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POWER Source

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A Touchstone Energy® Cooperative 



Farmers Electric Getting New Indoor Lighting at Headquarters Building

Effective July, 2012, production of T12 fluorescent lamps was phased out as mandated by the 2009 Department of Energy (DOE) General Service Lamp legislation. Many of the standard fluorescent lights – an estimated 500 million T12 lamps – in millions of buildings across the nation will need to be replaced with something more efficient. The “T” in T12 designates the lamp configuration. “T” stands for “tube” and “12” represents the diameter of the tube-shaped lamp in 1/8’s of an inch. So, in this case “12” equates to 12/8” or 1 1/2” in diameter. Most building owners will have two options for replacing T12 lamps; switching to T8s (8/8” or 1” lamps) or T5s (5/8” lamps). Also being phased out are the magnetic ballasts that support T12 lamp technology. These will be replaced with more efficient, electronic ballasts. Electronic ballasts will virtually eliminate flicker and hum.



Electrician changing out T12s with the more modern LED lighting

These increasingly common lighting retrofits offer improved lighting quality and illumination levels while reducing lighting system operating costs by 30 – 50% or more. Lighting in a typical commercial building represents 40% of their total energy costs. Farmers’ Electric Cooperative (FEC) was one of these businesses facing the challenges of a lighting retrofit.

When evaluating our options for the change, we weighed many things including total investment (material plus labor), lead-time on materials, light quality, and of course, return on our investment. After all things considered, in the warehouse we opted for a T8 conversion from T12. One thing that was attractive about the T8s was the fact that they will fit the same pin connection as the T12s. However, we did have to convert to the electronic ballasts. If we had opted for the T5s over the T8s, we would have had to change out the entire fixture (troffer) costing us considerably more in material and labor. Converting to T8s from T12s is one of the simplest ways to save on lighting energy and get better quality lighting at the same time.

In the office area we went with an LED conversion from T12s. LED stands for Light-Emitting Diode. An LED is an electronic device that emits light when electrical current passes through it. LEDs are actually considered equipment rather than lamps. We chose a very nice white light, similar to the existing emitted color (LEDs are available in many different colors and different variations of white). LED lighting technology has come a long way since it’s early days when most LED lights were red and used in small electronics such as portable stereos, etc.

Farmers’ Electric is excited about this lighting conversion for a couple of reasons; one, because we will use significantly less electricity to light our building, and two, maintenance spent changing bulbs and ballasts will be a fraction of what it used to be. Fact is, if they last as long as they claim (50,000 working hours or just over 21 years), the LED lights won’t need changing until many of us are long retired.

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Manager's Message...

Lance Adkins, GM

Where Does Our Electricity Come From?

Occasionally, I'll get a question from someone wanting to know where our electricity comes from and how much it costs to make it. Wholesale power cost represents roughly fifty-six-cents of every dollar that members pay to the Cooperative, the greatest single cost in providing electricity to the membership. Farmers' wholesale power is generated from a "fleet" of generation resources serving eastern New Mexico and west Texas and includes plants that burn coal and natural gas, as well as renewable energy resources. In other words, the Cooperative's supply

is not tied to specific generating units, we receive a load-ratio-share or "slice" of the whole system.

Approximately 45% of the power we purchased last year was generated by coal-fired generators located in the panhandle region of Texas. Generation plants that use natural gas as a fuel source account for another 45% of the power we purchased, generated by plants also located in Texas and a couple of plants in southeastern New Mexico. Electricity from renewable energy sources rounded out the remaining 10% of our resource mix, approximately 7% wind and 3% hydroelectric. In short, not only does our wholesale supply come from a variety of generators, there is also diversity in the type of

fuel used to generate electricity. Historically, this diversity has helped to provide system reliability and cost stability for the members of Farmers' Electric.

There are two coal-fired plants in our resource mix, one with two generating units and the other has three units. These plants were built in the late 1970's and early 1980's and utilized the best available technology for reducing emissions at that time. Over the years, additional emission controls have been added to meet changing, more stringent, federal and state regulations. Keep in mind, any time additional controls are added to a plant those costs are eventually included in rates and are passed on to consumers through their monthly electric bill.

Power plants that burn coal have come under increased scrutiny in recent years. Of particular concern is the fact that a coal plant produces more than two-

times the level of carbon dioxide (CO₂) in the combustion process than the equivalent size plant that burns natural gas. We are aware that the Environmental Protection Agency (EPA) is moving forward with regulations aimed at reducing CO₂ emissions from existing plants. Unfortunately, technology to capture CO₂ in the power plant combustion process does not exist. Across the nation, utilities are choosing to retire coal plants early and are replacing them with plants that burn natural gas.

Many of the natural gas fueled plants in our region are older than the coal plants just described, and a few are relatively new, having just begun operation in the past few

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years. Due to political uncertainty regarding national energy policy and ever-increasing regulations from state and federal regulators almost all-new “dispatchable” generation being built in the United States will be fueled by natural gas. Dispatchable just means the generator will be available to run on an as-needed basis; natural gas, coal and nuclear power are all considered fully dispatchable generation resources.

Unlike coal-plants, which are similar in design and function, natural gas plants can be designed to operate as a base-load unit, for intermediate use, or built to operate for system peaking needs or in emergency situations. Generally speaking, generating units designed to run for longer periods of time, such as base-load and intermediate units, are also designed to be more efficient in converting fuel to electricity. Peaking units are less efficient, but have the ability to start and be at full capacity in five to ten minutes, while a base-load unit may take hours to reach full capacity. Intermediate and peaking generation units are also well suited for providing backup reserves for “non-dispatchable” resources, like wind and solar, so that if the wind suddenly becomes unavailable, consumers continue to receive power.

When I’m speaking with folks, many are surprised to learn that energy from renewable resources provide a significant and increasing portion of our wholesale supply. As noted above, roughly 10% of our energy is from renewable resources, including 7% wind, from wind projects in New Mexico and Texas, and 3% from hydroelectric. While the Cooperative’s wholesale supply contracts prohibit Farmers’ Electric from negotiating directly with a wind developer, Farmers’ does receive energy from wind resources contracted with our wholesale supplier. Historically, wind resources have provided good value to members of Farmers’ Electric in that each kWh of wind offsets natural gas that would have been burned to generate electricity. Until an economic and reliable means of storing excess wind and solar energy is developed, these technologies can reduce the amount of fuel needed, however, they cannot fully replace dispatchable generation.

Until Next Month,



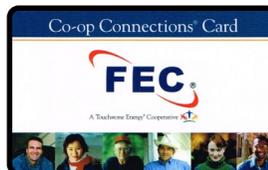
Highlight Business of the Month!

Rib Crib

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Poles Being Treated In Your Area

Continuing through this month and into late November or early December, *GLS, Ground Line Services* out of San Antonio, Texas, will be testing and treating poles for Farmers’ Electric, (FEC) in and around the Santa Rosa, New Mexico portions of the service area.

Pole testing and treating is a yearly maintenance program that FEC performs, however, every pole is not tested each year, rather, they are tested on a ten year rotation.



This type of maintenance program helps to ensure that FEC can continue to supply safe, reliable electricity to our members.

Stay Safe! Look Up and Live!

Staying clear of high-voltage overhead power lines is vital to your safety and the safety of others on the job and at home.

On the Job

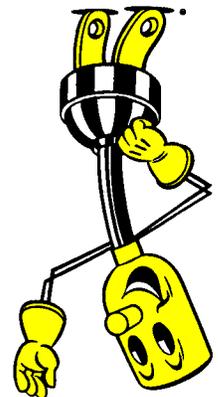
- Always look up before moving irrigation pipe or ladders, and operating a crane or other equipment that may come in contact with overhead power lines.
- Federal and state laws require you to stay a safe distance of 10 feet or more away from overhead lines.
- Use spotters when operating lift trucks and power or farm equipment to observe and communicate with operators so overhead lines aren't contacted.
- Avoid storing materials under or near overhead power lines.



At Home

- Look up! Always examine your surroundings for power line locations before doing any outside work.
- Keep yourself and your equipment at least 10 feet away from overhead lines at all times.
- If you notice an existing tree interfering with power lines, never attempt to trim the tree yourself. Call FEC at 1-800-445-8541.
- Pick a safe route to carry a ladder to your work area, and then carry it horizontally – never upright.
- Fly kites only in open areas away from power poles, overhead power lines, substations and other obstacles.
- Work only in good weather. Thunderstorms, rain, winds and damp or icy ground can cause you to lose control and come into contact with power lines.
- Overhead power lines are bare metal conductors and will kill or maim if they are contacted. Assume all power lines are energized and very dangerous.
- If you encounter a downed power line, stay as far away from it as you can – at least 100 yards. Contact FEC immediately at 1-800-445-8541 and 911.

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