



A Touchstone Energy® Cooperative 

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www.twinvalleyelectric.coop

TWIN VALLEY ELECTRIC CO-OP

# NEWS

## TWIN VALLEY ELECTRIC COOPERATIVE, INC.

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## OFFICE HOURS

Monday-Friday  
8 a.m. to 4:30 p.m.

## CONTACT US

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## Coordinating Power Across the Grid

When you flip a switch, electricity is there — instant, reliable and ready to power your day. But behind that simple moment is a carefully coordinated system made up of many “grid power players,” all working together to keep the lights on.

At Twin Valley, we think it’s important for our members to understand how this system works and who’s involved in delivering the electricity you depend on every day.

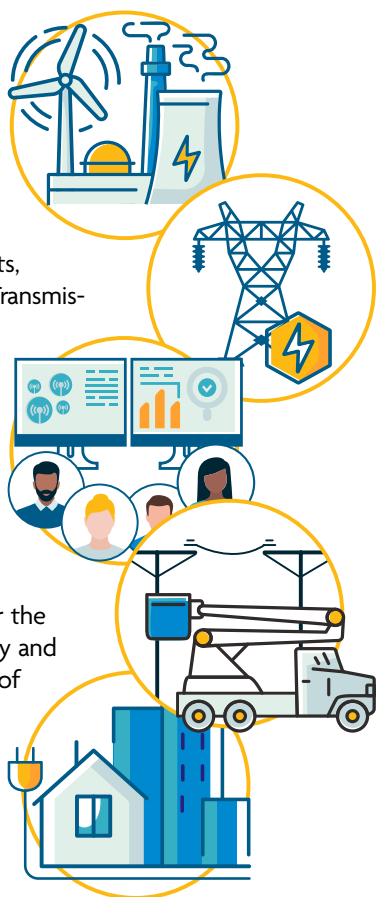
It all starts with generation owners and operators. These are the facilities that produce electricity. Power plants convert energy from a variety of sources — such as natural gas, coal, nuclear energy and renewables like wind or solar — into electricity. These facilities may be owned by electric utilities, government entities or private companies. In most regions, a diverse mix of generation sources helps ensure reliability while also supporting affordability and sustainability goals.

Once electricity is generated, it needs to travel — often across long distances — to reach local communities. That’s where transmission owners and operators come in. Using high-voltage transmission lines strung along massive towers, they move bulk electricity from power plants to local areas. You’ve likely seen these lines along highways or across open land. Because electricity can’t easily be stored in large quantities, this system must constantly move power

from where it’s produced to where it’s needed, all in real time.

Twin Valley is a member of Kansas Electric Power Cooperative (KEPCo), our local generation and transmission partner. KEPCo is a private, not-for-profit wholesale power provider that generates and transmits electricity to Twin Valley and other electric cooperatives in our state.

Coordinating the flow of large amounts of power is a complex job, especially across multiple states or regions. In many parts of the country, organized wholesale markets, managed by Regional Transmission Organizations (RTOs) or Independent System Operators (ISOs), handle this responsibility. These entities don’t typically own power plants or transmission lines. Instead, they act as traffic controllers for the grid — balancing supply and demand every second of the day and directing which power plants should generate



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## GRID POWER PLAYERS

Electricity is available at the flip of a switch, but it travels great distances and is coordinated among multiple power players before it reaches your home or business.



### 1 GENERATION OWNERS & OPERATORS:

Power plants — run by utilities, government entities or other private companies — generate electricity by converting energy from sources like natural gas, coal, nuclear or renewables.

### 2 TRANSMISSION SYSTEM OWNERS & OPERATORS:

The transmission grid moves large amounts of electricity over long distances using high-voltage transmission lines supported by large towers. These lines can be owned by various public and private companies.

### 3 ORGANIZED WHOLESALE MARKETS:

In the U.S., Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) manage the flow of electricity by balancing supply and demand in real time and managing the dispatch of electric generation and transmission across large areas with the participation of generation and transmission owners.

### 4 ELECTRIC UTILITIES (THAT'S US!):

Electric distribution utilities take electricity from the transmission system and deliver it to homes and businesses through lower-voltage distribution lines. They also maintain local power lines, poles and other essential equipment.

### 5 END USERS (THAT'S YOU!):

End users consist of the homes, businesses and industries that consume electricity. Their demand drives how much electricity is generated and how the grid is managed in real time.

### OTHER KEY PLAYERS:

- ▶ **NERC:** The regulatory authority that develops and enforces mandatory, reliability standards for the North American bulk electric grid. (Standards are developed through a stakeholder process.)
- ▶ **FERC:** Independent federal agency that oversees interstate transmission and wholesale electricity sales, ensuring fair access to the grid.

## Coordinating Power Across the Grid

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electricity at any given moment. KEPCo works with the Southwest Power Pool to help ensure reliable service and cost-effective energy for our members.

Then there's the part of the grid most people are familiar with — your local electric utility. That's where Twin Valley comes in. We take electricity from the high-voltage transmission system and deliver it directly to your home, farm or business through lower-voltage distribution lines. We also maintain utility poles, power lines, electric substations and other essential equipment in our community.

When storms roll through or outages occur, our crews are the ones working to restore power safely and as quickly as possible. At Twin Valley, we're proud to serve 2,900 meters across our service area, and we're committed to providing reliable, affordable electricity you can count on.

Finally, there's you — the end user. Homes, businesses and industries all play a critical role in the grid. Your energy use directly influences how much electricity needs to be generated and delivered at any given time. During periods of high demand — like hot summer afternoons or cold winter mornings — the grid must work harder to meet increased usage. Simple steps,

like adjusting your thermostat or running appliances during off-peak hours, can make a meaningful difference.

Beyond these key power players, there are additional organizations working behind the scenes to ensure our grid remains reliable and secure.

The North American Electric Reliability Corporation (NERC) develops and enforces reliability standards through a collaborative stakeholder process that includes utilities, regulators and industry experts. NERC also monitors the grid, trains personnel and assesses risks to help maintain a strong and resilient electric system across North America.

Meanwhile, the Federal Energy Regulatory Commission (FERC) provides federal oversight. FERC regulates interstate transmission of electricity and oversees wholesale energy markets to ensure they operate fairly and efficiently. It also plays a role in hydroelectric licensing and energy infrastructure development, helping ensure safe and reliable energy delivery nationwide.

From generation to transmission to your local utility, it takes a coordinated effort to power your everyday life. At Twin Valley, we're proud to be your trusted energy partner — and to play our part in keeping the grid strong for the communities we serve.



# HEAT PUMPS EXPLAINED: How They Heat and Cool Your Home

Heat pumps aren't brand-new technology anymore. What's changed is how well they work (including in colder weather) and how many options homeowners have, from ductless mini-splits to high-efficiency, variable-speed systems. If you've heard the term and wondered what a heat pump actually does, here's the simple idea: it doesn't "make" heat like a furnace. It moves heat, which can make it an efficient way to keep your home comfortable year-round.

## WHAT ARE HEAT PUMPS AND HOW DO THEY WORK?

In general, a heat pump extracts heat from one place and transfers it to another, similar to how an air conditioner or refrigerator cools. In warmer months, a heat pump takes heat from inside a home and relocates it outdoors, helping to make your home cooler. In cooler months, it pulls heat from the outdoor air (even when it feels cold) and transfers it indoors. Some newer models use variable-speed (inverter) compressors that adjust output in small increments for steadier comfort and better efficiency.

## DO THEY SAVE ENERGY?

Because heat pumps move heat rather than generate it, they can be very efficient — especially when replacing electric-resistance heat (like baseboard heaters). The U.S. Department of Energy notes that today's heat pumps can cut electricity use for heating by up to 75% compared with electric resistance heating, though actual savings depend on your climate, home and the system you're replacing.

Heat pumps for larger homes can save energy with a zone-heating feature that warms only the rooms in use. High-efficiency heat pumps also dehumidify more effectively than standard systems, resulting in lower energy use.

## IS THERE MORE THAN ONE TYPE?

Four primary types of heat pumps exist:

**1 AIR-TO-AIR OR AIR-SOURCE PUMPS** are the most common and are powered by electricity. They have an outdoor compressor/condenser unit that warms or cools the coils inside the air handler. It then circulates the warmed or cooled air through the system and pushes it back into rooms through ducts. For homes without air ducts, air-source heat pumps are also available as ductless mini-split heat pumps.

**2 ABSORPTION HEAT PUMPS** are similar to air-source heat pumps except that, instead of using electricity to operate, they use alternative energy sources such as natural gas, propane, or solar- or geothermal-heated water.

**3 GEOTHERMAL/GROUND SOURCE HEAT PUMPS** can heat, cool, and even supply hot water to a home by transferring heat to or from the ground (or nearby water source), according to Energy.gov. They have higher installation costs but lower operating costs because they take advantage of relatively constant ground or water temperatures. They're usually more efficient, provide steadier performance, and work better in extreme climates than air-source heat pumps. However, air-source models have improved: cold-climate versions

can still heat efficiently below freezing, so they can be a good option in many northern states.

**4 AIR-TO-WATER HEAT PUMPS** are a special type of air-source heat pump called a "reverse cycle chiller" that generates hot and cold water rather than air, allowing it to be used with radiant floor heating systems.

## WHAT TO ASK:

- ▶ Ask about cold-climate performance for your area (and whether you'll need backup heat).
- ▶ Confirm the system is right-sized (bigger isn't always better).
- ▶ If you're choosing ductless, ask about zoning and placement for comfort.
- ▶ Ask what electrical work (panel/circuit) might be needed before installation.

Heat pumps are electric appliances, so safe installation matters. Use a qualified contractor to determine the best heat pump system for your home, and if your installer recommends electrical panel upgrades, have them done by a licensed electrician.

To learn more about energy efficiency and safety around electricity, go to [www.SafeElectricity.org](http://www.SafeElectricity.org).

## WORK SAFELY NEAR UTILITY LINES

Whether you're running heavy equipment or using handheld tools, working outdoors can put you dangerously close to overhead and underground utility lines. A line strike can cause outages, fires, fines, serious injury or death.

### LOOK UP: OVERHEAD POWER LINE SAFETY

- ▶ Survey the job site each day for overhead lines, poles, guy wires and pad-mounted equipment. Check carefully for lines hidden by trees or buildings.
- ▶ Assume all overhead lines are energized, including service drops from poles to buildings. Keep clear unless the utility confirms that a line is not energized.
- ▶ **SET A CLEAR BOUNDARY:** Keep workers, tools, ladders and equipment at least 10 feet from power lines. When using cranes or derricks, keep at least 20 feet away. Follow OSHA guidelines for clearance at different voltages.
- ▶ Use a dedicated spotter to keep you, your crew and your equipment a safe distance from power lines.

### DIG SAFELY: UNDERGROUND UTILITY LINES

- ▶ Pre-mark the excavation area with white paint (use black on snow), flags, chalk, lath or whiskers.
- ▶ Call 811 or [www.811beforeyoudig.com](http://www.811beforeyoudig.com) before you dig to have lines marked. Every job needs a locate request, even small ones.
- ▶ Wait for utilities to mark their lines before digging.
- ▶ Expose marked utilities carefully by hand or with soft excavation to verify location and depth.
- ▶ Report any utility strike or damage to the facility owner. Never cover up damage.

[WWW.SAFEELECTRICITY.ORG](http://WWW.SAFEELECTRICITY.ORG)

## BUILDING NEAR POWER LINES:

**REQUIRED CLEARANCE**

The National Electrical Safety Code (NESC) is a widely used industry safety code, but requirements may also come from utilities and state or local building codes.

**PLAN EARLY**

- ▶ **CHECK** easements and right-of-way restrictions before finalizing a plan.
- ▶ **CONTACT** the utility early if a structure will be near overhead or underground lines.
- ▶ **CONFIRM** which rules apply and follow the most restrictive.

**CLEARANCE BASICS**

- ▶ **CLEARANCE** is the required separation between lines and structures, including roofs, balconies and decks.
- ▶ **DESIGN FOR WORST-CASE SAG/SWING** from wind, ice and heat.
- ▶ **HORIZONTAL:** Distance for lines near walls, windows or projections.
- ▶ **VERTICAL:** Distance for lines over roofs, balconies or accessible areas.
- ▶ **SERVICE DROPS:** Separate rules for lines serving the building.

**FACTORS AFFECTING CLEARANCES**

- ▶ **VOLTAGE:** Higher voltage requires greater clearance.
- ▶ **ACCESS:** Areas accessible to people or vehicles require greater clearance.
- ▶ **LINE TYPE:** Requirements differ for service drops, distribution, transmission and communications space.
- ▶ **CONDITIONS:** Sag and swing vary with heat, wind and ice.

**THINGS TO REMEMBER**

- ▶ **TREAT ROOF ACCESS** as a design trigger. Accessible roofs require more clearance.
- ▶ **AVOID ROUTING SERVICE DROPS** over areas that could later become accessible (decks, rooftop equipment, roof doors).
- ▶ **VERIFY CLEARANCE** at worst-case sag and loading, not just on a mild day
- ▶ **CONFIRM REQUIREMENTS** with the utility and local code authority.

Don't guess. Minimum clearances vary by voltage, line type and location. Involve your electric co-op and local code authority early.

SOURCES: WWW.SAFEELECTRICITY.ORG/OSHA, NESCC

**WELCOME HOME:****Electrical Safety for New Homeowners**

A quick checklist to keep your new home safe (and avoid costly surprises)

Moving into a new house is exciting. From unpacking boxes to decorating, there's a lot to do. During this busy time, don't overlook a vital aspect of your new home: its electrical system.

**GET TO KNOW YOUR ELECTRICAL PANEL**

Your electrical panel is your home's control center. Take a few minutes to learn what each switch does so you can act fast when something trips.

- ▶ Label every breaker by appliance or room.
- ▶ Practice resetting a tripped breaker.
- ▶ Locate the main shut-off switch for emergencies.

**AVOID ELECTRICAL HAZARDS**

A few smart habits prevent most electrical mishaps. Know the red flags, reduce fire risk and avoid expensive repairs.

- ▶ Plug in only one heat-producing appliance, such as a coffee maker, microwave or space heater, into an outlet at a time.
- ▶ Plug major appliances (refrigerators, dryers, washers, stoves) directly into a wall outlet. Extension cords and outlet strips should not be used.
- ▶ Inspect cords for signs of fraying or damage and replace or repair them immediately.
- ▶ Use extension cords only temporarily. Don't run cords under rugs, carpets, doorways or windows. Have a qualified electrician add more outlets if needed.
- ▶ Use surge protectors to safeguard devices such as computers, televisions and appliances from sudden power spikes.
- ▶ Use outlet covers to prevent children (and pets) from inserting objects into unused outlets.

- ▶ Reduce risk of shock by using ground fault circuit interrupters (GFCIs) around water sources such as kitchens, bathrooms, garages, basements and outdoors.
- ▶ Keep electrical devices away from water sources such as sinks, tubs and pools. Unplug items like hair dryers after use.
- ▶ Use lightbulbs with the correct wattage — lamps and fixtures have a sticker to indicate the maximum wattage.
- ▶ Have a working smoke and carbon monoxide detector on every floor of your home and ensure there are units installed near your sleeping area.
- ▶ Keep outdoor ladders away from overhead power lines, including the electrical service into your home.
- ▶ Schedule an electrical inspection with a qualified electrician for peace of mind and to catch issues early.

**CALL A PROFESSIONAL IF YOU NOTICE THESE SIGNS OF AN ELECTRICAL PROBLEM:**

- ▶ Frequently blown fuses, tripped circuit breakers and unexplained power outages.
  - ▶ A tingling feeling when touching an appliance.
  - ▶ Discolored or warm outlets or switch plates.
  - ▶ A burning or rubbery smell, or a buzzing or sizzling sound.
  - ▶ Flickering or dimming lights.
  - ▶ Sparks from an outlet.
- Keep electrical safety on your new-home checklist. Pair these basics with energy-smart steps like turning off lights and unplugging unused devices, and you'll cut your risk and trim your utility bill at the same time. Small steps. Big piece of mind. Welcome home.