powers. . . the PUC's power to effect social policy through preferential rate making is restricted by statute no matter how deserving the group benefiting from the preferential rates may be.³⁷

While the *Mountain States* decision has been read to prohibit *per se* low-income discount rates in Colorado, as even the CPUC has observed, it stands for no such broad proposition.

Ratemaking Based Exclusively on "Social Policy"

The Colorado Supreme Court, through its *Mountain States* decision, prohibited the Colorado PUC from implementing "a rate structure which is designed to provide financial assistance *as a matter of social policy*. . ." (emphasis added). This notion that the state supreme court disapproved the PUC's social policymaking is reinforced by the language that "the PUC's power *to effect social policy* through preferential rates is restricted. . ." (emphasis added).

Given these findings, it is possible to conclude that, unlike the situation which *Mountain States* posits, where discount rates are "financed by remaining ratepayers," low-income affordability programs, whether rate programs as in *Mountain States* or energy efficiency programs as with the Energy Savings Partners programs, designed to effectuate sound regulatory policy other than social policy will not run afoul of the *Mountain States* directive.

Recognition that the *Mountain States* decision is not an absolute bar to low-income programs was evidenced in the CPUC decision approving certain low-income programs in the Commission's decision regarding PSCO's proposed merger with Northern States Power Company.³⁸ In that decision, CPUC approved both an extension of the company's low-income energy efficiency program and certain low-income rate affordability programs. According to the Commission, these programs "will result in savings to customers" and "produce[...] consumer welfare gains for the citizens of Colorado."³⁹ Moreover, the Commission found, the programs "provide assurances to Public Service's low income customers that service deterioration will not result from the merger of [PSCO] and NSP."⁴⁰

In addition to continuing the Company's low-income energy efficiency program (ESP), the merger settlement created the Affordable Payment Pilot Program (APPP). In approving this program, the Commission found:

The APPP is designed to be a cost-effective program, although to date there is insufficient data to determine if it is in fact cost-effective. The APPP forgives certain arrearages and provides certain low income customers a discounted base rate based on the customer's income. The forgiven amounts go into the lost and uncollectible account and are then recovered from all customers through rates. The intent of this arrangement is to provide assistance to certain low income

³⁶ *Id.*, at 497.

³⁷ *Id.*, at 498.

³⁸ NSP Merger Decision, at 13 – 21.

³⁹ *Id.*, at 14.

⁴⁰ *Id.*, at 15.

customers in a manner that results in a net benefit to all of Public Service's customers through an increase in the net revenue collected by Public Service attributable to improved bill payment practices and reduced collection costs.⁴¹

The Commission directly addressed the question of whether a program such as APPP was legal under the *Mountain States* court decision. The Commission explicitly acknowledged that its "approval of the APPP portion of the Low Income Agreement is not without awareness of the holding in *Mountain States Legal Foundation*. . ." The Commission acknowledged that "*Mountain States* teaches that the Commission may not effect social policy through preferential ratemaking in favor of a narrow group of utility customers, such as low income customers. . ."⁴² The Commission then held that *Mountain States* did not apply. "If a program or rate has an economic justification, it is distinguishable from the circumstances at issue in *Mountain States*."⁴³

The Commission then analyzed the proposed low-income rate affordability program in light of the *Mountain States* decision, holding that "the APPP was not developed in the name of social policy."⁴⁴ According to the CPUC:

Instead, the goal of the APPP is to reduce the balance of Public Service's lost and uncollectible accounts, thereby effecting a net reduction to all customers' bills. This economic justification for the APPP prevents Public Service from running afoul of the prohibition against preferential rates found at [the statute cited by *Mountain States*].⁴⁵

The Commission proffered a second justification for the program as well, holding that "nothing in *Mountain States* prevents Public Service from engaging in research and development with the hope of designing a program used and useful to the rendering of its service at a cost to ratepayers that is just and reasonable. Thus, because it appears that the APPP, as a pilot program, does not create a subsidy in favor of low income residential customers," the Commission was within its statutory authority to approve it.

Similarly, the Commission approved the proposed continuation of ESP in its NSP merger decision, noting that "the record contains uncontradicted evidence that ESP is cost-effective."⁴⁶ In approving ESP, the CPUC held that "because ESP is a cost-effective DSM program," the *Mountain States* decision "does not require a contrary result."⁴⁷

2007 Legislation

In 2007, the Colorado General Assembly enacted legislation overruling the *Mountain States Legal Foundation* decision.⁴⁸ Enacted largely in response to the CPUC decision placing the PSCO Energy Savings Partners program at risk, the new legislation explicitly provides that notwithstanding any other section of law, "the commission may approve any rate, charge, service, classification, or facility of a gas or electric utility that makes or grants a reasonable preference or advantage to low-income customers. . ."⁴⁹ The legislation provides that "when considering whether to approve a rate that makes or grants a reasonable preference or

⁴¹ *Id.*, at 16.

⁴² *Id.*, at 17.

⁴³ *Id.*, at 18, citing *Integrated Network Services v. Public Utilities Commission*, 875 P.2d 1373, 1383 – 84 (Colo. 1994).

⁴⁴ *Id.*, at 18.

⁴⁵ *Id.*, at 18.

⁴⁶ *Id.*, at 20.

⁴⁷ *Id.*, at 21.

⁴⁸ Senate Bill 07-022, A Concerning the Authority of the Public Utilities Commission to Consider the Needs of Low-Income Households when Setting Utility Rates for Energy.

⁴⁹ This language will be codified as C.R.S., Title 40, §3.106(d)(I).

advantage to low-income utility customers, the commission shall take into account the potential impact on, and cost-shifting to, utility customers other than low-income customers.”⁵⁰

The legislation, it should be noted, does not *direct* the CPUC to implement low-income affordable rates, nor does it create a statewide rate affordability program (such as New Jersey, Maryland, or Pennsylvania). Instead, the legislation merely *authorizes* the Commission to approve such rates. The impact of the legislation is to remove the *Mountain States Legal Foundation* decision as a barrier to such rates and efficiency programs.

Since the legislation was enacted in the 2007 session, no implementing administrative proceeding has occurred as of the date of the writing of this report.

D. Utility Contributions to Low-Income Energy Assistance

In 1989, the Colorado legislature created a “legislative commission on low-income energy assistance.”⁵¹ The Commission was charged with establishing “a fund through a nonprofit corporation. . .for the purpose of collecting and distributing moneys to eligible recipients. . .for use in the payment of electric and gas utility bills.”⁵² The nonprofit corporation was to disburse funds to households determined by the state LIHEAP office to be eligible.⁵³ The nonprofit corporation that was created was known as the Colorado Energy Assistance Foundation (CEAF), later to become known as Energy Outreach Colorado. Because CEAF and Energy Outreach Colorado are the same organization (with Energy Outreach Colorado succeeding CEAF in name), to prevent confusion, the two groups will be collectively referred to below as the Colorado Fuel Fund.

Over the years, the CPUC approved agreements between various Colorado utilities and the Colorado Fuel Fund to generate funding for distribution as energy assistance to low-income Colorado energy consumers.

One of the primary regulatory agreements reached between the Colorado Fuel Fund and Colorado’s biggest natural gas and electric utility involved the settlement of PSCO’s proposal to create an “electric quality of service plan” (QSP). In settling that proceeding, PSCO agreed that the Colorado Fuel Fund would receive 8% of any bill credits associated with the Company’s performance under the terms of the reliability measure of the QSP. Not only did this QSP agreement result in substantial funding for the Colorado Fuel Fund in subsequent years, but in 2005, when changes were made to the QSP that the Company acknowledged “could negatively affect” the Colorado Fuel Fund, the Company agreed to match its customer contributions to the Fuel Fund on a dollar-for-dollar basis up to \$1 million “to address this potential impact.”⁵⁴

In addition to these regulatory agreements, pursuant to statute,⁵⁵ the CPUC “may” order the distribution of “up to ninety percent” of any undistributed rate refund balance to the Colorado

⁵⁰ C.R.S., Title 40, §3.106(d)(III).

⁵¹ C.R.S. § 40-8.5-103.5 (2007)

⁵² C.R.S. § 40-8.5-104 (2007).

⁵³ C.R.S. § 40-8.5-107 (2007).

⁵⁴ In the Matter of the Public Service Company of Colorado 2004 Electric Service Quality of Service Plan, Docket No. 05M-189E, In the Matter of the Application of Public Service Company of Colorado for an Order Authorizing it to Modify the Operation of its Electric Service Quality of Service Plan for the 2005 and 2006 Plan Years, Docket No. 05A-268E (consolidated dockets), Stipulation and Settlement Agreement, at 11 (October 2005).

⁵⁵ C.R.S., §40-8-101(2) (2007) (“For gas, electric, and steam utilities, the public utilities commission may order that all or part of the undistributed balance of a refund be paid by the utility in an equitable manner to the general body of utility customers and the public utilities commission may order a gas or electric utility to pay up to ninety percent of the undistributed balance of a refund into the fund established by the Colorado commission on low income energy assistance. . .”)

Fuel Fund. These undistributed refunds can be substantial.⁵⁶ In addition, when conditions warrant, the affected utility estimates the amount of the refund to be provided to the Colorado Fuel Fund on the front-end. In one case, for example, PSCO was faced with refunding certain pipeline gas overcharges. These pipeline costs were federally-regulated. The refund of overcharges, however, was under the jurisdiction of the CPUC. Noting that undistributed refunds “usually result from Applicant’s inability to locate customers who have left no forwarding address or who have not cashed their refund check,”⁵⁷ the Commission approved PSCO’s proposal to set aside \$1.0 million of the amount to be received from the pipelines as a donation to the Colorado Fuel Fund. The set-aside would be equal to approximately 11.1% of the amount to be refunded by the pipeline.

Similarly, in 1999, PSCO was faced with refunding certain federal ad valorem tax dollars collected by pipelines between October 1983 and June 1988. As the CPUC noted, “developing and processing a refund on this test period would be virtually impossible and, at the very least, would not be a cost-effective way to process the Kansas ad valorem tax refunds received.”⁵⁸ The Commission approved a set-aside of \$3.3 million to be paid directly to the Colorado Fuel Fund at the beginning of the refund.⁵⁹ Since part of the purpose of the federal settlement with the pipeline, PSCO had told the Commission, was to have “refunds paid to Public Service and the other distribution companies so that they could be used to help offset customers’ high winter heating bills resulting from high gas prices,”⁶⁰ to force the Colorado Fuel Fund to wait for the amount of undistributed funds to be determined would be to unreasonably delay these funds. “An attempt to identify. . .customers from the 1980s would not only be costly, it would take many months to accomplish.”⁶¹ To facilitate getting funds in the hands of the Colorado Fuel Fund, the Company proposed, and the Commission approved “the carving out of a portion of the [pipeline] refund to be donated directly to CEAF.”⁶²

E. Summary and Conclusion

Colorado’s treatment and analysis of its universal service programs provide insights into both the potentials and pitfalls of pursuing rate affordability programs for low-income customers. The legislative decision to provide for voluntary check-off support for low-income assistance, while quite limited in nature, has some good attributes. Perhaps most appealing is the authorization to use that support for financial assistance, residential energy efficiency, or energy conservation assistance.

The legislation is noteworthy, also, in that it extended the requirement to adopt funding mechanisms to all Colorado utilities, including municipally-owned companies and rural electric cooperatives. The legislation was expansive to the extent that it extended the opt-in mechanism to all retail electric and gas customers in Colorado, not merely to residential customers.

Colorado’s low-income programs have been developed and administered within the context of the 1979 *Mountain States Legal Foundation* decision. That decision creates an explicit legal

⁵⁶ See, e.g., In the Matter of the Application of Public Service Company of Colorado on Less than Statutory Notice, for an Order Approving Its Proposal to Issue a Lump-Sum Deferred Gas Cost Credit, Docket No. 95A-380G, Commission Order on the Final Report of Lump Sum Deferred Gas Cost Credit and Disposition of Undistributed Balance, at 2 – 3 (July 19, 1996) (undistributed balance of \$480,094).

⁵⁷ In the Matter of the Application of Public Service Company of Colorado for an Ordering Authorizing it to Effect Certain Revisions in Gas Rates Upon Less than Statutory Notice, Docket No. 97L-408G, Commission Order Authorizing Upward Revisions of Gas Rates, at 7 – 8 (September 26, 1997).

⁵⁸ In the Matter of the Application of Public Service Company of Colorado on Less than Statutory Notice for an Order Authorizing it to Revise its Fort St. Vrain Decommissioning Adjustment Rider, Commission Order Granting Application, at 7 (September 29, 1999).

⁵⁹ Id., at 8, 12.

⁶⁰ Id., at 7.

⁶¹ Id.

⁶² Id., at 8.

barrier to adopting low-income programs as a mechanism for “social policy.” The decision is limited, however, by its very terms, to situations where the rate “is financed by [a utility’s] remaining customers.” Moreover, as the Colorado commission has since held, if a program “has an economic justification, it is distinguishable from the circumstances at issue in *Mountain States*.” The economic justification can be applied either to rate affordability programs (such as Colorado’s APPP) or to energy efficiency programs (such as Colorado’s ESP). Finally, the Colorado Commission has held that nothing in *Mountain States* “from engaging in research and development with the hope of designing a program used and useful to the rendering of its service at a cost to ratepayers that is just and reasonable.”

Unlike most states, Colorado has made explicit connections between other regulatory activities and the impacts of utility company actions (or inactions) on low-income customers. The Colorado commission noted the impact of poor service quality on low-income customers, when it approved earmarking a percentage of bill credits with service quality sanctions to low-income energy assistance. The Commission further noted the connection between low-income customer attributes (such as frequent mobility) and utility refunds in approving the front-end set-aside of utility refunds for distribution as energy assistance. (The statute allows, but does not require, the commission to devote “up to” ninety percent of undistributed refunds as low-income assistance.) The Commission noted the need for expedited assistance for low-income customers when it approved one utility’s proposal to “carve out” a proportion of a pipeline refund on the front-end to be distributed as low-income energy assistance.

These Colorado commission decisions evidence the fact that, even in light of a seemingly contrary judicial decision, creative mechanisms exist that allow regulatory decisions to generate (sometimes substantial) utility dollars to be devoted to improving low-income energy affordability.

IV. Low-Income Affordability Programs

The major affordability program available to low-income households in Colorado is the LIHEAP Program. There were three sources of funding for LIHEAP in FY 2005 – Federal funding of \$32.4 million, State funding of \$10.0 million, and Energy Outreach Colorado funding of \$2.2 million – for a total of about \$44.6 million.

- LIHEAP Program – In 2005, the Colorado LIHEAP program received about \$45.1 million in funding from the Federal government.⁶³ Since about 91% of low-income households use natural gas or electricity for their home heating fuel, we will estimate that about \$41.0 million was made available to gas and electric customers for LIHEAP benefits.

In total, about \$41.0 million was available to help pay the electric and gas bills for low-income households. . [Note: In addition, Energy Outreach Colorado distributed \$5.5 million in energy assistance grants through its local outreach offices. Those funds were not counted as part of this analysis, but serve many of the same households as the funds distributed through LIHEAP.]

Using the ACS data, we estimated the following statistics regarding the aggregate electric and gas bills for low-income households in Colorado.

- Aggregate Electric and Gas Bill – The total electric and gas bill paid directly by low-income households is estimated to be about \$533 million. The available funding of \$41.0 million in benefits would cover about 8% of the total bill for low-income households.

⁶³ Source: LIHEAP Clearinghouse

- 5% Need Standard – Some analysts suggest that 5% of income is an affordable amount for low-income households to pay for the energy needs. The aggregate value of electric and gas bills that exceeds 5% of income is estimated to be about \$288 million. The available funding of \$41.0 million in benefits could cover about 14% of the unaffordable amount for low-income households. [Note: If benefits from any of the three programs are allocated to households with an energy burden less than 5% of income, the program would not cover 14% of the estimated need.]
- 15% Need Standard – Some analysts suggest that 15% of income is an affordable amount for low-income households to pay for the energy needs. The aggregate value of electric and gas bills that exceeds 15% of income is estimated to be about \$110 million. The available funding of \$41.0 million in benefits could cover about 37% of the unaffordable amount for low-income households if it were targeted to only those households with energy bills greater than 15% of income.
- 25% Need Standard – Many low-income households pay more than 25% of income for energy service. Among the ratepayer-funded low-income programs that have used a percent-of-income guideline in their benefit determination process, none have been as high as 25% of income for combined use of electric and gas. The aggregate value of electric and gas bills that exceeds 25% of income is estimated to be about \$69 million. The available funding of \$41.0 million in benefits could cover about 59% of the unaffordable amount for low-income households if it were targeted to households with energy bills greater than 25% of income.

These statistics demonstrate that the Colorado programs cover a significant share of the total low-income need, but do not meet the entire need from the three need standards examined. In addition, since the LIHEAP Program does not require households to exceed these need thresholds to receive benefits, some of the funding is being allocated to households that do not exceed these need standards.

Since there are no active ratepayer-funded low-income affordability programs for Colorado, we did not document any such programs. As discussed above, the Affordable Payment Pilot Program (APPP) was implemented as a pilot program, but is not currently operating.

V. Affordability Program Evaluation Findings

There are no active ratepayer-funded affordability programs for Colorado.

VI. Low-Income Energy Efficiency Programs

The four major sources of funding for energy efficiency programs available to low-income households in Colorado are the DOE Weatherization Assistance Program (WAP), the LIHEAP Program, the Energy Saving Partners Program (ESPP), and the Home Efficiency Assistance Program (HEAP).

- DOE WAP Program – In 2005, Colorado received about \$5.5 million in funding for the Weatherization Program. These funds were distributed to local agencies to deliver weatherization services to low-income households.⁶⁴
- LIHEAP Program – In 2005, Colorado elected to use \$4.5 million (14%) of its LIHEAP funding for weatherization.⁶⁵

⁶⁴ Source: LIHEAP Clearinghouse

⁶⁵ Source: LIHEAP Clearinghouse

- Energy Saving Partners Program (E\$P) – In 2005, the Energy Saving Partners Program was funded at a level of about \$2.7 million.⁶⁶
- Home Efficiency Assistance Program (HEAP) – In 2005, the Home Efficiency Assistance Program was funded at a level of about \$167,000.⁶⁷

In total, about \$12.8 million was available to help furnish energy efficiency services to low income households in Colorado.

It is a little more challenging to estimate the need for energy efficiency programs. In general, we would suggest that energy efficiency programs should be used in place of affordability programs when the energy efficiency programs result in cost-effective savings to the household. The literature on energy efficiency programs demonstrates that programs that target high users achieve the highest savings levels and are the most-effective. For electric baseload, programs that target households that use 8,000 kWh or more are most cost-effective. For electric heating, programs that target households that use 16,000 or more kWh are most cost-effective. For gas heating, programs that target households that use 1,200 or more therms are most cost-effective.

Our primary state-level data source, the ACS, does not ask respondents to report on the amount of electricity or natural gas that they use. However, we can develop a proxy for usage based on the respondent’s estimate of the household’s electric and gas bill. [Note: kWh price = 9.06 cents, therm price = \$1.029].

Using the ACS data, we developed estimates of the number of households that would be eligible for energy efficiency programs using the cost-effectiveness targets. Table 10 shows that 42% of households could be targeted for high baseload bills, 18% could be targeted for high electric heat bills, and 16% could be target for high gas usage.

**Table 10
Need for Energy Efficiency Programs for Low-Income Households (2005)**

Group	Number of Households with Bills	Number of Households with High Bills	Percent of Households with High Bills
Electric Baseload Services ⁶⁸	290,776	120,745	42%
Electric Heating Services	68,672	12,505	18%
Gas Heating Services	246,285	39,501	16%

Source: 2005 ACS

In general, low-income weatherization programs spend about \$3,000 per unit including all costs for administration and service delivery. With the available funds, Colorado could serve about 4,250 households, or about 8% of the high usage home needing *weatherization assistance*, and 1% of the home needing electric baseload services. Longer-term efforts to reduce the energy usage for the best targets in Colorado would required significantly more funding.

We collected information on two Colorado ratepayer-funded low-income energy efficiency programs, including:

⁶⁶ Source: LIHEAP Clearinghouse

⁶⁷ Source: LIHEAP Clearinghouse

⁶⁸ For households that report electric and natural gas expenditures as one bill, we allocated half of the cost to electricity and half of the cost to natural gas.

- Energy Saving Partners – This program is funded by Xcel Energy. The funds are used to supplement WAP and LIHEAP weatherization funds for low-income households served in XCEL’s service territory.
- Home Energy Assistance Program – This program is funded by Colorado Springs Utility. It furnishes weatherization services to between 100 and 200 households each year. It is similar to the WAP program, but operates independently.

Some important features of the Energy Saving Partners program include:

- WAP Program Administration – The state WAP office (the Governor’s Office of Energy Management and Conservation) administers this program.
- Service Delivery – The program is delivered by local service providers. In many cases, these service delivery agencies are part of local government.
- WAP Office Collaboration – The program is completely integrated with WAP.
- Demographic/Program Targeting – The program is subject to WAP targeting guidelines.
- Usage Targeting – There is a preference to serving high consuming households, but high energy consumption is not a requirement for program participation.
- Funding/Service Delivery – The program was funded at the level of about \$2.5 million. It supplemented the delivery of weatherization services to over 2,600 households.

The following table furnishes detailed information on the Energy Saving Partners program.

Program State	Colorado
Program Name	Energy Saving Partners (ESP)
Utility Company (If Applicable)	Xcel Energy
Program Goals	To provide low-income households with quality energy efficiency services, in a safe and cost-effective manner.
Funding Source (SBC or Rates)	Rates (DSM Cost Adjustment- tariff rider); Public Funding (DOE and LIHEAP Funds)
Annual Program Funds – Allocated (2006)	Xcel Energy: \$2,482,000 (2005-2006) Other Funding (some of this money is spent outside of Xcel territory): \$5.5 million of DOE funds \$4.5 million of LIHEAP funds Total: \$12,272,197 (2005-2006)
Annual Program Funds – Expended (2006)	2005-2006: \$2,506,000 (Xcel Energy) 2005-2006: \$11,778,454 million (Entire Program)
# of Households Served (2006)	2005-2006: 2607 households (Xcel Energy) 2005-2006: 3899 households (Total)
Participation Limit	None. Participation depends on the available funds.
Eligibility – % of Poverty Level	Gross family income is at or below 185 percent of the FPL.
Eligibility – Home Type	<ul style="list-style-type: none"> o Single-family homes, mobile homes and multifamily units o Renters and homeowners may be weatherized. o Units classified as new construction, including Habitat for Humanity, are disallowed. o Temporary dwelling structures, recreational vehicles, and buildings not intended for permanent

	habitation may not be weatherized.
Eligibility – Energy Usage	None.
Eligibility – Participation in Energy Assistance	Participation in LEAP satisfies the Program's eligibility requirements.
Eligibility – Other Criteria	Participation in TANF, Work Incentive Program (WIN), Medicaid, SSI, Old Age Pension (OAP), and Aid to the Needy Disabled (AND) satisfies the Program's eligibility requirements.
Targeted Groups	There is a preference to serve high consuming households but high energy consumption is not a requirement for Program participation.
Measure Determination	<p>Each agency uses their own version of a general priority list to identify potential measures.</p> <p>In unusual situations the Program is approved to use the National Energy Audit Tool (NEAT) for site built housing and The Audit Program (TAP 3) for mobile homes.</p> <p>Audit procedures include information collection of existing conditions of the dwelling; a dwelling evaluation of existing conditions for energy conservation opportunities and energy related health/safety problems; and the development of a dwelling strategy to improve energy efficiency.</p>
Mean Costs per Home (2006)	July 2005-June 2006: \$3,035 avg./home (all costs)
Targeted Average Cost (2006)	The annual DOE Maximum Average: \$2,826 for Program year 2006. The adjusted average can be increased to \$3,000 when renewable measures are applied.
Cost Limit	<p>Xcel: \$1,000</p> <p>Federal funds are limited to DOE Maximum Average.</p>
Landlord Contribution	<p>50% of the total cost for heating system and/or refrigeration replacements must be contributed. This requirement is waived if:</p> <ul style="list-style-type: none"> o The owner is also eligible for E\$P services and eligibility is verified and documented, or o The owner is a non-profit organization. <p>It is preferred that landlords fully cover the cost of replacing forced-air furnaces.</p> <p>If significant safety problems are found, owners may be asked to participate in the cost of repairs or replacements.</p>
% of Program Dollars Spent on Administrative Costs	All Xcel funds are used for direct services (materials/labor). Administrative costs are taken from the DOE funds.
Efficiency Measures	Comprehensive energy audit; attic, wall and crawlspace insulation; air leakage reduction; forced air furnace efficiency assessment; appliance safety inspection; refrigerator replacements, duct sealing; high efficiency lighting survey; and an inspection to identify other potential safety problems.
Customer Education – Y/N	Yes.
Education as Part of Service Delivery – Y/N	Yes.
Education Separate from Service Delivery – Y/N	No.
Follow-Up with Customers – Y/N	No.
Program Manager (PUC, State, Utility)	State and Xcel Energy
Data Manager (PUC, State, Utility, Other)	State
Enrollment Responsibility (Utility, CAP, etc.)	Local Administering Agencies
Number of Provider Agencies and/or Contractors	8 Providers
Type of Provider (For-Profit, CAA, etc.)	County governments; councils of government; or non-profits.
Application Method (Mail, In-Person, Telephone)	In-person at a local administering agency.
Joint Application	<p>A successful E\$P application makes participants eligible for weatherization services.</p> <p>A successful E\$P application serves as their eligibility for E\$P plus (see "coordination with other energy efficiency programs" for description of E\$P Plus services).</p>

Reasons for Service Denial	<ul style="list-style-type: none"> o Home Safety Hazards o Improper Heating System Installations o Structural Hazards o Excessive Repair Costs
Type of Follow-Up	None.
Quality Control (Inspections?, etc.)	A qualified staff person must perform a final inspection after all work is completed. E\$P State staff regularly inspects the completions of its agencies. The State E\$P office may require an agency to re-inspect up to 100 percent of installed measures if the quality of completed work is perceived to be deficient.
Evaluation Frequency	The last evaluation was in June 2006. Statute does not require a regular evaluation schedule.
Coordination with LIHEAP	The entire program receives 15% of the LIHEAP block grant (\$4.5 million LIHEAP funds). Also, a successful E\$P application makes them eligible for LIHEAP.
Coordination with WAP	This program delivers the federally-funded Weatherization Assistance Program services.
Coordination with Energy Affordability Programs	None.
Coordination with Other Energy Efficiency Programs	State-funded energy efficiency funds can be administered to the same household through a program called E\$P plus. E\$P plus provides heating systems for efficiency reasons (E\$P only replaces heating systems for safety reasons).

Some important features of the Colorado Springs HEAP program include:

- Utility Program Administration – Colorado Springs Utilities administers this program.
- Service Delivery – An external contractor – the Energy Resource Center - delivers program services.
- WAP Collaboration – The program is coordinated with WAP delivery.
- Demographic/Program Targeting – The LIURP program targets the working poor.
- Usage Targeting – N/A
- Funding/Service Delivery – The program is funded at the level of about \$167,000. It delivered weatherization services to 136 customers.

The following table furnishes detailed information on the Colorado Springs HEAP program.

Program State	Colorado
Program Name	Home Efficiency Assistance Program (HEAP)
Utility Company (If Applicable)	Colorado Springs Utilities
Program Goals	Help low-income customers make energy and water efficiency improvements to reduce their utility bill.
Funding Source (SBC or Rates)	Rates
Annual Program Funds – Allocated (2006)	Through Rates: \$147,588.00 Through Grants: \$19,826.22 Total: \$167,414.22
Annual Program Funds – Expended (2006)	\$167,414.22
# of Households Served (2006)	136

Participation Limit	Participation depends on available funding. The program tries to complete a minimum of 100 households each calendar year.
Eligibility – % of Poverty Level	Household income must be between 186% - 225% of Federal Poverty Guidelines.
Eligibility – Home Type	Owner-occupied single-family homes, condos, townhouses, and duplexes/four-plexes. Rental properties and mobile/manufactured homes are not eligible.
Eligibility – Energy Usage	None.
Eligibility – Participation in Energy Assistance	None.
Eligibility – Other Criteria	The participant must be a Colorado Springs Utilities electric/gas/water customer.
Targeted Groups	Working poor.
Measure Determination	Energy efficiency measures (electric & gas) are determined using the NEAT (National Energy Audit Tool) audit and water measures are determined by doing a physical water audit in the participant's home.
Mean Costs per Home (2006)	\$1,231
Targeted Average Cost (2006)	\$2,500
Cost Limit	\$5,000
Landlord Contribution	N/A – rental properties are not eligible.
% of Program Dollars Spent on Administrative Costs	Approximately 28%
Efficiency Measures	NEAT Audit, Water Audit, Blower Door Test, Insulation, Air Leakage, CFLs, Low-flow Showerheads, Low-flow Toilets, Water Leak Repair, Water Heater Repair and/or Replacement, Furnace Safety Inspection & Tune-up and Furnace Replacement.
Customer Education – Y/N	Yes
Education as Part of Service Delivery – Y/N	Yes, education is completed immediately after measures are installed.
Education Separate from Service Delivery – Y/N	No
Follow-Up with Customers – Y/N	Yes. Participants complete a satisfaction survey.
Program Manager (PUC, State, Utility)	Utility
Data Manager (PUC, State, Utility, Other)	Utility
Enrollment Responsibility (Utility, CAP, etc.)	Energy Resource Center
Number of Provider Agencies and/or Contractors	One contractor – Energy Resource Center
Type of Provider (For-Profit, CAA, etc.)	Non-profit
Application Method (Mail, In-Person, Telephone)	Mail and In-person
Joint Application	N/A
Reasons for Service Denial	<ul style="list-style-type: none"> o Failure to meet income guidelines; o Failure to accept all energy/water measures recommended; and/or o Home doesn't meet program guidelines (i.e., participant lives in a rental property or mobile/manufactured home).
Type of Follow-Up	Participant satisfaction survey.
Quality Control (Inspections?, etc.)	Inspections are performed by vendor's supervisors. Inspections on hot water heater replacements and furnace replacements are inspected by the Pikes Peak Regional Building Department.

Evaluation Frequency	No. The Program must submit annual reports to the City council (the program's governing body) The Program is currently evaluating completed households to determine if energy/water costs have decreased based on installed energy/water measures.
Coordination with LIHEAP	HEAP serves participants that are not eligible for LIHEAP. In Colorado Springs, Colorado, LIHEAP recipients have gross household incomes at or below 185% of Federal Poverty Guidelines. HEAP serves the working poor customer segment (customers with gross household incomes between 186% and 225% of Federal Poverty Guidelines).
Coordination with WAP	HEAP is coordinated with the Federal/State Energy Savings Partners program. WAP recipients have gross household incomes at or below 185% of Federal Poverty Guidelines. HEAP serves customers with gross household incomes between 186% - 225% of Federal Poverty Guidelines.
Coordination with Energy Affordability Programs	Colorado Springs Utilities has an energy affordability program (Project COPE), which provides utility bill payment assistance to needy customers. Project COPE recipients receive referrals to HEAP so they can transition from financial assistance to self-sufficiency through installation of energy/water efficiency measures through HEAP.
Coordination with Other Energy Efficiency Programs	As stated above, HEAP is coordinated with the Federal/State Energy Savings Partners program which serves the low-income (185% or less) market segment.

VII. Energy Efficiency Program Evaluation Findings

Colorado's Governor's Office of Energy Management and Conservation (GEO) contracted with M. Blasnik & Associates in March 2006 to conduct an independent evaluation of the energy savings achieved by the Energy Savings Partners Program.⁶⁹ The evaluation assessed the gas and electric savings of single family homes treated between July 2002 and December 2004. The final Colorado Energy Savings Partners Impact Evaluation⁷⁰ report is dated June 20, 2006. This section summarizes the findings from this evaluation report.

The main findings of the evaluation were:

- The average net savings of the program were 125 therms of gas, or 13.6 percent of pre-treatment usage. Electric baseload savings averaged 440 kWh per year, or 5.4 percent of pre-treatment usage.

**Table 11
Usage Impact Results**

	# of Households	Usage		Gross Savings		Net Savings	
		Pre	Post	Amount	Percent	Amount	Percent
Gas	1,557	919	773	146	15.9%	125	13.6%
Electric	1,017	8,202	7,819	383	4.7%	440	5.4%

- Savings are lower than average for HWAP programs, but pre-treatment usage is lower than average.
- The cost of conserved energy was \$1.43/therm. A 20-year measure life was assumed for gas measures and a four percent discount rate was used.

**Table 12
Cost Effectiveness Analysis**

⁶⁹ A Process Evaluation will be conducted by APPRISE in 2007-2008.

⁷⁰ Colorado Energy Savings Partners Impact Evaluation Report, M. Blasnik & Associates, June 30, 2006.

	Cost	Savings	Cost of Conserved Energy (\$/therm)
All Single Family Homes	\$2,429	125	\$1.43
On-site Costs Only	\$1,415	125	\$0.83

The key recommendations of the evaluation were:

- The program may improve average gas savings by targeting resources to higher use households. The program should consider both reducing resources allocated to lower use homes, and exploring ways to identify more “high use” eligible households.
- The program should investigate whether it may be cost-effective to increase the installation rates of refrigerators and lighting measures.