Clinton County Connection

Your Touchstone Energy® Cooperative

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Understanding the difference between energy and demand

Bob Kroeger
President/COO

In last month's article, I shared that Clinton County Electric Cooperative (CCEC) is preparing to transition to a cost-based rate structure beginning in January 2027. One of the key ideas behind that change is the difference between **electric energy** and **electric demand**, two terms that sound similar but represent very different costs on the electric system.

This month, I want to take a closer look at what those terms mean, why they matter, and how they affect the cost of providing electric service for both CCEC and for our members.

Energy: How much electricity you use over time

Electric energy is what most members are already familiar with. It is measured in **kilowatt-hours (kWh)** and represents the total amount of electricity you use over time.

If you turn on a 1,000-watt space heater and run it for one hour, you've used one kilowatt-hour of energy. If you run it for 10 hours, you've used 10 kilowatt-hours.

Energy answers a simple question: **"How much electricity did I use this month?"**

What energy costs pay for

Energy-related costs are primarily usage-driven and generally include:

- Fuel used to generate electricity
- Power purchased to meet day-to-day energy needs
- Routine operating costs of power plants

As energy use goes up or down, these costs typically move with it. CCEC's current rate structure is largely based on this measurement.

Demand: How much electricity you need at one time

Electric demand measures something different. It looks at how much electricity is being used at the same time, measured in **kilowatts (kW)**.

If you think of electricity like a car on the highway, **energy** is the distance the car travels, while **demand** is the speed of the car at a given moment. The faster the car needs to go, the bigger and stronger the engine must be — and the more expensive the car becomes.

The same is true for an electric system. The greater the demand the system must be able to serve, the larger and more robust the system must be. Meeting higher demand requires greater investment in power plants, transmission lines, substations, transformers and other infrastructure, all of which increases the overall cost of providing electric service.

Referring back to the space heater example, when you plug in the 1,000-watt space heater, a 1,000-watt demand was placed on the electric system, and the system does not care if that 1,000-watt demand was there for one hour or 10 hours. The system had to be capable of meeting that demand.

High demand is often created when several large appliances are operating at the same time — such as air conditioning, electric heat, water heaters or large motors — even if that increased usage only lasts for a short period of time.

Demand answers a different question: **"How much electricity did I need all at once?"**

Why demand drives costs

Understanding the difference between energy and demand is important, because peak demand determines how an electric system must be built. Electric systems

Continued on 18B ▶

Energy and demand continued from 18A

are not sized for average use. They must be designed to safely handle the highest load they may ever carry, even if that load is only present for a few hours.

As peak demand increases, the cooperative may need to upgrade power plants, transmission lines, substations, distribution lines, transformers and other equipment to ensure reliable service. These improvements are expensive, long-term investments, and the costs are shared by all members — whether or not they personally contribute to the peak.

This is why managing peak demand is so important. By reducing or shifting electricity use during peak periods, the cooperative can delay or avoid costly infrastructure upgrades and keep overall system costs lower.

Why energy-only rates can miss the full picture

CCEC's current rate structure does a good job measuring how much electricity is used over time, but it does not fully reflect the costs created during peak demand periods.

Two members could use the same number of kilowatt-hours in a month, but place very different demands on the system:

- One spreads usage evenly throughout the day.
- Another uses most electricity during peak hours.

Under the current rate structure, those members pay similar amounts — even though one creates significantly higher costs for the electric system.

Over time, this mismatch can result in some members unintentionally paying less than the cost they place on the system, while others pay more — even when their usage patterns help keep costs down.

How cost-based rates address this difference

A cost-based rate structure recognizes **both energy and demand**. It better aligns member bills with how costs are actually created by that member, particularly during peak periods.

This does not mean members are being penalized for using electricity. It means:

- Members who drive peak demand contribute appropriately to those costs.
- Members who help flatten peaks and improve load factor are no longer subsidizing others.

Importantly, this change is about fairness, not increased revenue. CCEC is not collecting more money — just allocating existing costs more accurately.

Small changes can make a difference

The good news is that demand is something members can influence. In many cases, small changes can reduce demand, such as:

- Avoiding the simultaneous use of multiple high-energy appliances
- Shifting certain activities to off-peak hours
- Paying attention to heating and cooling habits during extreme weather

Under a cost-based approach, these changes can have a meaningful impact.

Looking ahead

Understanding the difference between energy and demand is an important step in understanding why CCEC is transitioning to a cost-based rate structure.

In upcoming articles, I will continue to share examples, practical tips and additional details about how the new rate structure works — including how each member contributes to CCEC's wholesale power costs.

As always, CCEC remains committed to open communication, transparency and fair and reasonable rates that serve the long-term interests of the membership.

In next month's ICL article, I'll discuss how CCEC is billed by SIPC and how each CCEC member contributes to those costs.

If you have questions in the meantime, please contact our office at 800-526-7282.

Construction Work Plan

Jared Kampwerth
Engineer

Clinton County Electric Cooperative, Inc. (CCECI) is committed to maintaining a high level of electric service reliability for our membership. To help minimize service interruptions and ensure long-term system performance, CCECI follows a comprehensive Construction Work Plan designed to guide system improvements and capital investments.

Each Construction Work Plan spans a four-year period and is developed using a detailed engineering model of the electric distribution system. This analysis ensures that infrastructure upgrades and capital investments are made strategically — where and when they are needed most. The plan accounts for system growth driven by new service connections as well as increased energy consumption across CCECI's service territory.

Work Plan Overview

Construction Work Plan projects include a wide range of system improvements, such as:

- New service line extensions
- Distribution line installations and upgrades
- Three-phase line conversions
- New substations and substation upgrades
- Service upgrades
- Sectionalizing equipment
- Voltage regulators and capacitor equipment
- Pole replacements
- Transformer and meter installations

2023-2026 Construction Work Plan Progress

CCECI is currently in the fourth and final year of its 2023-2026 Construction Work Plan. The largest project this year will be a three-phase, 336 ACSR line rebuild from our Breese Substation totaling approximately 3.1 miles in length. Construction will start at the intersection of Drive In Road and Highline Road, then continue south along Drive In Road to Wesclin Road, then west to Grassy Branch Road. This project will begin in early spring.

Upgrading to larger 336 ACSR aluminum conductor significantly enhances system reliability. The increased capacity helps maintain proper voltage levels during transmission interruptions or when a substation must be temporarily deenergized for maintenance. In these situations, power can be safely transferred — or "backfed" — from another substation. This load transfer capability greatly improves service reliability while allowing crews to perform maintenance safely and efficiently. The larger conductor also performs better under heavy loading conditions, including ice and wind events.

Another large project to be completed this year will be pole testing all poles on our Ferrin Substation. CCECI has contracted with Osmose Utility Services to inspect about 2,425 poles. During the inspection process, Osmose will determine the condition of each pole, which then leads to one of three things:

1. Acceptance of pole condition as is. No action by Osmose or CCECI.
2. Pole condition shows signs of decay. If caught early enough, the decay can be removed and treatment applied to the pole to extend the lifespan of the pole.
3. Pole is rejected and must be replaced. In some cases, the decay is severe enough that it cannot be treated, and the pole must be replaced with a new pole.

CCECI is planning to replace about 194 poles, or 8%, of the poles on our Ferrin Substation with the findings of these Osmose inspections. Osmose started the inspection process in January 2026, and CCECI will work throughout 2026 on replacing the necessary poles.

Later this year, CCECI will begin working towards finalizing the next 4-year work plan which, will include years 2027-2030.

Minimizing service interruptions

CCECI crews are trained to perform work on energized lines whenever possible to minimize outages. However, there may be instances when temporary service interruptions are necessary to ensure work can be completed safely and efficiently. We will strive to provide advance notice whenever possible and work to keep any interruptions as brief as possible.

Most construction activities will be performed from the roadway. We ask members to use caution when traveling near work zones — please slow down and move over when possible to provide our crews with a safe working environment.

Commitment to reliability

These projects represent a significant investment in strengthening CCECI's distribution system and improving reliability for our membership. We appreciate your patience and cooperation as we complete this important work.

If you have any questions, please contact Jared Kampwerth at 800-526-7282 or by email at kampwerth@cceci.com.

Safety first

Clinton County Electric recognized for outstanding workplace practices

Safety leadership and training were the focus of the 2026 Safety and Energy Conference, held Jan. 28-29 in Springfield. The two-day event brought together electric cooperative professionals, safety leaders and industry partners for educational sessions, networking and recognition of outstanding safety performance.

The conference, which was held by the Association of Illinois Electric Cooperatives, covered a range of topics focused on leadership, safety and workplace culture, including personal influence and leadership, technical safety training, and the role of safety culture in the workplace.

Safety awards were also given, recognizing cooperatives for exemplary safety performance over the past year. Clinton County Electric Cooperative (CCEC) earned the 2025 RESAP Certificate of Achievement.

This certificate indicates that the co-op completed the Rural Electric Safety Achievement Program, a program that was developed to maintain a culture of safety at cooperatives. By participating in the program, cooperatives commit to safety as an organizational value through training, educating and assessing its workforce.

As the electric industry continues to evolve, safety remains a top priority. CCEC will always be committed to a strong safety culture for both employees and cooperative members.

ENERGY EFFICIENCY
TIP OF THE MONTH

As we prepare for the seasonal shift, remember to set your ceiling fan rotation accordingly. In winter months (or whenever your home heating system is running), fan blades should rotate clockwise, which produces an updraft that pushes warm air down. In summer months (or whenever your home cooling system is running), blades should rotate counterclockwise, which produces a downdraft or windchill effect that makes you feel cooler. When used correctly, ceiling fans can boost comfort and allow you to adjust the thermostat a few degrees for energy savings.

Source: energy.gov