

Energy for Generations
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Federal tax credits for energy efficiency in 2010



In 2010, the federal government will again be offering a 30%

tax credit up to \$1,500, on many energy efficiency improvements for homeowners. A list of qualifying improvements are as follows:

Biomass Stoves - Biomass stoves burn biomass fuel to heat a home or heat water.

Heating, Ventilating, Air Conditioning (HVAC)

- Advanced Main Air Circulating Fan
An Advanced Main Air Circulating Fan is an efficient fan or blower motor, which blows the air that your furnace heats up through the duct system.
- Air-source Heat Pumps
- Central Air Conditioning
- Gas, Propane or Oil Hot Water Boilers

Insulation - Typical bulk insulation products can qualify, such as batts, rolls, blow-in fibers, rigid boards, expanding spray, and pour-in-place. Products that air seal (reduce air leaks) can also qualify, as long as they come with a Manufacturers Certification Statement, including: Weather stripping, spray foam in a can, designed to air seal, caulk designed to air seal or house wrap.

Roofs (metal and asphalt) - ENERGY STAR metal roofs with “pigmented coatings” and ENERGY STAR asphalt roofs with “cooling granules”

Water Heaters (non solar)

- Gas, Oil and Propane with Energy Factor >0.82 or a thermal efficiency of at least 90% (most fossil-fuel tank-type water heaters do not meet these specs.)

- Electric Heat Pump Water Heater - Energy factor > 2.0

Windows, Doors, Skylights - U factor <0.30 , SHGC <0.30

Storm Windows & Doors - U-factor and SHGC of 0.30 or below and Must meet the IECC

Geothermal Heat Pumps

- Closed Loop: EER >14.1, COP >3.3.
- Open Loop: EER >16.2, COP >3.6.
- Direct Expansion: EER >15, COP >3.5

Small Wind Turbines (Residential) - Must have a nameplate capacity of no more than 100 kilowatts.

Solar Energy Systems

Solar Water Heaters - At least half of the energy generated by the “qualifying property” must come from the sun. The

system must be certified by the Solar Rating and Certification Corporation (SRCC).

Solar Panels (Photovoltaic Systems) - Photovoltaic systems must provide electricity for the residence, and must meet applicable fire and electrical code requirement.

Fuel Cells (Residential Fuel Cell and Microturbine System) - Efficiency of at least 30% and must have a capacity of at least 0.5 kW. To find out more details, ask your tax preparer, a Perennial representative, or go to www.energystar.gov. Perennial also offers residential rebates through their Energywise program, on heat pumps and attic insulation.

ENERGY STAR Appliance Rebate Program begins

The much anticipated appliance rebate program will be coming out in Late Spring 2010. The following appliances will qualify:



Central Air Conditioners - 16 SEER+ \$100

Air Source Heat Pumps - 15 SEER 8.5 HSPF \$250

Refrigerators - Larger than 14 cubic feet - 20% Above Federal Standard efficiency \$100

Natural Gas & Propane Furnaces - 95% efficient \$250 **continued on page D**

Sealing and insulating your home is one of the cheapest ways to lower your heating and cooling cost

More than any other time of year, you notice your home's air leaks in the winter. Most people call these air leaks "drafts." You may feel these drafts around windows and doors and think these leaks are your major source of wasted energy. In most homes, however, the most significant air leaks are hidden in the attic and basement. These are the leaks that significantly raise your energy bill and make your house uncomfortable. But locating leaks can be difficult because they are often hidden under your insulation. In cold weather, warm air rises in your house, just like it does in a chimney. This air, which you have paid to heat, is just wasted as it rises up into your attic and sucks cold air in all around your home — around windows, doors, and through holes into the basement.

Locating Basement Air Leaks

A common area of air leakage in the basement is along the top of the basement wall where cement or block comes in contact with the wood frame. These leaks can easily be fixed in portions of the basement that are unfinished. Since the top of the wall is above ground, outside air can be drawn in through cracks and gaps where the house framing sits on top of the foundation. This perimeter framing is called the rim (or band) joist. In the basement, the above floor joists end at the rim joist creating multiple cavities along the length of the wall, and many opportunities for leakage.

Plug the Big Holes First

Don't worry about finding and sealing all the little holes in your attic; your biggest savings will come from plugging the large ones. Once in the attic, locate the areas where leakage is likely to be greatest: where walls (inner and outer) meet the attic floor, dropped soffits (dropped-ceiling areas), and behind or under attic kneewalls. Look for dirty

insulation — this indicates that air is moving through it. Dropped soffits may be filled or covered with insulation and hard to see. Push back the insulation and scoop it out of the soffits. You will place this insulation back over the soffit once the stud cavities have been plugged and the soffits covered.

If You Have a Finished Attic, Seal Behind the Kneewalls

Finished rooms built into attics often have open cavities in the floor framing under the side-walls or kneewalls. Even though insulation may be piled against or stuffed into these spaces, they can still leak air. Again, look for signs of dirty insulation to indicate air is moving through. You need to plug these cavities in order to stop air from traveling under the floor of the finished space.

Foam or Caulk Small Gaps in Your Attic

Even though most of the gaps spilling warm air into your attic are buried under insulation, you might be able to find evidence of these gaps. Look for areas where the insulation is darkened. This is the result of filtering dusty air from the house. In cold weather, you may also see frosty areas in the insulation caused by warm, moist air condensing and then freezing as it hits the cold attic air. In warmer weather, you'll find water staining in these same areas. Although the insulation is dirty, it is still okay to use. There's no need to remove and replace. After sealing the areas, just push the insulation back into place. If you have blown insulation, a small rake can be helpful to level it back into place.

Seal Small Gaps

Use expanding foam or caulk to seal the openings around plumbing vent pipes and electrical wires. Be sure to wear gloves and be careful not to get

expanding foam on your clothes, as the foam is very sticky and nearly impossible to remove once it sets. When the foam or caulk is dry, cover the area again with insulation.

Complete the Job by Sealing the Attic Hatch or Door

Finish up by sealing the access hatch with self-sticking weather stripping. If your hatch rests directly on the moldings, add 2-1/2 inch wide stops around the opening. The stops provide a wider surface for attaching the weatherstrip and a space to mount hook-and-eye fasteners. Position the screw eyes so the weatherstrip is slightly compressed when the hooks are latched. Cut a piece of fiberglass or rigid foam board insulation the same size as the attic hatch and nail or glue it to the back of the hatch.

If you have pull-down attic stairs or an attic door, these should be sealed in a similar manner: weatherstrip the edges and put a piece of rigid foam board insulation on the back of the door. Treat the attic door like a door to the outside. Pre-made insulated attic stair covers are also available from local home improvement centers.

Stopping the Chimney Effect

Outside air drawn in through basement leaks is exacerbated by the chimney effect created by leaks in the attic. As hot air generated by the furnace it rises up through the house and into the attic through leaks and cold outside air gets drawn in through basement leaks to replace the displaced air. This makes a home feel drafty and contributes to higher energy bills. After sealing attic air leaks, complete the job by sealing basement leaks, to stop the chimney effect.

Seal All Gaps and Cracks around Rim Joists

Though you may not be able to see cracks in the rim joist cavities, it is best to seal up the top and bottom of the inside of the cavity. Also, rim joist air sealing

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Be a part of the 2010 Youth Energy Camp

Each summer we get a crew together for a fun, worthwhile experience. And that's what the Nebraska Rural Electric Association's Youth Energy Camp is – absolutely!

This year's camp, to be held July 19-23. Please accept this invitation from the NREA and Perennial to attend this exciting and educational summer event for youth in grades 9-11.

Set in the beauty of the Nebraska National Forest at Halsey, the camp is casual, yet educationally and personally challenging. The camp program offers each participant the opportunity to grow socially and learn something important at the same time.

Through interesting workshops, facilitating demonstrations and presentations by regional experts addressing the many issues affecting the rural electric program, you will leave the camp after five days far more knowledgeable than when you first arrive. A tour to the Gerald Gentleman Power Station and the Kingsley Hydro-Electric Power Plant provide a first-hand look at the process of generating electricity.

To be eligible for camp you must: currently be in the 9th, 10th, or 11th grade and be sponsored by a Nebraska Rural Electric Association member-system. Perennial is a member-system.

Your week at camp will be intermingled with many fun activities: a dance and banquet, sporting activities, a cook-out, and time to make new friends. About 75 highly motivated young people just like you attend the Youth Energy Camp each year.

Don't put off calling Perennial at (402) 362-3355 and signing up. Space is limited and this popular camp fills up fast.

Win a free trip to Washington, D.C.

Three campers from Youth Energy Camp, will be selected by their fellow campers to serve as Nebraska's Ambassadors to the National Rural Electric Cooperative Association's 2011 Rural Electric Youth Tour in Washington, D.C. They'll get to spend a week in D.C. touring all of the historic sites and learning about their government, along with hundreds of students from all over the nation. So what are you waiting for? Call now, so you can get signed up!

Refrigerator Recycling Program begins March 1, 2010

Chances are that old working refrigerator in your garage is running up your electric bill. That's because it will use three-times as much energy as a newer one. But now there's



an easy solution: We will pick up your older appliance for free and you'll pick up \$35 in cold cash when you recycle it (limit 2 per household).

Recycling program begins March 1st. Only a limited number of pickups available, so act now. Program is available to residential customers only. Refrigerators and/or freezers are accepted. Must be a working secondary appliance. Must be 10 cubic feet or greater in size. Convenient at-home pick up. To schedule a FREE pickup, call toll-free 1.866.444.9160 or visit www.jacoinc.net.



JACO Environmental, an appliance recycler, will pick up and recycle refrigerators and freezers that are in working condition. This program is seasonal and available to residential customers of NPPD and its wholesale utility customers on a first-come first-served basis. The program is partially funded through the Waste Reduction and Recycling Incentive Grant Program and the Nebraska Department of Environmental Quality. Customers must own the unit(s) being recycled. Limit two units per residential address.

Students receive utility line scholarships

Two local students will be heading off to utility line college this fall with a little help from Perennial. At their January meeting, the Perennial Board of Directors voted to approve utility line scholarships for two students who will be attending Northeast Community College. Both students were awarded a \$1,000 per year scholarship to attend Northeast Community College's two year utility line program beginning this fall.

Scholarship recipient Scott Bellows is the son of Kevin Bellows and Lisa Wurtele and the late Kim Bellows. He is a senior at McCool Junction High School.

Our second recipient, Ashton Soukup, is the son of Bruce and Kathy Soukup of Strang and is a senior at Fillmore Central High School in Geneva.

Congratulations to these students and we wish them well as they pursue careers as utility line technicians.



Scott Bellows



Ashton Soukup

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is especially important at bump out areas such as bay windows that hang off the foundation. These areas provide greater opportunities for air leakage and loss. Caulk is best for sealing gaps or cracks that are 1/4 inch or less. Use spray foam to fill gaps from 1/4 inch to about 3 inches. We also recommend you seal penetrations that go through the basement ceiling to the floor above. Generally, these are holes for wires, water supply pipes, water drain pipes, the plumbing vent stack (for venting sewer gases), and the furnace flue (for venting furnace exhaust).

Materials Checklist for Basement Sealing

Silicone or acrylic latex caulk and caulk gun
Expanding spray foam

Caution: When sealing the furnace flue (which will be encased in a metal sleeve) use high-temperature caulk. Run a bead of high temperature caulk around the pipe sleeve and around the metal frame.

Areas to Foam or Caulk

Along the gap between the sill plate and the foundation
At the bottom and top of the rim joist on each end of the house

All electrical, water, or gas penetrations and any venting ducts that pass to the outside

What About Insulating the Rim Joist?

After air sealing the rim joist area it is relatively easy to insulate each cavity with rigid foam insulation or fiberglass batts. If using batts, just cut the insulation to fit and place against the rim joist without compression, gaps, or voids. If using rigid, foam into place. This could also be done in conjunction with finishing the basement, when you would insulate the basement walls floor-to-ceiling. Attic and basement air sealing will go a long way to improve your comfort because your house will no longer act like an open chimney.

Duct Sealing

In houses with forced-air heating and cooling systems, ducts are used to distribute conditioned air throughout the house. In a typical house, however, about 20 percent of the air that moves through the duct system is lost due to leaks, holes, and poorly connected ducts. The result is higher utility bills and difficulty keeping the house comfortable, no matter how the thermostat is set.

How do you know that your home has poorly performing ducts?

you have high summer and winter utility bills;
you have rooms that are difficult to heat and cool;
you have stuffy rooms that never seem to feel comfortable;
your ducts are located in an attic, crawlspace, or the garage;
you find tangled or kinked flexible ducts in your system.

Benefits of Duct Sealing

A duct system that is well-designed and properly sealed can make your home more comfortable, energy efficient, and safer.

Simple Steps to Improving Duct Performance

Because ducts are often concealed in walls, ceiling, attics, and basements, repairing them can be difficult. But there are things that you can do to improve duct performance in your house. Some homeowners choose to take on duct sealing as a do-it-yourself project. Start by sealing air leaks using mastic sealant or metal tape and insulating all the ducts that you can access (such as those in attics, crawlspaces, unfinished basements, and garages). Never use duct tape, as it is not long-lasting. Also, make sure that the connections at vents and registers are well-sealed where they meet the floors, walls, and ceiling. These are common locations to find leaks and disconnected ductwork. Many homeowners choose to work with a professional contractor for duct improvement projects. Most heating and cooling equipment contractors also repair ductwork. **(Information from the U.S. Department of Energy).**

Appliance rebates continued from page A

Clothes Washers - MEF \geq 2.0; WF \leq 6.0 \$200

Dishwasher - \leq 307 kWh/yr \leq 5.0 gal/cycle - \$50

Process/Key Points

1. Appliance dealers, HVAC companies and installers would have to pre-register with the Energy Office and have a physical location within the borders of the state.
2. Rebate claim form (different form for each appliance) would be given to customer by seller. Each claim form will have a unique ID number and dealer will enter customer profile (name, address, etc) and manufacturer and model number.
3. Customer signs, mails claim form and sales receipt to fulfillment center within 30 days. After 30 days, any unclaimed refunds would be available to others.
4. Fulfillment company has an 800 call center for customers on status and other questions.
5. Only two rebates per customer.
6. Rebates would be on a first come, first served basis.
7. Start date is likely April or May 2010.
8. Rebates are for replacement appliances only.
9. Appliances purchased prior to start of program are not eligible for a rebate.
10. Recycling would be encouraged, but not required. The customer rebate claim form will provide recycling information and contacts. The ENERGY STAR Appliance Rebate Program will be administered through the Nebraska Energy Office in Lincoln. You can get more information at www.neo.ne.gov or (402) 471-2867.