

HOME ENERGY AUDIT REPORT



Customer Name: Jennifer Smith
Customer Address: 123 Washington Ave., Saint Paul, MN 55101
Audit Date: August 15, 2011
Auditor Name: Mike Anderson
Auditor Phone: 651-221-4462

Thank you for participating in the Xcel Energy Audit program. A Home Energy Audit is the important first step toward achieving home energy efficiency. Read on to learn more ways to save with Xcel Energy's conservation programs.

Your audit was performed by the Neighborhood Energy Connection (NEC), a Minnesota nonprofit whose mission is to offer tools for energy-efficient living. It was our pleasure to visit your home to help you find ways to increase its comfort and energy efficiency. We hope that you found the audit informative and useful.

For follow-up questions about your auditor's recommendations please call your auditor Mike Anderson at (651) 221-4462.

Thanks again for your interest in conserving energy. Your commitment to improving your home provides a better future for everyone.

Sincerely,

Jimmie Sparks
Residential Energy Program Manager
Neighborhood Energy Connection

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OUR TOP RECOMMENDATIONS WERE:

Add Attic Insulation / Air Seal

Insulate your attic to R-50, taking care to seal all air leaks beforehand.

Insulate Rim Joist

Sealing and insulating the "envelope" or "shell" of your home -- its outer walls, ceiling, windows, doors, and floors -- is often the most cost effective way to improve energy efficiency and comfort. ENERGY STAR estimates that a knowledgeable homeowner or skilled contractor can save up to 20% on heating and cooling costs (or up to 10% on their total annual energy bill) through comprehensive sealing and insulating.

Add Continuous Ventilation

Having a very tight, well sealed home is great for energy savings but it also requires a more permanent ventilation strategy to reduce humidity in the home. High relative humidity (above 50%) can lead to problems with mold, dust mites, and other biological pollutants. A continuously running exhaust fan can provide this ventilation. We recommend Energy Star rated, quiet (low-sones) exhaust fans.

Replace Furnace with 90% efficiency or better

High efficiency furnaces typically cost less to operate on a month to month basis as they use less fuel to generate the same amount of heat. Over time, even though they are more expensive, high efficiency furnaces can cost less overall than less efficient furnaces.

Add Wall Insulation

Sealing and insulating your home's outer walls, ceiling, windows, doors, and floors is a cost effective way to improve energy efficiency and comfort. ENERGY STAR estimates that a knowledgeable homeowner or skilled contractor can save up to 20% on heating and cooling costs (or up to 10% on their total annual energy bill) through comprehensive sealing and insulating.

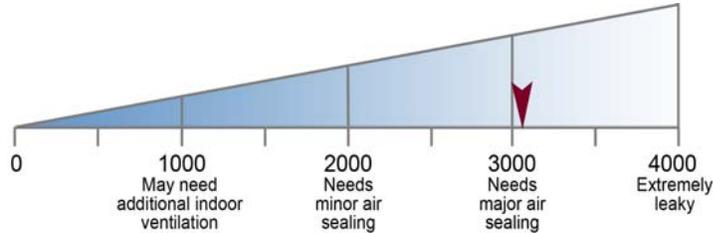
Replace Light Bulbs with Compact Fluorescent Lights

An ENERGY STAR qualified compact fluorescent light bulb (CFL) will save about \$30 over its lifetime and pay for itself in about 6 months. It uses 75 percent less energy and lasts about 10 times longer than an incandescent bulb.

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Your blower door reading: 3050 cubic feet per minute (CFM) @ 50 Pascals (Pa).



We recommend air sealing in the following areas:

- Attic: Chimney Flue, Plumbing Vent, Attic Hatch, Recessed Lights
- Living Areas: Electric outlets, Switches, Door trim
- Basement: Rim joist

HOME PERFORMANCE SUMMARY

5 stars meets ENERGY STAR Federal Tax guidelines

Attic: We recommend insulating your attic.

Your attic's current R-Value:	16	★ ★
Recommended R-Value:	50	★ ★ ★ ★ ★

Estimated cost: \$1,075 to \$1,300 Estimated Annual Return on Investment: 4 to 5%

Walls: We recommend insulating your walls.

Your wall's current R-Value:	4	★
Recommended R-Value:	14	★ ★ ★

Estimated cost: \$1,350 to \$1,650 Estimated Annual Return on Investment: 16 to 19%

Basement Rim Joist: We recommend insulating and air sealing your basement rim joist.

Your rim joist's current R-Value:	0	
Recommended R-Value:	10	★ ★ ★ ★ ★

Estimated cost: \$200 to \$250 Estimated Annual Return on Investment: 5 to 7%

DEFINITIONS

Savings figures are calculated independently of one another and should not be combined. R-value insulation ratings are used to measure insulation's ability to resist heat flow. The higher the R-value, the more effective it is. House insulation should be purchased based on its R-value, not thickness or weight. The "Rim Joist" is the piece of wood that sits directly on top of your foundation, connecting your floor joists. It is a common place for rim joist air leaks.

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MECHANICAL SYSTEMS

Heating System: We recommend replacing your furnace.

Existing: Furnace

Existing AFUE: 78



We recommend you replace your heating system with an ENERGY STAR model. For forced air furnaces, we recommend an AFUE of 90% or higher. For boilers, we recommend a AFUE of 85% or higher. Consider utility rebates and the federal energy efficiency tax credit when purchasing. See <http://www.energystar.gov/> for information on the tax credit.

Water Heating: We do not recommend replacing at this time.

Existing: Standard Gas (< .52 EF)


Air Conditioning: We do not recommend replacing at this time.

Existing Air Conditioning: Central air

Existing SEER: 13



DEFINITIONS

Annual Fuel Utilization Efficiency (AFUE) is a rating that reflects how efficiently a heating system converts fuel to energy. The higher the AFUE, the more efficient the heating system.

The Energy Factor (EF) indicates a water heater's overall energy efficiency based on the amount of hot water produced per unit of fuel consumed over a particular day. The higher the EF, the more efficient the water heater.

Seasonal Energy Efficiency Ratio (SEER) is a measure of the energy efficiency of an air conditioning system.

POTENTIAL UNSAFE CONDITION

Auditor did not find any unsafe conditions.

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ABOUT INFARED IMAGES

The infrared (IR) images show what the surface temperatures of wall and ceiling areas are relative to surrounding areas. The darker shades represent colder areas and indicate framing and/or insulation voids or cold air coming in from outside. Following are infrared images next to standard digital photos of the same areas. Darker shades indicate cooler surfaces while lighter shades indicate warmer surfaces.

		<p>Side attics appear to be uninsulated. Add insulation in floor spaces in side attics where accessible.</p>
		<p>Shows air leakage around gap in ceiling and duct return. Caulk or use expanding foam around seam for a better seal.</p>
		<p>The knee walls encasing the side attics are cold. Insulate and air seal kneewalls.</p>

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<p>66.9°F FLIR</p> <p>60°F 71°F</p>		<p>East dormer wall lacking insulation; could be blown from interior.</p>
<p>72.1°F FLIR</p> <p>51°F 76°F</p>		<p>This photo is a sample photo of an insulated end wall on the second floor. There is an end wall on the east end, west end and north end of the second floor. These walls look well insulated.</p>
<p>70.2°F FLIR</p> <p>63°F 74°F</p>		<p>Evidence of cold air in the wall above the fireplace. This air is coming in through a gap where the attic floor meets the chimney. This gap should be sealed with metal flashing at the attic floor to control heat loss here.</p>
<p>53.8°F FLIR</p> <p>47°F 60°F</p>		<p>First floor sidewalls appear to be uninsulated. Recommend having a contractor dense pack these walls with cellulose or fiberglass from the exterior.</p>

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		<p>Dropped soffits in kitchen are leaky to the attic. These need to be covered with an air-tight seal at the attic floor. Insulation alone will not do the job. Also check for framing gaps between new addition and old framing and seal these with caulk or foam.</p>
		<p>Location of removed chimney is cold. This chaseway may still be open the peak attic and cold air from attic is settling above this ceiling. Look for gaps at the attic floor above here to seal with caulk or foam.</p>
		<p>The following photos are examples of utility penetrations and framing gaps in the foundation and rim joist of the home. All gaps should be air-sealed with caulk or foam, then the rim joist should be insulated to R10 using rigid foam board with all seams sealed with caulk.</p>
		<p>Take a look at the Home Performance program info and contractor list. Let me know if you need help reviewing bids or have any questions.</p>

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Recommended Xcel Energy Rebate Program for your home:

Home Performance Rebate with Energy Star

Take a whole-house approach to energy savings and home improvements. This program is ideal for homeowners who need to make multiple improvements to their home.

PROGRAM REQUIREMENTS

To participate, you must:

- Must be a residential natural gas and electric customer of Xcel Energy or be an all electric Xcel Energy customer with electric space heating
- Complete a Standard Audit (\$60 fee) or Standard Audit with Infrared audit (\$100 fee)
- Use an install contractor from our Participating Install Contractor List
- Implement at least five improvements—three mandatory and two optional
- Complete final inspection and provide all receipts to our partner, NEC
- Customers are not eligible to receive rebates from Home Performance and other Xcel Energy program for the same improvement
- Customer invoices/receipts must be dated *after their audit date* and *after the date of sign up* for the Home Performance program
- The test-out inspection must be satisfactorily completed
- Customers must meet all program requirements to be eligible for any of the Home Performance rebates
- All improvements must be completed by an Xcel Energy Participating Installation Contractor (PIC)
- Program is contingent on availability of funds and could be terminated at any time.
- Attic must have a pre R-value of 19 or less and a post R-value of 44 or greater.

Note: If you have already earned a rebate through a different Xcel Energy program, you cannot receive another rebate for the same improvement.

FIVE EASY STEPS:

1. Get a standard audit (\$60 audit with a blower door test) or infrared audit (\$100 audit).
2. Sign up for the program by calling our partner, the Neighborhood Energy Connection (NEC) at 651-221-4462 x136 or email the NEC at info@thenec.org. There is no obligation but signing up gets you the packet to get started.
3. [Choose a participating contractor](#). Have a participating contractor install your recommended improvements. The NEC will mail you a list of participating contractors when you sign up, or you can click the link above.
4. Call the NEC at 651-221-4462 x 136, to come inspect and verify that the improvements have been installed which will give you peace of mind.
5. *NEC will collect your receipts and submit your rebate paperwork for you.*

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HOME PERFORMANCE ELIGIBLE IMPROVEMENTS

Required Energy Conservation Improvements	Rebate*
<input type="checkbox"/> Air Sealing/Weatherstripping (20% of install cost up to rebate amount)	\$60
<input type="checkbox"/> Attic Insulation (20% of install cost up to rebate amount)	\$350
<input type="checkbox"/> CFLs	\$40
Optional (choose at least two)	Rebate*
<input type="checkbox"/> AC 14.5 SEER	\$250
<input type="checkbox"/> AC 15 SEER	\$350
<input type="checkbox"/> AC 16 SEER	\$475
<input type="checkbox"/> Clothes Washer	\$50
<input type="checkbox"/> Dishwasher	\$15
<input type="checkbox"/> ECM Fan	\$100
<input type="checkbox"/> Furnace 90%	\$150
<input type="checkbox"/> Furnace 92%	\$225
<input type="checkbox"/> Furnace 94%	\$300
<input type="checkbox"/> Furnace 96%	\$325
<input type="checkbox"/> Boiler – 84%	\$250
<input type="checkbox"/> Occupancy Sensor	\$60
<input type="checkbox"/> Refrigerator	\$15
<input type="checkbox"/> Programmable Thermostat	\$10
<input type="checkbox"/> Wall Insulation (20% of install cost up to rebate amount)	\$400
<input type="checkbox"/> Water Heater – Tankless (0.82 EF)	\$450
<input type="checkbox"/> Water Heater – (0.67 EF)	\$150
<input type="checkbox"/> Water Heater – (0.80 EF)	\$250
<input type="checkbox"/> Refrigerator Recycling	\$35

*Certain restrictions and criteria do apply in order to be eligible for these rebates criteria do apply in order to be eligible for these rebates.

PRE-EXISTING EQUIPMENT OR CONDITION

Pre-Existing condition refers to equipment or insulation that you have already installed, prior to your audit and prior to signing-up for Home Performance with ENERGY STAR. Certain pre-existing equipment can be counted towards your Home Performance requirements; however, you are **not** eligible to receive our rebate for that specific equipment. CFLs are allowed as pre-existing equipment and you may also have one optional improvement designated as a pre-existing equipment condition.