

## Residential Audit Program

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### 1. Program Description

This program encourages comprehensive efficiency improvements in existing homes by providing free online and on-site energy audits, on-site installation of simple energy-efficiency measures and financial incentives for insulation improvements. The program also coordinates with the annual *Change A Light, Change the World* campaign sponsored by the U.S. Environmental Protection Agency to encourage installation of compact fluorescent lamps (CFLs). The program is delivered through three program contractors and a network of insulation installers and operates under the service mark HomeCheck<sup>SM</sup>. MidAmerican will implement the program in South Dakota beginning in 2008.

### 2. Operations

This program is delivered primarily by the audit contractor, who provides the on-site audits, installs the low-cost measures, specifies and verifies the building shell measures, maintains inventory of low-cost measures, maintains a network of insulation installers, coordinates rebate distribution with MidAmerican's accounts payable department and provides program tracking.

The program also relies on two additional program contractors to deliver specific program components. One contractor provides the online audit functionality, which is available to all MidAmerican customers on MidAmerican's Web site. Another contractor manages the participation in the *Change A Light* campaign, coordinating with retailers selling compact fluorescent lamps as well as the fulfillment houses responsible for managing rebate coupons.

Key steps in the on-site audit component include:

- Scheduling and completing an on-site audit, during which the auditor evaluates a range of efficiency opportunities, directly installs key low-cost measures and helps customers determine appropriate next steps,
- Coordinating, where appropriate, with an insulation installer for insulation measures,
- Processing insulation rebate checks and
- Verifying insulation installation for a sample of participants.

The program also offers an online energy audit tool to give customers an opportunity to evaluate their own energy usage and opportunities for efficiency improvements. Customers using the online tool also can request an on-site audit by completing a simple Web form.

### 3. Value Proposition

Customers participating in the program receive the following benefits.

- They receive *trustworthy energy-efficiency advice* from comprehensive online and in-person energy audits.
- They receive *immediate savings* through the direct installation of low-cost lighting, water heating and other measures, as well as through CFLs purchased through the *Change A Light* campaign.
- They receive *significant savings, increased comfort* and *increased housing values* through building shell improvements.
- They *lower the hassle* and receive the benefit of *having someone else* involved in identifying and installing efficiency measures. They can rely on the program contractor to schedule audits, maintain quality control and provide ongoing reminders to ensure follow-through on savings recommendations.

#### 4. Customer Targets

This program targets residential customers (and their landlords) in existing housing who purchase their heating fuel from MidAmerican. Initially, MidAmerican will limit participation to housing constructed prior to Dec. 31, 1986, in order to manage participation levels and focus on those homes most likely to require insulation improvements. Using its Iowa experience as a model, MidAmerican expects to change this eligibility requirement over time. (For example, when MidAmerican began its Iowa program, only houses constructed prior to 1975 were eligible; the current program requires houses to be constructed prior to Dec. 31, 1996.) Customers in rental housing must have approval from building owners to participate in the program.

When multifamily buildings receive at least some service on nonresidential tariffs – either because the building is master-metered or because common areas and building systems are served on nonresidential tariffs - customers receive services in coordination with the Small Commercial Audit program (BusinessCheck<sup>SM</sup>).

MidAmerican also will attempt to coordinate with other utilities to better meet the needs of customers served by multiple utilities (e.g., purchasing natural gas from MidAmerican and electricity from another utility). In Iowa, MidAmerican works with other utilities to increase convenience for customers by sharing the costs of audits, direct installation measures and insulation rebates.

All electric customers are eligible for the *Change A Light* campaign. All electric and natural gas customers are eligible for the online audit.

Table 1 outlines customer eligibility requirements.

**Table 1  
Customer Eligibility Parameters**

	<b>Online Audit</b>	<b>On-Site Audit</b>	<b>Low-Cost Measures</b>	<b>Insulation Rebate</b>	<b>Lighting Campaign</b>
<b>Customer Class</b>	Residential rates	Residential rates	Residential rates	Residential rates	Residential rates
<b>Customer Status</b>	Homeowners; Landlords	Homeowners; Landlords	Homeowners; Landlords	Homeowners; Landlords	Customers
<b>Building Type</b>	Single-family; Multifamily; Mobile home	Single-family; Multifamily	Single-family; Multifamily	Single-family; Multifamily	Single-family; Multifamily; Mobile home
<b>Building Vintage</b>	All ages	1986 or before	1986 or before	1986 or before	All ages
<b>Heating Utility</b>	All fuels	MidAmerican	MidAmerican*	MidAmerican*	N/A
<b>Cooling Utility</b>	All fuels	N/A	N/A	MidAmerican*	N/A
<b>Geography</b>	All customers	South Dakota	South Dakota	South Dakota	South Dakota
<b>Other</b>	N/A	N/A	N/A	Pre-qualified during on-site audit	N/A

\* If possible, MidAmerican will coordinate with other utilities to deliver program to customers served by multiple utilities.

## 5. Trade Ally Targets

The key trade allies for this program include:

- Insulation contractors and
- Retailers participating in the *Change A Light* campaign.

All insulation contractors (or customers themselves) are eligible to install approved building shell measures. However, MidAmerican will maintain a list of preferred insulation contractors who meet MidAmerican’s quality-control requirements and who also provide MidAmerican customers with pre-specified prices (that the auditor can quote during the audit). Customers relying on contractors not on MidAmerican’s preferred list receive incentives based on the pricing offered by the preferred contractors; however, incentives will not exceed

customers' actual costs. MidAmerican also performs a higher percentage of quality-control verifications for contractors not on the preferred list.

Also, customers can work with other contractors to install additional measures recommended in the online or on-site audits that are not eligible for financial incentives.

## **6. Eligible Measures**

During the on-site audit, the auditor may install the following measures:

- Water heater insulation blanket,
- Water heater pipe insulation,
- Faucet aerators,
- Low-flow showerheads,
- Water bed mattress pads,
- Programmable thermostats and
- Compact fluorescent lamps.

MidAmerican also will provide financial incentives to customers adding appropriate levels of insulation to ceilings, walls, foundations and band joists.

The *Change A Light* campaign also encourages customers to purchase compact fluorescent lamps from participating retail outlets.

## **7. Financial Incentives**

The program offers participants three types of cost subsidies to lower or eliminate market barriers related to high cost of energy-efficient equipment.

- ***Full subsidies*** are offered for lighting and water heater measures that can be directly installed during the audit. The strategy here is to fully overcome market barriers concerning cost and perceived quality.

- **Partial subsidies** are offered for programmable thermostats that can be directly installed during the audit. In these cases, the customer pays MidAmerican only a portion of the full cost of qualifying measures. This strategy requires a shared customer investment to help ensure that customers will utilize the measures to fully realize efficiency benefits.
- **Rebates** will be offered for some qualifying measures, such as insulation and lights purchased through the *Change A Light* campaign. Insulation rebates representing a portion of total installed cost will be sent by MidAmerican to the homeowner (following installation verification, if appropriate). The strategy is to lower costs to a level likely to move customers to follow through with the recommendations. Rebates for *Change A Light* will be defined for qualifying equipment and be available through point-of-sale rebate coupons to offset a portion of the purchase costs.

In 2007, MidAmerican insulation rebates were set at 70 percent of qualified installation costs, capped at a total of \$600 per household for any combination of ceiling, sidewall, crawl space and band joist insulation projects. MidAmerican also made available to households a separate insulation rebate for foundation insulation projects at 70 percent of qualified installation costs capped at a total of \$600. In 2007, rebates for *Change A Light* averaged \$1.65 per lamp. MidAmerican expects to set financial incentives for the South Dakota program at similar levels. However, MidAmerican performs an annual review of qualifying equipment and reserves the right to adjust measures and rebate levels in the future as market conditions change.

## **8. Promotion**

MidAmerican will rely primarily on bill inserts and press releases to promote the audit program. MidAmerican also will target homebuyers by including promotional materials in welcome packages the company sends to new customers as part of a broader promotional

campaign. MidAmerican also will train its call center associates to recommend use of the online or on-site audits as strategies for customers calling with high-bill concerns.

If necessary to spur demand, MidAmerican also will target direct mail marketing to likely participants, including customers living in homes built prior to Dec. 31, 1986, and customers with high heating or air conditioning bills.

The *Change A Light* campaign will be promoted through newspaper and magazine advertisements.

## 9. Participation

Table 2 provides program participation assumptions.

**Table 2  
Participation**

	2008	2009	2010
<b>Electric Measures</b>			
Audits (Electric Heat Homes)	1	1	1
Insulation (AC Homes)	12	15	15
Change-A-Light CFLs	1,088	1,088	1,088
<b>Natural Gas Measures</b>			
Audits (Gas Heat Homes)	823	823	823
Insulation (Gas Heat Homes)	454	567	567
Audits (Electric Heat Homes)	1	1	1

## 10. Energy and Demand Savings

Table 3 provides energy and demand savings goals.

**Table 3**  
**Cumulative Energy and Demand Savings**

	2008	2009	2010
<b>Electric Impacts</b>			
Annual Energy (kWh)	78,017	156,524	235,031
Peak Demand (kW)	16	33	50
<b>Natural Gas Impacts</b>			
Annual Energy (therms)	70,430	151,150	231,860
Peak-Day Demand (therms)	760	1,660	2,570

## 11. Budget

Table 4 provides program budget assumptions.

**Table 4  
Budget**

	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Electric Budget</b>			
Planning & Design	\$1,000	\$0	\$0
Administration	\$4,000	\$4,000	\$4,000
Advertising & Promotion	\$0	\$0	\$0
Customer Incentives	\$5,000	\$5,000	\$5,000
Monitoring & Evaluation	\$0	\$0	\$0
Equipment	\$0	\$0	\$0
Installation	\$0	\$0	\$0
<b>Electric Total</b>	<b>\$10,000</b>	<b>\$9,000</b>	<b>\$9,000</b>
<b>Natural Gas Budget</b>			
Planning & Design	\$38,000	\$5,000	\$5,000
Administration	\$82,000	\$84,000	\$86,000
Advertising & Promotion	\$32,000	\$33,000	\$34,000
Customer Incentives	\$262,000	\$307,000	\$313,000
Monitoring & Evaluation	\$8,000	\$8,000	\$8,000
Equipment	\$0	\$0	\$0
Installation	\$0	\$0	\$0
<b>Natural Gas Total</b>	<b>\$422,000</b>	<b>\$437,000</b>	<b>\$446,000</b>
<b>Total Budget</b>			
Planning & Design	\$39,000	\$5,000	\$5,000
Administration	\$86,000	\$88,000	\$90,000
Advertising & Promotion	\$32,000	\$33,000	\$34,000
Customer Incentives	\$267,000	\$312,000	\$318,000
Monitoring & Evaluation	\$8,000	\$8,000	\$8,000
Equipment	\$0	\$0	\$0
Installation	\$0	\$0	\$0
<b>Total</b>	<b>\$432,000</b>	<b>\$446,000</b>	<b>\$455,000</b>

## 12. Cost-Effectiveness Results

Table 5 provides program cost-effectiveness results.

**Table 5**  
**Cost-Effectiveness Results**

Lifecycle Societal Benefits (NPV)	\$ 2,316,357
Lifecycle Societal Costs (NPV)	\$ 1,529,381
Net Societal Benefits (NPV)	\$ 786,976
Benefit-Cost Ratio	1.51

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