

CASE STUDY

# Alcorn County Electric Power Association

Bringing high quality, super-fast broadband to rural Mississippi and beyond.



*Alcorn County Electric Power Association was the first rural co-operative in the USA to bring electricity to its members. Over 80 years later it's leading the way again, with a plan for a world class 2Gb/s broadband service for it's rural Mississippi community.*

## ALCORN COUNTY ELECTRIC (ACE) POWER ASSOCIATION

Established in 1934 with the aim of raising the standard of living in Alcorn County, Mississippi, ACE Power has been bringing electricity to the citizens of Alcorn County for nearly 90 years.

ACE Power was America's first rural co-operative and remains a vital part of the community to this day. Serving around 19,000 electric meters in the area, it is controlled by its members in a democratic governance model, where every member has a vote, and the sustainable development of the community is the number one priority.

### CHALLENGES AT A GLANCE

- Legacy equipment
- Inflexible and not scalable
- Need to modernize
- Limited skill set
- Increased critical usage

## RURAL BROADBAND IN THE UNITED STATES

High quality broadband has been limited in more rural areas of the United States. Around 10% of US households do not have broadband service (defined by the FCC as 25Mb/s or greater).

Yet, like many other places, people in these areas work from home, shop, consume entertainment, and access critical healthcare information and education online. They have the same need for broadband, if not more, as those in more urbanized areas.

The Covid-19 pandemic has increased internet usage all over the world, including Alcorn County. High speed, reliable broadband is no longer an optional service, but one as essential as water or electricity.

Like the electricity gap in the 1930's, there is an imparity in rural America, where communities don't have access to broadband, and companies like ACE Power are stepping in once more.

Access to fiber internet opens up opportunities for rural communities in education, economic development, healthcare and more. Not only that, it helps the electric co-ops utilize the latest smart grid technology to improve the quality and reliability of their electric service.

*“ We looked at this business and said, why don't we [Alcorn County] be the first, and that's when we decided to go 100% XGS PON, and provide 10G services throughout the territory.*

*Sean McGrath, CFO Alcorn County Electric Power Association*



## ALCORN COUNTY ELECTRIC'S APPROACH

At its inception, ACE Power wanted to make sure that everyone in the community had access to electricity.

ACE Power was built by pioneers, not only in their actions, but in their way of thinking. The founders believed everyone should have access to the same service, whether in the city or more rural areas. Nearly 90 years later, that same ethos has led it to further help the community by creating one of the fastest broadband networks in the USA.

ACE Fiber was formed with one goal, to provide super-fast, reliable broadband of the highest quality in the USA, if not the world, and to use that broadband to improve the quality of life of Alcorn County and Mississippi residents.

To reach this goal, ACE Fiber knew it would need to expand its capacity, to build a network that not only works for today, but for the future.

Although ACE Fiber was set up as a 'for-profit' company, it is driven by the same principles as the co-operative. Increasing the fiber capabilities allows the company to serve more hospitals, schools and residents during a time where broadband traffic increased 38% in just three months.

Employing a 'build it once, build it right' philosophy, ACE partnered with Walker to create a 100G fiber middle mile backbone that would meet the needs of the community, while preserving fiber for planned future expansion.

## KEY NETWORK CHALLENGES

ACE wanted its fiber to be leading edge, to be the best in rural America, if not the whole country. As an electricity provider, ACE had legacy connectivity in place, but this existing middle mile infrastructure needed to be modernized to handle the planned extra traffic.

ACE wanted to offer its customers a choice of speed, from 200Mb/s through to a whopping 2Gb/s. The solution needed to support these speeds at their full potential, regardless of the amount of movies streamed or video games played.

With a goal of becoming an industry leader in Mississippi and Tennessee, ACE wanted its network to be technology for the future. It didn't want to just support its subscribers now, but any and all potential subscribers in the future, whether business or residential. The tagline says it all, 'Building tomorrow's network today'.

For this forward-looking project, a 100G middle mile aggregation solution was the clear choice. This infrastructure would allow ACE to extend its reach and create long-term partnerships with co-operatives in other areas who share its values, to compete with larger, international providers for businesses who span multiple areas.

*“The trust that was built up throughout the last two years with the Walker team. The good advice they had given us, and the great detail that they went into in presenting us the network solution. It was beyond what other vendors had done.*

*Sean McGrath, CFO Alcorn County Electric Power Association*

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## WALKER'S EXPERTISE

Although the relationship between ACE and Walker was only a couple of years old, the two became solid partners throughout this project.

Walker's history of helping carriers solve economic challenges while increasing their ability to meet subscriber expectations meant it was a perfect fit for this project. From the very first meeting, the Walker team, including Ciena, impressed ACE with their knowledge and detail. The engineers involved went above and beyond other companies in preparing the bid, and this was the deciding factor for ACE in choosing Walker as its partner.

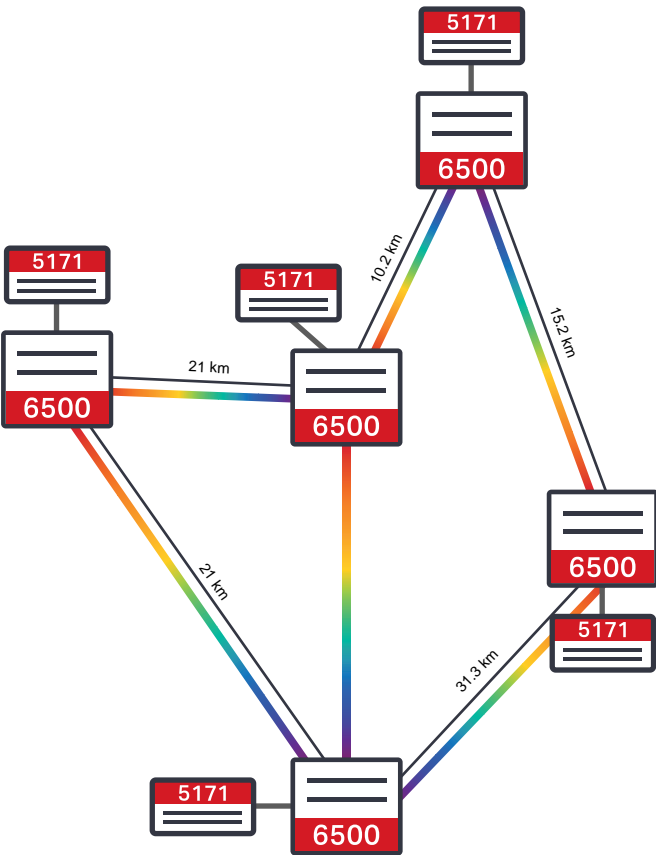
Walker's expertise in delivering projects of this nature proved invaluable, and its extensive industry knowledge allowed for a smooth integration of the increased capacity in the middle mile.

## CIENA'S 6500 AND 5171 FOR 100G MIDDLE MILE

Ciena's 6500 packet optical platform delivers the capacity, flexibility and resiliency that ACE needs to build a market leading 100G middle mile. Utilizing WaveLogic™ 5, this means DWDM can be used to ensure scalability well into the future. Combining this with the 5171 next-generation 100G packet aggregation platform delivers high-density 10GbE aggregation that has allowed ACE to rollout 10GPON right from the get-go. It is compact in size and temperature-hardened for the varied, remote, and often hostile environment, making it ideal for serving rural areas.

All of this is managed using Ciena's Manage, Control and Plan (MCP) domain controller for complete visibility and centralized software control of the network so that provisioning, monitoring and service assurance operations can be performed most efficiently.

ACE gets the performance it needs to fulfil its own business goals as well as the capacity and flexibility to build partnerships with other like-minded cooperatives.



## ACE FIBER'S RESULTS

With grants from the Federal and Mississippi government (under the CARES Act and RDOF) combined with Walker's support and expertise, ACE was able to condense its planned 48 month build into an incredible 15 months. 100% of its members will now have access to super-fast, lightning speed broadband nearly three years earlier than planned.

As the first Mississippi provider to offer 2Gb/s speeds to residential customers, setting price points was a bit of a challenge, but with 75% of customers choosing the top two offerings, and 23% requesting the highest 2Gb/s speeds, ACE positioned themselves perfectly.

ACE Power has been the trusted electricity supplier in its community for nearly 90 years, and now ACE Fiber is on track to becoming the trusted broadband supplier.



## SUMMARY

Walker, along with Ciena, created a 100G middle mile aggregation solution for ACE Fiber that allows it to provide high quality, super-fast broadband for its community at a critical time, while ensuring the solution is scalable and fit for the future.

ACE Fiber started with the aim of being the trusted broadband provider for its community and state. With a projected 60% take rate over the next 20 years, the new middle mile infrastructure has definitely given it a good start.

## KEY WINS



48-month build condensed to 15 months



75% of customers take higher two speeds



125 new customers per week



Current take rate 20%, projected 60%

## ABOUT WALKER

Walker ([www.walkerfirst.com](http://www.walkerfirst.com)) is the nation's premier value-added distributor of network products and services for the broadband industry, and a trusted partner with more than 50 years of expertise, experience, and performance. Today, Walker and Comstar Supply are powered by USTC Corp and together the three combined companies offer a comprehensive portfolio of material, services, and solutions, for any type of infrastructure project.

Walker serves network operators and utility customers ranging from PUDs to Rural Co-ops, simplifying network deployments with expert installation, systems integration, and managed services.

The company 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 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](http://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.