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A MONTHLY NEWSLETTER FOR MEMBERS OF OTERO COUNTY ELECTRIC CO-OP

December 2008

Cloudcroft, N.M. 575-682-2521

Alto, N.M. 575-336-4550

Carrizozo, N.M. 575-648-2352

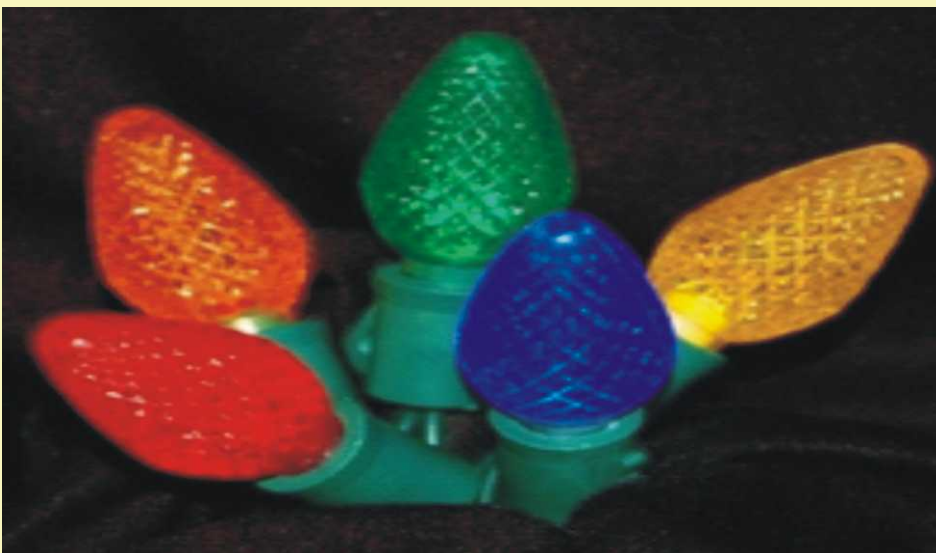
LED CHRISTMAS, HOLIDAY & DECORATIVE LIGHTS Advantages of L.E.D. Technology

Nothing has greater impact than lighting! Lighting influences the appearance, tone and impression of every object and space. The nature of light shapes our vision. Lighting technology has come a long way since the invention of Edison's light bulb.

Cutting edge technology includes:

- ◆ Connect up to 125 strings of lights using just one plug
- ◆ Reliability-Solid, one piece construction
- ◆ LED lights last for up to 100,000 hours (11 years)
- ◆ Constructed using 20-gauge wire
- ◆ Saves you up to 98% on electricity bills. Less than 2 % of incandescent bulb
- ◆ Never gets hot making them more fire safe
- ◆ Rust Proof, Zinc Coated lamp contacts
- ◆ 2 year warranty

Prices: White \$15.01; Red \$10.88; Multi-colored \$ 12.39;
Lights can be seen at all OCEC offices!



We have an energy challenge, America.

When it comes to finding solutions, we must meet climate change goals while keeping costs down and electricity available. America needs a plan. Immediately. Because we all know that our energy needs keep on growing—every day.

Now is the time to have a candid conversation with your elected officials. Together, we can find answers and take action. Start the conversation today at www.ourenergy.coop.

Winter Moratorium Began November 15

Notice has been sent to our members announcing the beginning of the Winter Moratorium. Should you have questions from members, direct them to Mike Winrow or the Human Services Department; Low Income Heating Energy Assistance Program (LIHEAP) at 800-283-4465.

Christmas Closings
December 24th
Closed @ Noon
December 25th All Day

Benefits of geothermal heat pumps

Geothermal systems are able to transfer heat to and from the ground with minimal use of electricity. When comparing a geothermal system to an ordinary system, a homeowner can save anywhere from 30% to 70% annually on utilities.^[8] Even with the high initial costs of purchasing a geothermal system the payback period is relatively short, typically between three and five years.^[9] Geothermal systems are recognized as one of the most efficient heating and cooling systems on the market.

The U.S. Environmental Protection Agency (EPA) has called geothermal the most energy-efficient, environmentally clean, and cost-effective space conditioning systems available.^[10] The life span of the system is longer than conventional heating and cooling systems. Most loop fields are warranted for 25 to 50 years and are expected to last at least 50 to 200 years.^{[9][8]} Geothermal systems use electricity for heating the house. The fluids used in loop fields are designed to be biodegradable, non-toxic, non-corrosive and have properties that will minimize pumping power needed.

Some electric companies will offer special rates to customers who install geothermal systems for heating/cooling their building.^[11] This is due to the fact that electrical plants have the largest loads during summer months and much of their capacity sits idle during winter months. This allows the electric company to use more of their facility during the winter months and sell more electricity. It also allows them to reduce peak usage during the summer (due to the increased efficiency of heat pumps), thereby avoiding costly construction of new power plants. For the same reasons, other utility companies have started to pay for the installation of geothermal heat pumps at customer residences. They lease the systems to their customers for a monthly fee, at a net overall savings to the customer.

Geothermal heat pumps are especially well matched to underfloor heating systems which do not require extremely high temperatures (as compared with wall-mounted radiators). Thus they are ideal for open plan offices. Using large surfaces such as floors, as opposed to radiators, distributes the heat more uniformly and allows for a lower temperature heat transfer fluid; however, wood or carpet floor coverings damp this effect because the thermal transfer efficiency of these materials is lower than that of masonry floors (tile, concrete).

Undisturbed earth below the frost line remains at a relatively constant temperature year round. This temperature equates roughly to the average annual air-temperature of the chosen location, so is usually 7-21 degrees Celsius (45-70 degrees Fahrenheit) depending on location. Because this temperature remains more constant than the air, geothermal heat pumps perform with far greater efficiency and in a far larger range of extreme temperatures than conventional air conditioners and furnaces, and even air-source heat pumps. A particular advantage is that they can use electricity to heat spaces and water much more efficiently than an electric heater.

Geothermal heat pump technology is a natural building technique. The current use of geothermal heat pump technology has resulted in the following emissions reductions:^[8]

- Elimination of more than 5.8 million metric tons of CO₂ annually
- Elimination of more than 1.6 million metric tons of carbon equivalent annually

These 1,000,000 installations have also resulted in the following energy consumption reductions:^[8]

- Annual savings of nearly 8,000 GWh
- Annual savings of nearly 40 trillion Btus of fossil fuels
- Reduced electricity demand by more than 2.6 GW

The impact of the current use of geothermal heat pumps is equivalent to:^[8]

- Taking close to 1,295,000 cars off the road
- Planting more than 385 million trees
- Reducing U.S. reliance on imported fuels by 21.5 million barrels (3,420,000 m³) of crude oil per year.

Costs and savings

The initial cost of installing a geothermal heat pump system can be two to three times that of a conventional heating system in most residential applications, new construction or existing. In retrofits, the cost of installation is affected by the size of living area, the home's age, insulation characteristics, the geology of the area, and location of the home/property. For new construction, proper duct system design and mechanical air exchange should be considered in initial system cost. These systems can save the average family from US\$400-1400/year, reducing the average heating/cooling costs by 35-70% per household.