February 2024

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 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 generating plants, power lines, transformers, substations and other infrastructure that span 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.

The journey of electricity begins at power plants.

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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.

Maquoketa Valley Electric Cooperative receives power from our generation and transmission (G&T) co-op, Central Iowa Power Cooperative (CIPCO). We work closely with CIPCO 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 Continued to page 2.

Did you know that you can have Watts Current emailed to you each month? Save paper and postage by changing your preferred delivery method to email at mvec.coop/newsletter.



Continued from front page.

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.

CRITICAL CONNECTIONS: HOW ELECTRICITY GETS TO YOU

The electric grid is considered one of the most complex machines in the world, delivering the electricity we need for everyday life.



Power plants generate electricity using a variety of energy sources, like solar, natural gas, nuclear and wind energy.

step 5

DISTRIBUTION SUBSTATION

These substations lower the voltage again so the electricity is ready to travel on distribution lines.

step 6

DISTRIBUTION LINES

Lower-voltage electricity travels through distribution lines, like the ones you typically see on the side of the road.

step 2 STEP-UP TRANSFORMER

A step-up transformer increases the voltage to push the electricity over long distances.

step 3

TRANSMISSION LINES

High-voltage electricity travels over long distances through these lines.

step 4 TRANSMISSION SUBSTATION

Voltage is lowered at a transmission substation so electricity can travel across the local distribution system.

step 7 FINAL STOP A transformer located on the ground or a utility pole reduces the voltage a final time, then electricity is sent inside your home, school or business.

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Our Energy Working For You: Ag and Commercial Incentives

By Al Reiter, Energy Advisor

MVEC has rebates for many types of energy efficiency improvements. While the rebates for residential applications are the overwhelming majority that are submitted to the co-op, MVEC also offers incentives for ag and commercial settings.

1. Agriculture Rebates

MVEC has several rebates for agricultural products. Rebates for livestock equipment include energy efficient livestock waterers, single and double heating pads that meet wattage requirements, and heat lamp or heat pad controllers. Ag livestock ventilation rebates are also available for fans and controllers. While these items may be smaller loads, because they can run many hours each day, finding units that have the highest efficiency will reduce your energy needs.

Other agricultural rebates cover dairy equipment such as milk pre-coolers, refrigerant heat reclaimers, scroll compressors and variable speed vacuum pumps, along with robotic milkers.

2. Commercial Rebates

As with the residential rebate program, commercial incentive emphasis is put on geothermal and air source heat pumps. There are also incentives for Commercial Chiller Systems that are air or water cooled. In addition, electric forklift rebates are available for class 1-3 lifts. This may apply to both purchased and leased units.

Additionally, more businesses are adding electric vehicles to their fleet and rebates are available for the vehicles themselves as well as the Level II charging equipment.

Do you have a business that has purchased Energy Star commercial kitchen equipment? Qualifying equipment includes commercial refrigerators, freezers, dishwashers and electric steam cookers.

Several of these commercial rebates also may be found in a farm setting. For example, Commercial Adjustable Speed Drives meeting all the recommendations for power surges and limiting harmonic distortion are available. These are found on large motor loads in a grain drying setup. As with many of the rebates in all categories, there are very specific requirements and energy efficiency standards that have to be met to qualify (and specific requirements can be found on each rebate form). I encourage members to have the blank rebate form in hand when meeting with dealers or equipment suppliers to ensure it will qualify, before committing to a purchase.

If you have questions on rebates, don't hesitate to contact us. We would be happy to assist you in your energy saving journey. All MVEC rebates are available on our website at *www.mvec.coop/rebates*.

Please Cash 2023 Dividend Checks!

Dividend checks were issued to eligible MVEC members on October 19, 2023, and automatically become void on February 16, 2024. If you have not cashed your check, please do so soon. Dividend checks not cashed by February 16, 2024, will be retained by the Cooperative and redistributed next year when dividends are paid. Please call the office at 800-927-6068 and talk to Jan if you have any questions. As a reminder, if your dividend was under \$5, it is being held until the accumulated amount in the future is over \$5.



Today's changing energy landscape is bringing more attention to renewable energy resources. Maquoketa Valley Electric Cooperative supports generation that is safe, reliable, cost effective and environmentally responsible.

Watts Green - Green renewable energy is electricity produced in an environmentally friendly manner. Sources of green energy include the sun, wind, and water, which are pollution free and naturally reoccurring. Some of the renewable energy that is sold to our members is purchased from other members who have renewable energy systems.



Costs - The price for new green power is slightly higher than power generated from conventional sources such as coal. MVEC's Watts Green Renewable Energy Program enables you to support renewable energy by paying a small premium on your bill.

The extra cost is currently 2 cents per kilowatt hour, or \$1 for a 50 kilowatt hour block, which is applied only to that portion of renewable energy that is chosen.



Minzenmeyer Joins MVEC Board

MVEC's Board of Directors appointed Scott Minzenmeyer to fill the Region 1 seat filled by Jan Null until her retirement last September. A nominating committee was appointed to search for candidates



to fill the vacant seat. Interviews were held in early December, with the committee recommending two candidates for consideration. MVEC's Board of Directors selected Minzenmeyer at the December Board meeting held on Friday, December 15th.

Minzenmeyer has resided in Jones County for the past 50 years and has been an MVEC member for 40 years. He is the owner of Recreational Motorsports, located in Anamosa. Recreational Motorsports is a full machine shop for the motorsports industry and also designs and supplies performance parts for youth snowmobiles in the US and internationally. Minzenmeyer has previously served as resident of the Anamosa Chamber of Commerce and is currently serving on the board of trustees for Wilcox Cemetery as well as on the board of directors for the Anamosa Development Corporation.

Minzenmeyer has been involved in developing the powersports EV market and was also involved in working with the State Capital, House of Representatives and Senate to write and ultimately get Iowa UTV law HF 2130 passed.

A Solid Investment in Your Electric Co-op

As a member of Maquoketa Valley Electric Cooperative, you make an investment in the co-op every time you pay your bill. This collective investment in the co-op benefits you and the community immediately and over time. So what exactly is this monthly investment, and how do you benefit from it?

At MVEC, the Basic Service Charge is a monthly investment that helps your co-op cover the expenses of maintaining the overall electric system. Combatting cyber security threats and maintaining poles, wires, substations and co-op equipment takes strategic planning and significant resources. The Basic Service Charge essentially ensures that all equipment operates properly and staff is trained and ready so the lights turn on when you need them.

The Basic Service Charge is applied to every MVEC account. Single phase accounts are charged \$39.50 and three phase accounts are charged \$75.00.

These charges are intended to represent the costs of bringing service to your property. Over the last several years, MVEC has faced rising costs for materials, equipment and labor. As such, the Cooperative's goal is to work toward a Basic Service Charge that more closely reflects the true costs to provide service to individual meters.

Regardless of how much electricity a particular household uses, the cost of having service available to each home is the same. As a not-for-profit electric cooperative, we believe the operational costs should be spread fairly and equitably across all of our members, regardless of the level of electricity use. That is why every member pays the Basic Service Charge each month to cover basic operational costs. All members are charged the same amount for the cost of operation since all members benefit from the same service. In essence, this gives each MVEC member an equal share in MVEC's operation.

Your monthly investment ensures you have access to safe, reliable and affordable power when you need it. We appreciate and value the investment that you make in MVEC each month, and we strive to use that investment wisely for the benefit of all members of our community.

To learn more about the Basic Service Charge, please contact us at 800-927-6068 or visit myec.coop.

Heat Plus Members

If you are on MVEC's Heat Plus rate and are having work done on your geothermal or air source heat pump that involves changes in your wiring, please contact MVEC to ensure that the metering is operating as originally installed. Call 800-927-6068 and ask for Al Reiter or email *metering@mvec.com*.



Metering Department (319) 462-3542 or (800) 927-6068 or metering@mvec.com

February 2024

2024 Legislative Session Underway

Iowa legislators are back in session and Iowa electric cooperatives will again be important advocates for a balanced approach in addressing energy issues as we work to power lives and empower communities. For example, we're concerned about the potential establishment of Integrated Resource Plans (IRPs) in Iowa Code. IRPs could essentially force the early retirement of carbonbased electric generation facilities, resulting in stranded costs and reliability concerns for the member-consumers we serve. Iowa's locally owned and governed electric cooperatives continue to support an "all-of-the-above" power generation strategy that ensures reliable and affordable electricity for our members. In the coming months, the Iowa General Assembly will be addressing a multitude of issues, including energy-related matters that are central to Iowa's rural economy.



Stop by MVEC's booth #409 at the Greater Dubuque Home & Builders Show the weekend of February 16-18

Representatives from our electric and fiber internet teams will be on hand to answer questions.

MVEC/MVlink members can sign up to WIN A NEW 40" ROKU TV



Nondiscrimination Statement

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by:

 mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights 1400 Independence Avenue, SW Washington, D.C. 20250-9410

(2) fax: (202) 690-7442 or

(3) email: program.intake@usda.gov





Maintaining Your Digital Wellbeing by Security Awareness News

Developing good habits in life is the key to strong physical and mental health. Research shows that people who regularly eat healthy foods and exercise are generally happier. A commitment to those habits (and many others) can be challenging, but it's a fundamental part of living a fulfilling life.

Similarly, you can take actions that contribute to the health of your digital well-being. By making a commitment to the following security habits, you can avoid the many scams and downsides of living in a connected world.

Remain dedicated to strong passwords.

Protecting your online accounts is one of the most important aspects of personal security. As you can probably guess, strong passwords represent the first step to keeping those accounts safe. Reminder: A strong password is long, hard for others to guess but easy for you to remember, and never used twice.

Think before you click.

Phishing is any attempt to lure people into making a bad decision — like clicking on a malicious link or paying a fraudulent invoice — and it is one of the top concerns. Stay alert for common warning signs of those scams, such as threatening messages, unexpected attachments, and urgent requests.

Avoid oversharing on social media.

Scammers often search social media profiles in hopes of finding valuable information. They will then use that information to launch phishing attacks designed to steal money or even more confidential information. Avoid it by setting your social profiles to private and being selective about what you post.

Stay updated.

Outdated devices and software are easy targets for cybercriminals and place confidential information at risk. That's why developers often release updates, especially for operating systems of computers and smartphones. Enable automatic updates wherever they're available so you never miss a crucial patch.

Practice good mobile hygiene.

Smartphones have access to an abundance of personal data and are top targets for cybercriminals. As such, it's crucial to maintain proper mobile hygiene. That means only installing apps from trusted sources, limiting the permissions of those apps (such as access to contacts and location), and removing apps you no longer need.



Your Touchstone Energy[®] Cooperative



Public Art at MVEC

Recently, Jones County Economic Development, Arts Court, Metal Design Systems and MVEC teamed up to help re-imagine MVEC's pole yard fence into a downtown art display. Jones County Economic Development assisted KC Wortman, Founder of Anamosa-based Arts Court, with securing a Paint Iowa Beautiful grant for the project. Paint Iowa Beautiful is a statewide program that provides free paint to various public service projects throughout Iowa.

Jones County Economic Development also worked with Metal Design Systems in Anamosa to find a resilient base for the paint. Ultimately, six metal panels were donated to the project. Wortman, Katie Kilburg, and art students at Thou Art Gallery in Anamosa combined to design and paint the six panels now

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displayed on MVEC's fence at its Anamosa headquarters.

December MVEC Board Meeting Update

- Reviewed and discussed the 2024 Safety Improvement plan that was developed by the Cooperative's Safety Committee
- Reviewed projected 2023 year-end financials
- Approved the Cooperative signing an agreement to receive up to \$2.8 million dollars of grant funds from the State of Iowa to support broadband extensions to underserved areas
- Discussed potential state and federal grant programs for electric projects
- Approved updates proposed for Cooperative Employment Policies
- Reviewed the Cooperative's energy efficiency programs and 2024 rebate offerings
- Discussed items of interest to the Cooperative for the 2024 Iowa Legislative session
- Approved voting delegates for upcoming business meetings for affiliate organizations

Lifeline Financial Assistance Available

Financial assistance through the Lifeline program is available to help those who qualify, to afford and maintain either telephone service or broadband internet access service, or bundled services. Lifeline participation enables Iowans to stay connected to jobs, family, community resources, and government and emergency services. For more information and the application form, visit mvec.coop/lifeline-assistance

Watts The **Answer**?

1. So, to make sure the whole system stays the electric grid must adjust in real time to changes and unforeseen events.

2. Your monthly investment ensures you have to safe, reliable and affordable power when you need it.

3. By making a to the following security habits, you can avoid the many scams and downsides of living in a connected world.

Mail your answers in with your energy bill, or email them to efletcher@mvec.coop

Two Winners will each receive a \$10.00 credit on their energy bills.

Please complete the following:

Name

Address

December winners: Steve Rutz, Farley Vicki & Kevin Gehl, Cascade Misprint November winners are: John Grant, Peosta

Roger Fischer, Bernard





Our Office Will Be Closed Monday, February 19 In Observance Of Presidents' Day

ENERGY EFFICIENCY

Area rugs are an easy, cost-effective solution to cold floors. Adding area rugs to hard-surface flooring can add warmth to any room and keep your feet cozy on cold winter days.

Choose rugs made from wool or other natural fibers and plush or high-pile textures for the most insulation. Place rugs in areas where you need additional warmth, like the foot of a bed or under a coffee table. Area rugs can enhance the aesthetic of your home and keep you cozier.

Understanding Your Electric Bill

ON-PEAK hours are 4 p.m. - 9 p.m. OFF-PEAK hours are Midnight - 4 p.m. and 9 p.m. - Midnight

These times are in effect every day.

Watts Current

A Touchstone Energy® Cooperative 🔨

Mailing Address: 109 North Huber Street • Anamosa, IA 52205 **319-462-3542 or 800-927-6068**

Office Hours: Monday-Friday • 7:30 a.m. to 4:00 p.m. After Hours Call Center: 800-582-8998 WWW.MVEC.COOP

Email direct to the following departments:

Electric Billing:	billing@mvec.coop
Electric Service:	maintenance@mvec.coop
Internet/Phone Service:	fiber@mvec.coop
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