July 2015 "Owned By Those We Serve Since 1938"

FEC® POWER Source

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A Touchstone Energy® Cooperative

Climb Safely, Avoid Power Lines When Using Ladders

Add your ladder to the list of outdoor equipment that can cause a serious electrical injury.

Sixty-five people die every year from electrocutions involving a metal ladder that touched an electrical wire in or around the house. In most of the cases, someone moves a metal ladder without lowering it to the ground and accidentally makes contact with an overhead electrical wire. Accidents also happen when people use metal ladders while handling an improperly grounded power tool.

Underwriters Laboratories and other rating agencies warn consumers not to bring their ladders within 10 feet of an overhead power line. They also recommend using fiberglass or wood ladders when working anywhere near electric wires or equipment. But any material can allow electricity to pass through it if it's wet.

The experts at UL also recommend that you:

- Buy ladders with a seal from UL or another accredited rating agency.
- Choose a ladder that is long enough for your job. Using a ladder that is too short is the culprit in many accidents.
- Follow the manufacturer's instructions for using your ladder. They set limits on weight and height.
- Inspect your ladder each time you use it for cracks in the wood or crimps in the metal.
- Secure the ladder on a firm, level surface – not on rocks or boards.
- Don't carry equipment while you're climbing a ladder. Buy a tool belt or ask someone to hand you what you need.
- Distribute your weight evenly, and don't overextend your reach.
- Never stand on the top rung of a stepladder or on the bucket shelf.

Switch to Safety

WITH THE FLIP OF A SWITCH, we can light our world. But, it's important to remember the powerful electric force that the switch controls and make sure it is operating safely.

Don't ignore these warning signs:

- The wall plate is hot to the touch.
- There is discoloration on or around the switch plate.
- Lights dim and/or flicker without apparent cause or when other appliances turn off or on.
- You hear cracking, popping, or buzzing from a switch or an outlet.
- Breakers trip or fuses blow when the switch is turned on.
- You detect an odor when a switch is used.
- The switch leans to one side or feels loose when operating.
- You experience a shock when operating the switch.
- The home is more than 40 years old and has aluminum wiring, but has not recently undergone a safety inspection by an electrician.

If any of these are happening in your home, have a licensed electrician inspect your home's electrical system as soon as possible.

Manager's Message...

Lance Adkins, GM

Why Not More Renewable?

Last month I finished my column with the question "why not purchase more renewable energy?" Readers will recall the question was posed by members following a previous article that discussed the energy resource mix for members of Farmers' Electric (FEC) in 2014 and that renewable energy in FEC's generation resource mix comprised a whopping 25 percent of total resource. Further, that renewable energy in our wholesale supply was purchased at a cost below the FEC "system average avoidable cost" for conventional generation resources, generally comprised of a combination of coal, natural gas, renewables, and the greater wholesale electricity market, resulting in cost savings for the members of FEC.

For FEC, the short answer to why not more renewables is cost, availability, and restrictions in our wholesale power supply contracts with Southwestern Public Service Company (SPS) and Western Farmers Electric Generation and Transmission Cooperative (WFEC). When evaluating cost and availability let us consider the issue from three perspectives; the retail member/consumer, FEC as a distribution cooperative/utility, and a wholesale supplier like SPS and WFEC.

From the retail residential member/consumer perspective, members pay FEC a fixed monthly customer charge, a charge for each kilowatt-hour (kWh) used, fuel and purchased power cost adjustment charge (FPPCAC), applicable taxes, and franchise fees in jurisdictions that charge franchise fees. For the roughly 15 members of FEC who have installed small wind or solar systems on their homes, also known as "distributed generation" (DG), they are able to "avoid" paying FEC the kWh charge, FPPCAC, and applicable taxes for the energy their DG systems produce for their use, saving around 11 cents for every kWh they avoid purchasing from FEC. Any excess energy or kWh put back on the FEC system is returned to the member at "avoided costs," a rate substantially lower than the 11 cents retail cost. For these members, they must weigh the cost of purchasing and operating their systems against the cost they would have paid FEC. These members are still connected to the "grid," relying on FEC to provide energy when their systems are not operating and pay FEC the fixed monthly customer charge and for additional energy they use during the month through a process known as net-metering. Over time, FEC will look to increase the monthly customer charge so that owners of DG, interconnected under net-metering rules, will be paying their fair share of FEC's fixed costs and not be heavily subsidized by all other members.

From FEC's perspective, the cost of wholesale power and costs we can avoid with renewable energy is more complicated. FEC also pays certain fixed customer charges, a kWh charge, a demand/capacity charge, transmission charge, FPPCAC charges, and gross receipts tax for resources generated in Oklahoma. Similar to a retail customer, renewables help FEC avoid a portion of wholesale kWh and FPPCAC charges, averaging roughly 3 cents per kWh; however, we are still responsible for fixed and demand/capacity charges and transmission capacity charges which are based on our full demand/capacity load requirements. FEC has wholesale power contracts with SPS and WFEC that obligate these wholesale suppliers to have, at all times, sufficient generation and transmission resources

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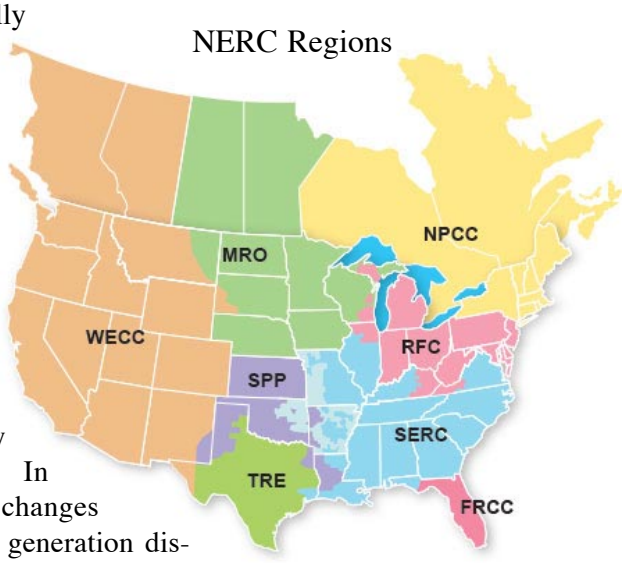
available to meet the energy demands of the FEC membership. In return, FEC is bound contractually to purchase all of our energy needs from these suppliers and is not able to independently own generation resources or contract with other suppliers. This contractual arrangement permits wholesale suppliers to make investments in generation and transmission resources designed to operate over a period of many years. One can imagine the reluctance of a supplier or banker to commit monies for the construction of new generation and transmission resources if there were no commitment to purchase from those resources.

Over time, this contractual relationship has changed through federal regulations due to concerns for grid reliability and planned development of new generation and transmission resources.

FEC is part of the eastern United States power grid and electrically isolated from most of New Mexico and the west. More specifically, FEC is electrically interconnected with the Southwest Power Pool (SPP) who has functional oversight of all power generation and bulk-transmission in the SPP footprint, which includes eastern New Mexico, the panhandle of Texas, Oklahoma, Nebraska, Kansas and portions of Arkansas, Missouri, and Louisiana. Today, all generation owners in the SPP, including SPS and WFEC, must report to the SPP what generation resources they will have available to serve load the following day and provide a bid price they will generate for. They must also report an estimate of the load for their system that must be served. In turn, the SPP decides which generators will run, all in an effort to enhance grid reliability and to select generation that will serve load most economically. In real-time, generation availability, transmission capacity and load changes must be rebalanced on a minute-by-minute basis with SPP giving generation dispatch instructions to the generation owners across the SPP. When considering the unpredictable nature of renewable technologies and their dependence on wind and sun, one can get a sense of the challenge these resources pose to the grid.



One exception to these regulations is renewable generation resources less than 10-megawatts generating capacity and located "behind the meter", or on FEC's side of the wholesale delivery point. In coordination with SPS, WFEC, and the SPP, FEC was able to commit to a long term Purchase Power Agreement (PPA) between the two Brahms Wind Projects interconnected with the FEC system south of Grady, with the contracting parties being WFEC and Brahms for the sole cost and benefit of FEC. As behind the meter generation, FEC is able to directly offset energy purchased from conventional generation resources without scheduling the wind generation through the SPP. For FEC this exemption from SPP market oversight was critical.

As an example, if the Brahms Wind Projects were registered and scheduled in the SPP market, FEC would be required to pay WFEC the contracted price per kWh and would receive credit from the SPP market on the actual value of the wind energy, determined in five minute intervals, throughout each month. Around noon on July 4, 2015, wind energy was trading at a negative value in portions of the SPP, meaning the utilities with wind energy contracts were paying the wind farm the contract price for production and receiving no credit for that energy in the market. Utilities were actually paying load to use it rather than being able to charge for it! Definitely a position FEC worked to avoid so that members would be protected from this price risk. In addition to the less than 10-megawatt requirement, the full output of behind the meter generation must truly stay behind the meter and avoid pushing excess production into the bulk transmission system. Over a 24-hour period, at certain times of the year, FEC's minimum load is well below 30-megawatts, so it is critical that the total of all behind the meter generation be sized to stay comfortably below this minimum value while assuming the renewable generation is at full production.

For large utilities like SPS and WFEC, owners of sizable conventional generation assets and relatively large service territories with both wholesale and retail loads, the risks associated with SPP market are greatly reduced. In fact, studies performed by the SPP indicate the SPP market has saved consumers a substantial sum of money in their first year of market operations. I'm skeptical of this claim, I think it has cost the members of FEC more, but that is another article somewhere in the future. One really positive development, with large scale wind and solar resources being

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operational in the SPP for several years, the SPP has learned that the variability of wind and solar, when disbursed over the entire SPP footprint has a greater measure of predictability than previously thought, thereby increasing the value of these renewable technologies to the grid as a whole. Still, reliability planners dictate there must be sufficient conventional generation, plus reserves and transmission capacity, available on a minute-to-minute basis to fully and reliably satisfy the energy requirements across the entire SPP footprint. Engineers and developers continue to work on technologies that will enable economic storage of excess renewable energy production. Economic storage technology is expected to be the next great leap in energy development and will greatly enhance the value of renewable energy production.

Until Next Month,

"I turned up savings by turning up my thermostat this summer. I'm now saving $100 a year on my electric bill! What can you do? Find out more at www.togetherwesave.com"

Working Together To Save!

Farmers' Electric Cooperative (FEC) recently partnered with Energy Pioneer Solutions (EPS) based out of Hastings, Nebraska. EPS is an innovative company exploring for lost energy in the form of leaks.

All homes, especially older homes, are challenged with air infiltration. Heat is gained or lost through these areas of infiltration. It is EPS's goal to find these escape routes and close them for good.

energypioneer

EPS will do an assessment of FEC members' homes (mobile homes excluded) for free. Once a member is made aware of what it will take, either through adding insulation, caulking, or other form of weatherization, a very attractive, unsecured loan package is offered. Members can choose to use EPS, another contractor, or do the work themselves, however, the loan package would only be available if EPS is contracted to make the improvements.

Because of FEC's large service area, EPS won't be able to get to everyone immediately, FEC will be sending out letters to our members, bi-weekly, so keep an eye out for your opportunity for an assessment.

To help defray the costs of energy efficiency improvements, FEC will rebate $500 to homeowners adding insulation to their attics.

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