

# THE BEC kWh

know what's happening

BEARTOOTH ELECTRIC COOPERATIVE MEMBER NEWSLETTER

JANUARY 2015

## Dear Members—

### *BEC Quick Look Calendar—*

#### **OPEN ENROLLMENT LIEAP-Energy Payment Assistance**

Montana: 800-433-1411  
Wyoming: 800-246-4221

**January 6, 2015**

#### **BEC Regular (Dec) Board Meeting/2015 Operations Budget Review**

Noon  
Red Lodge Area Community  
Foundation

**January 27, 2015**

#### **BEC Regular Board Meeting**

Noon  
Red Lodge Area Community  
Foundation

**Deadline:**

**January 28, 2015**

#### **MECA Memorial Scholarship \$500**

*Eligibility:* 2015 College  
Students and Graduating High  
School Seniors

**Deadline:**

**January 28, 2015**

#### **BEC Achievement Scholarship \$1,000**

*Eligibility:* 2015 Graduating  
High School Seniors

At the January 6, 2015 board meeting (regular December meeting) your board will be requesting borrowing \$4.3 million from our National Rural Utilities Cooperative Finance Corporation (CFC) bank. It is a cooperative banking corporation created by rural electric cooperatives like Beartooth Electric Cooperative in 1969. The loan funds will be utilized to update our utility infrastructure and or be requested to reimburse capital expenditures from prior years. If we do not draw the funds there are no costs for maintaining the \$4.3 million loan authorization. It has been almost three years since BEC has borrowed any long term funds.

The board policy on long term debt is to limit long term borrowing to a level of 50% for the projects identified in the 2014 construction work plan. Since early 2012, 100% of our funding for infrastructure replacements has come from your electric utility rates. The conservative policy of limiting long term debt to 50% for plant replacement will help keep future rate increases to a minimum.

The major construction projects in 2015 will be pole replacements and sections of underground wire that is failing and impacting system reliability. These capital projects were identified in the 2015 budget by the Finance Committee and will require expenditures of about \$1.3 million. The work will be accomplished with our own line personnel and contractors. A copy of the 2015 Operating and Capital Budget is available by calling the BEC office 446.2310 or a copy can be downloaded from our website (BeartoothElectric.com).

In early March 2015 your board will be conducting a cost of service study. The study will be evaluating various financial impacts from the Lower Valley Management Agreement and the future impacts of getting out of our Southern wholesale power contract. The study will be able to give your board the best path for determining the savings of these activities and how to allocate those savings back to the membership in the later months of 2015 or in early 2016.

In late January and or early February 2015 it is the plan of the BEC Board to schedule Town Hall meetings in various parts of our service area. At the meetings the board will be updating the membership on possible changes on our wholesale power contract with Southern and the financial impact of the management agreement. Both of the issues must be reviewed and approved by the Rural Utilities Services (formerly the REA) and the Wyoming Public Service Commission before we can implement any changes. The management agreement may be in place by either March or April.

Richard G. Peck—Interim General Manager and your Beartooth employee's wish you the best in the coming year.



Richard Peck  
Interim General  
Manager  
446-2310



# ENERGY

## Home heating: Calculating the benefits of electric vs. propane

According to the U.S. Department of Energy, heating and cooling account for nearly half of the energy use in a typical U.S. home, making it the largest energy expense for most households. While few people enjoy spending money on home heating fuels, consumers are willing to pay for comfort in the form of heat.

In these colder months when the temperatures dip and the need to heat your home rises, it makes sense when trying to determine the most economical heating method to evaluate the cost per unit of heat. This is referred to as a British thermal unit (Btu).

### Evaluating cost per unit of heat for propane and electric energy

The Btu content per gallon of propane is 91,500 Btu. The Btu content for electricity is 3,413 Btu per kilowatt-hour (kWh). It takes 26.8 kWh to equal the Btu content of one gallon of propane.

Using the U.S. Energy Information Administration's table on residential propane and electric energy rates for November 2014, \$2.40 per gallon, excluding taxes, and electric rate of 13.01 cents per kWh, we arrive at the following calculation:

$$26.8 \text{ kWh} \times 13.01\text{¢} = \$3.49$$

If we used only Btu content to determine the best energy source for home heating, it would appear that propane is less costly than electricity if the price for propane is below \$3.49 per gallon.

### Comparing usable heat costs

While we may have determined the cost of the actual heat content, what matters even more is the cost of the usable heat (warmth). A low-efficiency propane furnace may have an efficiency rating of 80 percent, and a high-efficiency propane furnace may have an efficiency rating of 95 percent. Let's assume we have a 90 percent efficient propane furnace. That

means 10 percent of the Btus are not converted to usable heat (warmth). Here is the math:

$$91,500 \text{ Btu} - 10\% \text{ Btu loss} = 82,350 \text{ Btu}$$

So now it only requires 24 kWh to equal the delivered Btu content of propane.

$$24 \text{ kWh} \times 13\text{¢} = \$3.12$$

### Electric heat is 100 percent efficient

What may surprise most consumers is that the least efficient electric heating system delivers 100 percent efficient heat. Yes, electric resistance heat (i.e., space heaters, baseboard heating) is 100 percent energy efficient. Every single Btu in a kilowatt-hour is delivered as usable heat. So if you are paying more than \$3.12 per gallon of propane for a 90 percent efficient propane furnace, it would be cheaper to use electric resistance heat.

Are we recommending that you use electric resistance heat as your sole heating source? No. While we are proud to offer a reliable source of electricity, we don't want to empty your wallet. However, if your only choice is electric resistance heat, we are happy to share saving tips.

### Pumping up efficiency

There are even more efficient electric heating systems called heat pumps. An air-source heat pump is at least 250 percent energy efficient. How is it so efficient?

In the heating mode, heat pumps do not use electric energy to create heat; they use it to pump heat into your home through a reversal of the refrigeration process. If you have central air conditioning, you have already experienced this process in reverse when your unit pumps heat out of your home in the summer. If you have ever stood next to the outdoor components you know the air conditioning system is exhausting very hot air. In winter, it simply does the opposite, moving heat into your home. Air source heat pumps are equipped with some type of auxiliary heat for those times when temperatures are near freezing or dip below. The typical back-up is in the form of electric resistance heat strips, but there is also a dual fuel propane option.

In calculating the Btu's per kilowatt hour for a heat pump we use this formula:

$$3413 \text{ Btu} \times 250\% = 8532 \text{ Btu}$$

This means that it only takes 9.65 kilowatts using an air source heat pump to deliver the same amount of warmth as a 90 percent efficient propane furnace.

$$9.65 \text{ kWh} \times 13 = \$1.25$$

The price of propane would need to drop to \$1.25 per gallon to breakeven with the cost of home heating using an air source

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### Energy Efficiency Tip of the Month



They're out of sight, but don't forget about your air ducts. Taking care of them can save money and energy. Check ducts for air leaks. Take care of minor sealing jobs with heat-approved tape, especially in attics and in vented crawl spaces. Call the pros for major ductwork repairs.

Source: U.S. Department of Energy

# 2014 — Due Diligence First, Then Decisions

## A year of change and progress—

This past year we reported on due diligence evaluations of power supply options and examination of potential business strategies to help reduce the cost of distributing power to our members. BEC encouraged Southern Montana Electric Generation and Transmission Cooperative, our power supplier, to obtain a power supply contract so that it could accurately predict expenses and plan for meeting the obligations of Southern's court-approved reorganization plan. A 3-year contract now provides low cost power to Southern and includes provisions for BEC to assume a share of that power if an exit agreement is reached. In November BEC signed a 3-year management agreement with Lower Valley Energy, an outstanding Wyoming electric cooperative – an action that will help us reduce distribution costs and improve our service to members.

At the beginning of last year the U.S. Bankruptcy Court judge had just removed Southern's court-appointed trustee. Southern's member co-ops supported liquidation of Southern because the trustee's proposed reorganization plan was not affordable. Prudential Finance and its associated noteholders, who had financed the Highwood Generating Station, took the trustee's plan forward in court. BEC testified that the plan would cause our co-op to fail financially. The noteholders and Southern's co-op members mediated a plan to reduce Southern's financial obligations and shorten the timeframe for HGS debt payment to four years. The plan, approved by the court in June, allows BEC to withdraw from Southern on payment of a share of the HGS notes if Southern's other member co-ops agree.



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heat pump. Efficiency increases even more sharply when looking at the 350+ percent efficiencies of a geothermal (water source) heat pump. An additional advantage of geothermal systems is that they can be equipped to provide free water heating most of the year.

## Providing reliable energy facts regardless of fuel type

At Beartooth Electric Cooperative, we believe it is our responsibility to provide members with reliable energy facts regardless of fuel type so you can get the most from your energy dollars. We are committed to helping you find the best energy solution for your budget and lifestyle and hope you will consult with your local co-op before making any big home-heating decisions.

*Anne Prince writes on energy efficiency issues for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives.*

In 2014 Southern moved from the threat of failure under the trustee's plan to a position that should allow it to meet its financial obligations and dissolve within three years. BEC continues to mediate with Southern for an early exit. The shortened timeframe for debt repayment should reduce financial concerns at Southern about a BEC prepayment and exit. Each time we run our forecast for wrapping up dealings with Southern the numbers improve for all involved parties.



Arleen Boyd,  
Due Diligence Chair  
December 2014

What's Next? You will continue to hear from our due diligence committee and board as we examine next-steps for long-term power supply and the management agreement. We will keep you informed about mediation to leave Southern. If we remain in Southern we will work to reduce its expenses and accelerate the payment of all bankruptcy reorganization obligations. We will report on information we receive from the trust created to sell HGS. We will share the numbers when Southern and SME Electric, its sister co-op, sell their properties located near HGS and use the proceeds to address obligations to First Interstate Bank, including a loan secured by BEC.

By this time next year our financial forecasts show that we could be independent of Southern Montana Electric and in a much-improved financial position. We look forward to keeping you informed.

## IN COMPARISON TO OIL OR GAS FURNACES, ELECTRIC HEATING HAS MANY ADVANTAGES

Electric resistance heat  
(i.e., energy-efficient space heaters, baseboard heating):



...is 100% efficient - every single Btu in a kilowatt-hour is delivered as usable heat.



...is quick to respond and can be very quiet.



...takes up less space in the house than other conventional systems (assuming space heaters are used).



...can warm select rooms, allowing you to keep your main thermostat down while ensuring continued comfort.

Electric heating systems are:



...generally less expensive to purchase and install.



...safe because there is no combustion process. There is no chance of flames starting a fire or having combustion products contaminate the air.

# Chairman's Message



Roxie Melton  
Chairman of the Board  
robertsystop@aol.com  
406-426-0135

Another year has come and gone and we can truly say that a number of our goals are finally being realized. 2015 is shaping up to be a year of transition and transformation as we begin the Management Agreement with Lower Valley. I am excited about several prospects ahead -- the most important being the cost-saving efforts that should lead to lower rates. Of course you will continue to hear from Arleen and myself as to the activities of the co-op but direct involvement on the operations side likely will diminish as Lower Valley takes over management.

My wish is to continue updating you as to the health and stability of your co-op but begin to tell you about the co-op and the people behind the scene. We have some very interesting employees and board members and they have some unique stories. Several are very civic minded and active in the community and schools.

At our last MECA (Montana Electric Cooperatives' Association) meeting many awards were given to co-ops for

their communication endeavors. Many received recognition for their communicative efforts to bring their co-op to life by relating events that happened in the office, in the field and interaction with the membership. I hope you will continue to read your Rural Montana and stay involved in your co-op.

One last word, we will be hosting another round of town hall meetings after the first of the year. Please plan to attend, weather permitting. The dates will be listed in the paper, on our website, in a bill stuffer and fliers will be posted in the community. If time permits, they will also be in Rural Montana. It is my wish that after some face to face meetings we will be able to continue to provide updates through hosted call-ins. We will provide an 800 number and you will be able to listen in and at the end members may ask questions. I've seen other co-ops do this and it seems like an efficient way to get information to more members that otherwise could not attend meetings in person.

Once again, thank you for the trust and confidence you have placed in our hands. We take the co-op principles very seriously. Safe and reliable electric service to the membership and when we can lower the rates, a product that is not the highest in the state!

## Next Board Meetings

*Join us!*

JANUARY 6, 2015 • 12 Noon • Red Lodge Area Community Foundation  
JANUARY 27, 2015 • 12 Noon • Red Lodge Area Community Foundation

## Electricity's advantages for home heating and hot water

While most consumers are aware of the benefits of using propane or natural gas to heat their homes, many are not aware of the value of using electricity for home heating. Listed below are the numerous advantages of electricity-based home heating and hot water systems that may surprise even the most energy-savvy consumers.

In comparison to oil or gas furnaces, electric heating has many advantages.

- Electric heating systems are generally less expensive to purchase and install than other systems and on the whole, enjoy fuel cost stability.
- Electric heat is quick to respond and can be very quiet.
- Electric heat can be added on a localized basis to heat specific areas of the home, and the temperature can be controlled easily by room or by zone.
- A portable, energy-efficient electric space heater or electric baseboard heat can warm select rooms allowing you to keep your main thermostat down while ensuring continued comfort.

- Electric heat can take up less space in the home than other conventional systems (assuming space heaters are used).
- The electric heating system is safe because there is no combustion process. There is no chance of flames starting a fire or having combustion products contaminate the air.

Choices for electric heat include:

- Energy-efficient heat pumps
- Baseboard heaters
- Portable space heaters
- Decorative fireplaces

Heating contractors, electricians, home improvement stores and Beartooth Electric Cooperative are good sources for information about heating with electricity.



**We're here to serve you!**  
**Give us a call—**  
**406-446-2310**