APRIL ■ 2014

REAL PEOPLE. REAL POWER.

Tideland Topics

A NEWSLETTER FOR THE MEMBER-OWNERS OF TIDELAND ELECTRIC MEMBERSHIP CORPORATION

TAX HIKE: Electricity sales tax to more than double July 1

In 2013, the North Carolina General Assembly approved raising the sales tax on electricity from the current 3 percent rate to 7 percent effective July 1, 2014. However, legislators simultaneously repealed the 3.22 percent franchise tax power companies have traditionally paid on electricity sales.

To help offset some of the effects of the sales tax increase to our members, Tideland EMC's board of directors has approved a kilowatt-hour rate reduction beginning July 1 to reflect decreased operating expenses when the francise tax is eliminated. Therefore, the net increase for a member using at least 600 kilowatt-hours of electricity per month will be less than 1 percent. New rate schedules will be published in the June issue of Tideland Topics to reflect the changes in rates and sales tax.

The sales tax change does not impact manufacturers, farmers and internet datacenters that are currently exempt from electricity sales and use tax. If you have already filed a certificate of exemption with Tideland and the North Carolina Department of Revenue (NCDOR) then you will actually see a net decrease in the price you pay for electricity due to the decrease in kilowatt-hour rates.

If you believe your farming or manufacturing operation may qualify for the sales and use tax exemption, please fill out NCDOR's Form E-595E and mail the completed form to:

Tideland EMC
ATTN: Laura Willis
PO Box 159
Pantego, NC 27860

You can find a link to the form on our website at: www.tidelandemc.com/rateFeesBus.aspx

Weatherization loans available to members

Thinking about replacing your home's heating and cooling system or adding extra insulation to your attic, but can't find the cash? You may want to consider Tideland EMC's 5% weatherization loan program. Loans can be made for the cost of labor and materials for a wide range of projects including

- heat pumps and central air conditioning *(SEER 15 or higher)*
- heat pump water heaters
- storm windows and doors
- ceiling, wall or floor insulation
- new ductwork installations

Funds are subject to availability so apply early. The maximum loan term is 5 years. Monthly loan payments are added to your electric bill.

For more information, contact Tideland EMC loan officer Karen Heffley at 800.637.1079, ext. 1141.

Right-of-Way Maintenance Update

Tideland has hired Lucas Tree Experts to trim trees in our rights-of-way. In April crews will be working along the Merritt Circuit between Grantsboro and Stonewall.Their trimming includes all connected lanes and roads in that area where overhead power lines are present.

Mowing crews will continues to work south of the Pamlico River along Kershaw Road and Janiero Road.

Message to our Member-Owners: Going the extra mile to prevent outages

By Paul Spruill
General Manager & CEO

In late 2013, Tideland EMC solicited new competitive bids for right-of-way tree trimming. As a result, Tideland awarded a contract to Lucas Tree Experts that not only lowers our total right of way tree trimming costs but also allows for trimming along individual service drops (the overhead line from the transformer to the meter).

Previously, Tideland EMC used its own linemen to trim out service drops on an as-needed basis when members called to request service. With a lineman's hourly rate being more than that of a tree trimmer, it wasn't the best use of our linemen's time and skills. More importantly, all service drops are in need of regular inspection in order to minimize individual service outages.

Tree damage to service drops has often been a source of member frustration following major storms when individual outages must necessarily be at the bottom of our service restoration priorities when attempting to get power back on to thousands of homes.

Therefore, we have asked Lucas Tree Experts to assess the pathway along individual service drops to see if tree trimming is justified. If so, a Lucas representative will attempt to notify the member that their individual service drop needs to be trimmed. Keep in mind that we will only be trimming within three feet of the service drop and not the 15-foot distance normally associated with distribution lines. We will also not be taking down yard trees as a preventative measure. If you need a yard tree removed, you will need to privately engage a tree removal service.

To be cost effective, service drop trimming will be worked in conjunction with our normal right-of-way clearing. It currently takes five years to trim our entire electric system and each month we publish a schedule of the areas where Lucas Tree Experts is expected to trim.

Keep in mind that you can contribute to greater service reliability by planting trees outside of the mature-height fall zone. You may also want to consider having your overhead service line relocated underground.

Why proper HVAC sizing is so important

If you are in the market for a new central air-conditioning system or heat pump, it is important that the unit be properly sized. That's why we recommend that you get multiple quotes and make sure each HVAC technician provides you with a copy of the **Manual J** sizing calculation. Don't hire a contractor who wants to size your unit based solely on the square footage of your home. A well-qualified contractor will spend about an hour in your home taking measurements including floors, ceilings and walls including all the windows. They will also check the home's insulation levels and the existing ductwork.

An oversized system will short cycle, not running long enough to adequately dehumidify your home or business. Proper dehumidification is extremely important in eastern North Carolina where it's usually not the heat but the humidity that makes us hot and uncomfortable. One tell-tale sign of an oversized unit are windows that frequently sweat during the air-conditioning season. Remember, motors are most inefficient at start up, so when an oversized unit short cycles it will come on more frequently with shorter run times. That means more wear and tear on the HVAC system and could shorten the life of the unit.

A Craven County member recently had a new heat pump installed and after calling us to say the house remained uncomfortable and utility bills were still high, we went to her house and found completely disconnected ductwork and uninsulated boots. Chances are she didn't even need a new heat pump just ductwork repairs. That's why it pays to call the co-op before making a new system purchase.

Tipping Point: Propane vs. Electricity

For many it was a winter to remember. For others it was also a breaking point. That's what we've heard from many members who were at the mercy of volatile propane prices that climbed to $5.00 per gallon in February. We've also heard from members who were unable to get deliveries due to rationing in some areas and icy road conditions in others.

We're not here to advocate for electric heat over propane or any other fuel source. In years past we routinely recommended that members consider the advantages of dual fuel heat pumps when the economics made propane as a back-up heat source more affordable than electric resistance heat strips. We also know that serious home chefs almost always prefer gas cooking to electric methods. And if you are determined to convert to an on-demand water heating system, we always prefer that you go with propane over electric because it generally means having to increase transformer sizes and possibly even the size of your household electric service. (Not to mention the abysmal service reliability of on demand water heating systems...but we'll save that for another article). However, it is our responsibility to provide members with reliable energy facts regardless of fuel type so you can get the most energy bang for your hard earned bucks.

In reality, no one wants to spend money buying electricity or propane, or even firewood for that matter. It's not like you can go outside and see it parked in your driveway and brag about it to all your neighbors. However, what people are willing to pay for is comfort in the form of heat. So it only makes sense that when we are trying to determine the most economical heating method we evaluate the cost per unit of heat which is referred to as a British thermal unit or more commonly Btu.

The Btu content per gallon of propane is 91,500 Btu. The Btu content for electricity is 3,413 Btu per kilowat-hour. So Btu to Btu, it takes 26.8 kilowatt-hours to equal the Btu content of one gallon of propane. Using Tideland's residential rates for January and February 2014 we arrive at the following calculation:

26.8 kWh x 10.71¢ = $2.87

So if we used only Btu content to determine the best energy source for home heating it would appear that propane beats electricity if the price for propane is below $2.87 per gallon.

However, we've determined the cost of the actual heat content, now we have to go the next step and look at the cost of the usable heat (warmth). A low-efficiency propane furnace may have an efficiency rating of 80 percent. A high-efficiency propane furnace may have an efficiency rating of 95 percent. So let's just assume that we have a 90 percent efficient propane furnace. That means 10 percent of the Btus are not converted to useable heat (warmth). So here's more math:

91,500 Btu-10% Btu loss = 82,350 Btu

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

24 kWh x 10.71¢ = $2.57

Now the least efficient electric heating system delivers 100 percent efficient heat. That's right, electric resistance heat (i.e. space heaters, baseboard heating) is **100%** energy efficient. Every single Btu in a kilowatt-hour is delivered as usable heat. So if you are paying more than $2.57 per gallon of propane for a 90 percent efficient propane furnace, it would be cheaper to use electric resistance heat.

Do we recommend that you use electric resistance heat? No, we don't. We're proud to sell electricity but not the type that leaves your wallet empty every month. If you have no choice but to use electric resistance heat then there are a whole bunch of tips we can share that will save you lots of money. We'll address those at a later time or just give us a call and we'll help you navigate your way around the potential landmines of electric resistance space heating. *(Although we'd like to point out that the Amish don't even use electricity. So why would anyone think an Amish space heater is a good idea?)*

Fortunately, there are much more efficient electric heating systems called heat pumps. An air-source heat pump is at least 250 percent energy efficient. What? How can this be? It's all in the name. Heat. Pump.

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4 SPRING CLEANING TIPS THAT SAVE ENERGY

1. While changing out your air filter, remove the return air grille and give it a thorough cleaning to remove dust buildup

2. Give your refrigerator and freezer gaskets a thorough cleaning with a soft brush and warm soapy water

3. Clean range top drip pans so they will reflect more heat for faster cooking

4. Clean your clothes dryer vent hose to reduce drying times and to prevent fires

Tipping Point *continued from page 31*

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 a central air conditioner you've already experienced this process in reverse when your unit pumps heat out of your home in the summer. If you've ever stood next to the outdoor components you know the air-conditioning system is exhausting very hot air. It simply does the opposite in winter moving heat into your home.

Now the colder it gets outside the less heat content there is in the outdoor air to pump into the home. Because heat pump engineers know you want to warm when you want to be warm, air source heat pumps are equipped with some type of auxiliary heat for those times when temperatures near freezing. The typical back up is in the form of electric resistance heat strips but there is a dual fuel propane option. In a normal winter, given our coastal climate, less than 5 percent of the heating season should require auxiliary heat. That means for 95 percent of the heating season the system is operating at 250+ percent efficiency. Let's do the math by calculating the delivered Btu per kilowatt hour when using a heat pump:

3,413 Btu x 250% = 8,532 Btu

So using an air source heat pump it only takes 9.6 kWh to deliver the same amount of warmth as a 90 percent efficient propane furnace.

9.6 kWh x 10.71¢ = $1.03

So the price of propane would have to drop to $1.03 per gallon to breakeven with the cost of warmth provided by an air source heat pump.

And it gets even better when we look at the 350+ percent efficiencies of a geothermal (water source) heat pump.

3,413 Btu x 350% = 11,945 Btu

To be fair to propane I'm going to assume 97 percent furnace efficiency when comparing it to the geothermal heat pump so the delivered heat per gallon of propane would be 88,755 Btu.

88,755 Btu / 11,945 Btu = 7.4 kWh
7.4 kWh x 10.71¢ = 79¢

So the price of propane would have to equal 79¢ per gallon to be cost competitive with a geothermal heat pump. Yes, the geothermal unit costs more upfront but remember that you can get up to 65 percent of the installed cost back through state and federal tax credits. (Always consult a tax professional first to make sure you can take advantage of available tax credits). The extra hidden nugget about geothermal systems is they can also be equipped to provide free water heating most of the year.

Let us reiterate: We are not anti-propane. We are pro-member affordability. If you are able to benefit from farm pricing for your propane purchases then it may still be a viable heating source. If you just installed a new propane system you probably can't afford to transition to a new system now. If you have a readily available source of firewood a wood fired boiler may be your best bet. (We can calculate those Btu costs as well).

The point of this article is to encourage you to call Tideland EMC before you make a home-heating decision so we can help you find the best energy solution for your budget and lifestyle. One size does not fit all when it comes to home heating. For many of you, the best return on investment may be simply insulating and weather sealing your home or replacing bad ductwork instead of the mechanical system. So pick up the phone and call energy services manager Heidi Smith at 252.944.2410. The advice is free and the savings could be substantial.

RESIDENTIAL TIME OF USE MEMBERS:
SUMMER PEAK HOURS OF 4 PM TO 8 PM BEGIN APRIL 16

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Tideland Topics

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