

# the BEC kWh

know what's happening

DECEMBER 2012

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## announcements



## Dear Members,

by Interim General Manager, Richard "Dick" Peck



Richard Peck,  
interim general  
manager

Happy holidays to all! Christmas is just around the corner and your Beartooth management team hopes that your stockings are overflowing with gifts and goodwill. We have enjoyed the past year to provide electrical service to all. This year is the first time in several years that there were no increases in your electric energy rates brought on by our wholesale power supplier. Our goal for 2013 is for the same high level of service and continued commitment to system reliability and hopefully no wholesale power increases.

To accomplish our 2013 operational goals we have allowed, natural attrition to reduce employment by five staff members over 2012, we plan on minimizing borrowing, increase tree trimming and maintain pole and URD replacement programs that effect system reliability. The Boards Finance Committee has met twice to evaluate the requests by staff for work plan activities and necessary

capital improvements. If the work load is higher than anticipated we will be using contractors to accomplish our work plan.

Another way we can help you reduce your costs of electric energy is by helping you reduce your use of energy. We are currently looking at hiring energy specialists to assist you in deciding how to reduce your overall energy consumption. Next month I will have more information available on what type of programs we will have in place after the 2013 budget is approved by your Board.

In the late January we fully expect a plan will be released by the Bankruptcy Court for bringing closure to the Southern Bankruptcy. We are not sure what the plan will recommend or of the rate impacts from the decision, but we will try to mitigate the effects of the Bankruptcy decision. The Board is looking at all types of remedies in lieu of increasing rates. The boards Due Diligence Committee will be coming forth with a recommendation that will hold the line on any increases.

Happy Holiday's to all,

*Dick Peck*

Richard G. Peck,

Contact us at 406-446-2310

PO Box 1110

1306 N Broadway Avenue

Red Lodge, MT 59068



[www.beartoothelectric.com](http://www.beartoothelectric.com)



# SAVE MONEY.

## SAVE ENERGY.

### Why Insulate Your House?

Heating and cooling account for 50 to 70% of the energy used in the average American home. Inadequate insulation and air leakage are leading causes of energy waste in most homes. Insulation:

- saves money and our nation's limited energy resources
- makes your house more comfortable by helping to maintain a uniform temperature throughout the house, and
- makes walls, ceilings, and floors warmer in the winter and cooler in the summer.

The amount of energy you conserve will depend on several factors: your local climate; the size, shape, and construction of your house; the living habits of your family; the type and efficiency of the heating and cooling systems; and the fuel you use. Once the energy savings have paid for the installation cost, energy conserved is money saved - and saving energy will be even more important as utility rates go up.

This fact sheet will help you to understand how insulation works, what different types of insulation are available, and how much insulation makes sense for your climate.

### How Insulation Works

Heat flows naturally from a warmer to a cooler space. In winter, the heat moves directly from all heated living spaces to the outdoors and to adjacent unheated attics, garages, and basements - wherever there is a difference in temperature. During the summer, heat moves from outdoors to the house interior. To maintain comfort, the heat lost in winter must be replaced by your heating system and the heat gained in summer must be removed by your air conditioner. Insulating ceilings, walls, and floors decreases the heating or cooling needed by providing an effective resistance to the flow of heat.

Batts, blankets, loose fill, and low-density foams all work by limiting air movement. (These products may be more familiarly called fiberglass, cellulose, polycynene, and expanded polystyrene.) The still air is an effective insulator because it eliminates convection and has low conduction. Some foams, such as polyisocyanurate, polyurethane, and extruded polystyrene, are filled with special gases that provide additional resistance to heat flow.

Reflective insulation works by reducing the amount of energy that travels in the form of radiation. Some forms of reflective insulation also divide a space up into small regions to reduce air movement, or convection, but not to the same extent as batts, blankets, loose-fill, and foam.

### Which Kind Of Insulation Is Best?

Based on our email, this is one of the most popular questions homeowners ask before buying insulation. The answer is that the 'best' type of insulation depends on:

- how much insulation is needed,
- the accessibility of the insulation location,
- the space available for the insulation,
- local availability and price of insulation, and
- other considerations unique to each purchaser.

Whenever you compare insulation products, it is critical that you base your comparison on equal R-values.

### What Is an R-Value?

Insulation is rated in terms of thermal resistance, called R-value, which indicates the resistance to heat flow. The higher the R-value, the greater the insulating effectiveness. The R-value of thermal insulation depends on the type of material, its thickness, and its density. In calculating the R-value of a multi-layered installation, the R-values of the individual layers are added.

The effectiveness of an insulated ceiling, wall or floor depends on how and where the insulation is installed.

- Insulation which is compressed will not give you its full rated R-value. This can happen if you add denser insulation on top of lighter insulation in an attic. It also happens if you place batts rated for one thickness into a thinner cavity, such as placing R-19 insulation rated for 6 1/4 inches into a 5 1/2 inch wall cavity.
- Insulation placed between joists, rafters, and studs does not retard heat flow through those joists or studs. This heat flow is called thermal bridging. So, the overall R-value of a wall or ceiling will be somewhat different from the R-value of the insulation itself. That

is why it is important that attic insulation cover the tops of the joists and that is also why we often recommend the use of insulative sheathing on walls. The short-circuiting through metal framing is much greater than that through wood-framed walls; sometimes the insulated metal wall's overall R-value can be as low as half the insulation's R-value.

### Reading the Label

No matter what kind of insulation you buy, check the information on the product label to make sure that the product is suitable for the intended application. To protect consumers, the Federal Trade Commission has very clear rules about the R-value label that must be placed on all residential insulation products, whether they are installed by professionals, or whether they are purchased at a local supply store. These labels include a clearly stated R-value and information about health, safety, and fire-hazard issues. Take time to read the label BEFORE installing the insulation. Insist that any contractor installing insulation provide the product labels from EACH package (which will also tell you how many packages were used). Many special products have been developed to give higher R-values with less thickness. On the other hand, some materials require a greater initial thickness to offset eventual settling or to ensure that you get the rated R-value under a range of temperature conditions.

### Insulation Product Types

Some types of insulation require professional installation, and others you can install yourself. You should consider the several forms of insulation available, their R-values, and the thickness needed. The type of insulation you use will be determined by the nature of the spaces in the house that you plan to insulate. For example, since you cannot conveniently "pour" insulation into an overhead space, blankets, spray-foam, board products, or reflective systems are used between the joists of an unfinished basement ceiling. The most economical way to fill closed cavities in finished walls is with blown-in insulation applied with pneumatic equipment or with sprayed-in-place foam insulation.

The different forms of insulation can be used together. For example, you can add batt or roll insulation over loose-

fill insulation, or vice-versa. Usually, material of higher density (weight per unit volume) should not be placed on top of lower density insulation that is easily compressed. Doing so will reduce the thickness of the material underneath and thereby lower its R-value. There is one exception to this general rule: When attic temperatures drop below 0°F, some low-density, fiberglass, loose-fill insulation installations may allow air to circulate between the top of your ceiling and the attic, decreasing the effectiveness of the insulation. You can eliminate this air circulation by covering the low-density, loose-fill insulation with a blanket insulation product or with a higher density loose-fill insulation.

Blankets, in the form of batts or rolls, are flexible products made from mineral fibers, including fiberglass or rock wool. They are available in widths suited to standard spacings of wall studs and attic or floor joists. They must be hand-cut and trimmed to fit wherever the joist spacing is non-standard (such as near windows, doors, or corners), or where there are obstructions in the walls (such as wires, electrical outlet boxes, or pipes). Battens can be installed by homeowners or professionals. They are available with or without vapor-retarder facings. Battens with a special flame-resistant facing are available in various widths for basement walls where the insulation will be left exposed.

Blown-in loose-fill insulation includes cellulose, fiberglass, or rock wool in the form of loose fibers or fiber pellets that are blown using pneumatic equipment, usually by professional installers. This form of insulation can be used in wall cavities. It is also appropriate for unfinished attic floors, for irregularly shaped areas, and for filling in around obstructions.

In the open wall cavities of a new house, cellulose and fiberglass fibers can also be sprayed after mixing the fibers with an adhesive or foam to make them resistant to settling.

Foam insulation can be applied by a professional using special equipment to meter, mix, and spray the foam into place. Polyisocyanurate and polyurethane foam insulation can be produced in two forms: open-cell and closed-cell. In general, open-celled foam allows water vapor to move through the material more easily than closed-cell foam. However, open-celled foams usually have a lower R-value for a given thickness compared to closed-cell foams. So, some of the closed-cell foams are able to provide a greater R-value where space is limited.

Decorative insulation is made from fibrous materials or plastic foams and is pro-

heat flow when next to an air space. Rigid insulation is often used for foundations and as an insulative wall sheathing.

Reflective insulation systems are fabricated from aluminum foils with a variety of backings such as kraft paper, plastic film, polyethylene bubbles, or cardboard. The resistance to heat flow depends on the heat flow direction, and this type of insulation is most effective in reducing downward heat flow. Reflective systems are typically located between roof rafters, floor joists, or wall studs. If a single reflective surface is used alone and faces an open space, such as an attic, it is called a radiant barrier.

Radiant barriers are installed in buildings to reduce summer heat gain and winter heat loss. In new buildings, you can select foil-faced wood products for your roof sheathing (installed with the foil facing down into the attic) or other locations to provide the radiant barrier as an integral part of the structure. For existing buildings, the radiant barrier is typically fastened across the bottom of joists, as shown in this drawing. All radiant barriers must have a low emittance (0.1 or less) and high reflectance (0.9 or more).

#### Adding Insulation to an Existing House (Smart Approaches)

Does your home need more insulation? Unless your home was constructed with special attention to energy efficiency, adding insulation will probably reduce your utility bills. Much of the existing housing stock in the United States was not insulated to the levels used today. Older homes are likely to use more energy than newer homes, leading to higher heating and air-conditioning bills.

#### Where and How Much

Adding more insulation where you already have some, such as in an attic, will save energy. You can save even greater amounts of energy if you install insulation into places in your home that have never been insulated. Figure 1 shows which building spaces should be insulated. These might include an uninsulated floor over a garage or crawlspace, or a wall that separates a room from the attic. Figure 3 can give you general guidance regarding the appropriate amount of insulation you should add to your home, and the rest of this page will provide more specific information.

After you find out how much you have, you can use the ZipCode tool to find out how much you should add. This recommendation balances future utility bill savings against the current cost of installing insulation. So the amount of insulation you need depends on your climate and heating fuel (gas, oil, electricity), and whether or not you have an air

costs and to input certain facts about your house to improve the accuracy of the recommendations. However, some personal computer security systems won't allow Java programs to run properly. The recommended R-values table can be helpful in those cases, because it will provide recommendations based on insulation and energy costs for your local area.

#### How Much Insulation Do I Already Have?

Look into your attic. We start with the attic because it is usually easy to add insulation to an attic. This table will help you figure out what kind of insulation you have and what its R-value is.

Look into your walls. It is difficult to add insulation to existing walls unless:

You are planning to add new siding to your house, or

You plan to finish unfinished space (like a basement or bonus room).

If so, you need to know whether the exterior walls are already insulated or not. One method is to use an electrical outlet on the wall, but first be sure to turn off the power to the outlet. Then remove the cover plate and shine a flashlight into the crack around the outlet box. You should be able to see whether or not insulation is in the wall. Also, you should check separate outlets on the first and second floor, and in old and new parts of the house, because wall insulation in one wall doesn't necessarily mean that it's everywhere in the house. An alternative to checking through electrical outlets is to remove and then replace a small section of the exterior siding.

Look under your floors. Look at the underside of any floor over an unheated space like a garage, basement, or crawlspace. Inspect and measure the thickness of any insulation you find there. It will most likely be a fiberglass batt, so multiply the thickness in inches by 3.2 to find out the R-value (or the R-value might be visible on a product label). If the insulation is a foam board or sprayed-on foam, use any visible label information or multiply the thickness in inches by 5 to estimate the R-value.

Look at your ductwork. Don't overlook



# the board room



## A message from the Chairman of the Board ...

*BEC Board President, Roxie Melton*

I hope everyone had a wonderful Thanksgiving with family and friends. As winter sets in I trust everyone that attended the annual meeting has used their gift certificate to purchase energy saving items to help lower their power bill during the coming cold season.

The holidays are approaching and we want to urge everyone to be aware of safety concerns with lights, decorations and the Christmas tree. Please be sure to check the strings of lights for fraying and never leave the tree lit when you leave home.

Your Trustees are hard at work even during the Holiday season. Several committees are meeting regularly each month. There is a lot of work to do and if you would like to be involved please contact the Trustee in your region.

The Communication Committee is coordinating with several news papers in outer regions of our service areas. We realize everyone doesn't receive or read the Carbon County and Stillwater News, so we are expanding our contacts to include the news papers in Columbus and Wyoming.

The By Laws Committee has begun addressing additional concerns of our

membership. The changes to the old By Laws should be on the web site updated and on line for you to read. We would like to have at least two members from each district and to date we are falling a bit short.

The Finance Committee is working on the 2013 budget and will have it complete for the December board meeting. To date we have completed all work projects and planned construction without increases to the rates. At this point, we do not anticipate any rate increases and plan to continue business as usual. It's been a very interesting and demanding year and we look forward to the challenges ahead.

In closing, I would like to thank our employees for their hard work and attention to our tasks ahead. Your attention to detail and the bottom line has enabled Beartooth to continue to provide reliable and fiscally responsible service to our customers. To all our members we a Beartooth wish you a very Merry Christmas and a Happy New Year.

Sincerely,

## Trustees

Roxie Melton, President  
District 2—Boyd, Joliet  
robertsystop@aol.com  
406-425-2516

Dan Dutton, VP  
District 1—Bridger, Park Co., WY  
circled@nemont.net  
406-664-3000

Pat Hoffman, S/T  
District 3—Roberts  
pathoffman@vcn.com  
406-446-1605

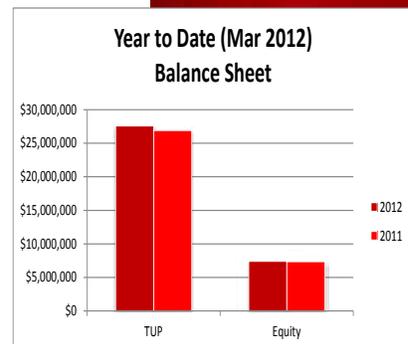
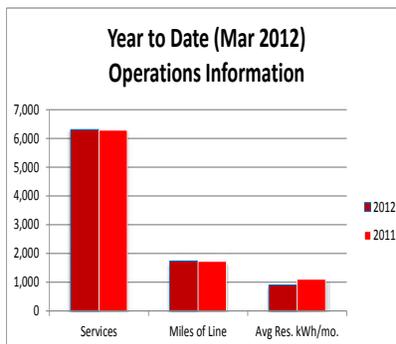
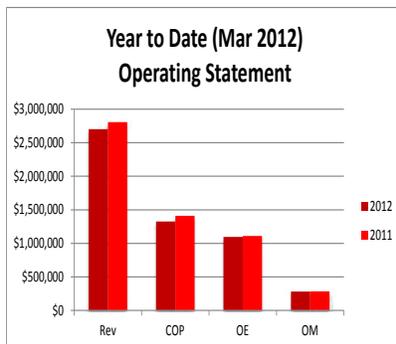
Arleen Boyd, Southern/SME Board Rep.  
District 5—Absarokee, Fishtail  
arleenboyd@montana.net  
406-328-6645

Richard Nolan  
District 4—Red Lodge  
DNolanMt@gmail.com  
406-425-2269

Laurie Beers  
District 6—Nye  
laurie.j.beers@gmail.com  
406-328-4283

Dave Peterson  
District 7—Columbus, Rapelje  
dppbranch@gmail.com  
406-326-2184

Richard "Dick" Peck  
Interim General Manager  
rpeck@beartoothelectric.com  
406-446-2310



Financial Summary: Rev = Revenue COP = Cost of Power OE = Operating Expenses OM = Operating Margins TUP = Total Utility Plant