



**DSO ELECTRIC  
COOPERATIVE, INC.**

**DSO**  
ELECTRIC COOPERATIVE

**HEADLINER**

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## Office Hours

8 a.m.-4:30 p.m., Monday-Friday  
Open over the lunch hour

## Payment Locations


**CENTRAL NATIONAL BANK IN  
WALMART SUPERCENTER**  
521 E. Chestnut St., Junction City, KS 66441  
**FARMERS STATE BANK**  
447 Harrison, Lindsborg, KS 67456

## Outage Information

**IN CASE OF AN OUTAGE, CALL  
800-376-3533.** After-hours calls will be  
answered by dispatch and forwarded to  
standby personnel.

## Find Out More

 [facebook.com/DSOElectricCooperative](https://www.facebook.com/DSOElectricCooperative)

 @DSOElectricCoop

# Pardon the Interruption

## Let's talk **RED ZONE**

Every year during July and August DSO asks members to reduce their energy usage between the hours of 3-6 p.m., Monday through Friday. DSO sets its summer peak during these hours, which are known as the **RED ZONE**. The peak demand for electricity recorded in July and August drives a major part of the wholesale power billing process for the eight off-peak months that follow, October through May. Reducing the demand during July and August will help lower the demand charges we all pay the following year.

A few years ago, DSO worked with several members on a voluntary pilot program where DSO would completely interrupt power for one hour during the **RED ZONE**. At that time, members received a \$50 credit on their statement for participating and

helping DSO reduce its demand during July and August. The program grew in popularity over the next two years, and last year DSO transitioned the program from a pilot program to an official rate, available to all residents.

### How does the interruptible rate work?

With the residential interruptible rate, DSO may turn off power to a member's meter any time during the **RED ZONE**. Power may be interrupted on multiple days, but there is only one peak day. In 2020, DSO interrupted power to members five times during July and August. During each event, power was interrupted for one hour (except for one event that had a two hour interruption). DSO notifies members at

*Continued on page 16B ▶*

## ENERGY EFFICIENCY Tip of the Month

When shopping for new lightbulbs, know the difference between lumens and watts. Lumens measure the amount of light produced by the bulb, while watts measure energy consumption. Energy-saving LEDs come in a variety of colors and brightness levels and last 15-25 times longer than incandescent bulbs. **SOURCE: ENERGY.GOV**



# Avoid the RED ZONE to Save Energy

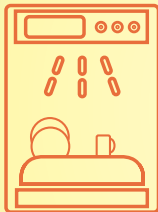


The **RED ZONE** is a period when electricity costs the most.

This occurs from 3-6 p.m. Monday-Friday in July and August.

## WAYS TO REDUCE YOUR ENERGY USAGE

Did you know that the highest hour of electric usage in the summer months is the basis for billing for the next eight months? Controlling your energy usage during peak hours helps reduce electricity demand and keeps costs down.



Avoid running the dishwasher during peak energy use hours.

Avoid doing laundry during peak energy use hours.



Raise your thermostat a few degrees to help conserve energy.

# THE RED ZONE Continued from page 16A ▶

least 30 minutes prior to power being interrupted. This notification comes in the form of a text message or email. Members will receive a \$25 credit per kW saved on the peak day. Another advantage members receive for selecting the interruptible rate is they are not charged the higher energy rates during the **RED ZONE** window. Contact the office at 800-376-3533 to find out how the interruptible rate can save you money.

DSO would like to thank all of the members who have signed up for the interruptible rate for the 2021 season and encourage all of its residential members to sign up for the 2022 season.

## Proper Rest, Using '4 A' Method can Improve Harvest Safety

Farming requires long days in the field and little rest. The pressure to harvest as much as possible, combined with fatigue and looming deadlines, increases the risk of injury. In fact, most injuries occur during the spring and fall when stress and fatigue are common among farmers.

The safety and health of workers, including making time for sleep, should be a priority when considering a farm's productivity, according to Josie Rudolphi, University of Illinois Extension associate research scientist. "Rushing and cutting corners can lead to injury, which no one has time for, especially during the harvest," Rudolphi says.

Rudolphi grew up on a farm and understands the pressures of harvest season. She says that getting proper rest can make a huge difference in staying safe, but during the time crunch of harvest season, farmers sacrifice sleep to work late into the night.

"Sleep deficiency has been associated with increased injury, reduced reaction time, and reduced concentration," Rudolphi says. "All of which could impact health and safety, as well as productivity."

The demands of harvest are stressful, and a lack of sleep can intensify that and lead to errors in the fields or even on the roads. To improve sleep, Rudolphi advises farmers to go to bed and wake up at regular times when

possible. They can use rainy days to catch up on sleep.

### Other Sleep Health Tips Include:

- ▶ Create a bedroom environment that encourages sleep; keep it quiet, dark and cool.
- ▶ Avoid large meals, caffeine and alcohol before bedtime.
- ▶ Limit electronic device use.

In addition to improving sleep, managing stress is an important component to injury prevention, health and safety, according to Rudolphi. "By using the 'Four A' Method of avoid (planning ahead), adapt (changing expectations), alter (changing the situation when you can) and accept (acknowledging that a situation is what it is), farmers can successfully manage the stress of long hours and unpredictability," she adds.

For information about safety around electricity, including farm and ranch safety, visit [SafeElectricity.org](http://SafeElectricity.org).





## Energy Efficient Irrigation Strategies

Agriculture is the backbone of our country, and keeping farmland well-irrigated is crucial for almost any agricultural producer.

Energy-efficient irrigation methods help farmers curtail unnecessary water use while growing the same produce, reducing their operating costs and increasing overall productivity. When choosing between different irrigation methods and technologies, the most important aspects to consider are the overall cost, return on investment, convenience and minimization of risks.

One of the easiest ways to maximize energy efficiency, as many farmers have already done, is to use electric motors in place of inefficient diesel irrigation motors. Electric motors are about 90% efficient, while diesel motors have much lower efficiencies between 30-40%. This means cost savings in the long run. Electric motors also require less maintenance needs and use a variable frequency drive (VFD) irrigation system, which helps to further reduce costs.

VFD systems allow farmers to pump water at different rates, maximizing irrigation throughout the day. A VFD system can control the speed of the electric motor because it controls the electric power frequency supplied to the motor. Since there are many benefits from using electric irrigation motors, the majority of U.S. farmers have switched to electric ones, although pairing the motor with a VFD system is still a relatively new agricultural trend.

Irrigation efficiency tends to decline over time. After five years, irrigation pumps are typically evaluated for performance efficiency. The evaluation can help inform decisions on the most cost-effective solution, whether making improvements to the existing pump or replacing it entirely. Irrigation pump tests assess the pump's discharge pressure, lift, water flow and power input. Regular testing of irrigation pumps can help ensure the pumps are working as efficiently as possible. Upgrading

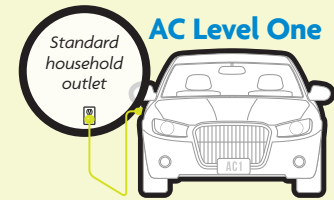
irrigation hardware can also lead to more efficient irrigation system performance. Replacing leaky sprinklers, for example, can help save a significant amount of water. Maintaining the overall efficiency of irrigation systems over time helps to reduce water use and save energy.

There are many new agricultural technologies that are part of the "precision agriculture" industry, including autonomous tractors, crop-monitoring drones and robotic milking or weeding machines. Beyond existing irrigation technologies, Wi-Fi connected crops is one type of precision agriculture irrigation technology. After placing Wi-Fi-connected sensors throughout a crop field, farmers can monitor the conditions by simply using their smartphones or computers. Data on light, humidity, temperature and moisture are captured by the sensors. That data is automatically sent to a server to be analyzed, which is then sent to a farmer's smartphone app. Using Wi-Fi-connected crops also allows farmers to remotely set automatic timers for watering systems. With Wi-Fi-connected crops, several factors are considered, such as cost, range, bandwidth and power. One constraint of using Wi-Fi-connected crops is that the sensor range can be limited, which makes the technology only feasible for smaller farms. Other network connectivity platforms can be applied to irrigation management, such as cellular connection, satellites, LoRa and Sigfox, but Wi-Fi is by far the most commonly used.

As technology continues to improve, there will be new opportunities to support the agricultural sector. Replacing technology that uses on-site fossil fuels, such as propane and gasoline, with technology powered by electricity will help improve energy efficiency and reduce local pollution.

Kansas' electric cooperatives are proud to support their agricultural members and will continue to help them determine opportunities to improve and meet their energy efficiency goals.

## Electric Vehicle Charging Levels



**VOLTAGE**  
120V 1-Phase AC

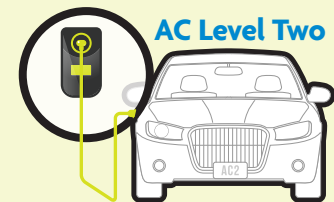
**AMPS**  
12-16 amps

**CHARGING LOADS**

1.4 to 1.9 kW

**VEHICLE CHARGE TIME**

3-5 miles per hour



**VOLTAGE**  
208V or 240V 1-Phase AC

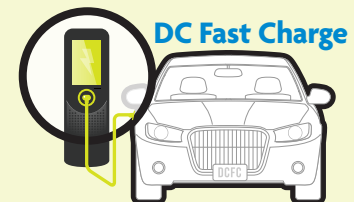
**AMPS**  
12-80 amps (32 amps typical)

**CHARGING LOADS**

2.5 to 19.2 kW (6.6kW typical)

**VEHICLE CHARGE TIME**

10-20 miles per hour



**VOLTAGE**  
208V or 480V 3-Phase AC

**AMPS**  
<100 amps

**CHARGING LOADS**

50-350 kW

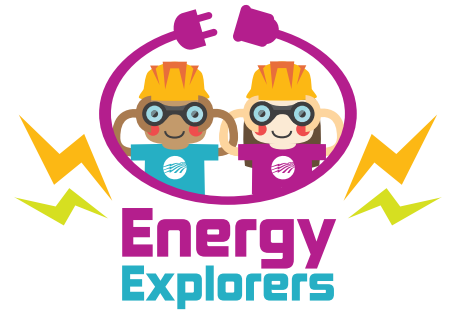
**VEHICLE CHARGE TIME**

60-80 miles in 20 minutes

SOURCES: ADVANCED ENERGY AND EPA

# HYDROPOWER WORD SCRAMBLE

You know that it's never safe to mix water and electricity. But did you know that large amounts of flowing water can be used to create electricity? It's called hydropower, and it's made from the movement of water.



Read the facts about hydropower below, then unscramble each word in **bold** type. Check your work in the answer key.

1. **YROHD** means “water” in Greek.

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2. Water flowing down a **EVRRRI** is used to spin large turbines that help make the hydroelectricity.

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3. When the turbines spin, a large **TROAEGREN** spins, which makes the electricity.

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4. The amount of water used to generate hydropower is controlled through the use of large **MDAS**.

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5. Hydropower is a form of **ELNERAEWB** energy.

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ANSWER KEY: 1. HYDRO 2. RIVER 3. GENERATOR 4. DAMS 5. RENEWABLE