

MidAmerican Energy Company
South Dakota Energy Efficiency
2011 Annual Report

This report provides the 2011 results for MidAmerican Energy Company's South Dakota Energy Efficiency programs. The 2011 Annual Report includes the following:

1. 2011 Program Results
2. Significant Activities for 2011
3. Program Summaries

Introduction

MidAmerican Energy Company (MidAmerican) conducts energy efficiency programs in South Dakota pursuant to MidAmerican's Revised Energy Efficiency Plan filing for South Dakota (February 25, 2010) and as approved by the South Dakota Public Utilities Commission (Commission) on March 24, 2010, in Docket No. EL07-015. On February 19, 2011, MidAmerican filed changes to the plan, which were approved by the Commission on April 6, 2011, in Docket No. GE10-001. Currently, MidAmerican offers six different energy efficiency programs to South Dakota customers, five are combination electric/gas programs and one is an electric only program.

1. 2011 Program Results

In 2011, a total of 638 audits were conducted and 8,301 measures were installed, for an expected annual savings of 401,582 kWh (loss adjusted) of electricity and 223,921 therms of natural gas. In 2011, MidAmerican paid a total of \$942,805 in equipment rebates and customer incentives and incurred costs totaling \$242,792 to deliver energy efficiency programs. The total Benefit/Cost ratio (B/C ratio) for MidAmerican's combined energy efficiency programs (not including the Residential Load Management program) for 2011 is 1.35¹.

Overall savings achieved by MidAmerican's South Dakota energy efficiency programs in 2011 were less than anticipated, largely due to a significant drop in nonresidential program

¹ All B/C ratios calculated in this report are based on societal test results. MidAmerican's societal test results use a 4.81% discount rate for the purposes of calculating the net present value of costs and benefits. The societal test also incorporates a 10% externality factor for electric programs and a 7.5% externality factor for gas programs.

participation. The economic downturn may have adversely affected MidAmerican's nonresidential programs due to the continued reluctance of businesses to make new investments. However, the full economic impacts may have been mitigated to a certain extent by federal tax credits and deductions available in 2011.

Federal energy efficiency tax credits for residential customers expired as of December 31, 2011. Residential customers may have made energy efficiency improvements during 2011 to take advantage of federal tax credits before they expired. This may explain why the residential savings projections were close to target, despite the economic downturn and continued low natural gas prices, which typically lowers energy efficiency investment. Nonresidential customers did not face the same deadline; nonresidential tax deductions are still available through December 31, 2013. While it is not possible to quantify the impact that the economic downturn and tax credits and deductions had on participation, the drop in nonresidential participation was consistent across all states served by MidAmerican.

Total expenses for 2011 were \$1,075,948 for gas programs and \$109,649 for electric programs. Based on these expenses and the Commission-approved incentive mechanisms, MidAmerican is requesting approval for a 2011 incentive of \$90,143 for natural gas and \$9,187 for electric programs. Significant results for 2011 are as follows:

- Residential electric program savings totaled 197,813 kWh, which was 76 percent higher than 2010, and was 61 percent higher than the 2011 kWh savings goal. The (B/C ratio) for the residential electric program (not including residential load management) is calculated as 0.75.
- Residential gas program savings totaled 169,173 therms, which was 12 percent less than 2010, and was 15 percent lower than the 2011 therm savings goal. The B/C ratio for the residential gas program is calculated as 1.31.
- Total residential spending was five percent below budget for 2011.
- Nonresidential electric program savings totaled 203,769 kWh, which was a decrease of 29 percent from 2010, and was 37 percent of the 2011 kWh savings goal. The B/C ratio for the nonresidential electric program is calculated as 1.69.

- Nonresidential gas program savings totaled 54,748 therms, which was a 20 percent increase over 2010, and was 14 percent greater than the 2011 therm savings goal. The B/C ratio for the nonresidential gas program is calculated as 2.24.
- Total nonresidential spending was 24 percent below for budget for 2011.

Detailed 2011 program results are provided in the following exhibits:

- Exhibit A – Detailed program results by measure
- Exhibit B – Comparisons of program level savings and expenses to budget
- Exhibit C – Benefit/Cost information by program
- Exhibit D – Annual summaries of energy savings and benefits by program

2. Significant Activities for 2011

MidAmerican conducted the following activities to promote energy efficiency in South Dakota:

- Energy efficiency programs were promoted through special articles in the *At Your Service* newsletter, which is included with customer bills.
 - HomeCheck Online audit, HomeCheck on-site audit, Residential Equipment, BusinessCheck online audit and BusinessCheck on-site audit were promoted in the February 2011 newsletter.
 - HomeCheck Online audit, HomeCheck on-site audit, Nonresidential Equipment, Variable-Speed Drives and Residential Equipment were promoted in the May 2011 newsletter.
 - HomeCheck Online audit, HomeCheck on-site audit, Residential Equipment BusinessCheck online audit and BusinessCheck on-site audit were promoted in the August 2011 newsletter
 - HomeCheck Online audit, HomeCheck on-site audit, Residential Equipment, BusinessCheck Online audit and BusinessCheck on-site audit were promoted in the November 2011 newsletter.

- MidAmerican continued to promote all of its programs through its trade allies. This promotion is particularly important for the Residential Equipment program, the Nonresidential Equipment program and the Custom program.
 - MidAmerican conducted its annual trade ally meeting on November 1, 2011, in Sioux Falls. During the meeting, MidAmerican reviewed South Dakota program offerings and engaged the attendees in conversation about business trends and outlooks for 2012.
 - On November 2, 2011, MidAmerican conducted an additional trade ally meeting in Sioux City, Iowa. During this meeting, MidAmerican reviewed South Dakota program offerings for Sioux City area trade allies that also do business in South Dakota. Trade ally meetings are intended to educate and inform MidAmerican's trade ally partners about MidAmerican's energy efficiency programs and provide trade allies with tools and information to successfully market MidAmerican's energy efficiency programs to their customers.
- Additional promotional activities included:
 - Promotion of the Residential Audit program by:
 - Placing follow-up door hangers in neighborhoods after a customer in the neighborhood completed an audit,
 - Utilizing MidAmerican's call center during the heating season to inform customers about in-home audit options during in-bound calls,
 - Press releases.
 - Promotion of the SummerSaver program by direct mail to eligible customers and having HomeCheck® auditors discuss the program with eligible customers during the home energy audit. Additionally, the HomeCheck auditors left behind a SummerSaver program application brochure after completion of the audit so customers could mail in a postage-paid card if they wanted to join SummerSaver.

3. Program Summaries

a. Residential Equipment

The Residential Equipment program promotes the purchase of high-efficiency equipment by residential customers in new and existing homes. The program provides customers with rebates to offset the higher purchase cost of efficient equipment, as well as information on the features and benefits of efficient equipment. Targeted equipment includes heating, cooling, and water heating equipment. This program is delivered in partnership with a network of heating, cooling, and water heating dealers as well as retail outlets selling qualifying equipment.

The Residential Equipment program achieved annual energy savings of 192,338 kWh, which was 62 percent higher than expected and 131,659 therms, which was 23 percent lower than expected. Total program spending was \$606,682, which was 18 percent lower than expected.

The combined B/C ratio including both gas and electric components for the Residential Equipment program for 2011 is calculated as 1.26. The B/C ratio for the gas component is calculated as 1.36 and the B/C ratio for the electric component is calculated as 0.76.

Significant highlights for the Residential Equipment program for 2011 include:

- 1,418 new furnaces were rebated in 2011, which was 13 percent lower than 2010 and 21 percent lower than expected. Furnace equipment rebates provided 97 percent of the achieved total therm savings for the Residential Equipment program.
- 14 ground source heat pumps and 20 air source heat pumps were rebated in 2011, which was 17 percent higher than 2010, and equal to the 2011 goal.
- 56 furnace fans were rebated in 2011, which was 93 percent more than 2010, and 93 percent higher than expected. Furnace fans and heat pumps provided 86 percent of the achieved total kWh savings for the Residential Equipment program.
- The Residential Equipment program was promoted by special articles in the February, May, August and November editions of the *At Your Service* newsletter.

b. Residential Audit

The Residential Audit program encourages comprehensive efficiency improvements in existing homes by providing free on-line and in-home energy audits, in-home installation of simple energy-efficiency measures and financial incentives for a predetermined list of complex measures (primarily building insulation). Both the on-line and in-home energy audits are operated under the registered trademark name of HomeCheck[®].

The Residential Audit program achieved annual energy savings of 2,403 kWh, which was 15 percent lower than expected and 37,514 therms, which was 36 percent higher than expected. Total program spending was \$381,434, which was 31 percent higher than expected.

The combined B/C ratio including gas and electric components for the Residential Audit program for 2011 is calculated as 1.11. The B/C ratio for the gas component is calculated as 1.13 and the B/C ratio for the electric component is calculated as 0.38.

Significant highlights for the Residential Audit program for 2011 include:

- 519 in-home audits were completed in 2011, which was 20 percent more than 2010 and 18 percent more than expected.
- 368 insulation measures were installed, which was three percent higher than 2010 and was 45 percent more than expected. Insulation measures installed in 2011 saved an estimated 17,166 therms and 656 kWh.
- 2,048 direct install measures were installed, which was 40 percent higher than 2010 and was 42 percent more than expected. 2011 direct install measures saved an estimated 20,348 therms and 1,607 kWh.
- The Residential audit program was promoted by:
 - Placing follow-up door hangers in neighborhoods after a customer in the neighborhood completed an audit,
 - Utilizing MidAmerican's call center during the heating season to inform customers about in-home audit options during in-bound calls, and

- Special articles in the February, May, August and November editions of the *At Your Service* newsletter.

c. Residential Load Management

The Residential Load Management program provides financial incentives to residential customers in exchange for allowing MidAmerican to control central air-conditioning on hot summer days when MidAmerican is experiencing a system peak demand or when operational conditions require use of the program. The program is promoted under the service mark SummerSaverSM.

MidAmerican began preparation for offering this program in 2009 and began operating the program in 2010. During 2011, the Residential Load Management program achieved annual peak demand savings of 85 kW, which was 30 percent lower than expected. Total program spending was \$13,713, which was 12 percent lower than expected. The B/C ratio for the Residential Load Management program for 2011 is calculated as 1.90.

Significant highlights for the Residential Load Management program for 2011 include:

- MidAmerican had 74 load control receivers (LCRs) installed in the field during the 2011 cycling season, which was 31 percent less than the goal of 107.
- MidAmerican promoted the program by direct mail to eligible customers and HomeCheck[®] auditors discussed the program with eligible customers during the home energy audit. Additionally, the HomeCheck auditors left behind a SummerSaver program application brochure after completion of the audit so customers could mail in a postage-paid card if they wanted to join SummerSaver.
- Flooding delayed installation of load control receivers in the Dakota Dunes area. Installations were completed for the year in December after the flood waters receded.
- MidAmerican successfully cycled air conditioners nine times during 2011 on June 6, June 7, July 1, July 18, July 19, July 20, July 27, August 1 and August 2.

d. Nonresidential Equipment

The Nonresidential Equipment program promotes the purchase of high-efficiency equipment by commercial and industrial customers in new and existing facilities. The program provides customers with rebates to offset the higher purchase cost of efficient equipment and is organized into five sections for program delivery:

- Heating, ventilation and air conditioning
- Lighting
- Motors and variable speed drives
- Commercial kitchen equipment
- Other – Insulation

The program is delivered in partnership with a network of trade allies specifying, selling, and installing qualified equipment. The program targets replacement and first-time purchases, but also is available to customers making retrofit installations.

The Nonresidential Equipment program achieved annual energy savings of 79,887 kWh, which was 84 percent lower than expected and 6,099 therms, which was 59 percent lower than expected. Total program spending was \$46,116, which was 51 percent lower than expected.

The combined B/C ratio including gas and electric components for the Nonresidential Equipment program for 2011 is calculated as 1.59. The B/C ratio for the gas component is calculated as 1.09 and the B/C ratio for the electric component is calculated 3.17.

Significant highlights for the Nonresidential Equipment program for 2011 include:

- 36 new furnaces were rebated in 2011, which was 10 percent lower than 2011, and 25 percent lower than expected.
- Two new boilers were rebated in 2011, which was five fewer than 2010, and six fewer than expected.

- One programmable thermostat was rebated in 2011.
- One heat pump was rebated, which was four fewer than expected.
- 97 lighting measures were rebated which was 102 percent more than 2010 and 75 percent less than expected.
- No variable speed drives were rebated in 2011.
- Two insulation projects were completed in 2011.
- The Nonresidential Equipment program was promoted by a special article in the May edition of the *At Your Service* newsletter.

e. Nonresidential Custom

The Nonresidential Custom program provides a program delivery channel for non-standard energy-saving measures. It offers financial incentives to customers installing equipment or systems not covered by a prescriptive rebate in the nonresidential equipment program. It also is available to customers with more complex energy needs than can be accommodated through the Small Commercial Audit program. The program is marketed as the Custom Systems program.

The Nonresidential Custom program achieved annual energy savings of 123,859 kWh, which was 202 percent higher than expected and 2,443 therms, which was 91 percent lower than expected. Total program spending was \$141,102, which was 52 percent lower than expected.

The combined B/C ratio including gas and electric components for the Nonresidential Custom program for 2011 is calculated as 1.33. The B/C ratio for the gas component is calculated as 1.12 and the B/C ratio for the electric component is calculated as 1.39.

Significant highlights for the Nonresidential Custom program for 2011 include:

- 10 projects were completed in 2011 that included:
 - Two attic projects and one sidewall insulation project with modest gas and electric energy savings,

- A heat exchanger project saving 115,800 kWh per year, and
- Three boiler stack draft control projects saving 1,068 therms per year.
- The boiler stack controls technology generated 82 contractor requests for preliminary project reviews which resulted in 11 customer requests for project pre-approval for the measure with potential cumulative gas energy savings of 30,000 therms per year.

f. Small Commercial Audit

The Small Commercial Audit program promotes comprehensive energy efficiency strategies for smaller commercial customers. It provides an on-line energy audit, more extensive on-site energy audits, direct installation of low-cost efficiency measures and recommendations for additional measures. The program is supported by a program contractor and marketed under the registered trademark name of BusinessCheck[®].

The Small Commercial Audit program achieved annual energy savings of 23 kWh, which was 100 percent less than expected, and 46,206 therms, which was 806 percent greater than expected. Total program spending was \$94,550, which was 59 percent more than expected.

The combined B/C ratio including gas and electric components for the Small Commercial Audit program for 2011 is calculated as 3.48. The B/C ratio for the gas component is calculated as 3.53 and the B/C ratio for the electric component is calculated as 0.01.

Significant highlights for the Small Commercial Audit program for 2011 include:

- 119 energy audits were completed in 2011.
- 3,939 direct install measures were installed in audited buildings, compared to 415 in 2010. These direct install measures saved an estimated 45,610 therms and 22 kWh.
- Annual electric savings were lower in 2011 primarily due to severe flooding in a large part of our electric service area. During our Sioux City 2012 trade ally

meeting held November 2, 2011, lighting contractors reported unusually low sales in the affected areas.

- Annual gas savings were markedly higher than the 2011 target due to the large increase in audits in the Sioux Falls area and their associated direct installs.
- Two gas projects recommended by audits were installed in 2011, compared to four in 2010.

MidAmerican lowered rebates for insulation upgrades to be more in line with other utilities in the region as well as other MidAmerican jurisdictions.