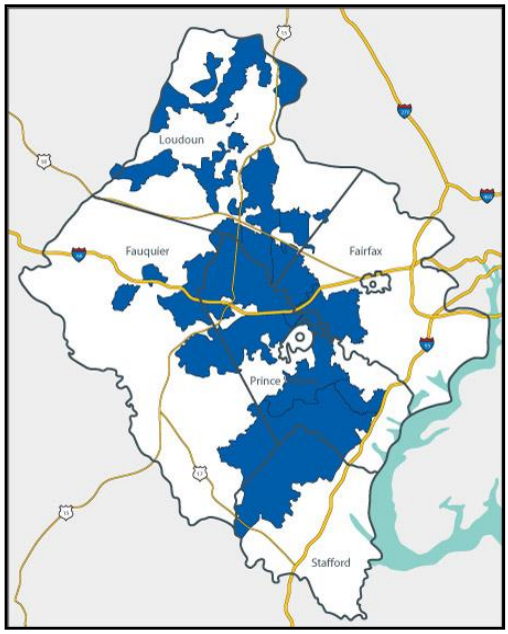
Technology Advisory

How One Cooperative Leveraged Data to Advance its Pole Attachment Policies

Northern Virginia Electric Cooperative (NOVEC), one of the nation's largest distribution cooperatives, has experienced major challenges in dealing with telecommunications firms' attachments on their distribution poles. These include technical problems due to improper attachments, as well as frequent attempts by these firms to reduce NOVEC's ability to recover its costs through attachment rates. In meeting these challenges in the field, in the legislature, and with regulators, the cooperative has leveraged solid asset data to stand up to some of the largest companies in the state of Virginia. This includes NOVEC achieving a connect charge of $20.60 with Comcast that also allowed additional billing for specific cost elements not covered in that fee; Comcast had originally requested a rate of only $6.35. This rate allows NOVEC to recover most or all their cost of attachment with Comcast.

Figure 1: NOVEC's Service Territory



NOVEC Background

NOVEC serves more than 167,000 homes and businesses across 651 square miles of territory, including parts of six counties in the Washington, DC metropolitan area. Most of NOVEC's consumer-members are residential and small commercial, but the cooperative also serves many large commercial and industrial loads (C&I), with overall sales split about evenly between residential and C&I.

To serve this area, NOVEC employs 320 full-time employees and owns over 7,300 miles of distribution lines. While about two-thirds is underground, the cooperative owns and maintains an overhead distribution system of more than 2,400 miles of line and more than 62,000 wood, fiberglass, steel, and concrete poles. On average, NOVEC serves 22.9 meters per mile of line.

NOVEC's service reliability is a major focus for the cooperative, and its average system reliability of 99.99 percent over the last five years is the best in the region.[1] This has earned NOVEC recognition by J.D. Power and Associates as one of the top three utilities in Power Quality and Reliability nationally for the last eight years.

[1] From 2012 to 2016, NOVEC's System Average Interruption Duration Index (SAIDI) score averaged 49.6 minutes, meaning that consumer-members experience, on average, less than one hour of outage time each year, excluding extreme weather events.

Public Policy and Growing Demand for Pole Attachments

The joint use of utility poles has been a long-term feature across the United States going back to the 1930s. To avoid costly, unsightly, and potentially dangerous clutter, laws and regulations have long facilitated the joint use of poles for both electric and communications uses, either through joint ownership or through pole owners charging an attachment fee for other service providers to attach to their poles. This led to long-established relationships between electric companies and local telephone companies. However, in the 1970s, new technology began to bring new demands for attachments to electric poles, a trend actively promoted by governments at the federal, state, and local levels.

In 1978, Congress passed the Pole Attachment Act of 1978, amending the Communications Act of 1934 and placing Investor Owned Utilities (IOUs) under the jurisdiction of the Federal Communications Commission (FCC) in setting "just and reasonable" pole attachment rates. This was done to promote the then-emerging technology of cable television and mandated that IOUs allow cable companies to attach equipment to their electric distribution poles. The FCC pole attachment formula set low rates that amounted to a subsidy for cable companies, with no provision made for the IOUs to recover the full costs of these attachments. Notably, the act exempted cooperative, municipal utilities, and public power districts because their ownership and governance processes already took into account local needs and interests, and because those types of utilities were operated as not-for-profit businesses providing electric service at cost, distinct from for-profit IOUs.

The Telecommunications Act of 1996 expanded the earlier act to include new telecommunications technologies and, with limited exceptions, mandated that cable and telecommunications firms have access to utility poles to spur growth and facilitate competition. Using a different formula, attachment rates for telecom firms were set higher than those for cable, but still at a subsidized rate. While cable was the emerging technology in the 1970s, high-speed broadband internet has been the focus of much of this policy support in the last decade.

The 1996 law allowed for reverse preemption, whereby states could certify that they regulated pole attachments in lieu of the FCC, and 20 states plus the District of Columbia have decided to do so. While Virginia has not chosen to fully preempt the FCC, the state did adopt its own policy mandating that all utilities in the state, including cooperatives and public utilities, allow pole attachments "upon reasonable terms and conditions and the payment of reasonable annual charges."[2] For electric cooperatives, attachment rates are to be set based on negotiations between pole owners and attachers, though the parties can appeal to the Virginia State Corporation Commission (SCC or Commission) to intervene if negotiations break down.

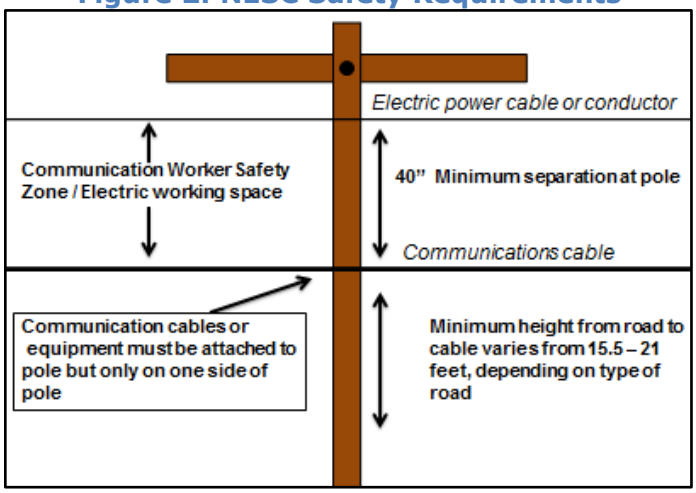
Given its affluent and largely suburban and exurban territory, including rapidly growing Loudoun County, NOVEC faces particularly high demand from cable and telecom firms

[2] Virginia Code Section 56-466.

wanting to attach lines and equipment to their poles. Of the major U.S. cable and telecom firms, Verizon has the most attachments on NOVEC's poles, followed closely by Comcast, with Cox Communications running a distant third. NOVEC periodically conducts a full field survey of attachments on their poles, a time consuming and expensive process. NOVEC's 2010-2012 survey found that while the three firms had attachments on nearly half of NOVEC's poles, only about a third of these attachments were permitted.[3]

This lack of coordination with NOVEC has led to a large share of these attachments not meeting NOVEC's requirements that would have otherwise been included in any agreement, and many are in violation of the National Electric Safety Code (NESC). According to NOVEC President/CEO Stan Feuerberg, "Communications companies just don't pay attention to the rules. By not following the rules, attachments can create safety, reliability, and financial issues for the cooperative." Feuerberg identified several common violations, including:

Figure 2: NESC Safety Requirements



- **Minimum Height:** The NESC generally sets a minimum height over the ground above which all attached cables must be hung, from 15.5 to 21 feet depending on the type of road or crossing. Feuerberg gives an example where a truck got caught on low-hanging communications lines over a roadway, snapping the top of the pole and leading to an eight hour outage for more than 200 NOVEC customers.
- **Communications Worker Safety Zone:** To keep workers safe, the NESC requires 40 inches between the lowest energized electric line and communications cables/equipment. Feuerberg says that this "Communications Worker Safety Zone" is routinely violated. This can pose a danger to workers by inhibiting their ability to maneuver on the pole away from the energized lines. This is true even for trained lineworkers, but is especially true for communications workers, who are often contractors with limited training.
- **Boxing the Pole:** Attachments are required to be on only one side of the pole. This allows lineworkers to climb the pole in situations where electrical equipment is not accessible via bucket truck, or when a truck is not available. By placing equipment on both sides of a pole, called "boxing," attachers block the ability of lineworkers to climb the pole to reach the electric working space.
- **Make Ready Issues:** Communications firms seeking to attach to a utility pole must work with other attachers to "make ready" the pole, which involves moving equipment around so that it can fit and be adequately spaced while also meeting

[3] Compliance varied significantly among the three companies, with Verizon having a rate of compliance of less than 1%, Cox 54%, and Comcast 74%. Source: Blank, O'Neill, and Smith. "Northern Virginia Electric Cooperative (NOVEC) Cost Recapture for 3rd Party Pole Attachments." Masters Final Project, George Mason University, Fall 2013. Can be found here.

NESC clearance and strength requirements. If there is not enough ground clearance remaining, the last installer is supposed to also cover the cost of replacing the pole with a taller one. According to Feuerberg, "Communications companies do all they can to avoid this, often leading to improper attachments violating clearances." Even after a pole is replaced and its top removed, attachments are often left on the old cut-down poles until there are enough complaints to the owners for them to move the equipment. This creates delays and extra costs for the cooperative.

- **Skipping Poles:** Attachers are required by contract to connect to every utility pole sequentially, but they sometimes skip poles to save on fees. This can lead to issues such as sagging communications lines, and puts extra stress on the poles with the attachments.

Like other electric utilities, NOVEC's poles are engineered to bear both the weight and transverse loading of any attached electrical equipment under typical wind and ice conditions. NOVEC also uses guy wires where necessary to strengthen poles due to weight and tension from electric lines. Over time, additional weight, line tension, and transverse loads from heavy communications cables can lead to poles leaning, and make them more vulnerable to extreme weather. This problem is compounded due to "overlashing," where a new communications cable is wrapped around an existing cable, further increasing stress on the pole. Overloaded poles are especially vulnerable to high winds and ice accumulation, which adds additional weight and transverse loading to the poles and can cause them to fall, creating additional costs for the cooperative, hurting reliability, and angering members when their lights go out. When a line or a pole is down, it is the cooperative that gets the call from members and first responders, not the communications companies.

Improper attachments can also contribute to problems that expose the pole owner to lawsuits. Feuerberg cites the recent mudslides in California, where homeowners from Montecito are suing Southern California Edison for negligence in part because "power poles were overloaded with communications equipment 'from shared usage by telecommunications and cable TV providers who were joint owners or renters.'"[4] These communications firms, however, are not being sued.

Today, there is growing demand from telecommunications companies seeking to attach wireless broadband equipment to the tops of utility poles. Because these require line of site, they are often attached on top of extensions for extra height. Adding heavy equipment beyond even the pole's original height can create obvious problems with mechanical load if it is not engineered correctly. As an additional challenge with these types of attachments, they require two wires for power and data connection that must cross through the energized electric portion of the pole down to the communications section below.

Cooperatives and municipally-owned utilities are currently exempt from FCC mandates to allow wireless attachments on their poles. Feuerberg expects that this will change

[4] Rainey, James. "Montecito homeowners sue utilities, alleging negligence before deadly mudslide." NBC News, January 16, 2018. Can be found here.

due to pressure from the telecommunications industry, but he is adamant that NOVEC will not sacrifice worker safety, whether NOVEC's lineworkers or contractors unfamiliar with energized lines. According to Feuerberg: "NOVEC has made it known that it wants to help with broadband deployment, but worker safety is the first priority." He added that "NOVEC would be happy to install these attachments on behalf of the telecommunications firms, but they will have to negotiate their own easements with private landowners to attach on NOVEC's poles because the easements do not convey rights to attachers. Moreover, an attacher would need to negotiate public rights of way with the Virginia Department of Transportation."

Attachment Costs: Who Pays? Using Good Data to Make the Case

Since the 1996 Telecommunications Act expanded FCC authority over IOU pole attachments, communications companies have been pressuring the Virginia General Assembly (the state legislature) and the SCC to apply the same subsidized rates to electric cooperatives in the state. They have used the issue of broadband deployment, popular with policymakers and the public, as a cudgel to push for low attachment rates, claiming pole attachment costs impede broadband expansion in rural areas.

In 2011, Comcast and Cox pushed for HB1439 in the House of Delegates. This bill sought to have the state regulate pole attachment fees, and remove cooperatives' exemption and ability to negotiate their own rates based on their actual costs and local conditions. As Feuerberg noted at the time:

> These fees are negotiated by the parties and are based on the costs incurred in the design, construction, operation, and maintenance of overhead electric distribution…The telecom companies simply don't want to pay a fair share of these costs. Reducing the pole attachment fees to subsidy levels amounts to a transfer of wealth from the not-for-profit co-op customer-owners to the stockholders of Comcast, Cox Communications, Time Warner, and other for-profit telecom companies.[5]

NOVEC played a leading role in opposing the legislation, using solid data to show the actual costs of pole ownership. Bob Bisson, NOVEC's Vice President of Electric Systems Development, calculated these costs and found that "Telecom corporations used two-thirds of each pole, but paid only one seventeenth of pole-line ownership costs."[6] This gap was largely attributable to the failure of communications companies to go through the proper process, as mentioned above.

Allowing the state to regulate pole attachment costs in favor of attachers would only further erode cost recovery and put more costs onto co-op members, who ultimately must cover any subsidization given to telecom companies through rates. With the grassroots support from member-owners of Virginia cooperatives, who flooded

[5] Spinner, Howard. "NOVEC customers benefit from Virginia SCC ruling on pole attachments." Cooperative Living, February 2015. Can be found here.
[6] "Comcast/Cox Bill Proposes State Regulation of Pole Attachment Fees (HB1439)." January 2011. Can be found here.

representatives with hundreds of phone calls and e-mails, the legislation was withdrawn and the SCC was asked to study the issue and produce a report by the end of 2011.

When the Commission released its report in November 2011, it largely vindicated the position of NOVEC and the Virginia cooperatives, who submitted extensive comments. Notably, the report found that:

> No persuasive evidence was submitted in this proceeding that proved lower pole attachment rates would directly result in additional broadband deployment… Further, as electric cooperatives and investor owned utilities are regulated under a "cost of service" model, any reduction to cooperatives' and electric investor-owned utilities' pole attachment rates will likely require an increase in consumers' electric rates if the utilities' revenue requirements remain the same. Such decisions are matters of public policy.[7]

Figure 3: NOVEC's HB1439 Cost & Fee Data

NOVEC 2009 pole line ownership cost

O&M	$7.9M
Property Tax	$1.3M
Depreciation	$4.5M
Interest	$1.8M
Total	$14.5M

NOVEC 2009 pole attachment fees received from Telecoms

Cox	$132,903
Adelphia/Comcast	$336,182
Comcast	$ 26,895
Others	$330,470
Total	$826,450

Telecoms use 2/3 of pole but only pay 1/17 of the ownership cost!

In May of 2012, Comcast notified NOVEC that it would be terminating their two existing pole attachment agreements for fiber optic and coaxial cable attachments. The two companies entered good faith negotiations on a new agreement in the summer of 2012, but these talks broke down in 2013, and in May of that year, NOVEC applied to the SCC asking the Commission to determine just and reasonable pole attachment rates with Comcast.

NOVEC was supported in this filing by the Virginia, Maryland & Delaware Association of Electric Cooperatives (VMDAEC), and Comcast was supported by the Virginia Cable Telecommunications Association and the Virginia Telecommunications Industry Association.

Starting from an annual Base Year Charge of $431,210, NOVEC initially filed for a rate of $30.92 per each of the 13,946 poles on which Comcast had attachments, to be adjusted by $26.71 per attachment added or removed from the base year level of 15,034. Comcast, by contrast, offered a rate of only $6.35 per attachment, asking to apply the formula used by the FCC to set the (subsidized) rates for investor-owned utilities. In further negotiations, NOVEC adjusted slightly to $26.43 per attachment, and Comcast to $7.16.

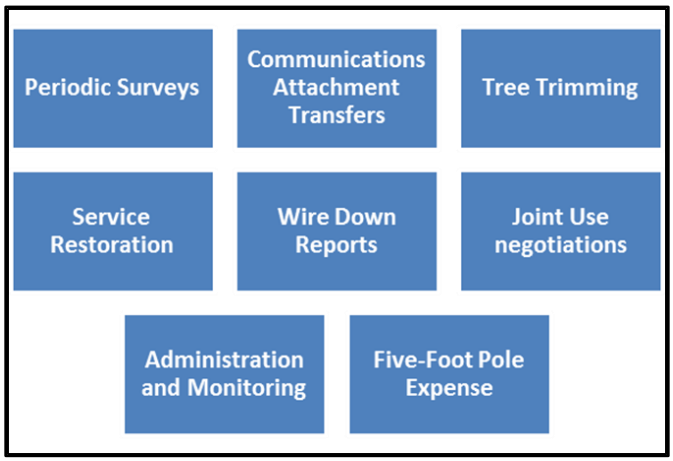
In support of this filing, NOVEC developed a robust assessment of the costs incurred by NOVEC to accommodate third party attachments, which Bisson organized into eight categories. With this data, NOVEC offered strong evidence to justify their requested

[7] "Report on Electric Cooperative Pole Attachment Issues." Commonwealth of Virginia State Corporation Commission, November 1, 2011. Can be found here.

pole attachment rates for costs that were above and beyond those that NOVEC would incur for poles with no attachments.[8]

The Hearing Examiner filed his report in June of 2014. In it, he applied a modified version of the FCC formula developed by the SCC's staff to NOVEC's specific cost data to arrive at a just and reasonable rate of $20.60 per attachment per year. This excluded costs for tree trimming/vegetation management, but allowed NOVEC to bill Comcast for these separately as needed. This was far closer to the rate that NOVEC had asked for than what Comcast proposed. Echoing the Commission's 2011 report, the Hearing Examiner also concluded that these rates "will have little impact on broadband expansion" and that "that customer density appears to be the overriding factor in broadband expansion."

Figure 4: NOVEC's Eight Pole Attachment Cost



In October 2014, the SCC adopted the Hearing Examiner's findings, accepting the rate as just and reasonable, as well as his conclusions regarding broadband expansion. The SCC also noted that NOVEC had met the burden of proof with the data it provided to the Commission, and that the case and its findings applied only to NOVEC and Comcast, a position supported by VMDAEC. The Commission ordered the parties to resume good faith negotiations for a comprehensive pole attachment agreement based on the terms and conditions of the hearing.[9]

NOVEC accepted the findings as just and reasonable. Comcast did not immediately accept the conclusion and continued to argue for lower alternative rates ranging from $9.67 to $17.00 per attachment, but ultimately it did not seek reconsideration from the SCC nor appeal the decision to the Virginia Supreme Court. Feuerberg was satisfied with the result, saying:

> We invested a tremendous amount of internal resources into this proceeding and the commission's Final Order was proof positive that our efforts paid off. We asked to be fully compensated for providing space on our pole infrastructure to Comcast, and the rate determined by the hearing examiner, and affirmed by the commissioners, achieved most of what we were seeking.[10]

[8] Regarding the Five-Foot Pole Expense category, NOVEC made a strategic decision in the 1990s to install 40 foot poles (instead of standard 35 foot poles) everywhere in their system whenever new poles, or replacements, were needed. This was done in recognition of the perceived need for more pole attachment space by telecommunications companies. This decision helps to minimize "make ready" costs and was approved by the Virginia SCC as a legitimate capital expense that should be included in attachment rates. For more detail on NOVEC's eight pole attachment cost categories, contact Bob Bisson at rbisson@novec.com.

[9] "Final Order of the Virginia SCC on NOVEC's Application for approval of pole attachment rates." October 24, 2014. Can be found here.

[10] Spinner, Howard. "NOVEC customers benefit from Virginia SCC ruling on pole attachments." Cooperative Living, February 2015. Can be found here.

After the SCC made its decision, NOVEC and Comcast reentered negotiations and adopted a new pole attachment agreement based around the Commission's order. As part of this agreement, Comcast promised to fix the issues of improper and non-permitted attachments on NOVEC's poles. As it stands today, Feuerberg notes that Comcast has fixed many of these issues, but not all of them.

The issue is not closed though. In January of this year, a new bill was proposed in the House of Delegates on the pole attachment cost issue. Among its provisions, the new bill, HB1283, proposes a five-year period when pole attachment shall be free for providers of broadband or other telecommunications services, and that any costs to prepare poles for new attachments be split evenly between the pole owner and the telecommunications provider. NOVEC is again engaged in battling this misguided legislation, which Feuerberg says ignores NESC concerns and land owner property rights, and essentially legalizes unauthorized attachments.

What do cooperatives need to know or do about it?

NOVEC is not alone in facing pressure to cut pole attachment fees, ostensibly to facilitate broadband deployment. Cooperatives in several states have faced similar pressure, and NRECA has worked with cooperatives in a number of states, including Arkansas, North Carolina, Tennessee, and Virginia on these issues. NRECA has also filed comments with the FCC on telecommunications industry attempts to circumvent exemptions for cooperative and public utilities.[11]

While electric cooperatives nationwide are seeking solutions to bring high-speed internet to their often underserved communities, in the case of pole attachments, broadband is largely a fig leaf. Low population density in rural areas is the major impediment to growth of broadband services, and pole attachment issues often become a distraction from good public policy needed to address the issue. In many ways, the situation is similar to impediments to rural electrification before the Rural Electrification Act.

NOVEC has shown that when electric cooperatives use solid data to prove the facts are on their side, they can stand up to pressure from some of the largest companies in the nation.

Contact for Questions

For questions or further information, please contact Michael Leitman, Senior Analyst, at michael.leitman@nreca.coop.

[11] For examples, see "Reply Comments of the National Rural Electric Cooperative Association" submitted to the FCC July 17, 2017. Can be found here.