

Public Utilities Commission
2010 Report to the
Colorado General Assembly on
Demand Side Management (DSM)
Pursuant to HB 07-1037 (§ 40-3.2-105, C.R.S.)

Introduction

In 2007 the General Assembly passed, and the Governor signed into law, legislation directing all Colorado investor-owned gas and electric utilities to implement Demand Side Management (DSM) programs. These programs focus on the demand or consumption component of the utility system instead of the supply side that provides the electricity or natural gas. The directives concerning these DSM activities are codified in § 40-3.2-103 C.R.S. for gas utilities and § 40-3.2.104 C.R.S. for electric utilities.

The Colorado Public Utilities Commission (PUC) was directed by § 40-3.2.105 C.R.S. to submit to the Business, Labor, and Technology Committee of the Senate, or its successor committee, and the Business Affairs and Labor of the House of Representatives, or its successor committee, a report on the progress made by the utilities in meeting their DSM goals. This report is due by April 30 of each year. The first report was submitted in 2009. An electronic copy of the 2009 report can be accessed at:

<http://www.dora.state.co.us/puc/rulemaking/HB07-1037/HB07-1037StaffDSM04-28-09ReportToLegislature.pdf>).

The data presented herein indicates that, collectively, the utility DSM plans were cost-effective, (e.g., the benefit-to-cost ratio is greater than one). Yet, several of the individual gas DSM plans netted cost-benefit ratios of less than one. These utilities expressed several reasons for plans not being cost effective. The utilities incurred full first year planning and development costs, yet unforeseen delays and changing market influences yielded fewer energy savings than projected. For instance, the companies had to establish trade ally relationships, educating them on programs and then executing contracts with them for program delivery. Also, some programs deliberately may not generate benefits until later in the program. For instance, residential audit programs serve to educate customers concerning potential efficiency investments. Yet, subsequent energy efficiency decisions may not occur until the following year, thus yielding future program energy savings benefits. Additionally, some custom rebate programs require case-by-case pre-approval before measures can be implemented and energy savings realized, thus delaying the impact. Lower gas prices during 2009 also had the effect of muting customer interest in energy savings programs. Last, the companies indicated that recessionary economic conditions, dampened customers' enthusiasm to invest limited discretionary income in energy efficiency devices.

The Commission anticipates that, in most cases, the concerns addressed above will be resolved in 2010, yielding greater overall cost-effectiveness and few, if any, DSM programs

falling below break-even. Yet, this first year data also might indicate that the smaller gas companies are not well suited to implementing aggressive and focused DSM plans. The Commission is monitoring this situation closely, including investigating service delivery alternatives that could improve efficiency. The Commission is aware of DSM service delivery models in other states that aggregate utility DSM delivery through one non-utility entity, benefitting from economies of scale and the singleness of focus that an energy efficiency entity can bring to DSM.

The statute directs the PUC to report “on the progress made by investor-owned utilities in meeting their natural gas and electric demand-side management goals. The report shall include any recommended statutory changes the commission deems necessary to further the intent of sections 40-3.2-103 and 40-3.2-104.”

This 2010 report to the Colorado General Assembly contains:

- 1) A brief history of the implementation activities accomplished in 2007-2008, that preceded the successful initiation of DSM plans by all investor-owned utilities in 2009;
- 2) The 2009 quantitative goals and accomplishments for each investor-owned gas and electric utility in Colorado;
- 3) The consolidated return-on-investment from all programs; and
- 4) Comments and recommendations concerning the DSM statutes.

1) DSM Statute Implementation: 2007-2008

Colorado Revised Statutes (§ 40-3.2-103(1) C.R.S.) directed the Commission to commence a gas DSM rulemaking proceeding on or before September 30, 2007 to address specific issues such as the adoption of expenditure and savings targets, cost recovery mechanisms and a bonus structure. The Commission initiated a rulemaking proceeding in September, 2007 that resulted in gas DSM rules that took effect in May, 2008. A narrative of how the specific issues were addressed in the rules is outlined in the 2009 DSM annual report to the General Assembly.

After the gas DSM rules took effect, the utilities submitted DSM applications to the Commission. After review by Commission staff and intervening parties, all the dockets ended with approved DSM plans. Five of the six utilities were able to launch their DSM plans in January 2009 (or shortly thereafter), with the sixth launching in mid-year.

2) 2009 Goals and Accomplishments of investor owned utilities

Each regulated electric and gas utility has filed with the PUC its 2009 DSM Annual Report. These reports compare the approved DSM goals with actual results. The following charts compare the approved DSM budget with the actual amount of money expended; the estimated energy savings goal with the actual energy saved; the estimated demand savings goal with the actual demand savings (for electric DSM plans only); and the planned benefit to cost ratio with the actual benefit to cost ratio. This information is presented by market segments, as defined by each utility in its DSM Plan.

2009 ELECTRIC DSM PERFORMANCE:

**Black Hills Energy
2009 Electric DSM**

Pursuant to Decision R09-0542, Docket No. 08A-518E, Black Hills Energy's 2009 DSM plan runs from July 1, 2009 to June 30, 2010. Each plan year will be measured from July 1 to June 30. Therefore, Black Hills' performance information from its 2009 Electric DSM Plan will be reflected in the 2011 annual DSM report to the Colorado General Assembly.

**Public Service Company of Colorado
2009 Electric DSM**

Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (kWh)	Actual Energy Savings (kWh)	Demand Reduction Goal (kW)	Actual Demand Reduction (kW)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Business	\$21,520,457	\$18,971,607	116,394,660	143,782,198	25,793	28,897	3.29	4.16
Residential	\$21,970,532	\$18,422,932	54,307,139	64,573,072	30,360	30,107	4.70	4.71
Low-Income	\$1,516,075	\$1,633,508	5,133,511	11,255,876	384	791	2.45	4.51
Indirect	\$5,531,221	\$4,836,372						
Total:	\$50,538,284	\$43,864,419	175,835,310	219,611,146	56,537	59,796	3.29	4.07

Incentive Bonus Requested: \$8,772,884

2009 GAS DSM PERFORMANCE:

Atmos Energy Corporation 2009 Gas DSM						
Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Residential Energy Audit	\$169,626	\$34,181	2,862	298	1.64	0.53
Efficient Equipment	\$228,774	\$200,350	7,747	2,825	2.49	0.78
Low-Income	\$166,811	\$43,626	2,881	160	1.73	0.32
TOTAL	\$565,211	\$278,157	13,490	3,283	2.09	0.69

Incentive Bonus Requested: \$0

Black Hills Energy 2009 Gas DSM						
Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Residential	\$408,400	\$238,082	13,633	4,030	1.37	.94
Non-Residential	\$117,000	\$42,780	4,810	98	3.37	.20
Special	\$153,700	\$22,747	1,208	637	.82	1.51
Training, Marketing, Admin.	\$116,700	\$126,260				
TOTAL	\$795,800	\$429,869	19,651	4,765		0.71

Incentive Bonus Requested: \$0

**Colorado Natural Gas, Inc.
2009 Gas DSM**

Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Residential Energy Audit	\$40,361	\$5,877	731	2	2.05	0.03
Efficient Equipment	\$146,834	\$127,069	15,660	12,295	1.93	1.03
Low-Income (Single Family Kits)	\$5,932	\$748	1,391	0	1.98	0.00
Low-Income (Fuel Conversion)	\$49,882	\$7,116	N/A	N/A	47.49 ¹	0.00
TOTAL	\$243,008	\$140,810	17,782	12,297	6.74	0.93

Incentive Bonus Requested: \$0

**Eastern Colorado Utility Company
2009 Gas DSM**

Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Efficient Equipment	\$6,882	\$16,073	194	51	1.72	0.15
Low-Income	\$5,475	\$11,075	78	31	1.02	0.16
TOTAL	\$12,357	\$27,147	271	82	1.49	0.15

Incentive Bonus Requested: \$0

¹ Staff of the PUC investigated this number and found that calculating the cost effectiveness of fuel conversions is problematic from a DSM perspective, since it is increasing the use of natural gas, yet is decreasing the use of another fuel (propane in this case). This number will be revised as necessary in future plans to reflect a more comprehensive analysis.

**Public Service Company of Colorado
2009 Gas DSM**

Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Business Segment	\$1,209,587	\$770,152	79,100	25,226	2.69	1.39
Residential Segment	\$5,094,697	\$5,240,292	138,462	181,750	1.67	1.28
Low-Income Segment	\$3,363,503	\$2,913,251	100,579	101,785	1.60	2.36
Indirect Segment	\$2,960,743	\$2,663,591				
TOTAL	\$12,628,529	\$11,587,286	318,141	308,761	1.60	1.36

Incentive Bonus Requested: \$872,754

**SourceGas Distribution LLC
2009 Gas DSM**

Market Segment	Proposed (Approved) Expenditure	Actual Expenditure	Energy Savings Goal (Dth)	Actual Energy Savings (Dth)	Planned Benefit to Cost Ratio	Actual Benefit to Cost Ratio
Residential Energy Audit	\$141,054	\$61,439	2,490	1,025	1.82	1.06
Efficient Equipment	\$305,027	\$93,752	9,688	1,935	2.55	1.22
Low-Income	\$131,248	\$170,246	2,304	5,604	1.80	1.83
Custom Program	\$186,505	\$240,252	4,083	6,305	2.02	1.29
TOTAL	\$763,834	\$565,689	18,565	14,869	2.20	1.42

Incentive Bonus Requested: \$0

3) Consolidated Return on Investment

a. Cost effectiveness of the 2009 gas DSM programs:

The total 2009 benefit of the six gas DSM programs was \$38,972,152. The total cost was \$29,228,088 which nets a benefit of \$9,744,144.

For each \$1 invested in gas DSM, \$1.33 in benefits resulted

b. Cost effectiveness of the 2009 electric DSM programs:

The total 2009 benefit of the electric DSM program was \$320,729,203. The total cost was \$78,817,691 which nets a benefit of \$241,911,512.

For each \$1 invested in electric DSM, \$4.07 in benefits resulted

4) Comments and recommendations

As noted previously, each annual report is to include any recommended statutory changes the Commission deems necessary to further the intent of the gas and electric demand side management programs, as required by § 40-3.2-105 C.R.S. Based upon the Commission and Commission Staff's experience to date implementing the existing statute, we do not recommend any statutory changes at this time.

However, now that one year of DSM performance has been completed, the Commission is assessing the current DSM practices and incentives. Our objective is to determine whether these practices and incentives are achieving the desired outcome of a successful DSM program, namely that a maximum amount of energy is saved with a cost-effective expenditure of funds. To this end, a Commissioner Information Meeting was convened on March 18, 2010 to discuss market transformation as a DSM strategy, alternative utility financial incentives, and the quantitative measurement of DSM impacts. The Commission anticipates that this information, which has been discussed with the utilities, will have a positive impact upon DSM performance.