

How Does the Texas Electric Grid Work?



MESSAGE FROM GENERAL MANAGER AND CEO JERRY D. WILLIAMS

THE ELECTRIC GRID AND HOW IT WORKS IN

Texas still seems to be a mystery to many. I still get asked the question; does Lamar Electric generate the power we sell? Where does the power come from? The answer for most of Texas is different than most every other state in the USA. Most of Texas has an electric grid that operates sort of like an island. Our electric grid is a lot like Hawaii. In Texas we pretty much generate all the electricity we use. The East fringe of Texas just east of Lamar Electric and some of the Texas panhandle are exceptions and are outside the Texas electric grid. Other than those minor exceptions; what's made here pretty much stays here.

In the early 1900's, investor owned power companies built power plants in the major cities and constructed electric power lines between the cities. If something happened at one power plant, the connections to other power plants would take up the slack. When Rural Electric Cooperatives were formed in the late 1930's, the Cooperatives negotiated to buy excess power from the big power companies. Over time the Cooperatives joined together and constructed their own power plants and connected the plants with high voltage transmission lines for reliability.

Other than the Tennessee Valley Authority area and some lines connecting government operated (Corps of Engineers) hydroelectric generators, virtually all of the high voltage transmissions lines across the United States were constructed by private power companies and cooperatives. There was no master plan and no government intervention. In most cases the transmission lines connected to nearby power plants for reliability reasons. In general private power companies and cooperatives would buy or sell power to their neighbor based on contracts or on an hourly basis based on who could generate the cheapest at the given hour.

As you may have guessed, Texas wished to remain independent and had no prevailing reason to build lines across the borders. Today 90 percent of the Texas electric load is interconnected through a high voltage transmission grid and the flow of power in the grid is overseen by the Electric Reliability Council of Texas (ERCOT). This grid supplies power to 25 mil-

lion Texans.

The concept of having an independent organization to oversee the grid in Texas actually started at the beginning of World War II, when several power companies banded together and formed the Texas Interconnected System, to help with the war effort. The transmission lines in Texas were used to send excess power to aluminum smelting plants along the Gulf Coast. After the war was over the organization continued because the power companies realized the benefits of having more transmission lines interconnected for reliability. In 1970 the name of this organization was changed to ERCOT.

In 1996 the Texas Public Utility Commission (PUC) endorsed ERCOT as a non-profit impartial third-party organization to oversee equitable access to the power grid by all the utilities. This was the first electric utility Independent System Operator in the United States. The utilities would still own and operate the electric grid but were required to comply with operating guidelines and allow every utility access to any other transmission line in the ERCOT control area.

In 1999 the Texas Legislature passed Senate Bill 7 which changed everything, effective January 1, 2002. This was called de-regulation but it created a lot of new regulations. Prior to this time the PUC would regulate how much each public electric utility could charge their customers based on what the PUC considered acceptable expenditures. The purpose was primarily to keep the investor owned utilities from over charging to benefit their investors or stock holders. The electric cooperatives were all non-profit and already being regulated by board members that were elected by their electric customers (consumer/owners). The cities with electric distribution systems (municipals) were also being regulated by their city council members who were elected by their electric customers. Basically the incentive to line the pockets of the investors did not exist for cooperatives and municipals electric systems and they were exempt from many of the new regulations.

Starting in 2002 this law effectively required every (Investor owned, Cooperatives and Municipals) electric gen-

erating plant to sell their power to the grid operator ERCOT and every company that sells retail electric power to purchase their power from ERCOT. In our area the major investor owned utility was TXU or Texas Utilities.

TXU was broken up into three companies. All TXU generating plants were now owned and operated by a company called Luminant and like everyone else must sell all their generated power to ERCOT. All the TXU transmission lines, distribution lines, poles, transformers and electric meters were now owned and operated by a company called Oncor. All expenses for the TXU, Cooperative and Municipal transmission lines would be grouped together across the state and all the transmission line owners would compensate each other based on electric load being served through the transmission line.

A new type of electric utility was created. These new companies were called Retail Electric Providers (REP). Their sole purpose is to purchase wholesale power from ERCOT and re-sell it retail. They own no generating plants, poles, wire, or meters. They are basically marketing and billing companies. There are currently about 138 companies selling retail power in ERCOT, and the new TXU is one of those 138 companies.

Non-Profit Cooperatives and Municipal Owned electric utilities were allowed to continue owning power plants, transmission lines, distribution lines, meters and bill their customer/owners the same as in the past. They still have to sell all power generated to ERCOT and purchase all the power they sell from ERCOT. They also get compensated for operation and maintenance of transmission lines the same way every other transmission line owner gets reimbursed.

Every utility selling electric power in the ERCOT part of Texas (REP's, Cooperatives and Municipals) must provide a forecast every day of power needs for the next day and every day ERCOT takes bids from companies with generators to supply the electric load for the next day. This is called the "day ahead" market. The bids from the generators establish the market price for the next day's electrical needs. Of course not every forecast is perfect so ERCOT secures immediate over-ages or shortfalls from the generating companies as the need arises which is called the "real time" market.

Since all electricity comes from the same interconnected grid, next month we will discuss the ramifications of Texas having more wind and solar than any other state. We will also discuss how some Texas cities are advertising that all their electricity is wind and solar, and at the same time purchasing all their power from the same grid as Lamar Electric.



1485 N. Main St. • P.O. Box 580
Paris, TX 75461

GENERAL MANAGER AND CEO

Jerry D. Williams

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Member Benefits

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

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.

CONTACT US

CALL US

(903) 784-4303 local or
1-800-782-9010 toll-free

FIND US ON THE WEB

www.lamarelectric.coop



Power Tip close the doors to your home and refrigerator quickly. Your heating system won't have to work as hard to maintain a constant temperature, and your appliances will use less energy to do their jobs.

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Lamar Electric To Award \$6,000 in Scholarships

LAMAR ELECTRIC WILL AWARD SIX \$1,000 ACADEMIC SCHOLARSHIPS TO STUDENTS who plan to pursue an academic degree or certification from an accredited university, college, junior college, technical school or other postsecondary educational institution. Scholarship payments will be made directly to the college, university or school in one lump sum. Scholarships must be used within two years of the award date. Funds may be used for tuition, books, and room and board.

ELIGIBILITY REQUIREMENTS

To be considered for a Lamar Electric scholarship, students must:

- ▶ Live full time in a residence served by Lamar Electric.
- ▶ Be a graduating senior attending a high school or an accredited home extended studies program within the counties served by Lamar Electric.

Six scholarships will be given away at the Lamar Electric Annual Meeting on April 27 in a random drawing of qualified students. The winners need not be present.

Entry deadline is April 12. The application can be found on our website, lamarelectric.coop. Once the application is complete, simply click on the email button and send to scholarship@lamarelectric.coop.

OR FILL OUT THE APPLICATION BELOW AND MAIL TO:

Lamar Electric Cooperative

Attn: Katie Morris

P.O. Box 580

Paris, TX 75461

LAMAR ELECTRIC COOPERATIVE 2019 SCHOLARSHIP APPLICATION

DEADLINE: APRIL 12

NAME _____

ADDRESS _____

NAME OF HIGH SCHOOL _____

PARENT(S)/GUARDIAN(S) NAME(S) _____

LAMAR ELECTRIC ACCOUNT NO. _____

PHONE NUMBER _____

Applicants hereby acknowledge that the application essay becomes the property of Lamar Electric and may be published.

SIGNATURE _____ DATE _____



Get details and enter online at TexasCoopPower.com/contests.

One lucky Lamar Electric member will win!
Find Schlitterbahn info at schlitterbahn.com.

Annual Meeting Set for April 27

LAMAR ELECTRIC COOPERATIVE WILL HOLD ITS ANNUAL MEETING at 10 a.m. Saturday, April 27, at Paris Junior High School, 2400 Jefferson Road in Paris. Additional information about the meeting will appear in *Texas Co-op Power* over the next few months. Three positions on the board of directors are up for election each year. This year, districts 2, 3 and 4 will be voting at the annual meeting. Members residing in those districts who wish to be a candidate for one of the three available board positions must appear in person at the main office of the cooperative and fill out a nomination form no earlier than January 27 and no later than February 26, as outlined in the co-op's bylaws. If you are unsure of which district you live in, please refer to the district map above.



Circled number represents board district

EXCERPT FROM LAMAR ELECTRIC BYLAWS

ARTICLE III. SECTION 3. Qualifications. No person shall be eligible to become a board member of the cooperative who:

- a) Has not been a member of the Cooperative for at least one year prior to nomination;
- b) Has not been a bona fide resident of the board district for which seeking election for at least one year prior to nomination;
- c) Is any way employed by or financially interested in a competing enterprise or a business selling electric energy or supplies to the cooperative;
- d) Is an employee of this cooperative or has been terminated from the cooperative less than five years;
- e) Is a close relative of an employee or an employee's spouse ("close" being defined as wife, husband, grandparent, grandchild, parent, child, brother, sister, step-parent, step-child, step-brother,

- step-sister, father-in-law, mother-in-law, son-in-law, daughter-in-law, brother-in-law, and/or sister-in-law);
- f) Has been convicted, pleaded guilty or plead "no contest" to a felony; or
- g) Is an incumbent of, or candidate for, an elective public office for which a salary is paid.

No person shall be eligible to remain a board member who:

- a) Is not a member of the Cooperative;
- b) Is not a bona fide resident of the district for which elected;
- c) Is any way employed by or financially interested in a competing enterprise or a business selling electric energy or supplies to the cooperative;
- d) Is an employee of this cooperative or has been terminated from the cooperative less than five years;
- e) Is a close relative of an employee

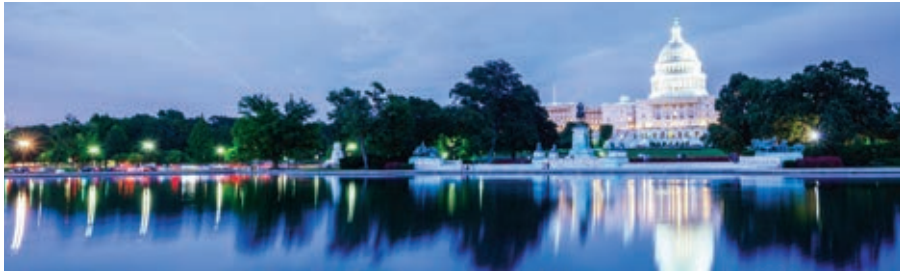
or an employee's spouse ("close" being defined as wife, hus-band, grandparent, grandchild, parent, child, brother, sister, step-parent, step-child, step-brother, step-sister, father-in-law, mother-in-law, son-in-law, daughter-in-law, brother-in-law, and/or sister-in-law);

- f) Has been convicted, pleaded guilty or plead "no contest" to a felony; or
- g) Is an incumbent of, or candidate for, an elective public office for which a salary is paid.

Upon establishment of the fact that a board member is holding office in violation of any of the foregoing provisions, the board shall remove such board member.

Nothing contained in this section shall affect in any manner whatsoever the validity of any action taken at any meeting of the board or at any special or annual meeting of the members.

Government-in-Action Youth Tour



EACH YEAR, LAMAR ELECTRIC SELECTS TWO HIGH SCHOOL STUDENTS TO ATTEND AN all-expenses-paid tour of Washington, D.C., which includes a visit to the U.S. Capitol and a meeting with members of Congress.

Eligible students must be in 10th, 11th or 12th grade and live full time in a residence served by Lamar Electric or attend one of the four high schools served by the co-op: Prairieland, Roxton, Detroit and Faith Christian. Home-schooled students served by Lamar Electric are also eligible.

Applications must include a three-page typed essay. The essay prompt is, “Tell us about circumstances where you have demonstrated your leadership skills.” The essay must be submitted to Lamar Electric no later than 5 p.m. February 8. The application is available online at lamarelectric.coop. Submit by email to dctrip@lamarelectric.coop or in person at 1485 N. Main St., Paris. It’s that easy!

Learn more about the Government-in-Action Youth Tour at lamarelectric.coop. Look for Government-in-Action Youth Tour 2019 after clicking on the Youth tab.

LAMAR ELECTRIC COOPERATIVE 2019 YOUTH TOUR APPLICATION

DEADLINE: FEBRUARY 8

NAME _____

PHONE NUMBER _____

EMAIL ADDRESS _____

PARENT(S)/GUARDIAN(S) NAME(S) _____

ADDRESS _____

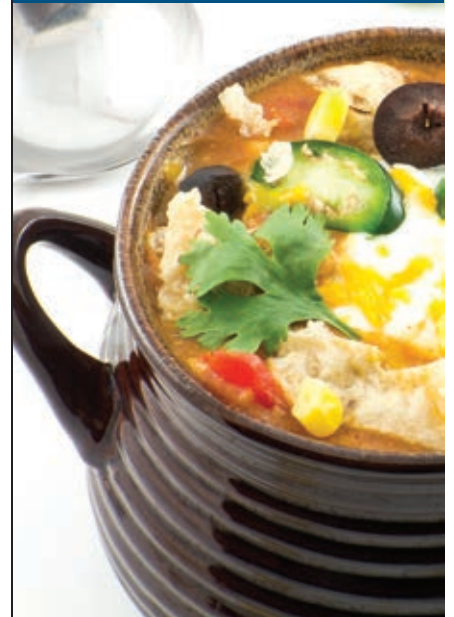
NAME OF HIGH SCHOOL _____

LAMAR ELECTRIC ACCOUNT NO. _____

Applicants hereby acknowledge that the application essay becomes the property of Lamar Electric and may be published.

SIGNATURE _____ DATE _____

RECIPE OF THE MONTH



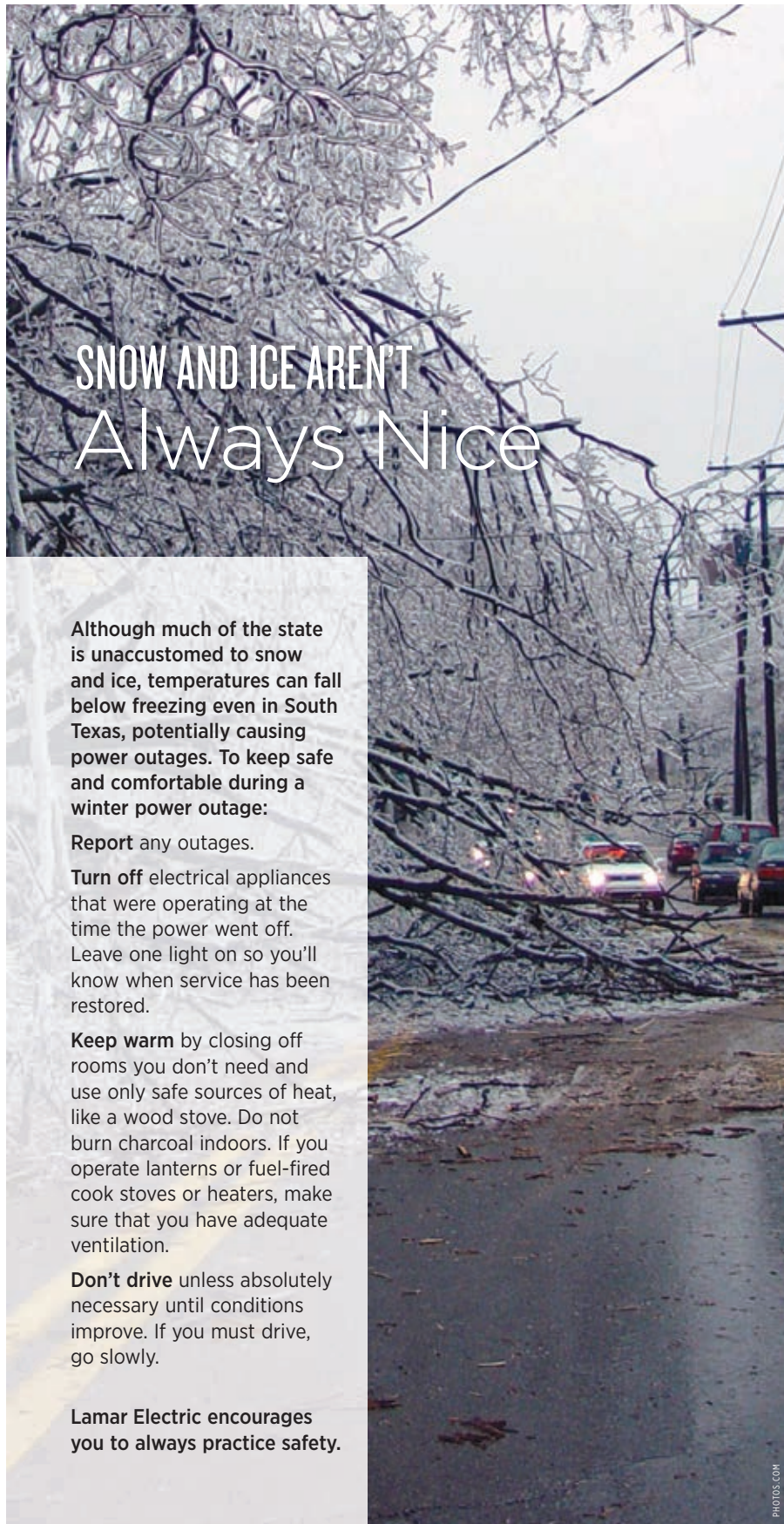
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Creamy Chicken Tortilla Soup

- 3 pounds chicken breast, cubed
- ½ cup chopped cilantro
- 1 tablespoon minced garlic
- 6 medium tomatoes, chopped
- 48 ounces mild picante sauce
- 26 ounces cream of chicken soup
- 26 ounces cream of mushroom soup
- Pepper, to taste
- Tortilla chips
- Mild cheddar cheese, finely shredded

1. In a large pot, boil chicken in 8 cups of water with cilantro and garlic. Once chicken is fully cooked, add tomatoes and picante sauce and cook 15 minutes.
2. Add soups and pepper to taste. Let simmer an additional 30 minutes.
3. Serve over crushed tortilla chips and top with cheese. Add avocado slices, jalapeños, black olives and sour cream, as desired. ▶ Makes 7 quarts.

Find this and more delicious recipes online at TEXASCOOPPOWER.COM



SNOW AND ICE AREN'T Always Nice

Although much of the state is unaccustomed to snow and ice, temperatures can fall below freezing even in South Texas, potentially causing power outages. To keep safe and comfortable during a winter power outage:

Report any outages.

Turn off electrical appliances that were operating at the time the power went off. Leave one light on so you'll know when service has been restored.

Keep warm by closing off rooms you don't need and use only safe sources of heat, like a wood stove. Do not burn charcoal indoors. If you operate lanterns or fuel-fired cook stoves or heaters, make sure that you have adequate ventilation.

Don't drive unless absolutely necessary until conditions improve. If you must drive, go slowly.

Lamar Electric encourages you to always practice safety.

PHOTOS.COM

“You are never too old to set another goal or to dream a new dream.”

—C.S. Lewis,
British writer and theologian

We wish you and yours a happy, healthy and joy-filled 2019.

Lamar Electric will be closed Tuesday, January 1, in observance of the holiday.

Happy New Year

2019

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