

● JULY 2022

iowa

ELECTRIC COOPERATIVE LIVING

**Understanding this summer's
grid reliability concerns**

**What to know before
considering solar**

Favorite grilling recipes

Win an electric grill ▶ See Page 3

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ON THE COVER

Special thanks to Josie Pauley, Harrison County REC member-consumer, for supplying this month’s cover image. Submit high-resolution photos for consideration to editor@ieclmagazine.com. You could win \$100!

ADVOCACY: A STRATEGIC “GAME” OF OFFENSE AND DEFENSE

BY KEVIN CONDON



Another Iowa General Assembly has come and gone, and the political pundits have already moved on into “campaign mode.” While candidates prepare

to throw pound-after-pound of parade candy this summer, it is important to reflect on this legislative session for both the positive and not-so-positive developments the electric co-op family experienced.

Even though it is a grossly overused cliché, I can’t help but compare the legislative session to a sporting event. Sometimes you are on offense; sometimes you play defense. The 2022 session required us to play both, some days simultaneously.

The impacts of state tax reforms

The rural electric cooperative (REC) government relations team focused primarily on the tax conversations at the Statehouse this year. The governor and Republican majorities in both chambers laid out plans for significant income tax reforms. RECs identified a sales tax oversight from a 2018 bill that needed to be fixed in order to achieve parity for rural member-consumers.

The income tax issue came out of the blocks fast, and significant reforms were signed into law on March 1, less than two months into session. Achieving income tax exemption for cash-rent payments to retired farmers and pension payouts to retired co-op employees are positive outcomes of the reform. And member-consumers of Iowa’s electric cooperatives will collectively save more than \$1 million annually thanks to two other bills that passed this session. SF 2367 passed in the final days of session and included a resolution to the sales tax issue above and will save roughly \$300,000 annually. It was

signed by Gov. Reynolds in June. Another bill that protected the expiration of a 30-year-old special energy utility tax was also signed into law (SF 2325 – approximately \$750,000 saved annually).

Advocating for REC member-consumers

Again, while reviewing the positive outcomes of any legislative session is worthwhile, it can also be as meaningful to analyze those ideas that weren’t successful. The hard truth of public policy is that new laws can simultaneously help some and hurt others. When it is necessary to appeal to the referee to blow the whistle, the Iowa Association of Electric Cooperatives (IAEC) steps in to help cooperatives and you, the member-consumer, by being the collective voice of RECs at the Iowa Capitol.

One piece of legislation (HSB 697) attempted to make a mockery of the cooperative business model by creating special “solar clubs” for certain consumers. The bill aimed to essentially push the installation costs of their systems onto other consumers of electricity. RECs support solar energy

when it is a fair deal for all cooperative members, not just a few.

A second bill (SF 2321) could have trampled individual landowners and their property rights by prohibiting the use of their land for utility-scale solar energy production based on a Corn Suitability Rating 2 score of 65 or above. Imagine Iowa farmers being told they can’t do what they want with their land because it’s TOO good! Electric co-ops believe government shouldn’t preclude any landowner from an opportunity to make a profit off their own land.

We all know and love somebody who can take a football or basketball game very seriously. I’ve been guilty of letting my blood pressure skyrocket when the Iowa Hawkeyes aren’t playing the way I think they should. But I believe the actions that play out at the Statehouse must always be taken seriously. Whether pocketbook issues for you and your co-op or whether your poles, wires or land are at risk of government overstepping, IAEC will be ready to speak up on your behalf and when necessary, call for a timeout.

Kevin Condon is the director of government relations for the Iowa Association of Electric Cooperatives.

EDITOR’S CHOICE CONTEST

Win an electric grill!

The Cuisinart compact portable grill has a built-in telescoping base, so it functions as both a tabletop grill and a freestanding grill. Use it to cook family-sized meals on the ample porcelain-enamel grate. The unit packs away in seconds for compact storage and features a briefcase-style handle for easy transport.

Visit our website and win!

Enter this month’s contest by visiting www.ieclmagazine.com no later than July 31. You must be a member of one of Iowa’s electric cooperatives to win. There’s no obligation associated with entering, we don’t share entrant information with anyone and multiple entries from the same account will be disqualified. The winner of the beef bundle from the May issue was Sam Spellman, Guthrie County REC.



ENTER ONLINE BY JULY 31!

PRESIDENT BIDEN AUTHORIZES EMERGENCY POWERS FOR DOE TO BOOST TRANSFORMER PRODUCTION

Domestic production of transformers and other electric grid components will be fast-tracked under new authority granted to the Department of Energy (DOE) by President Joe Biden. It's a remedy that augments recommendations by the National Rural Electric Cooperative Association (NRECA) to address reliability concerns caused by the overburdened U.S. supply chain.

Biden signed orders in early June allowing DOE to use the Defense Production Act to help manufacturers increase their output of transformers, a move that NRECA said was necessary to meet demand in fast-growing areas of the country and for power restoration after storms and other disasters.

"For several months, America's electric cooperatives have raised serious questions about supply chain disruptions to materials necessary for reliable operation of the nation's electric infrastructure," NRECA CEO Jim Matheson said in a statement.



"The Biden administration's use of the Defense Production Act to shorten lead times for supplies of electric transformers is a much-needed step to support reliability and resilience."

A recent report from the North American Electric Reliability Corp. confirmed that several states are facing reliability risks this summer from extreme weather and supply shortages. (See Pages 6-7 of this issue for more information on this topic.)

Matheson said NRECA will continue to work with Washington policymakers

on "additional measures" to help ensure that co-op members' lights stay on at a price they can afford.

"America's electric cooperatives look forward to continuing to work with the Biden administration and Congress to reduce supply chain vulnerabilities in the short term while we increase domestic capability to meet our future needs," Matheson said.

"A diverse energy mix that includes adequate baseload supply and an assured supply chain are essential to meet those expectations."

ENTER TO WIN

WIN \$100 FOR A
PUBLISHED COVER PHOTO

We're always looking for stunning images for the cover of *Iowa Electric Cooperative Living* magazine. If we select your photo for a cover, we'll award you with \$100. The

photos must be clear, of an Iowa place served by an electric cooperative and in high resolution. To be considered, email photos to editor@ieclmagazine.com with "Cover Submission" in the subject line.



ALERT FROM THE BENEFICIAL ELECTRIFICATION LEAGUE'S
ELECTRIC COOPERATIVE SCHOOL BUS INITIATIVE
ELECTRIFYING AMERICA'S RURAL SCHOOL BUSES

DON'T MISS YOUR CHANCE
TO GET A **FREE**

ELECTRIC SCHOOL BUS

The Environmental Protection Agency (EPA) is now accepting applications from eligible organizations for a \$500 million rebate program covering the purchase of electric school buses and related charging infrastructure. The application process is relatively simple and the first round applications are due by Aug. 19, 2022.



WWW.EPA.GOV/CLEANSCHOOLBUS

REFRESHED IOWA FARM & FUN PASSPORT OFFERS DEALS, DISCOUNTS AND PRIZES FOR IOWA TRAVELERS

Travelers can discover farm experiences and family fun across the state while earning the chance to win prizes with the refreshed Iowa Farm & Fun Passport from the Iowa Tourism Office. The passport features trail options for u-pick flower farms and dairies.

"We're excited to offer travelers an added incentive to explore Iowa this summer," says Amy Zeigler, state tourism manager for the Iowa Tourism Office. "We invite adventurers to experience these off-the-beaten path locations that showcase our state's rich agricultural heritage."

At stops along the new **U-Pick Flower Farm Trail**, travelers are encouraged to not just stop and smell the roses, daisies, zinnias and more, but pick them and take them home. Each check-in at a participating location between June 1 and Aug. 31 counts as an entry for the grand prize giveaway, valued at \$200.



The refreshed **Iowa Dairy Trail** includes homemade ice cream, cheese and all things dairy. Each check-in between June 1 and Oct. 31 earns travelers an entry into a monthly sweepstakes drawing courtesy of Midwest Dairy. Prizes include an ice cream maker, smoothie maker, espresso machine, artisan pizza oven and fondue set.

Travelers can sign up for the free passport by visiting traveliowa.com/passport.



Previous Iowa Farm and Fun Passport holders will need to re-register their passports.

Editor's Note: Many of these destinations feature businesses served by Iowa's electric cooperatives. Because Iowa's electric co-ops serve member-consumers in all of Iowa's 99 counties, you'll also be traveling through several cooperative-served communities when visiting the flower farm and dairy trails.

BE ALERT TO THE SIGNS OF HUMAN TRAFFICKING

Earlier this year, the Iowa Association of Electric Cooperatives (IAEC) officially joined a new program administered by the Iowa Secretary of State's Office called Iowa Businesses Against Trafficking (IBAT).

The official mission of IBAT is to empower businesses to help in the fight to end human trafficking through trainings and outreach opportunities.



The U.S. Department of State estimates that between 14,500 and 17,500 people are trafficked into the U.S. each year. Human trafficking can affect anyone – male, female, adult or child. People can be trafficked within their state, country or internationally, and trafficking victims represent a variety of socioeconomic levels.

If you see a situation where you believe someone is being trafficked, here's what you can do:

- Call your local law enforcement agency by dialing 911 and reporting what you see.
- For victim services in Iowa, contact the Iowa Helpline at 800-770-1650 or text "IOWAHELP" to 20121.
- Call the National Human Trafficking Resource Center Hotline, toll-free, at 888-373-7888 (to report a tip or request services).

Learn more about the signs of human trafficking by visiting www.iowaahht.org.

COMMUNITY SAFETY

UNDERSTANDING THIS SUMMER'S ELECTRIC GRID RELIABILITY CONCERNS

BY ANN FOSTER THELEN

The North American Electric Reliability Corporation (NERC) recently released a reliability report indicating that many states, including Iowa, are at an increased risk for power generation shortfalls this summer. Decreased power generation capacity, increased electricity demand, above-normal temperature forecasts and drought conditions contributed to NERC's assessment.

You might have noticed local, state and national headlines warning of impending power outages based on the report's findings. While many of us remember the polar vortex outages that impacted Texas in February 2021, Iowans aren't accustomed to these types of news reports about potential outages based on energy supply.

What does this report mean for Iowa's electric cooperative member-consumers, and why is electricity generation a concern now? While the information warrants awareness and consideration, there is no reason to panic.

Reliability is paramount

First and foremost, locally owned electric cooperatives are committed to providing member-consumers with reliable electric service around-the-clock. Iowa's electric co-ops rely on an "all-of-the-above" generation strategy, including coal, natural gas, hydropower, wind and solar resources. Ensuring reliability involves a portfolio of diverse options to meet consumers' energy needs while also prioritizing our commitment to affordability and environmental responsibility.

Sources of electric generation have changed dramatically over the past 20 years. More renewable energy sources (wind and solar) have been integrated into the power grid while traditional baseload generation sources (coal and nuclear) have been shut down or retired. Renewable energy is also considered intermittent because the wind doesn't always blow, the sun doesn't always shine, and large-scale battery storage isn't yet feasible. Because of these factors, resources that can be used regardless of weather conditions, such as coal, nuclear, hydro

and natural gas, are still critical to ensuring reliable, 24/7 generation.

Power generation and demand mismatch

The power grid is complex and vastly interconnected, even though it might seem simple at the local level. The poles and wires you see dotting Iowa's countryside and leading to your home or business are just one part of a complex grid that includes local distribution systems and transmission infrastructure. Many of Iowa's electric cooperatives are part of regional transmission organizations or independent system operators, which coordinate, control and monitor a multistate electric grid (see sidebars about SPP and MISO). These federally created organizations act as "air traffic controllers" to enable the reliable and cost-effective delivery of electric service.

Unlike water or gas, electricity cannot be effectively stored in large quantities at this time. Electricity must be consumed the instant it is generated, which requires supply

to be kept in constant balance with demand. That's where organizations like SPP and Midcontinent Independent System Operator (MISO) provide incredible value; they constantly monitor electric demand regionally and manage available electric generation resources to maintain an equal balance.

Controlled interruptions

In the rare event that electric demand exceeds available supply, deliberate and thorough plans are in place to keep the grid from shutting down and to minimize interruptions to electric service. Groups like SPP and MISO, along with electric cooperatives, are planning and preparing every minute of every day to use tools and resources to balance electric demand and supply. Some Iowa electric cooperatives have voluntary load management programs in place to cycle off water heaters, air conditioners and commercial/industrial loads to quickly reduce electric demand. Interruptions of electric service are a last resort but could still take place in some areas.

In the news, member-consumers might hear the term "load shedding," which in simple terms means a reduction in electric demand is needed. If this occurs, a controlled and temporary power interruption could take place on

certain portions of the grid to decrease electric demand so it matches the available electric supply on the regional grid. If these brief power interruptions are needed on high-demand days this summer, they would likely last for a couple of hours or less. While highly unlikely, these temporary, controlled power interruptions are protection mechanisms designed to prevent catastrophic, system-wide damage to the regional power grid.

What are electric cooperatives doing?

Those managing the ongoing energy transition must recognize the need for time, invest in technology development and be inclusive of various energy sources to maintain reliability and affordability. A resilient and reliable electric grid that affordably keeps the lights on is essential to daily life. Iowa's electric cooperatives will continue to advocate for an all-of-the-above energy strategy with policymakers. A diverse energy mix that includes adequate baseload supply is essential to providing member-consumers with safe, reliable, affordable and environmentally responsible energy for the long term.

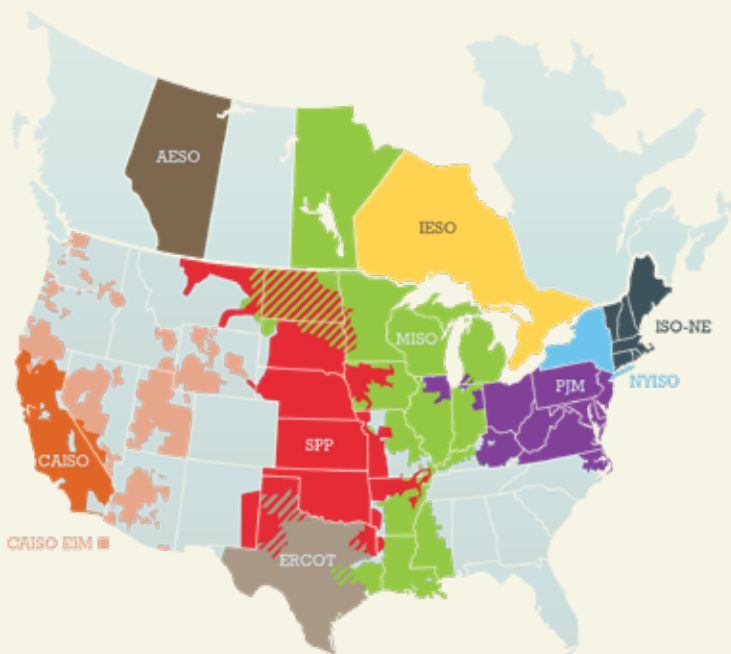
Your electric cooperative might offer load control programs or have suggestions for conserving energy to lower electric use

on high-demand days. If a temporary, controlled interruption is necessary, it could occur with little notice. Follow your cooperative on social media, monitor its website or contact them directly for the most up-to-date information.

Ann Foster Thelen is the editor of Iowa Electric Cooperative Living magazine.

WAYS YOU CAN CONSERVE ENERGY DURING HIGH-TEMPERATURE WEATHER EVENTS

- Increase your thermostat a few degrees. For example, if a normal setting for your home is 75 degrees, raise it to 78 degrees or higher.
- Limit using large appliances (e.g., ovens, washing machines, electric clothes dryers, etc.) during the late afternoon and early evening hours.
- Unplug devices that are not in use.
- Turn off unnecessary lights.
- Close blinds and drapes during peak hours (typically mid- to late-afternoon and early evening hours) and operate ceiling fans counterclockwise.



If you have questions about grid reliability, please contact your local electric cooperative.

WHAT IS SPP?

Located in Arkansas, SPP (Southwest Power Pool) is a regional transmission organization (RTO) – a nonprofit corporation mandated by the Federal Energy Regulatory Commission (FERC) to ensure reliable power supplies, adequate transmission infrastructure and competitive wholesale electricity prices on behalf of its members. SPP oversees the bulk electric grid and wholesale power market in the central U.S. on behalf of a diverse group of utilities, including some electric cooperatives, and transmission companies in 17 states, including portions of western Iowa.

WHAT IS MISO?

Headquartered in Indiana, MISO (Midcontinent Independent System Operator) is an independent, not-for-profit, member-based organization responsible for operating the power grid across 15 U.S. states, including portions of Iowa, and the Canadian province of Manitoba. 42 million people depend on MISO to generate and transmit the right amount of electricity every minute of every day. MISO is committed to delivering electricity reliably, dependably and cost-effectively. In addition to managing the power grid within its region, MISO administers the buying and selling of electricity, and partners with members and stakeholders to plan the grid of the future.



TERIYAKI STEAK

- 1 cup soy sauce
- 1 cup water
- $\frac{1}{4}$ cup sugar
- $\frac{1}{2}$ teaspoon ginger powder
- $\frac{1}{4}$ teaspoon garlic powder
- 1 shot Saki wine
- 2 or 3 sirloin steaks, cut $\frac{3}{8}$ -inch thick

Mix marinade ingredients together and marinate steak on one side for at least 1 hour. Turn steaks and marinate for 1 more hour. Grill to your taste.

Lea Bradley • Mount Pleasant
Access Energy Cooperative

TERIYAKI PORK CUBES

- 3-4 pounds pork chops or roast
- $\frac{1}{2}$ teaspoon Accent meat tenderizer
- 2 cloves garlic
- 1 tablespoon brown sugar
- $\frac{1}{2}$ teaspoon ginger
- $\frac{1}{2}$ teaspoon pepper
- 1 teaspoon water
- $\frac{1}{4}$ cup soy sauce
- $\frac{1}{2}$ cup oil

Cut meat into 2-inch pieces and sprinkle with meat tenderizer. Mix remaining ingredients and pour over meat. Marinate for 1.5 hours or longer before grilling. Can be stored in the refrigerator for 24 hours. Grill 10-15 minutes until done.

Kamie Meyer • Lester
Lyon Rural Electric Cooperative

GRILLED VEGETABLES WITH BALSAMIC VINAIGRETTE

- 1 medium eggplant
- 2 medium zucchinis
- 2-3 medium yellow squash
- 2 medium red bell peppers
- $\frac{3}{4}$ cup olive oil
- $\frac{1}{4}$ cup balsamic vinegar
- 1 teaspoon salt
- $\frac{1}{4}$ teaspoon black pepper
- 1 clove garlic, minced
- 2-3 tablespoons mixed herbs, finely chopped

Slice eggplant, zucchini and squash lengthwise into $\frac{1}{2}$ -inch slices. Core, seed and cut red pepper into 1-inch-wide slices. Combine remaining ingredients and pour over vegetables. Let stand for at least 30 minutes. Oil hot grill to prevent sticking. Lift vegetables from vinaigrette and place on grill for 10-15 minutes or until fork tender, turning once or twice. Remove from grill. Remaining vinaigrette may be poured over vegetables just before serving. Serves 6

Mary Schreur • Kanawha • Prairie Energy Cooperative

BRATWURST SUPPER

- 3 pounds bratwurst links, uncooked
- 3 pounds red potatoes, cut into chunks
- 1 pound baby carrots
- 1 red onion, sliced into rings
- 1 4-ounce jar mushroom stems (7 pieces), drained
- ¼ cup butter
- 1 envelope onion soup mix
- 2 tablespoons soy sauce
- ½ teaspoon pepper

Cut bratwurst links into fourths. Place bratwurst, potatoes, carrots, onions and mushrooms in a greased tinfoil roaster pan. Dot with butter. Sprinkle with soup mix, soy sauce and pepper. Stir lightly to mix and cover with tinfoil. Grill covered over medium heat for 60 minutes or until vegetables are tender and sausage is no longer pink, stirring once. *Serves 12*

Stephanie Messner • Rock Rapids
Lyon Rural Electric Cooperative

GRILLED PINEAPPLE

- 1 large pineapple
- 2 tablespoons brown sugar
- 2 tablespoons honey
- 1 tablespoon hot water
- pinch salt
- oil

In a small bowl, whisk together brown sugar, honey, hot water and salt until combined. Peel pineapple, cut into ¾-inch slices and place in a gallon-sized zip-lock bag. Add brown sugar mixture, then seal the bag and shake it until the pineapple is evenly coated. Let sit at room temperature for 15 minutes. While pineapple sits, preheat the grill on high heat. After 15 minutes, scrape the grill grates and then lightly oil them. Place the pineapple slices on the grill for 2-3 minutes or until heated through and grill marks appear. Flip the pineapple and grill for another 2-3 minutes. Serve immediately.

Deanna Foreman • Rock Valley
North West Rural Electric Cooperative

GRILLED ASPARAGUS WITH BACON

- 1 pound fresh asparagus spears, trimmed
- bacon slices
- salt and pepper, to taste

Preheat grill on high heat. Group 3-4 asparagus spears, wrap with a bacon slice and secure with a toothpick. Repeat then season with salt and pepper to taste. Place asparagus bundles on aluminum foil or grill pan. Grill over high heat for 3-5 minutes to desired tenderness for asparagus, turning once to cook bacon completely. *Serves 4*

Denise Anderson • Ocheyedan
Osceola Electric Cooperative, Inc.

PIZZA DOGS

- 1½ pounds ground beef
- 1 teaspoon salt
- 1 teaspoon pepper
- 1 teaspoon oregano
- ½ teaspoon garlic powder
- ½ teaspoon onion powder
- mozzarella sticks
- hot dog buns
- mozzarella cheese slices
- ½ cup pizza sauce
- pepperoni slices (optional)

Mix all seasonings with ground beef. Take a ball of meat and flatten out then wrap around a cheese stick, giving it a hot dog shape. Grill for 15-20 minutes or until the meat is cooked. Add mozzarella cheese slices to hot dog buns and toast under a broiler or on the grill for 3-5 minutes. Place pizza dogs into bun and top with pizza sauce and pepperoni slices if desired. *Serves 5*

Crystal Hammes • Libertyville
Access Energy Cooperative

MARINADE FOR GRILLED PORK CHOPS

- ¼ cup soy sauce
- ¼ cup Italian dressing
- 1 teaspoon dry red pepper flakes
- 1 tablespoon sugar
- 3 garlic cloves, minced
- 2 pounds pork chops

Mix all ingredients and marinate pork chops before grilling. *Serves 4*

Emily Rassi • Rock Rapids
Lyon Rural Electric Cooperative

WANTED:

THANKSGIVING SIDE DISH RECIPES

THE REWARD:

\$25 FOR EVERY ONE WE PUBLISH!

Deadline is July 31

Please include your name, address, telephone number, co-op name and the recipe category on all submissions. **Also provide the number of servings per recipe.**

EMAIL: recipes@ieclmagazine.com

(Attach your recipe as a Word document or PDF to your email message.)

MAIL: Recipes

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WHAT YOU NEED TO KNOW BEFORE CONSIDERING SOLAR

BY MIRANDA BOUTELLE

Often, homeowners conflate installing solar at home with energy efficiency. But what most people don't realize is solar is not energy efficiency. Solar is generating energy. Energy efficiency is finding ways to use less energy. While these are not one in the same, both are thought of as beneficial to the environment and a way to save money.

If you are interested in installing solar, it is important to understand your motivations. It may be saving money, concern for the environment or both. Focusing first on energy efficiency can address both motivations.

Here are the five key energy efficiency

considerations to evaluate when adding solar to your home.

1 Energy consumption

Solar systems are sized based on a home's energy needs. The larger the system, the higher the cost. Before installing solar, make sure your home is as energy efficient as possible. That means it will use less energy and allow you to install a smaller solar system – which will save money and reduce your home's environmental impact.

Verify the efficiency of your lighting, HVAC systems and insulation. A fully insulated and air-sealed home uses less energy, and those insulation

measures are less expensive than solar panels. Finish these energy efficiency projects before installing solar.

2 Affordability

Consider your overall out-of-pocket expenses. The expected lifespan of a heating and cooling system is 15 to 25 years. Check the age and condition of your HVAC equipment and consider the expenses of replacement.

3 Roofing

Consider the age, orientation and shade of your roof. It is more difficult and expensive to reroof a home with solar panels. Evaluate if the



roof will need to be replaced before the solar panels need to be replaced.

The best orientation for solar panels is south facing to receive direct light throughout the day. A shaded roof helps keep your home cool in the summertime but reduces solar energy production.

4 Maintenance

A solar system doesn't last forever. Lifespans range from 25 to 30 years. As systems degrade over time, they produce less energy. Maintenance and repairs may be needed.

5 Electric bills and storage

Solar is not "off the grid."

Unless you plan to disconnect from your electric co-op, you will still receive a monthly bill.

Solar panels only produce power when the sun is shining. If you want power to your home at other times, like after dark, you need to be connected to your electric co-op or invest in battery storage system, which comes at an additional cost.

During power outages, don't assume solar panels will supply you with power. Typical solar interconnection to the grid requires panels to shut down during a power outage. This protects lineworkers from injury while making repairs.

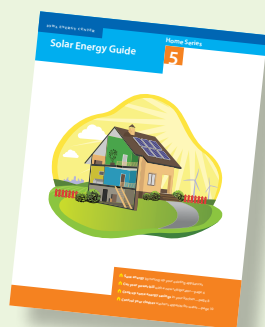
Contact your electric co-op

Solar contractors often work in several utility service territories and may not be familiar with your co-op's offerings, rate structures and interconnection agreements. Before signing an agreement, check with your electric co-op for local information rather than relying on what the contractor says.

As with any other system for your home, get bids from three contractors to compare equipment and pricing. Another option may be community-owned solar. Many electric co-ops offer community solar programs. You may have an option to enjoy the benefits of solar without the responsibilities of ownership and maintenance.

Understanding these considerations before installing solar will ensure you meet your money-saving and environmental goals.

Miranda Boutelle writes on energy efficiency topics for the National Rural Electric Cooperative Association, the national trade association representing more than 900 local electric cooperatives.



SOLAR ENERGY GUIDE

Iowa's electric cooperatives are committed to helping member-consumers make educated energy decisions that make sense for their home or business. Before moving ahead with a solar project, contact your local co-op first and also review the Solar Energy Guide for tips and to learn interconnection requirements.

www.iowarec.org/publications/solar-resources

TOP 10 CONSIDERATIONS BEFORE INSTALLING SOLAR

- 1 Address energy efficiency.** Implementing energy efficiency measures in advance can help reduce your overall energy or water consumption, and subsequently, the size of your solar system.
- 2 Do your homework before writing a check.** Talk to your electric co-op at the outset of the process. Then speak with credible, reputable sources who are skilled professionals that will help guide you through the process.
- 3 Know your co-op's rate structure and policies.** Your co-op will help you understand the rate structure and what type of charges are likely to be incurred. They will also let you know how you will be compensated for the excess, unused energy that is generated by your solar system.
- 4 Analyze your electric load.** Understanding your electricity use and overall energy needs will help determine if solar is a good investment for you.
- 5 Determine costs upfront.** You will likely be responsible for initial upfront costs to install the system, as well as maintenance and repair costs. Doing your homework upfront will help determine if it is economical for your energy needs.
- 6 Research incentives and tax credits.** Visit with your co-op to see if there are financial incentives to offset your investment costs. These are often driven by laws and policies and can vary on the type and size of system.
- 7 Understand responsibilities.** A variety of parties are involved in making a solar project a reality, so it's important to know exactly what tasks and costs you're responsible for.
- 8 Know safety requirements.** Solar is connected to the grid, so it's important that you work with your co-op to ensure you're meeting their requirements to keep the grid reliable and safe.
- 9 Choose a reputable vendor.** It is important to find a reputable installer who will give you realistic expectations. Ask for references, check reviews and ask for third-party input.
- 10 Keep thorough records.** Establish a thorough record-keeping process to retain all data and research you gather.



READY, SET, (YOUR) THERMOSTAT!

BY MIRANDA BOUTELLE

Heating and cooling account for about half the energy used in a typical home, so it's a great place to use less energy. When used wisely, your thermostat can help reduce wasted energy.

An excellent place to start is understanding thermostat types and common operational misconceptions. Then, start implementing best practices.

Types of thermostats

Mechanical thermostats are easy to control by adjusting a dial or sliding switch. The downfall is that you must manually make temperature adjustments, which is easy to forget. They are inefficient because they typically heat or cool the home beyond the set point.

If your cooling is set to 72 degrees, a mechanical thermostat may cool your home to 70 degrees before turning off, wasting energy. Then, it might not come on again until the home reaches 74 degrees. That four-degree temperature change is noticeable and can lead

Use these cooling tips from the DOE to add efficiency and savings to your home:

- Set the thermostat to 78 degrees in the summer when you are home and awake and warmer at night or when away.
- Upgrade to a programmable or smart thermostat that automatically adjusts the temperature throughout the day and when you leave the house.
- When on vacation, set your thermostat to 85 degrees in the summer.
- In the summer, fans let you set your thermostat about 4 degrees warmer without feeling it. Remember, fans cool people not rooms, so turn them off when you leave a room.



Photos: Mark Gilliland, Pioneer Utility Resources

people to adjust the thermostat setting down even more, which wastes more energy.

Also, some mechanical thermostats contain mercury. You can determine that by removing the front plate and looking for small glass bulbs. If your thermostat contains mercury, replace it and find a way to recycle it properly.

Digital thermostats are more accurate and efficient, and some are programmable, which is a great option for people without internet access. Smart thermostats, which require an internet connection, are Wi-Fi-enabled and can be controlled using a smartphone app. Programming is easier, and you can track and manage use and temperature data. However, that data is shared with the manufacturer.

Smart thermostats can learn your preferences and set a schedule that automatically adjusts the temperature. Some even have geofencing, which changes the temperature based on the distance your smartphone is from home.

Misconceptions about thermostats

A common misconception is that the higher you turn your thermostat up or down, the faster your home's temperature changes. Turning your thermostat down to 55 degrees to cool your home faster is like repeatedly pushing the elevator button and expecting it to come faster.

It's likely you will forget you adjusted it and waste energy by over heating or cooling the home. Set your desired temperature for heating and cooling or program your thermostat so you don't make extreme adjustments.

The larger the temperature variance between inside and outside, the more energy your system uses. According to the U.S. Department of Energy, setting your thermostat 7 to 10 degrees from its normal setting for eight hours a day can save up to 10% a year on your energy bill.

Miranda Boutelle writes on energy efficiency topics for the National Rural Electric Cooperative Association.

KEEP YOUR COOL: FIVE TIPS TO STAY SAFE IN EXTREME HEAT

BY ABBY BERRY

The dog days of summer typically bring the warmest, sultriest temperatures of the year. Even if you're a summertime enthusiast, it's important to stay cool during extreme heat.

According to the Centers for Disease Control and Prevention (CDC), more than 700 people die from extreme heat every year in the U.S.

Factors like obesity, age and alcohol intake can impact how a person reacts to extreme heat. High humidity also contributes to heat-related illness because we don't sweat as quickly – meaning our bodies can't release heat as fast – when humidity levels are high.

Take extra steps to cool off, keep hydrated and stay informed. Here are five tips recommended by the CDC to help you stay cool during extremely warm weather:

- 1 Stay in an air-conditioned home or building as much as possible. Limit outdoor activity, especially midday when the sun is hottest. If your home is not air conditioned, call the local health department to locate public facilities or shelters.
- 2 If you must be outdoors, wear loose, light-colored clothing and apply sunscreen often.
- 3 Drink more water than usual. Don't wait until you're thirsty to drink more.
- 4 Take cold showers or baths to cool down.
- 5 Avoid using the oven or stove to cook. These appliances add heat to your home. Try using the microwave or a slow cooker instead.

Remember to look after those who may need extra help. People 65 years



of age or older are at greater risk of heat-related illness, so check on your senior neighbors and friends. Children under the age of two and pets are also more susceptible to heat stroke. Never leave a child or pet in a vehicle, even if only for a minute.

If you work outdoors, use a buddy system to monitor your co-workers and have someone do the same for you!

Heat-induced illness can happen to anyone, even to those who are perfectly healthy. If you're outdoors during extremely warm weather, monitor how you're feeling, stay hydrated and keep an eye on those around you.

Abby Berry writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the national trade association representing more than 900 local electric cooperatives.

STAY COOL DURING EXTREME HEAT.



- Limit outdoor activity.
- Stay hydrated.
- Check on friends and neighbors who are at greater risk.

HOW TO SAFELY USE A GENERATOR

Before using a portable generator, it's essential to understand the potential dangers associated with using them, such as their production of carbon monoxide (CO). CO is an odorless, colorless and tasteless poisonous gas that is called the "silent killer" because it is virtually undetectable without the use of technology like CO alarms. Follow these tips when using a generator.

- **Read and follow all manufacturer operating instructions to properly ground the generator.** Be sure you understand the directions before hooking up the generator.
- **A generator is a temporary power source.** It should never be used as a permanent solution.
- **Maintain adequate ventilation because generators emit CO.** It's against fire code to operate a generator in your home, garage or other enclosed building. Place it in a dry location outdoors. The Consumer Product Safety Commission recommends generators be positioned at least 20 feet from doors, windows and vents to prevent CO from entering the home.
- **Never plug a portable electric generator into a wall outlet or connect directly to a home's wiring.** This can energize utility power lines and injure you or others working nearby. Electrical back feed can also damage the generator and home electrical equipment.
- **Turn off the generator and allow cooling before refueling.** Gasoline and its vapors may ignite if they come in contact with hot components or an electric spark. Store fuel in a properly designed container in a secure location away from the generator or other fuel-burning appliances, such as water heaters. Always have a fully charged, approved fire extinguisher located nearby.



Photos: Honda/Kohler

- **Protect your appliances.** Turn off or disconnect all appliances and lights before you begin operating the portable generator. Once the generator is running, turn your appliances and lights on one at a time to avoid overloading the unit. Remember, generators are for temporary usage, prioritize your needs.
- **Generators pose electrical risks especially when operated in wet conditions.** Use a generator only when necessary when the weather creates wet or moist conditions. Protect the generator by operating it under an open, canopy-like structure on a dry surface where water cannot form puddles or drain under it. Make sure your hands are dry before touching the generator.
- **Keep children and pets away from portable generators at all times.** Many generator components are hot enough to burn you during operation.
- **Use proper extension cords.** Use only safety-tested, shop-type electrical cords designed and rated for heavier, outdoor use to connect appliances. Many generators are equipped with twist-lock connects to reduce the chance of accidental disconnections due to vibrations.
- **Shut down the generator properly.** Before shutting down a generator, turn off and unplug all appliances and equipment being powered by the generator.
- **Remember maintenance between uses.** Drain the gasoline from the generator while it is being stored. It's also a good idea to inspect the fuel and oil filters, spark plug, oil level and fuel quality, and to start the generator on a regular basis before an emergency situation happens.

For more information, visit Safe Electricity at safeelectricity.org

THE GIFT OF A BRIDGE

BY VALERIE VAN KOOTEN

A much-wanted gift finally materialized about a year ago. Kent and I had always discussed placing a bridge across the creek that separates our land from my parents' and my sister's. Without it, the only way to get to either of them was down our dead-end road and up a gravel one, 1.5 miles out of the way on a busy road.

Kent finally had all the pieces to put our bridge together. Someone was getting rid of a dock on their pond, so he and our son Colin dismantled it, and it became the bridge itself. Iron beams, pipes and whatever other paraphernalia are needed to make a bridge were finally in our possession. We would become bridge builders.

Well, Kent would. I'm not much good in the way of building anything. Even constructing a pillow fort in our living room with the grandkids is fraught with anxiety. So, I cheered on the bridge that would cross the 15 or so feet from bank to bank of what we call Meadow Creek.

A whole new world

Saying that the bridge changed my life might be a little melodramatic, but it certainly added a depth to my days that I hadn't anticipated. The four of us – my sister, my parents and I – share notes about our 4-wheeler rides and what we've found: a beaver dam, a new fawn, the old foundation of a country school that used to sit on my parents' acres.

I ride out there as frequently as the weather, the crops and my schedule allow. There's the Pig Wood, a stately stand of trees that once housed hogs in A-frames, with the remnants of one still remaining; my folks' cook spot, the site of many bonfires, sledding parties and weenie roasts; and a piece we call "Nebraska," because it's so far out of the way.

Imaginations run wild

At the back of the properties runs



Thunder Creek, a slow, wide stream that travels across the north end of Marion and Mahaska Counties and connects the Des Moines River with the South Skunk River. On a cool evening, I watched the bend that wraps around the north end of the field, and I could almost see the Native Americans who used this creek for a shortcut from one river to the other, canoeing slowly as they progressed. I surveyed the spots where I would put a cabin if I were homesteading in the 1840s. I watched the sun send streams through the Pig Wood, turning it into a medieval glade. My grandson, riding along with me, said,

"It's like a fairy tale, isn't it, Grandma?" and I replied, "It certainly is."

It's hard to describe the love of land where you know you belong. You feel its pull in your blood, in your heritage and in your responsibilities toward it. You can sense the generations that lived there before, whether you are related to them or not.

And in a medieval glade at sundown, you just might find yourself in the middle of a fairy tale.

Valerie Van Kooten is a writer from Pella who loves living in the country and telling its stories. She and her husband Kent have three married sons, two incredibly adorable grandsons and a lovely granddaughter.

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