

UTILITY POLES CAN BE A BIG ASSET IN THE FIBER BROADBAND ERA

What utility companies need to know about make-ready requirements

As the U.S. gets set to make an unprecedented investment in both energy and broadband, rural electric companies are considering what their involvement should be. As they do, it will be important for them to recognize the important role that their utility pole infrastructure could play, whether the company chooses to undertake its own broadband deployments or instead opts to facilitate deployments by others.

The biggest source of funding for energy and broadband is the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Act. The act allocates \$42.5 billion for a Broadband, Equity, Access and Deployment (BEAD) program that will cover some of the costs of broadband deployments in unserved rural areas. In addition, the act allocates \$60 billion for energy initiatives. Other federal and state funding programs also have funding that can be used for broadband and energy.

The BEAD program prioritizes fiber broadband deployments, as do some other funding programs. Those fiber deployments can be less costly and completed more quickly if the fiber is run on existing utility poles, but the poles may require a make-ready process before they can support fiber deployments.

This article explains those requirements and considers the implications for utility companies, including potential options to leverage federal funding to modernize electric power infrastructure.

Make-Ready Requirements

The fiber cabling underlying fiber broadband networks can be installed aerially or buried. In many cases, aerial installation is less costly than the buried approach and is less weather dependent. In the northern part of the U.S., it can be virtually impossible to bury cable in winter months when the ground is frozen solid.

Broadband network operators that are deploying fiber typically don't have their own utility pole infrastructure, however, and may seek to use poles owned by the local power company. Increasingly, local power companies also are getting into the broadband business and may benefit from using their existing poles to support their traditional and new lines of business.

Rules concerning utility poles and their use is detailed in the National Electrical Safety Code (NESC) standards. Those standards require fiber to be installed in the "comm space," which is 40 inches below the bottom electrical wire, known as the neutral. The only exception is when ADSS fiber is used*.

Some utility poles are not tall enough to meet requirements that fiber be installed in the "comm space" as well as requirements that the fiber be installed a certain distance above the ground – accordingly, they must be replaced before the infrastructure can be used for fiber broadband.

Pole replacement and make-ready may not be lucrative in and of itself for utility companies, as the fees charged are comparatively small. However, utilities often are member-owned cooperatives and members often want faster broadband and may be eager to facilitate deployments, whether the deployments are undertaken by the utility or whether the utility facilitates deployment by another network operator.

Implications

If a utility wants to deploy broadband, it may be able to obtain funding through the BEAD program or other government funding programs. Pole replacement costs should be included in funding requests, which should include an estimate of how many poles will have to be replaced.

Utility companies should consider using tools designed to streamline the process of estimating pole replacement requirements or hiring an engineering firm familiar with those tools to handle the task. Among these tools are software programs that take into account existing pole inventory and terrain to estimate where pole replacement is needed.

Those tools also can be useful in situations where the utility does not want to provide broadband but instead wants to facilitate deployment by a broadband network operator.

Upgrading pole infrastructure to support middle mile connectivity also may be an opportunity for rural utility companies, as broadband providers will need backhaul connectivity to an internet point of presence (POP).

The Smart Grid

Electric companies may be able to recover some of their utility pole make-ready costs through state and federal funding programs. The \$60 billion in the IIJA for energy initiatives includes funding that can be used for smart grid deployments.

Smart grid deployments need communications, typically requiring two fibers to interconnect smart grid equipment. And in the course of deploying smart grid communications, electric companies can deploy additional fibers that can be used to support broadband service, whether provided by the utility or leased to a broadband provider.

Summary

As the U.S. prepares to make a big investment in fiber broadband, utility companies should recognize the important role that their existing utility pole infrastructure can play in streamlining and minimizing the deployment costs, whether the utility company chooses to provide broadband service or, instead, opts to facilitate the provision of service by another company.

Make-ready work will likely be required to prepare the utility pole infrastructure to support broadband, but tools are available to streamline that process. Another consideration is that a utility company may be able to recover some of its make-ready costs by using the same utility pole infrastructure to support a smart grid deployment, which also may be eligible for government funding.

About Finley Engineering

Finley Engineering is a full-service engineering consultancy with a successful history of providing expertise in communications technology and energy engineering services for a wide variety of clients such as independent telecom providers, electric cooperatives, municipalities, competitive providers and government entities.

***All-Dielectric Self-Supporting Cable**

All-dielectric self-supporting (ADSS) cable is a special type of fiber cabling that does not have to be spaced as far below the neutral, or bottom electrical wire, on a utility pole as other types of fiber cabling. However, it must be installed by a qualified journeyman lineman.

Utility companies deploying fiber broadband may want to consider using ADSS as a means of avoiding certain make-ready costs, but they may find that the requirement to use qualified journeymen linemen outweighs those costs benefits. Another consideration is that the specialized labor required may be in short supply and may delay installation time.