



Top 5 Reasons Electric Cooperatives Should Modernize Their Networks

FROM SMART GRID
TO BROADBAND

The value delivered by the more than 850 distribution electric cooperatives in the U.S. cannot be overestimated, especially to rural communities.

Electric cooperatives provide safe, clean, reliable, and economically viable electric power to 19 million homes in rural communities that would otherwise not be served.

WHY FORWARD MOTION IS A MUST

In the 20th century, co-ops closed the gaps in access to electricity. In the 21st, a digital divide has widened in rural America. Bridging it requires that electric co-ops upgrade to a smart grid, replacing copper with fiber as the backbone for added services, from remote substation monitoring to community broadband.

WHY BROADBAND IS BIG

Electric co-ops are well positioned to bring broadband to their communities, but only 15% of them have the fiber foundation in place, and only 15% more are actively considering it, provided they can secure funding. That leaves more than 500 electric co-ops not taking steps toward the future.



Today, broadband is taking its place alongside water, sewer and electricity as essential infrastructure for communities.”

- Broadband Opportunity Council



COVID-19 Taking Broadband from Nice-to-have to **Essential**



Telehealth



Work from home



Government services



e-Commerce for small businesses



e-learning

Understand the top five reasons to reconsider what it takes to put a broadband-ready smart grid in place and what it can do for your electric co-op—and

1. It all starts with fiber for successful substation monitoring

The reliability of electric service depends on effective monitoring. The reality for many electric co-ops is that some substations go unmonitored. Co-ops simply don't have enough resources or the right tools. This opens up significant risks, including injury to employees, damage to equipment, copper theft from trespassers, vandalism, and unmanaged wind issues.

A fiber network links all substations electronically, so fewer people are needed for monitoring in high-voltage environments. It enables video monitoring across all substations, offices, and towers for tighter security in real-time. Unlike previous generations of video surveillance that store footage at individual substations locally, modern systems centralize the information, use AI to scan for problems, and surface them immediately for quick resolution.

What's more, modern performance measurement units (PMUs) work with fiber networks to check the state of the grid 30–60 times per second. This is a huge improvement over historical SCADA units that check the grid only every four seconds, missing out on major electrical spikes.

2. Fiber keeps communication flowing

Fiber bridges the distance of even hundreds of miles between substations, power plants, dams, and solar farms, providing a reliable network for internal communications that can handle higher traffic capacities.

More operational data is generated about the equipment in the network for greater situational awareness and resilience. Co-ops gain the ability to anticipate failures sooner, prevent downtime with proactive maintenance, and extend the life of assets.



Modern Monitoring Infrastructure In the News

South Plains Electric Co-Op Adds Unified Video Surveillance to Its 32 Substations, Seven Offices, and Tower Site

- Compliance with higher regulatory standards for physical security
- Ability to monitor 90+ cameras and 200+ doors from a centralized location or mobile phone
- Perimeter intrusion detection with motion-activated cameras



Modern Communication Network In the News

Georgia Transmission Corporation Electric Co-Op Tracks the Performance of Substation: Components Online

- Online monitoring of transformers, breakers, and relays for better situational awareness
- Data-driven voltage management for tighter component control
- 3%+ reduction in voltage across substations



3. Fiber automates responses to failures and outages

When a power fault occurs, fiber networks offer the resiliency to support instant switchover to other equipment. This reduces the risk of equipment damage that can cost hundreds of thousands of dollars.

Fiber also allows more precise location of downed power lines.

Line technicians and vehicles can be deployed more rapidly and efficiently, improving service restoration times.



Modern Event Response In the News

United Power Electric Co-Op of Colorado Advances the “Self-Healing” Grid With Smart-Switching Technology and Automated Control Systems

- Ability to isolate faults and route power automatically to restore service faster
- Greater reliability to better compete with another utility provider in the service area

4. Broadband satisfies co-op members and attracts new residents

Once an electric co-operative has a fiber-based smart grid in place, it can expand to broadband applications and services. Co-op members across the country want better broadband and are putting pressure on co-ops to deliver.

Offering broadband makes a community more desirable for both residents and businesses. It allows co-op members to work from home and supports small businesses in offering customers digital alternatives to in-person experiences.



Modern Small Business in the News

BARC Electric Cooperative of Virginia Brings Broadband to Historic Mill

- Enabled many small businesses to reach more visitors and offer online shopping
- Generated new revenue streams for small business owners and the co-op

5. Broadband balances community disparities

Community members who don't have reliable, high-speed broadband are separated from the **health, education, and employment** opportunities that those with broadband have.

Broadband equalizes access.

Health

Fiber-based broadband offers access to tele-health, which has come into its own as an important safety net, especially for rural communities.

"Using telehealth in rural areas to deliver and assist with the delivery of healthcare services can reduce or minimize challenges and burdens patients encounter, such as transportation issues related to traveling for specialty care."
—Rural Health Information Hub

Education

Fiber-based broadband supports e-learning, particularly the STEM curriculum, which has become critical with school closures and extended delays in progressing through coursework.

"In an ever-changing, increasingly complex world, it's more important than ever that our nation's youth are prepared to bring knowledge and skills to solve problems, make sense of information, and know how to gather and evaluate evidence to make decisions. These are the kinds of skills that students develop in science, technology, engineering, and math—disciplines collectively known as STEM."
—U.S. Department of Education

Employment

Fiber-based broadband makes it possible for many more people to work safely and efficiently from home and pursue new home-based job opportunities.

"The option to perform a job remotely—to telework—may prove to be a financial lifeline for many workers during the COVID-19 downturn, which has shut down large segments of the U.S. economy and caused about 30 million American workers to file unemployment insurance claims since the middle of March 2020."
—Pew Research Center

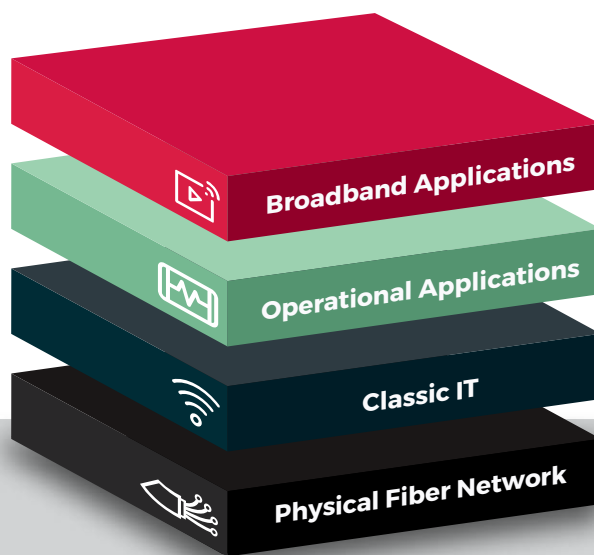


Modern Healthcare in the News

Indiana-Based NineStar Electric Co-Op Connects New Clinic to Broadband for COVID-19 Testing

- Expanded healthcare services from a hospital to a second location
- Improved triage and patient flow to maintain quality of care and response to emergencies
- Built significant goodwill in the community

ARCHITECTURE OF FIBER-BASED BROADBAND AT A GLANCE



IN THE SPOTLIGHT:

What Broadband Can Achieve

Chattanooga Generated More Than \$865 Million in Benefits from Electric Power Board Broadband



More than 124 million minutes of customer power interruptions saved



2,800 new jobs



Up to \$3,762 in benefits per Hamilton County resident



Because of our fiber optic infrastructure, we are creating economic development opportunities and good, middle-class jobs today as well as positioning Chattanooga to compete in the innovation economy of tomorrow.”

– Chattanooga Mayor Andy Berke

HELPFUL FUNDING RESOURCES

An electric cooperative must be profitable, or it will cease to exist. Naturally, the cost of modernization can be a real concern for independent utilities. Many electric co-ops have overcome this challenge with federal or state funding, and their installations are creating new revenue streams. It pays to stay up to date on your funding options. Consult these resources: [BroadbandUSA](#) and [FiberBroadband](#).

HOW CAN FIBER + BROADBAND HELP YOUR ELECTRIC CO-OPERATIVE EXCEL?

The ins and outs of fiber-based substations and opportunities it offers to add services are likely new to you. That's why it's important to work with a solutions-oriented partner who has deep expertise in the space and shares your commitment to the continued survival of electric co-ops.

Contact a dedicated Walker electric co-operative specialist for a complimentary, one-on-one information session: Nicholle.Britt@walkerfirst.com

Ask about "build your own" and "outsourced lease-to-own" models.

ABOUT WALKER

Walker (www.walkerfirst.com) is the premier source of telecommunications products for network operators, and utility customers ranging from PUDs to Rural Coops, simplifying network deployments with expert installation, systems integration, and managed services.

Walker brings together all the right resources to design profitable broadband systems for power utilities, stimulating greater benefits to communities and closing the digital divide in underserved areas.

Walker is partnered with many of the top telecommunications manufacturers in the world, enabling customers to trust Walker as a single-source partner for all of their equipment requirements. Of those top manufacturers, Ciena (www.ciena.com), a networking systems, services and software company, has been a valued partner for Walker since 2015. Walker is proud to maintain its status as Ciena Partner Network (CPN) Elite Partner.

We are proud members of:

