POWERLINE
NEWSLETTER FOR CO-OP MEMBERS OF CORN BELT ENERGY
CORN BELT ENERGY
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Electricity Grid 101

Beginner's guide to the electric grid

Electricity plays an essential role in everyday life.

It powers our homes, offices, hospitals and schools. We depend on it to keep us warm in the winter (and cool in the summer), charge our phones and binge watch our favorite TV shows. If the power goes out, even briefly, our lives can be disrupted.

The system that delivers your electricity is often described as the most complex machine in the world, and it's known as the electric grid.

What makes it so complex? We all use different amounts of electricity throughout the day, so the supply and demand for electricity is constantly changing. For example, we typically use more electricity in the mornings when we're starting our day, and in the evenings when we're cooking dinner and using appliances. Severe weather and other factors also impact how much electricity we need.

The challenge for electric providers is to plan for, produce and purchase enough electricity so it's available exactly when we need it. Too much or too little electricity in one place can cause problems. So, to make sure the whole system stays balanced, the electric grid must adjust in real time to changes and unforeseen events.

At its core, the electric grid is a network of power lines, transformers, substations and other infrastructure that spans the entire country. But it's not just a singular system. It's divided into three major interconnected grids: the Eastern Interconnection, the Western Interconnection and the Electric Reliability Council of Texas. These grids operate independently but are linked to allow electricity to be transferred between regions when backup support is required.

Within the three regions, seven balancing authorities known as independent system operators (ISOs) or regional transmission organizations (RTOs) monitor the grid, signaling to power plants when more electricity is needed to maintain a balanced electrical flow. ISOs and RTOs are like traffic controllers for electricity.

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The journey of electricity begins at power plants

Power plants can be thought of as factories that make electricity using various energy sources, like natural gas, solar, wind and nuclear energy. Across the U.S., more than 11,000 power plants deliver electricity to the grid.

Corn Belt Energy receives power from our generation and transmission (G&T) co-op, Wabash Valley Power Alliance.

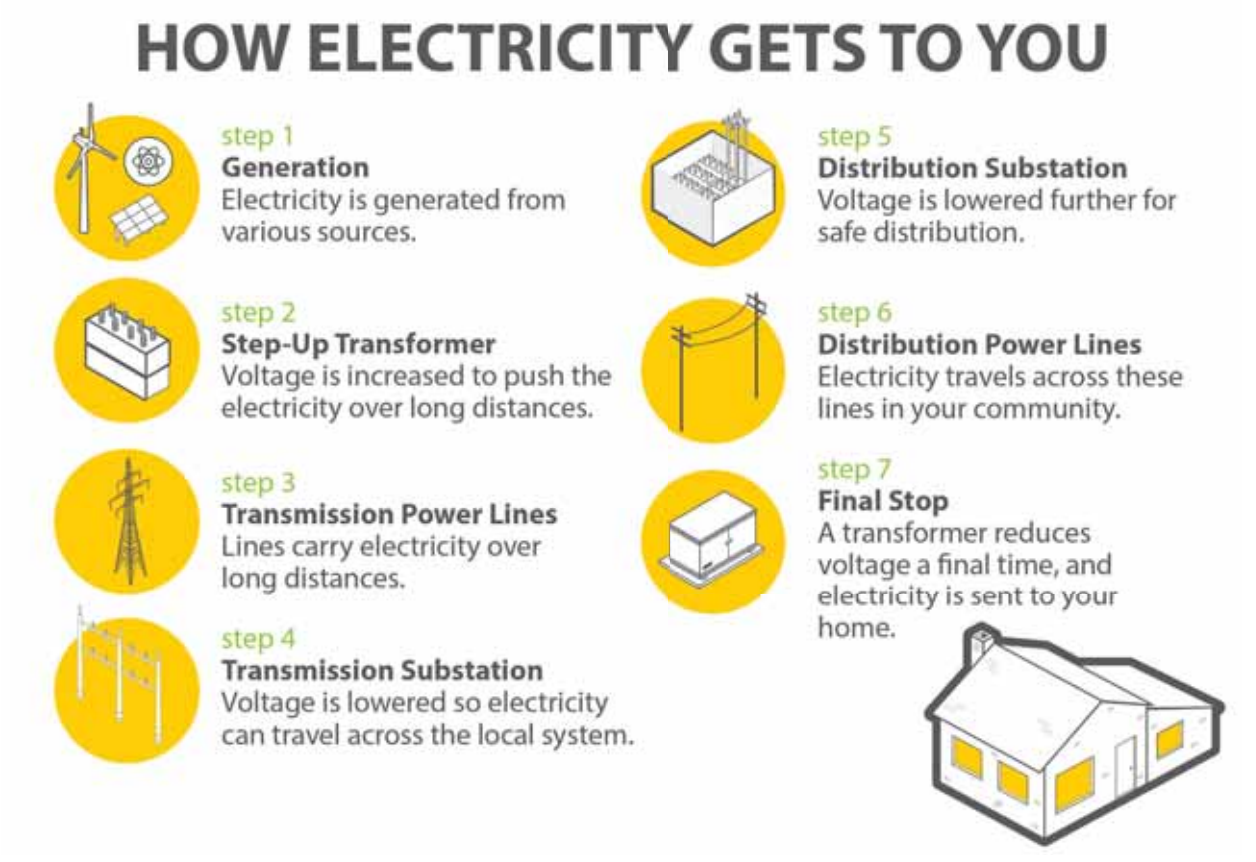
We work closely with Wabash Valley Power Alliance to provide electricity at the lowest cost possible. Being part of a G&T benefits members like you by placing ownership and control in the hands of your co-op, prioritizing affordability and reliability, supporting local economic development and fostering a sense of community. To get the electricity from power plants to you, we need a transportation system.

High-voltage transmission lines act as the highways for electricity, transporting power over long distances. These lines are supported by massive towers and travel through vast landscapes, connecting power plants to electric substations. Substations are like pit stops along the highway, where the voltage of electricity is adjusted. They play a crucial role in managing power flow and ensuring that electricity is safe for use in homes and businesses.

Once the electricity is reduced to the proper voltage, it travels through distribution power lines, like the ones you typically see on the side of the road. Distribution lines carry electricity from substations to homes, schools and businesses. Distribution transformers, which look like metal buckets on the tops of power poles or large green boxes on the ground, further reduce the voltage to levels suitable for household appliances and electronic devices.

After traveling through transformers, electricity reaches you — to power everyday life.

We're proud to be your local, trusted energy provider. From the time it's created to the time it's used, electricity travels great distances to be available at the flip of a switch. That's what makes the electric grid our nation's most complex machine — and one of our nation's greatest achievements.



Youth Day and Youth Tour 2024

Students of Corn Belt Energy Cooperative and Corn Belt Energy employees are eligible to attend the Youth Day in Springfield, IL, and the Youth to Washington Tour! Up to eight students will be selected to attend Youth Day in Springfield.

In addition, up to two students will be chosen to represent Corn Belt Energy by attending an all-expense paid, week-long trip to Washington D.C., with other winners from across the nation. This is a once-in-a-lifetime opportunity to see our government at work and tour national sites, monuments, and museums. To be eligible, the student(s) must currently be a high school sophomore, junior or senior and be able to attend the trip to Washington D.C. in June, if selected.

Students must reside in a home served by Corn Belt Energy. (Home School students may participate as well!)

YOUTH DAY - March 20th, 2024, Wyndham Springfield City Centre, Springfield, IL

For over 60 years, the electric and telephone cooperatives of Illinois have given tomorrow's leaders the opportunity to gain experience from today's public officials. Each year, over three hundred outstanding students get an up close and firsthand look at democracy in action when they meet their elected representatives during Illinois Electric and Telephone Cooperatives Youth Day. Over the years, thousands of students have learned how government works and why it's important for every citizen to get involved in it. State senators and representatives have the opportunity to inspire and encourage the leaders of tomorrow during this annual event, held in Springfield.

Application deadline- February 2, 2024

YOUTH TOUR - June 14th to 21st, 2024 - Washington D.C.

The Electric Cooperative Youth Tour has brought high school students to Washington, D.C. for a week in June every year since the late 1950s.

Students apply and are selected for this program by their local electric cooperative. We believe that students should see their nation's capital up close, learn about the political process and interact with their elected officials.

Students gain a personal understanding of American history and their role as a citizen by meeting their Representative and Senators. While student groups are organized at the state level, they all come together for Youth Day, where they get to meet each other and hear featured speakers who provide insight to the important roles electric cooperatives play in their communities.

For more information and application, scan the QR code below

Five Ways to Safeguard Your Home This Winter

As the temperatures drop and the days grow shorter, there's a natural inclination to create a warm and cozy haven at home. Unfortunately, as we see increased use of heating equipment, candles and electrical items, the number of home fires tends to increase during winter months.

Here are five ways you can safeguard your home for the winter season.

1. Ensure carbon monoxide and smoke detectors are working properly. If your detectors are battery-operated, replace the batteries annually. Test the detectors once a month and give them a good dusting to ensure the sensors are clear of dirt and debris.

2. Inspect electrical cords. We depend on more cords during winter, whether for holiday lighting, extension cords or portable heaters. Before using any corded items, double check to make sure cords aren't frayed or cracked. If you use portable space heaters, remember to keep them at least 3 feet away from flammable items. Use models that include an auto shut-off feature and overheat protection. Space heaters can take a toll on your energy bills. Use them efficiently (to heat smaller spaces) and safely. Never plug a space heater into a power strip. Speaking of power strips…

3. Avoid overloading electrical outlets and power strips. When overloaded with electrical items, outlets and power strips can overheat and catch fire. If you use power strips for multiple devices, make sure the strip can handle the electrical load. For a safer bet, look for power strips that include surge protection.

4. Clean the fireplace to improve safety and efficiency. There's nothing better than a warm fire on a chilly night, but it's important to maintain your fireplace for safety. As wood burns, a sticky substance known as creosote builds up in the chimney. When creosote buildup becomes too thick, a chimney fire can ignite. The chimney should be cleaned at least once a year to reduce fire risks. Regular cleaning also improves air flow and limits the amount of carbon monoxide that seeps indoors.

5. Practice safety in the kitchen. As we spend more time in the kitchen during the holiday season, be mindful of potential fire hazards. Never leave food that's cooking on the stovetop unattended. Clean and remove spilled foods from cooking surfaces and be mindful of where you place flammable items like dish towels.

Corn Belt Energy wants you and your family to stay safe during the winter season.

Visit cornbeltenergy.com for additional safety tips.

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