When summer approaches and we’re preparing for the time-honored tradition of our annual meeting and board of directors election, I’m reminded of Yampa Valley Electric Association’s past — how, in order to provide electricity to a special, hard-to-serve part of Colorado we joined together, in a cooperative effort.

Today, the annual meeting and elections bring a flurry of activity for us: sending out lots of articles and communication about the meeting and making sure that every member receives an election ballot. We spend months preparing the agenda, the guests, the presentations and, of course, the food. We diligently set up the election process, from nominations to opening ballots, ensuring that everyone’s vote is counted. It’s an important time for us at YVEA.

But, why, after so many decades do we still think that having this business meeting and electing directors is so important? In the fast-paced, electronic world we all live in, why should such an old-fashioned event matter?

The National Rural Electric Cooperative Association writes: “Technology and business innovations are rewriting the utility playbook by transforming the industry.” Yes, the future of YVEA will look different, but it will also reflect the longstanding heart of our business model — member ownership and having a voice. The annual meetings and voting reinforce that this is your business and you have a say in what happens. We encourage you to vote and attend the meeting, if you can. Exercise your rights as member-owners and influence decisions.

As the industry transforms, we will see other businesses and companies jump into energy. Last week, I received a flyer from my cable television provider explaining that I could buy green power through the company. Later in the week, I was also approached by a company that said it could offset all of my power with renewable energy and I could just have my bill go to the company and the company would pay YVEA.

As you watch this industry grow and change, I encourage you to cautiously evaluate companies that say they can provide new, special, green and innovative ways to give you electricity. Make sure the company is reputable and that what they are selling is logical and legitimate. Tell the salesperson about our cooperative model and ask whether, in their business model, you have a vote or ownership in the business.

As a cooperative, we have been providing new electricity solutions since 1940. We are stretching, growing, changing and innovating to serve you better, but always with member ownership as our focus. If someone tells you they have a better electricity bargain for you, recall what they say about things that are too good to be true. And, before you sign on the dotted line, make sure it’s actually good for you.

If you are contacted by a company and you don’t quite understand what it is selling, call us. We can help you sort through it and make a smart decision. We’ve been bringing electric service to our members for decades. Let us help you as the market and the industry changes.
NEW! “THE POWER LINE”
Your positive energy resource at YVEA

At YVEA, we strive to provide the best service, response time and value to our members. In May, we began our new column, “The Power Line,” to address many commonly asked questions that we are receiving from members.

QUESTION OF THE MONTH: “What is the best form of heat to install in my home?”

While YVEA cannot specifically answer that question, we can share how to convert between energy costs.

First things first: Let’s have a little educational session on energy. Energy is defined as the ability of a system to perform work. In most cases, people are concerned with the work of heating their homes. In the case of electricity, the energy is an electric charge through the wires and the case of natural gas or propane, the energy is generated when the gas is burned and converted to thermal energy to heat the home.

Energy is not measured the same for electricity as it is for propane and natural gas heaters. Most electric heaters will be rated in watts, while propane and natural gas heaters will be rated in Btu, or British thermal units, per hour. These are not energy ratings but, instead, power ratings; energy is how long you use power.

To convert from the power rating to the energy rating, you need to multiply the rated power by how long you plan to use the heater in hours. This results in the following units of energy that you will be billed for at the end of the month.

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Rating Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>kWh (kilowatt-hour)</td>
</tr>
<tr>
<td>Propane</td>
<td>Btu</td>
</tr>
<tr>
<td>Natural gas</td>
<td>Btu</td>
</tr>
</tbody>
</table>

You might not see Btu on your bill at the end of the month but instead gallons or ccf. Just realize that a gallon of propane and a ccf (100 cubic feet) of natural gas is equal to 91,333 Btu and 102,800 Btu respectively.

With this information, we are left with the following to convert to energy.

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Conversion Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>kWh = gallons x 91,333 Btu + 102,800 Btu</td>
</tr>
<tr>
<td>Propane</td>
<td>Btu = ccf x 91,333 Btu + 102,800 Btu</td>
</tr>
<tr>
<td>Natural gas</td>
<td>Btu = ccf x 91,333 Btu + 102,800 Btu</td>
</tr>
</tbody>
</table>

We can now relate the cost of propane and natural gas. If you multiply your natural gas cost by 1.1256 and it is higher than the cost of 1 gallon of propane, then propane is cheaper. If you multiply your propane cost by 0.8885 and it is higher than the cost of 1 ccf of natural gas, then natural gas is cheaper.

Finally, let’s convert from Btu to kWh:

\[
\text{Cost per gallon of propane} \times \left( \frac{91,333 \times 0.000293071}{1} \right) = \text{cost of 1 kWh of propane}
\]

\[
\text{Cost per ccf of natural gas} \times \left( \frac{102,800 \times 0.000293071}{1} \right) = \text{cost of 1 kWh of natural gas}
\]

To make things easier, here is a chart that allows you to compare different energy sources.

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Multiply by Factor in Table</th>
<th>Cost of Electricity (kWh)</th>
<th>Cost of Propane (gal)</th>
<th>Cost of Natural Gas (ccf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td></td>
<td>1</td>
<td>26.76660</td>
<td>30.12956</td>
</tr>
<tr>
<td>Propane</td>
<td></td>
<td>0.03736</td>
<td>1</td>
<td>0.88845</td>
</tr>
<tr>
<td>Natural gas</td>
<td></td>
<td>0.03319</td>
<td>1.12555</td>
<td>1</td>
</tr>
</tbody>
</table>

**Example: If you wanted to convert electric costs to compare to natural gas, you would multiply your electric costs by 30.12956 to compare that number to cost of natural gas.

**ANSWER:** Unfortunately, choosing your heating system isn’t quite as simple as comparing the rates as different types of heat are more efficient. Electric heat isn’t quite 100 percent efficient but it’s close, while propane and gas systems are going to range from 50 percent all the way up to 90 percent depending on the age of your system. Additionally, there is more to a bill than just these charges. Some companies might charge differently for other ancillary charges. There are also sometimes availability charges and different rebates. At a minimum, we hope that this helps you to compare apples to apples.

A big thank you to YVEA’s engineering team for helping put this information together. If you have any more questions on this topic, please send your questions to questions@yvea.com and we will do our best to get you an answer.

Source: eia.gov/energyexplained/index.cfm?page=about_energy_units
Yampa Valley Electric Association completed phase I of its pilot portion of the advanced metering infrastructure project at the end of December 2015 with much success.

In April and May, we deployed meters to our members on the west side of Steamboat, Milner and surrounding areas that receive power from our Airport substation.

Beginning in June, we will deploy meters to our members who reside in the downtown area including Old Town, Brooklyn and Fairview that receive power from our Brooklyn substation. We will finish the summer of 2016 with deployment in south Routt from the Keystone substation in order to reach meters that are sometimes not accessible during the winter.

- Members will receive a phone call a few days prior to YVEA being in their area
- Members do not need to be at home in order for YVEA to install a new meter
- In most cases, power will not be interrupted. But if power is interrupted for a few minutes, you may have to reset your electronic devices

YVEA will leave a courtesy notice on your door when the meter installation is completed.

If members have any access issues, i.e., gate codes we do not know about or safety concerns that we should have advanced knowledge of, we ask that you call us at 970-879-1160.

For detailed up-to-date information and a map of deployment in your neighborhood and subdivision, please visit our website at www.yvea.com.

We also created an icon on our website next to our Facebook and Twitter icons for easy access to AMI information.

Don’t Let Unsafe Actions Make Waves in Summer Fun

Keep you and your loved ones safe while enjoying water recreation activities this summer.

Be sure to check weather forecasts. Postpone your plans if a thunderstorm is expected, as the risks for lightning strikes are especially high in or near bodies of water. Remember the advice from the National Weather Service: “When thunder roars, go indoors.”

According to the NWS, 64 percent of lightning fatalities occur during outdoor recreation activities. You are not safe from lightning strikes while outside, so once you hear thunder, get to a safe shelter, such as an enclosed building with electricity or plumbing or an enclosed metal-topped vehicle with its windows up. Wait until at least 30 minutes pass without thunder to return outside.

Be aware of your surroundings. Always check the location of nearby power lines before boating or fishing. Make sure you are casting the line away from power lines to avoid potential contact.

Do not raise a mast or antenna when your boat is near a power line. Never attempt to move a power line out of the way so that a boat can pass underneath. Maintain a safe distance of at least 10 feet between your boat and nearby power lines. Keep in mind that water levels are constantly changing, altering the distance between the water and the line.

If your boat does come in contact with a power line, do not enter the water. The water could be energized. Instead, stay in the boat and avoid touching anything metal until help arrives or until your boat is no longer in contact with the line.

Do not swim around docks with electrical equipment or boats plugged into shore power. If you are in the water and feel a tingle of electric current, shout to let others know, try to stay upright, tuck your legs up to make yourself smaller and swim away from anything that could be energized. Do not head to boat or dock ladders to get out.

If you see someone who you suspect is getting shocked, do not immediately jump in to save them. Throw them a float, turn off the shore power connection at the meter base and/or unplug shore power cords. Try to eliminate the source of electricity as quickly as possible; then call for help.

To help prevent the risk of electricity entering the water, have your boat and dock electrical systems regularly inspected and maintained by a professional familiar with marine electrical codes.
Co-ops such as Yampa Valley Electric are leading the way in community solar energy initiatives. What are community solar programs? These cooperatively built “farms” of solar panels, such as YVEA’s project at Craig, allow co-op members to share in a photovoltaic installation that generates electricity from the sun.

“Co-ops are way ahead of the industry in community solar energy,” says Andrew Cotter, program and product manager for renewable and distributed generation with the National Rural Electric Cooperative Association.

Electric co-op involvement with different types of solar energy projects grew from enough photovoltaic projects to produce 3 megawatts of electricity in 2009, to 176 MW in 36 different states by the end of 2015, says NRECA strategic analyst Michael Leitman. He adds that with another 375 MW in the planning stages, by 2018 co-op involvement in solar will triple.

“Cooperative involvement in solar energy has risen very quickly over the last few years,” Leitman says. “And 70 percent of the community solar programs in the country are run by electric co-ops.”

Among the new approaches called for by solar energy are ways to assure safety in the way solar panels are connected to power lines and how to design electric rates in ways that benefit all members of the co-op.

Electric co-ops are even examining ways to overcome one of solar energy’s biggest hurdles — producing electricity at night, in weather and in parts of the country with limited sunshine.

Battery storage technology is improving, and one NRECA idea — community storage — recognizes that energy is stored in the hot water of home electric water heaters. Specially-designed electric rates and power line technology could link all those water heaters into one giant community battery. In addition, NRECA participates on a number of codes and standards committees, tackling the most urgent safety and operational issues to keep co-op members and staff safe and ensure a reliable grid.

That’s just one of the ways that co-op leadership in solar technology could maximize the usefulness of photovoltaics.

Paul Wesslund writes on energy topics for the National Rural Electric Association.

---

**Retrofitting Your Manufactured Home for Energy Efficiency**

1. Install energy-efficient windows and doors
2. Replace insulation in the belly
3. Make general repairs (seal bottom board, caulk windows, doors, ducts, etc.)
4. Add insulation to your walls
5. Install or seal belly wrap
6. Add insulation to your roof or install a roof cap