

Pump Your Heat



**MESSAGE
FROM
MANAGER
JERRY D.
WILLIAMS**

Last month we discussed space heaters and explained that 1,000 watts of electricity is equal to 3,412 British thermal units (BTUs). A 1,000-watt heater is still a 1,000-watt heater and will produce the same BTUs of heat, regardless of how pretty the surrounding case is, but sometimes there are other differences that I failed to mention.

Some of the fancy woodwork space heaters are so large they do not tip over easily and the coils are buried deep inside and prevent the heater from igniting nearby flammable materials. If you are going to purchase a space heater be aware of where the heater will be located. A space heater located too close to drapes, chairs or other flammable materials have been the cause of many house fires.

The most energy efficient way to heat your home is with a heat pump. Heat pumps are air conditioners but when they produce heat, the refrigerant (Freon) reverses its flow and then it is called a heat pump. As the name implies, you pump existing heat instead of creating heat by burning a fuel or using electricity to make wires get hot. Heat pumps are used to pull heat out of the outside air or ground to heat a home or other building, but they can be reversed to cool a building. Even on a cold day, there exists some heat in the outside air that can be pumped into your home. An air-to-air heat pump is simply an air conditioner with a reversing valve that allows it to do the opposite thing in the winter. In summary, a heat pump can heat and cool without having two separate units.

Simply put, a heat pump uses a small amount of energy to move heat from one location to another. If you know how an air conditioner works you basically know a lot about how a heat pump works. There are a lot of different heat pumps, but they all work on a basic concept of transferring heat. One of the most common heat pumps is the air-to-air heat pump.

In the hot summer, a central air conditioner simply compresses some gas like Freon into a liquid. (Yes, I know we don't use Freon any more, but a lot of folks still call it Freon.) The liquid Freon turns into a very cold gas as it moves through your inside air conditioning coils. A fan motor moves air through your inside air conditioning coils, which cools the air and allows heat from the house to be absorbed by the Freon moving through the coils. The warmed Freon gas is piped to your outside air conditioning unit, which disperses the absorbed heat by pulling outside air through the outside coils. When the outside unit releases the heat, it allows the refrigerant to cool down again and flow back inside to pick up more heat. In the winter time, instead of removing heat from inside your home, the reversing valve allows the heat pump to release it.

Currently the most efficient and Earth-friendly way of heating or cooling your home is the ground-source heat pump. This unit absorbs heat or cooling from the ground and transfers the heat/coolness into your home by circulating water through buried pipes. In this part of the United States, the earth is about 68 degrees at six feet, and pretty much stays this temperature for the next 100 feet or so. At six feet or more, the earth temperature stays the same each day, regardless of the above ground outside air temperature. The indoor unit compresses the heat from the 68 degree water to heat your home. By starting with 68 degree water, you can see the indoor unit doesn't have to work very

hard to produce your desired temperature of about 72 degrees, in the winter or summer.

These ground-source units can use either a closed loop or open loop system. I would never recommend anything but the closed loop. In a closed loop system the same water is circulated through the pipes repeatedly. The pipe can be buried in trenches about 6 feet deep or placed in wells. Either way of getting the pipe underground is acceptable, so the decision is usually based on the most economical way of burying pipe. There is no need for the wells to have water because when you place the pipe in the hole, the well is filled up with mud anyway.

The most visible difference between a standard air-source heat pump and a ground-source heat pump is the water pipes in the ground replace the need for the large outside unit with coils and a fan. The water is simply pumped through the underground pipe and back to your inside unit where the heat/coolness is transferred to your house.

A ground-source heat pump is going to cost more than a standard air-source heat pump. But, if you have the upfront money, the payback is usually about five to six years. The price difference is generally the price of installing the underground loop of pipe. Most three-bedroom homes will need about 2,400 feet of underground pipe, or about 800 feet per ton. One ton equals 12,000 BTU (BTUs in an hour). Your A/C and heating company will be happy to calculate how much cooling loss/heat loss your home has, and calculate what size (ton) unit you will need to be comfortable.

Air-source heat pumps continue to improve on efficiency, but they have one fault. They don't work as well when the outside air temperature falls near or below freezing on a regular basis. Even on a very cold day, there's still heat in the outside air to be pumped indoors, but the unit needs to work harder to

extract the heat that's available. For that reason, most air-source heat pumps installed in our area have backup or supplemental heat to make the heat pump produce enough warmth to comfortably heat your home when the temperature falls below freezing. This supplemental heat can be electric resistance heat or gas heat.

To save the most on your energy bill, use the supplemental heating system sparingly. Don't be fooled into thinking gas supplemental heat would be good in case of a major power outage. The gas heat will not work without the electric fan.

Last month I told you it is not unusual for a heat pump to be 300 or 400 percent efficient. The correct term is Coefficient Of Performance or COP. This term is used to describe the ratio of useful heat movement to the amount of energy input. For example, those space heaters with electric resistance heating coils are 100 percent efficient, but a gas furnace may only be 80 percent efficient due to the amount of heat escaping through the flue. A typical air-source heat pump will have a COP of 3 to 4, which means that for every one unit of energy used to power the system, 3 to 4 units are supplied as heat—thus 300 to 400 percent efficient. Ground-source heat pumps are

even more efficient and do not need supplemental heat.

When shopping for an efficient heat pump, you will want to use a more common efficiency rating. Manufacturers are required to rate the efficiency of heat pumps in two ways: SEER and HSPF ratings. The first rating is for cooling and the second for heating. Higher SEER and HSPF ratings indicate a more efficient unit.

SEER stands for seasonal energy efficiency rating, and is a ratio of how much energy (measured in BTUs) is pumped outside in cooling mode divided by the electricity used (in watts) for cooling. Look for a SEER rating between 14 and 18.

HSPF stands for heating seasonal performance factor. It calculates the ratio of energy pumped indoors for heating to electricity used, but it's a more complicated equation than the SEER rating because it also takes into account supplemental heating needs and the energy used to defrost the unit. Look for an HSPF rating between 8 and 10.

The government regulations now require manufactures of new heat pumps to have a minimum SEER of 13 and a HSPF of 6.8 or better.

The more you pump your heat, the lower your electric bill will be.

COUNTRY CORNER EVENTS

February 2-4 and 5

"Bye Bye Birdie"—Presented by Paris Community Theatre in downtown Paris. Thursday-Saturday 7:30 p.m.; Sunday 2:30 p.m.

February 4

"I Love Paris" Banquet—Paris Education Foundation fundraiser for PHS graduate scholarships.

February 11

Sweetheart Soiree, benefiting the Children's Advocacy Center of Paris—7 p.m., Love Civic Center in Paris. Tickets \$75. For more information, call Mitzi at (903) 784-5787.

February 11

Choctaw Electric Co-op Relay For Life's 2nd Annual Predator Hunt. Three-man teams, \$100. For information, contact Clint Leathers at (580) 512-6543 or Eugene Keeling at (580) 317-5164.

If you have any events that you would like listed for Delta, Lamar or Red River counties, please contact Marci Thompson. Information must be submitted two months in advance. Email marci@lamarelectric.coop or call (903) 783-4911.

ISTOCKPHOTO | THINKSTOCK



YOUTH TOUR DEADLINE APPROACHING

The deadline for high school juniors and seniors to win a free trip to Washington, D.C., is just days away. Get your entries in by 5 p.m. February 24. For more information, go to our website at www.lamar-electric.coop and apply today.

COOPERATIVE PRINCIPLE



Voluntary and Open Membership

Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

COOPERATIVES—

**Owned by Our Members
Committed to Our Communities**



Lamar Electric Cooperative Academic Scholarship Information

This year, Lamar Electric Cooperative will award six \$1,000 academic scholarships to students who plan to pursue an academic degree or certification from an accredited university, college or junior college. Scholarship payment will be made directly to the college or university in one lump sum. Scholarships must be used within two years of the award date.

Eligibility Requirements For An Academic Scholarship

To be considered for a Lamar Electric Cooperative Scholarship, the student must:

- Live in the home of a parent or legal guardian who is a full-time resident in the Lamar Electric service area and maintains an active Lamar Electric account in good standing.
- Be a graduating senior attending a high school or an accredited Home Extended Studies program within the counties served by Lamar Electric Cooperative.

Six scholarships will be given away at the Lamar Electric Cooperative Annual Meeting on April 28 in a random drawing of qualified students. The winners need not be present.

Entry Deadline is April 27, 2012

The application can be found on our website: www.lamarelectric.coop. Once the application is completed simply click on the email button and send to: scholarship@lamarelectric.coop.

Or fill out the application below and mail to:
Lamar Electric Cooperative
Member Services Department
P.O. Box 580
Paris, TX 75461

CUT ALONG DOTTED LINE

LAMAR ELECTRIC COOPERATIVE 2012 SCHOLARSHIP APPLICATION

Deadline is April 27, 2012

NAME _____

ADDRESS _____

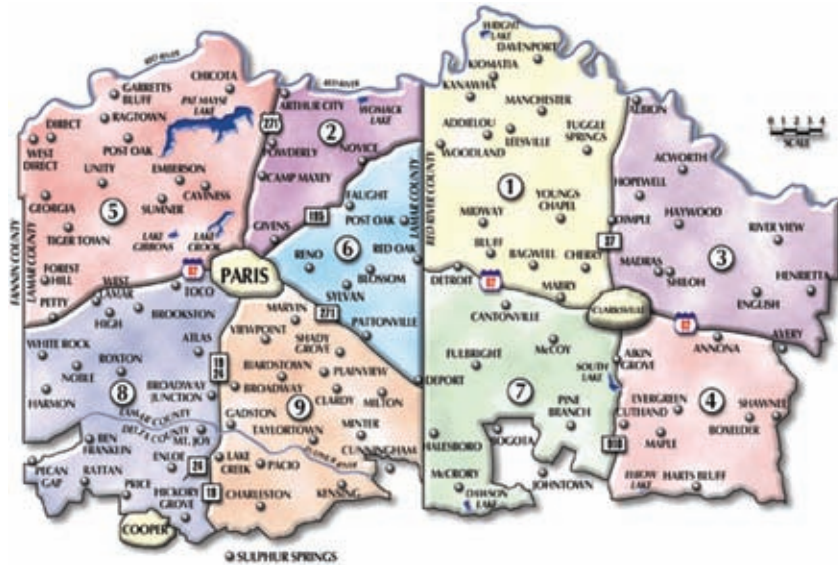
NAME OF HIGH SCHOOL _____

PARENT(S)/GUARDIAN(S) NAME _____

LEC ACCOUNT # _____

PHONE # _____

There's Still Time To Apply for the
LEC BOARD



Three positions on the board of directors are up for election each year. This year, Districts 5, 6 and 7 will be voting at the annual meeting. Members residing in Districts 5, 6 and 7 who wish to be a candidate for one of the three board positions must file an application not less than 60 days (February 28) or more than 90 days (January 29) before the annual meeting date. If you are unsure of which district you live in, please refer to the district map above.

Lamar Electric Cooperative will hold its annual meeting at 10 a.m. Saturday, April 28, at Love Civic Center at 2025 S. Collegiate Drive in Paris. If you have any questions, call Laura Williams at (903) 783-4907.

Qualifications for board members are specified in our bylaws. A copy of the qualification portion of the bylaws was published last month in this magazine. A copy of the bylaws is available at the Lamar Electric office and on our website at www.lamarelectric.coop.



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For information during office hours and outages after hours, call **(903) 784-4303** local or **1-800-782-9010** toll-free

Operating in Lamar, Red River, Delta and Fannin counties

Find us on the Web at www.lamarelectric.coop

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YOUR "LOCAL PAGES"

This section of Texas Co-op Power is produced by LEC each month to provide you with information about current events, safety, special programs and other activities of the cooperative. If you have any comments or suggestions, please contact the local office.

MEMBER BENEFITS:

- Level billing
- Automated meter reading
- Free bank draft service
- E-Bill
- Visa and MasterCard accepted



Air is drawn into your home from low areas, so inspect your foundation for potential air-infiltration points. Fixing these leaks makes a bigger impact on your electric bill than sealing doors and windows! Caulk all cracks and gaps around your home including spaces around wires for telephone, electrical, cable and gas lines, water spigots and dryer vents.