

Utilities Empower Broadband Deployment—A UTC Whitepaper

Electric utilities do more than power our lives with life-sustaining electricity. Electric utilities also empower and enable just about everything that we do; indeed, those power poles that bring electricity to each and every home are an [economic super highway](#), that are already and could help connect millions of Americans to high-speed voice, data, and internet services.

But while nearly every electric utility indirectly assists in the deployment of broadband, a growing number are working to provide internet connectivity either directly to their communities or by partnering with local companies. This briefing paper will discuss the history and different ways in which utilities are empowering broadband connectivity.

BACKGROUND

Electric utilities bring essential electricity services to every home and business in the U.S. Because of this, utility infrastructure, such as power lines, transmission towers, and utility poles, are ubiquitous throughout the country, in densely packed urban areas and remote rural locations. To underpin this infrastructure, utilities have built and operated sophisticated communications networks that provide situational awareness regarding the status of their power plants and power lines. As technologies have improved over the last two decades, these networks have enabled so-called “smart grid” and “smart meter” deployments, which allow utility operators greater control over their infrastructure and improves electric reliability and resilience.

Utility communications networks largely [rely](#) on wireless and wireline systems, depending on location. In remote, rural areas, utilities may use more wireless networks reliant on particular radiofrequency spectrum bands to ensure the reliability of their communications. In other locations, utilities will use fiber or wireline systems. For a detailed analysis of utility communications systems, please review UTC’s 2019 [Network Baseline Survey](#).

UTILITY BROADBAND EFFORTS

Because of this extensive history with building and maintaining massive communications networks, utilities have dabbled in providing internet connectivity a few times over the last 20 years. Perhaps most notable was the effort in the early 2000s to deliver broadband services over powerlines. This Broadband over Powerlines (BPL) technology was promising enough that a few large utilities launched pilot programs with local service providers throughout the U.S.

One of the best-known programs was established by Cinergy, a Cincinnati-based investor-owned utility (IOU). Cinergy, now owned by Charlotte, N.C.-based Duke Energy, created a joint venture between its Cinergy Broadband affiliate and local ISP Current Communications to both provide broadband services to its customers and also partner with municipal and cooperative utilities as well.¹ Another high-profile BPL program was operated by the City of Manassas, Va., which in October 2005 reported that BPL was available in every home in the city.² Despite these efforts, BPL as a technology did not catch on for a

¹ <https://www.power-grid.com/2004/08/09/cinergy-current-communications-begin-marketing-bpl-to-municipal-utilities-rural-electric-cooperatives/#gref>

² <https://www.nytimes.com/2005/10/17/technology/power-companies-enter-the-highspeed-internet-market.html>

variety of technical reasons.³ In 2012, a major BPL provider ceased operations⁴ in the U.S., all but ending the efforts to utilize it across the country and world.⁵

FEDERAL FUNDING OPPORTUNITIES

With the failure of BPL to gain traction, utilities, especially rural cooperatives, started looking into federal broadband funding programs to bring internet connectivity to their areas. It is well known that many rural areas across the U.S. are poorly served, if they are served at all, by broadband providers. The Federal Communications Commission, dating back to the 1970s, has continually asserted that a major barrier to serving rural areas with voice and data technologies is cost, particularly the costs voice, cable, and data companies pay for attaching their communications devices to utility owned power poles. Despite state-government studies and on-the-ground reports from utilities contradicting these pole-attachment policies, the FCC, supported by the telecommunications industry, nevertheless has doubled down on its insistence that allegedly high pole-attachment fees are a chief obstacle to broadband deployment in rural locations.⁶

Because the FCC's poles policies have not been able to bridge the rural broadband divide⁷, other programs have been needed and so the Commission has released billions in funding opportunities over the last decade that have helped lower the costs for local entities, including cooperative utilities, to bring broadband services to their communities. Starting in 2011, the FCC began reforming its universal-service funding programs to assist in the development of broadband networks in rural areas. In 2014, the agency ensured that its new \$1.8 billion Connect America Fund would only go to entities that could provide at least 10 Mbps for download, 1 Mbps for uploads (10/1) speeds⁸.

Around this time, many electric cooperative utilities, seeing the need to bring broadband to their communities, began looking creatively for ways to encourage telecommunications companies to provide these services. In several instances, numerous electric cooperatives offered extremely reduced or even free pole-attachment rates to any telecommunications company that would bring internet connectivity to their locations, but received no takers⁹.

Much like electricity in the early 20th Century, today broadband access has become a vital economic driver. For that reason hundreds of cooperative and public-power utilities, frustrated with the lack of coverage from the larger telecommunications carriers, have responded to this need by creating their own broadband entities. In fact, the Utilities Technology Council created the Rural Broadband Council (now the Utilities Broadband Committee) in 20XX to advocate on behalf of these entities before the FCC and Congress to ensure utilities could participate in grant programs offered by the FCC and the U.S. Rural Utilities Service (RUS). At the time, only a handful of utilities participated in the RBC; now well over 100 nationwide are providing broadband services directly to their customers¹⁰.

The following is just a sampling of rural electric cooperatives providing broadband services:

³ <https://eandt.theiet.org/content/articles/2013/10/whatever-happened-to-broadband-over-power-line/>

⁴ <https://www.telecompetitor.com/ibec-shutdown-deals-latest-blow-to-bpl/>

⁵ <https://eandt.theiet.org/content/articles/2013/10/whatever-happened-to-broadband-over-power-line/>

⁶ https://utc.org/wp-content/uploads/2020/05/UTC_Poles_DETAILED_HISTORY_Clean.pdf

⁷ <https://www.bluetoad.com/publication/?m=62269&i=648829&p=16>

⁸ https://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db1211/DOC-330989A1.pdf

⁹ https://www.cooperative.com/programs-services/government-relations/regulatory-issues/Documents/2020.01.06%20Updated%20NRECA%20Pole%20Attachment%20White%20Paper_FINAL.pdf

¹⁰ <https://www.electric.coop/expanded-rural-broadband-access/>

- Anza Electric Cooperative, Anza, Ca.
- BARC Electric Cooperative, Millboro, Va.
- Blue Ridge Mountain EMC, Young Harris, Ga.
- French Broad EMC, Marshall, NC
- Mid-Carolina Electric Cooperative, Lexington, SC
- Oklahoma Electric Cooperative, Norman, OK
- Ozarks Electric Cooperative, Fayetteville, Ark.
- United Electric Cooperative, Maryville, Mo.

In addition, the following public-power utilities are providing broadband services:

- Burbank Water and Power, Calif.
- Spencer Municipal Utilities, Iowa
- Owensboro Municipal Utilities, Ky.
- Shutesbury Municipal Light, Mass.
- City of Wilson, N.C.
- Johnson City, Tenn.

INVESTOR-OWNED UTILITIES

And as the broadband divide becomes even more apparent, state and federal policymakers are even looking into the role investor-owned utilities (IOUs) can play. While IOUs are unlikely to create new affiliates and directly provide internet services as many did in the BPL days, states like Virginia, West Virginia, Mississippi, Oklahoma, Wisconsin and elsewhere either have already implemented rules or are considering new policies to encourage their IOUs to consider ways in which they can help deploy broadband services in unserved and underserved locations.

In Virginia, laws passed in 2018 and 2019 permit their largest IOUs—Dominion Energy and American Electric Power (AEP)—to invest in new grid modernization communications technologies that can also assist in providing “middle-mile” broadband services in rural areas. Dominion Energy has reached a partnership with Prince George Electric Cooperative to bring internet service to 7,000 residents of rural Surry County in the southeast corner of the Commonwealth¹¹. In a plan that is still awaiting state regulatory approval, Dominion will build out its own fiber communications network in the area, and then will lease excess fiber to PGEC’s RuralBand subsidiary.

Meanwhile, AEP already has state approval for a similar arrangement with GigaBeam in Grayson County, a rural county in the far southwestern corner of the Commonwealth. Interestingly, according to the FCC’s broadband availability maps, which measure connectivity broadly by census blocks, Grayson County is unable to qualify for the agency’s most recent \$20.4 billion Rural Digital Opportunity Fund.¹² This means no FCC funding would be targeted for the county, despite the sheer lack of connectivity in the region.

In Mississippi, the state’s largest IOU Entergy in early 2018 reached an innovative partnership with a regional ISP C Spire, based in Jackson, MS. Under this arrangement, Entergy signed a long-term lease

¹¹ <https://news.dominionenergy.com/2020-02-21-Thousands-of-Rural-Virginians-Could-Get-Broadband-Access-through-Dominion-Energy-Prince-George-Electric-Cooperative-Partnership>

¹² <https://utc.org/wp-content/uploads/2020/08/Appalachian-Power- BB case-study FINAL.pdf>

with C Spire to use the ISP's networks for its smart-meter rollout program. This gives C Spire access to Entergy's customers along the way.¹³

REDUCING BARRIERS TO UTILITY BROADBAND

Policymakers across the country are viewing electric utilities as key partners in bridging the digital divide, evidenced by the number of states that have removed restrictions from cooperative and publicly owned utilities from getting involved in broadband deployment. States like Virginia, Mississippi, Arkansas, West Virginia, and elsewhere have all passed laws in the last three years permitting utilities to provide broadband services in different ways.

For example, Virginia lawmakers passed two bills since 2018 allowing its investor-owned utilities to partner with local entities by deploying middle-mile services along the utilities' transmission system¹⁴. Also, Mississippi legislators in 2019 passed a new law lifting the state's prohibition against electric cooperatives from providing broadband services directly to its customers¹⁵. Moreover, the state of Arkansas in 2019 also passed legislation permitting its public-power utilities to offer broadband¹⁶.

Still, numerous states over the last several years have adopted legislation at the behest of the telecommunications industry to prevent utilities—particularly public-power entities—from providing broadband services. More than 20 states have enacted laws either outright prohibiting utilities from deploying broadband or restricting certain utilities from doing so, or restricting how far these utilities can indeed offer broadband service.¹⁷ Many of these laws specifically target public-power utilities under the pretense that municipally owned broadband networks have unfair advantages against the traditional telecommunications carriers and therefore undermine competition. Unfortunately, instead of promoting competition, these laws instead serve to create a monopoly for an unregulated telecommunications company that has no incentive to provide quality service¹⁸.

UTILITIES EMPOWER BROADBAND DEPLOYMENT

This paper offers just a handful of examples of how utilities across the U.S. are empowering broadband deployment. While every electric utility indirectly assists in bringing internet connectivity to homes and businesses through access to their poles and other infrastructure, more and more utilities are going to great lengths to bring internet service to unserved and underserved areas.

As policymakers see the tremendous assistance electric utilities can provide, we anticipate that a greater number of utilities will provide these services in different ways.

¹³ <https://www.cspire.com/cms/news/wireless/33400003/C%20Spire%2C%20Entergy%20Complete%20All-fiber%20Broadband%20Infrastructure%20Project%20in%20Rural%20Mississippi/>

¹⁴ <https://utc.org/how-virginias-investor-owned-utilities-are-empower-broadband-connectivity/>

¹⁵ <https://www.electric.coop/mississippi-state-law-allows-four-co-ops-rural-broadband/>

¹⁶ <https://www.bloomberg.com/news/articles/2019-04-17/arkansas-will-allow-municipal-broadband-after-all>

¹⁷ <https://broadbandnow.com/report/municipal-broadband-roadblocks/>

¹⁸ https://www.vice.com/en_us/article/kzmana/report-26-states-now-ban-or-restrict-community-broadband