

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:)	
)	
)	
ELECTRONIC APPLICATION OF DUKE)	CASE NO. 2022-00372
ENERGY KENTUCKY, INC. FOR (1) AN)	
ADJUSTMENT OF ELECTRIC RATES; (2))	
APPROVAL OF NEW TARIFFS; (3))	
APPROVAL OF ACCOUNTING)	
PRACTICES TO ESTABLISH)	
REGULATORY ASSETS AND)	
LIABILITIES; AND (4) ALL OTHER)	
REQUIRED APPROVALS AND RELIEF)	
)	

DIRECT TESTIMONY

OF

PATRICIA D. KRAVTIN

Submitted on

Behalf of

The Kentucky Broadband and Cable Association

March 10, 2023

Q: PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A: My name is Patricia D. Kravtin. My business address is 2100 Park Avenue, Unit 682316, Park City, Utah 84068. I am principal and owner of Patricia D. Kravtin Economic Consulting, a private practice specializing in the analysis of communications and energy regulation and markets.

Q: ON WHOSE BEHALF IS THIS TESTIMONY BEING PRESENTED?

A: My testimony is offered on behalf of The Kentucky Broadband and Cable Association (“KBCA”).

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A: I received a B.A. with Distinction in Economics from the George Washington University. I studied in the Ph.D. program in Economics under a National Science Foundation Fellowship at the Massachusetts Institute of Technology (“M.I.T.”), completing all course requirements for the Ph.D. degree and passing oral and written examinations in my chosen fields of study: government regulation of industry, industrial organization, and urban and regional economics. My professional background includes a wide range of consulting experiences in regulated industries. Between 1982 and 2000, I was a consultant at the national economic research and consulting firm of Economics and Technology, Inc. (“ETI”), in that firm’s regulatory consulting group, where I held positions of increasing responsibility, including Senior Vice President/Senior Economist. Upon leaving ETI in September 2000, I began my own consulting practice specializing in telecommunications, cable, and energy regulation and markets.

Q: WHAT IS YOUR EXPERIENCE SERVING AS AN EXPERT IN PROCEEDINGS RELATED TO TELECOMMUNICATIONS MATTERS?

A: I have testified or served as an expert on telecommunications matters in proceedings before over thirty state regulatory commissions. I have also provided expert testimony and reports in proceedings before the Federal Communications Commission (“FCC”) and before international agencies, including the Canadian Radio-television and Telecommunications Commission, the Ontario Energy Board, and the Guam Public Utilities Commission. In addition, I have testified as an expert witness in antitrust litigation in federal district court, and also before a number of state legislative committees. A detailed resume summarizing my educational background and previous experience is provided in **Exhibit 1** to my testimony.

Over the course of my career, I have been actively involved in a number of state and federal regulatory commission proceedings involving cost methodologies and the allocation of costs of incumbent local exchange carriers (“ILECs”) and electric utilities. One local network component, essential for the provision of competitive communications services, with which I am also very familiar is access to poles, ducts, conduits, and rights-of-way. I have testified extensively on matters pertaining to these essential facilities before state and federal regulatory agencies and district courts. I have also been actively involved in related issues pertaining to broadband deployment.

I have authored and co-authored a number of reports dealing with this subject, including most recently one entitled “Advancing Pole Attachment Policies to Accelerate National Broadband Buildout,” which includes a chapter on Kentucky. Earlier, I participated as a

grant reviewer for the Broadband Technology Opportunities Program (“BTOP”) administered by National Telecommunications and Information Administration (“NTIA”).

Q: CAN YOU DESCRIBE YOUR PARTICIPATION IN POLE ATTACHMENTS PROCEEDINGS?

A: Yes. I have submitted expert reports and related analyses on pole attachment rates, terms, and conditions in proceedings before federal and state regulatory bodies. I have submitted reports on pole access issues in proceedings before the FCC, including the 2020 and 2022 proceedings, *In the Matter of Accelerating Wireline Broadband Deployment By Removing Barriers To Infrastructure Investment*, WC Dkt. No. 17-84 (Reports submitted Sept. 2, 2020 and June 27, 2022), and the Commission’s seminal 2010 pole rulemaking proceedings, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission’s Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, GN Docket No. 09-51 (Report submitted August 16, 2010), as well as in the earlier phase, WC Docket No. 07-245, RM 11293, RM 11303 (FCC 2008 NPRM Proceeding).

I have also served as an expert on pole attachment matters in proceedings before state regulatory authorities involving investor-owned electric utilities (“IOUs”), non-profit consumer-owned utilities (cooperatives or “Coops”), municipally owned utilities, as well as ILECs. I have testified before various state (and provincial) regulatory commissions including this Commission, the Connecticut Department of Public Utility Control, the New Hampshire Public Utilities Commission, the Arkansas Public Service Commission, the Public Utilities Commission of Texas, the New Jersey Board of Public Utilities, the Virginia Corporation Commission, the Ohio Public Utilities Commission, the Massachusetts Department of Telecommunications and Cable, the Wisconsin Public

Service Commission, the Georgia Public Service Commission, the North Carolina Public Service Commission, the South Carolina Public Service Commission, the Public Service Commission of the District of Columbia, the New York Public Service Commission, the Public Utilities Commission of the State of California, the Louisiana Public Service Commission, and the Ontario Energy Board. I have also testified on these and related matters before state and federal courts in Maryland, Florida, New York, California, Tennessee, Washington, and North Carolina.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A: Yes, I submitted written testimony in June 2022 in the four cases related to Kentucky's pole attachment regulations, Case Nos. 2022-00105, 2022-00106, 2022-00107, and 2022-00108. I also submitted written testimony in October 2017 before the Commission on pole attachment matters in the 2017 Kentucky Power rate case, Case No. 2017-00179. I submitted testimony in March 2015 before the Commission in the 2014 Kentucky Utilities and Louisville Gas & Electric rate cases, Case No. 2014-00371 and Case No. 2014-00372, respectively. Additionally, I submitted written testimony in April 2010 before the Commission in the 2009 Kentucky Utilities and Louisville Gas & Electric rate cases, Case Nos. 2009-00548 and 2009-00549, respectively. I also submitted written testimony and testified at a hearing in connection with two South Central Bell Telephone Company rate cases, Case No. 8847 (1984) and Case No. 8467 (1982), on behalf of the KPSC staff and the Commonwealth of Kentucky, respectively.

I also submitted a white paper to this Commission in July 2021 addressing pole cost issues related to the Regulations Regarding Access and Attachments to Utility Poles and Facilities

(807 KAR 5:015), and participated in a workshop with parties and Commission staff on December 14, 2020.

Q: WHY DID THE KENTUCKY BROADBAND AND CABLE ASSOCIATION ASK YOU TO PRESENT TESTIMONY IN THIS PROCEEDING?

A: I was asked by the Kentucky Broadband and Cable Association (“KBCA”) to evaluate Duke’s proposed increase to its pole attachment rental rates and assess whether they are just, reasonable, and cost based.

Q: HOW HAS DUKE PROPOSED TO INCREASE ITS POLE ATTACHMENT RENT?

A: Duke has proposed to increase its pole attachment rental rate from \$8.59 to \$9.99 (a 16% increase) per foot for a two-user pole, and from \$7.26 to \$8.61 (a 19% increase) per foot for a three-user pole.

Q: DID YOU IDENTIFY ANY PROBLEMS WITH DUKE’S PROPOSED INCREASE TO ITS POLE ATTACHMENT RATES?

A: Yes, I identified two problems reflecting discrepancies with the cost-based principles applicable to pole attachment rates as articulated in the Commission’s ruling on these matters in Administrative Case No. 251.¹

Q: WHAT ARE THOSE PROBLEMS?

A: *First*, in its rate calculation Duke failed to include the number of non-unitized poles it identified but had not “finalized” in its pole count used in its rate calculation. The failure to include those poles operates to artificially increase its rate. This occurs because the pole

¹ *In the Matter of the Adoption Of A Standard Methodology For Establishing Rates For CATV Pole Attachments*, Administrative Case No. 251 (Kentucky Public Service Commission 1982) (hereinafter “Administrative Case No. 251”) (attached as Exhibit 2).

rate is calculated on a per unit basis, and the investment in costs of these non-unitized poles (including those not yet “finalized”) is included in the Account 364 gross pole investment figure used to calculate the pole rate. Including the costs of these poles without their corresponding units will overstate the average per unit cost of a Duke pole. Because Account 364 includes the investment associated with all non-unitized poles, there is no basis to include only those Duke had “finalized.” This is especially true since Duke has quantified the number of such poles, and has the information readily available. As discussed below, other utility commissions that have addressed this issue have directed the utility to include the number of such poles in its calculation. When Duke’s rates are adjusted to account for all non-unitized poles for which associated investment has been booked to the utility’s Account 364, the appropriate rates drop to \$9.62 for two-user poles, and to \$7.96 for three-user poles.

Second, Duke’s distinction between two and three-user poles does not accurately reflect the actual distribution of attachments on Duke’s 35, 40 and 45 foot poles. In addition, for three-user poles, Duke’s calculation does not take into account attachments on 50 foot poles, which, according to actual data provided by Duke in response to KBCA data requests, is now of the same order of magnitude as attachments on 35 foot poles. To my understanding, the distinction between two and three-user poles pursuant to Administrative Case No. 251 is based on pole height, not the actual number of attachers on each and every pole. To appropriately reflect the increasing average height of Duke’s poles on which third-party attachments are being placed and to remedy the discrepancy I found in the actual height distribution of poles on which Duke has attachments, I recommend that the Commission direct Duke to amend its pole attachment rates in one of two ways. The first

option is to direct Duke to charge the three-user rate (\$7.96 including all non-unitized pole counts) calculated on the basis of an average 42.5 foot pole height for all attachments, instead of the current mix of two-user (calculated based on a lower average 37.5 foot pole height) and three user rates (based on the higher average 42.5 feet). Alternatively, the Commission could direct Duke to recalculate its two-user and three-user rates to reflect Duke's actual height distribution of poles used for attachments, including its use of 50 foot poles in the computation of the three-user rate. Using Duke's actual distribution of attachments produces a two-user rate of \$8.26 (based on an average 38.85 foot pole height) and a three-user rate of \$7.56 (based on an average 43.2 foot pole height).

Q: LET'S TAKE EACH PROBLEM YOU RAISED ONE BY ONE. YOU TESTIFIED DUKE FAILED TO ACCOUNT FOR ALL NON-UNITIZED POLES IN ITS RATE CALCULATION. WHAT IS THE BASIS FOR YOUR OPINION?

A: In its data requests, KBCA asked Duke to identify its total investment booked to Account 364, inclusive of appurtenances from 2020 to the present. KBCA First Set Data Requests No. 11. Duke's response identified 3,375 non-unitized/estimated retirements, but noted the "non-unitized/estimated retirements will not be finalized until unitization and actual retirements are done." KBCA-DR-01-011 Attachment.

KBCA subsequently asked Duke to confirm whether the non-unitized/estimated retirements identified as not finalized were included in the pole counts for 35, 40, and 45 foot poles used to calculate the pole attachment rate. KBCA Second Set Data Requests No. 5. Duke responded that of the 3,375 non-unitized/estimated retirements it identified (and for which the associated investment was already included in the Account 364 pole

investment) only 911 were “finalized” and included in the pole counts used to calculate the pole attachment rate. KBCA-DR-02-005 Attachment.

Q: IS THERE ANY REASON FOR DUKE NOT TO ACCOUNT FOR ALL NON-UNITIZED POLES IN ITS CALCULATION?

A: No. The investment associated with all 3,375 non-unitized poles is included in account 364 used to calculate pole rates, so there is no basis to include only the 911 that Duke “finalized” in its pole attachment rate calculation, and exclude the remaining 2,464.

Q: WHAT IMPACT DOES DUKE’S EXCLUSION OF MOST OF ITS NON-UNITIZED INVESTMENTS HAVE ON ITS RATE CALCULATION?

A: Including the related investment for these non-finalized poles without the associated pole count artificially inflates the average cost per pole booked to Duke’s Account 364 in the test year, and serves to increase Duke’s pole attachment rate for the current test year. While this overstatement will ultimately be corrected in subsequent years when Duke “finalizes” the remaining non-unitized poles and/or retirement units, failure to correct for these timing-related delays now results in a mismatch of investment and, in turn, unjust and unreasonable rates.

Q: ARE UTILITIES’ EXCLUSIONS OF NON-UNITIZED POLE COUNTS IN THEIR POLE ATTACHMENT CALCULATIONS JUST AND REASONABLE?

A: No, the exclusion of pole counts associated with non-unitized investments (or a subset of those yet to be “finalized”) in utilities’ pole attachment calculations is an increasingly significant problem that results in improperly inflated pole rates.

Q: HOW SO?

A: More and more, utilities are engaging in pole construction activities that create backlogs in their accounting processes, such that the posting of capital-related investment and expenses to the relevant fixed asset account is occurring a year or more ahead of the utility's "unitization" of the work order to the retirement/property unit level. In other words, utilities are booking investment in their utility fixed asset records for poles before the associated units of poles corresponding to that investment are included in the pole count inventory. Doing so has the effect of overstating their average gross pole investment per unit, which leads to artificially high rates. There is the additional concern that the process of finalizing the unitization of poles is under the control of the pole owner, who is not necessarily incentivized to complete the process timely. Indeed, the longer the process takes, the higher the pole rate for a longer period of time. The purpose of effective pole rate regulation is to somewhat level the playing field between the pole owner and the attacher, so that pole rates are just and reasonable. Directing the utility to include all units for which investment in Account 364 is already included in the pole rate calculation is the only way to achieve that goal and ensure just and reasonable rates.

Q: HAVE YOU SEEN THIS PROBLEM BEFORE?

A: Yes, I know this issue has been specifically addressed in at least two jurisdictions: Ohio, in cases involving Duke Energy Ohio, Toledo Edison Company, and Cleveland Electric Illuminating Company; and New York, in a case involving Central Hudson.

In the case involving Duke Energy Ohio, Inc., the Commission Staff discovered that "poles associated with non-unitized investment in Account 364 were not included in the pole

count used in the initial pole attachment rate.”² In response to this finding, Staff recommended that Duke file an amended application, including all the poles associated with non-unitized Account 364 investment, and re-calculate its rate – which Duke did.³ The Commission should follow a similar path here.

Prior to that case, the Commission Staff also asked Toledo Edison Company and Cleveland Electric Illuminating Company to amend their pole rate calculations to include estimated non-unitized pole counts in their pole rate calculations.⁴ (Unlike Duke in this case, the Ohio utilities had not quantified the number of non-unitized poles, but the Commission Staff found they readily could do so using the most current average cost of an installed pole).

Finally, in the Central Hudson matter the utility appeared to make this adjustment for what it categorized as “temporary closings” on its own, as described in a response to discovery from the New York Commission staff.⁵

Q: DID YOU CORRECT DUKE’S POLE ATTACHMENT CALCULATION TO PROPERLY ACCOUNT FOR ALL ITS NON-UNITIZED POLES?

A: Yes, I did.

² *In the Matter of the Application Of Duke Energy Ohio, Inc. To Amend Its Pole Attachment Tariff*, Case No. 22-0164-EL-ATA, Review And Recommendation (Public Utilities Commission of Ohio 2022) (attached as Exhibit 3).

³ *Id.*

⁴ *In the Matter of the Application Of Toledo Edison Company To Update Its Pole Attachment Rate*, Case No. 20-1645-EL-ATA, Review and Recommendation (Public Utilities Commission of Ohio 2020) (attached as Exhibit 4); *In the Matter of the Application of Cleveland Electric Illuminating Company To Update Its Pole Attachment Rate*, Case No. 20-1644-EL-ATA, Review and Recommendation (Public Utilities Commission of Ohio 2020) (attached as Exhibit 5).

⁵ *Central Hudson Gas & Electric Corporation Tariff Filing To Reflect New Pole Attachment Rates*, Case No. 17-E-0170, Response to Interrogatory/Document Request (New York State Department of Public Service 2017) (attached as Exhibit 6).

Q: HOW DID YOU PERFORM YOUR CALCULATION?

A: I corrected Duke's error by adding the 2,464 unassigned, non-unitized poles to the 35, 40, and 45 foot categories in the same proportion as the 911 assigned by Duke. My calculations are attached in Exhibit 7. Including this estimated count will produce a much more accurate, just, and reasonable pole rate than the arbitrary exclusion of certain pole counts that improperly inflates the rate.

Q: WHAT ARE THE RESULTS OF YOUR CALCULATIONS?

A: Once the unassigned, non-unitized poles are added back in to the pole attachment calculation, the appropriate pole attachment rates are \$9.62 for two-user poles, and \$7.96 for three-user poles. Exhibit. 7. These rate reductions are significant for pole attachers who must attach to many poles to operate their communications networks.⁶ These savings can then be used to support increased investment in high quality broadband services in the Commonwealth, to the betterment of all consumers, including electric ratepayers who are also subscribers of broadband.

Q: I WANT TO TURN TO THE SECOND PROBLEM YOU REFERENCED: THE ACCURACY OF DUKE'S RATES FOR TWO AND THREE USER POLES GIVEN ITS CURRENT POPULATION OF POLES USED FOR ATTACHMENTS. WHAT PROBLEM DID YOU IDENTIFY?

A: Pursuant to Administrative Case No. 251, Duke charges different attachment rates for poles based on a two-user/three-user distinction associated with the average heights of poles on

⁶ For example, Charter Communications attaches to roughly 35,000 Duke poles, 30,800 of which are two-user poles, and 4,214 of which are three-user poles. Properly accounting for non-unitized poles would save Charter tens of thousands of dollars per year, freeing up funds to invest in broadband services.

which attachments are placed. Exhibit 2. In particular the two-tier pricing structure under Administrative Case No. 251 assumes two users are attached to shorter poles on average and are each allocated a higher percentage of the costs of those shorter poles, whereas three-users are attached to taller poles on average and are each allocated a smaller percentage of costs of those taller poles. *Id.* In practice, it is my understanding that utilities are not actually tracking the number of attachers on each pole. Instead, they are charging the two-user or three-user rate using prescribed usable space factor percentages based the heights of the pole on which attachments are made, with the costs and units of 35 and 40 foot poles used to calculate the two-user rate and the costs and units of 40 and 45 foot poles used to calculate the three user rate. *Id.* But significantly, even though pole owners use 50 foot poles, 50 foot poles were not expressly included in the Kentucky pole attachment formula set forth in Administrative Case No. 251. *Id.* Not including 50 foot poles in the formula made sense based on the pole data available to the Commission when the formula was established in the 1980s, because the predominant population of poles used by third parties and the utilities themselves were between 35 and 45 feet tall.

Q: DOES IT STILL MAKE SENSE TODAY?

A: No.

Q: WHY NOT?

A: Today, the overwhelming majority (70%) of attachments on Duke's poles are attachments on 40 and 45 foot poles. KBCA-DR-02-002. Additionally, for Duke, the number of attachments on 50 foot poles are now the same order of magnitude as the number of attachments on 35 foot poles (10% and 12%, respectively), as shown below:

2021	Description	Quantity	%
	Pole: Wood, 30' or less	2,192	3.0%
	Pole: Wood, 35'	8,606	11.6%
	Pole: Wood, 40'	28,669	38.8%
	Pole: Wood, 45'	23,245	31.4%
	Pole: Wood, 50'	7,164	9.7%
	Pole: Wood, 55'	2,574	3.5%
	Pole: Wood, 60'	993	1.3%
	Pole: Wood, 65'	282	0.4%
	Pole: Wood, 70'	142	0.2%
	Pole: Wood, 75'	35	0.05%
	Pole: Wood, 80'	16	0.02%
	Pole: Wood, 85'	3	0.004%
		73,921	1.00

Id.; Exhibit 8. Accordingly, the usable space factors prescribed in Administrative Case No. 251 for the calculation of the pole rate are not accurate or reflective of Duke's actual pole characteristics. The FCC rate formula upon which the Kentucky formula is modeled would allow, if not dictate, the computation of a usable space percentage reflective of the average height of the utility's population of poles, where actual data or a statistically significant sample of data is available. Where the data demonstrates taller average pole heights, as is increasingly the case today, there is more usable space on the pole for attachments, and the attacher's one foot of occupancy is a lower percentage of the total usable space available for attachment.

As explained above, the Kentucky rate formula works a little differently in that it makes a translation between pole height and usable space and the number of users on the pole (two or three users). As a result, an adjustment of the space factor to account for the larger

amount of usable space available for attachments on taller poles is not as self-administering as it would be under the FCC formula.⁷

That said, Administrative Case No. 251, to my reading, similar to the FCC rules, would permit a rate calculation based on deviations from the numbers prescribed by the Commission where there are “major discrepancies” with the “average characteristics of the utility” – as is the case for Duke, given the significant number of 50 foot poles now used for attachments, and the relative declining percentage of 35 foot poles.⁸

Q: DO YOU HAVE AN OPINION ABOUT HOW THE COMMISSION SHOULD ADDRESS THIS ISSUE?

A: Yes. As described earlier, I am recommending two different options to remedy the discrepancy regarding the pole heights used by Duke to calculate its proposed pole rates. The first option is to direct Duke to charge the three-user rate (\$7.96 including all non-unitized pole counts) calculated on the basis of an average 42.5 foot pole height for all attachments, instead of the current mix of two-user (calculated on the basis of a lower average 37.5 foot pole height) and three user rates (based on the taller average 42.5 foot pole height).

In the alternative, the Commission could direct Duke to recalculate its two and three-user rates to reflect Duke’s actual known distribution of poles used for attachments, including its use of 50 foot poles in the computation of the three-user rate.

⁷ See Kravtin Workpapers (attached as Exhibits 7 and 8).

⁸ Administrative Case No. 251 (stating “[t]he Commission will allow deviations from the mathematical elements found reasonable herein only when a major discrepancy exists between the contested element and the average characteristics of the utility, and the burden of proof should be upon the utility asserting the need for such deviation”).

For a two-user pole, this is readily done by recalculating the usable space factor used to calculate the pole rate based on average pole height of 38.85 feet, which is the weighted average pole height of the population of 35 and 40 foot poles used by Duke for attachments as shown in the table above. The resultant two-user usable space factor is 10.50% (as compared to the presumptive 12.24%), and produces a two-user rate of \$8.26. Exhibit 7. Similarly, for a three-user pole, the usable space factor is based on an average pole height of 43.2 feet, which is the weighted average pole height of the population of 40, 45, and 50 foot poles used by Duke for attachments as shown in the table above. Exhibit 7. The resultant three-user usable space factor is 7.21% (as compared to the presumptive 7.59%), and produces a three-user rate of \$7.56. Either of these two approaches would much more accurately reflect the current allocation of attachments and usable space on the current joint use pole population and lead to just and reasonable rates.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes, it does.

[VERIFICATION ON SEPARATE PAGE]

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_____)	

VERIFICATION

The undersigned, Patricia Kravtin, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in her Direct Testimony, and that the answers contained therein are true and correct to the best of her information, knowledge, and belief.

Patricia Kravtin

Patricia Kravtin

STATE OF UTAH)
SUMMIT COUNTY)

SUBSCRIBED AND SWORN TO before me by Patricia Kravtin on this the 8 day of March, 2023.



EXHIBIT 1

Patricia D. Kravtin

pdkravtin@comcast.net

Summary

Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, broadband, and energy markets.

Experience

CONSULTING ECONOMIST

2000– Principal and Owner, PDK Economic Consulting, Park City, UT

- Providing expert witness services and full range of economic, policy, and technical advisory services in the fields of telecommunications, cable, and energy.

SENIOR VICE PRESIDENT/SENIOR ECONOMIST

1982–2000 Economics and Technology, Inc., Boston, MA

- Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, Canadian Radio-Television and Telecommunications Commission, Ontario Energy Board, and other international regulatory authorities on telecommunications, cable, and energy matters.
- Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).
- Extensive cable television regulation expertise relating to implementation of Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.
- Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition; electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; access to pole attachments, conduit, and other rights-of-way.
- Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and drafting of final decisions.
- Author of industry reports and papers on topics including market structure, competition, alternative forms of regulation, patterns of investment,

telecommunications modernization, and broadband deployment.

- Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.
- Grant Reviewer for the Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies, Washington, DC

- Prepared economic impact analyses concerning allocation of frequency spectrum (Federal Communications Commission).
- Performed financial and statistical analysis concerning the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).
- Prepared analyses and recommendations on national economic policy issues including capital recovery. (U.S. Dept. of Commerce).

Education

1980–1982 Massachusetts Institute of Technology, Boston, MA

- Graduate Study in the Ph.D. program in Economics (Abd). General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.
- National Science Foundation Fellow.

1976–1980 George Washington University, Washington, DC

- B.A. with Distinction in Economics.
- Phi Beta Kappa, Omicron Delta Epsilon in recognition of high scholastic achievement in field of Economics. Recipient of four-year honor scholarship.

Prof. Affiliation

American Economic Association

Reports and Studies (authored and co-authored)

“An Economic Study of the Barriers Erected by Current Utility Pole Replacement Practices and of Policy Prescriptions to Better Align Incentives and Promote Broadband Expansion,” co-authored with Patricia D. Kravtin and Edward J. Lopez, June 2022, underwritten by Charter Communications, Inc. and submitted to the Federal Communications Commission in WC Docket No. 17-84.

“Advancing Pole Attachment Policies to Accelerate National Broadband Buildout,” co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Pole Attachment Policies and Broadband Expansion in the State of Florida, co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Pole Attachment Policies and Broadband Expansion in the State of Kentucky, co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Pole Attachment Policies and Broadband Expansion in the State of Texas, co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Pole Attachment Policies and Broadband Expansion in the State of Missouri, co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Pole Attachment Policies and Broadband Expansion in the State of Wisconsin, co-authored with Dr. Edward Lopez, underwritten by Connect the Future, December, 2021.

“Utility Pole Policy: A Cost-Effective Prescription for Achieving Full Broadband Access in North Carolina,” co-authored with Dr. Edward Lopez, underwritten by the North Carolina Cable Telecommunications Association, August 2021.

“Pole Policy and the Public Interest: Cost Effective Policy Measures for Achieving Full Broadband Access in the Commonwealth of Kentucky,” July 22, 2021, underwritten by Charter Communications and submitted to the Kentucky Public Service Commission in *Regulations Regarding Access and Attachments to Utility Pole and Facilities*; 807 KAR 5:015.

“The Economic Case for a More Cost Causative Approach to Make-ready Charges Associated with Pole Replacement in Unserved/Rural Areas: Long Overdue, But Particularly Critical Now in Light of the Pressing Need to Close the Digital Divide,” dated September 2, 2020, underwritten by Charter Communications, Inc. and submitted to the Federal Communications Commission in WC Docket No. 17-84.

“An Analysis of Just and Reasonable Pole Attachment Rates for Bandera Electric Cooperative Pursuant to Senate Bill 14,” prepared on behalf of Guadalupe Valley Telephone Cooperative, Inc., Preliminary Report dated December 6, 2019.

Report on the Ohio Municipal Electric Association Pole Attachment Rate Study, prepared for the Ohio Cable Telecommunications Association, November 9, 2012.

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet Fully and Irreversibly Open,” prepared for CALTEL, August 2000.

“Final Report on the Qualifications of Wide Open West-Texas, LLC For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Final Report on the Qualifications of Western Integrated Networks of Texas Operating L.P. For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah” prepared for The Division of Public Utilities, March, 2000.

“Building a Broadband America: The Competitive Keys to the Future of the Internet,” prepared for The Competitive Broadband Coalition, May 1999.

“Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30,” prepared for AT&T and MCI Telecommunications, June 1998.

“Analysis of Opportunities for Cross Subsidies Between GTA and GTA Cellular,” prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

“Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms,” submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

“Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the ‘Gap’ between embedded and forward-looking costs,” FCC CC Docket 96-262, January 29, 1997.

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2016

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2013

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2012

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2008

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2006

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2005

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2004

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2003

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2002

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2001

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2000

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1999

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1998

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1997

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1996

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Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed June 14, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: In the Matter of Implementation of the Local Competition Provisions of Telecommunications Act of 1996*, CC Docket 96-98, filed May 1996.

Before the **Federal Communications Commission**, in *Re: Puerto Rico Telephone Company (Tariff FCC No. 1)*, Transmittal No. 1, on behalf of Centennial Cellular Corp., filed April 29, 1996.

Before the **United States District Court for the Eastern District of Tennessee at Greeneville**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, CIV 2-93-55, filed December 7, 1996.

1995

Before the **Federal Communications Commission**, in *Re: Bentleyville Telephone Company Petition and Waiver of Sections 63.54 and 63.55 of the Commission's Rules and Application for Authority to Construct and Operate, Cable Television Facilities in its Telephone Service Area*, W-P-C-6817, on behalf of the Helicon Group, L.P. d/b/a Helicon Cablevision, filed November 2, 1995.

Before the **US District Court for the Eastern District of Tennessee**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, 2-93-55, Class Action, filed June 12, 1995.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of SNET Company for approval to trial video dial tone transport and switching*, 95-03-10, on behalf of New England Cable TV Association, filed May 8, 1995, cross-examination May 12, 1995.

Before **Canadian Radio-Television and Telecommunications Commission**, in *Re: CRTC Order in Council 1994-1689*, Public Notice CRTC 1994-130 (Information Highway), filed March 10, 1995.

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C- 6958, on behalf of Hawaii Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of the California Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Florida's Section 214 Application to Provide Video Dialtone in the Pinellas County and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Virginia's Section 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6956, on behalf of Virginia Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

1994

Before the **Federal Communications Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed December 22, 1994 (Reply to Supp. Responses).

Before the **State Corporation Commission of the State of Kansas**, in *Re: General Investigation into Competition*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas CATV Association, filed November 14, 1994, cross-examination December 1, 1994.

Before the **Federal Communication Commission**, in *Re: Carolina Telephone's Section 214 Application to provide Video Dialtone in areas of North Carolina*, W-P-C 6999, on behalf of North Carolina Cable TV Association, filed October 20, 1994, reply November 8, 1994.

Before the **Federal Communication Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed September 8, 1994, reply October 3, 1994.

Before the **California Public Utilities Commission**, in *Re: Petition of GTE-California to Eliminate the Preapproval Requirement for Fiber Beyond the Feeder*, I.87-11-033, on behalf of California Bankers Clearing House, County of LA, filed August 24, 1994.

Before the **Federal Communications Commission**, in *Re: BellSouth Telecommunications Inc., Section 214 Application to provide Video Dialtone in Chamblee, GA and Dekalb County, GA*, W-P-C 6977, on behalf of Georgia Cable TV Association, filed August 5, 1994.

Before the **Federal Communications Commission**, in *Re: Bell Atlantic Telephone Companies Section 214 Application to provide Video Dialtone within their Telephone Services Areas*, W-P-C 6966, on behalf of Mid Atlantic Cable Coalition, filed July 28, 1994, reply August 22, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Hawaii's 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C 6958, on behalf of Hawaii Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE California's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of California Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Florida's 214 Application to provide Video Dialtone in the Pinellas and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Virginia's 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6955, on behalf of the Virginia Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communications Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Boise, Idaho and Salt Lake City, Utah*, W-P-C 6944-45, before the Idaho and Utah Cable TV Association, filed May 31, 1994.

Before the **Federal Communication Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Portland, OR; Minneapolis, St. Paul, MN; and Denver, CO*, W-P-C 6919-22, on behalf of Minnesota & Oregon Cable TV Association, filed March 28, 1994.

Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed Feb. 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company, Defendant*, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and Feb. 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey*, W-P-C-6840, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation*, T092030358, on behalf of NJ Cable TV Association, filed September 21, 1992.

Before the **New Hampshire Public Utilities Commission**, in *Re: Generic competition docket*, DR 90-002, on behalf of Office of the Consumer Advocate, filed May 1, 1992, reply July 10, 1992, Surrebuttal August 21, 1992.

Before the **New Jersey General assembly Transportation, Telecommunications, and Technology Committee**, *Concerning A-5063*, on behalf of NJ Cable TV Association, filed January 6, 1992.

1991

Before the **New Jersey Senate Transportation and Public Utilities Committee**, in *Re: Concerning Senate Bill S-3617*, on behalf of New Jersey Cable Television Association, filed December 10, 1991.

Before the **119th Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology**, in *Re: Issues Surrounding Telecommunications Network Modernization*, on behalf of the Ohio Cable TV Association, filed March 7, 1991.

Before the **Tennessee Public Service Commission**, in *Re: Master Plan Development and TN Regulatory Reform Plan*, on behalf of TN Cable TV Association, filed February 20, 1991.

1990

Before the **Tennessee Public Service Commission**, in *Re: Earnings Investigation of South Central Bell*, 90-05953, on behalf of the TN Cable Television Association, filed September 28, 1990.

Before the **New York Public Service Commission**, in *Re: NYT Rates, 90-C-0191*, on behalf of User Parties NY Clearing House Association, filed July 13, 1990, Surrebuttal July 30, 1990.

Before the **Louisiana Public Service Commission**, in *Re: South Central Bell Bidirectional Usage Rate Service*, U-18656, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the **Georgia Public Service Commission**, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service*, 3896-U, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the **New York State Public Service Commission**, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing*, 28961 Fifth Stage, on behalf of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case*, 86-20, on behalf of DE PSC, filed June 16, 1989.

Before the **Arizona Corporation Committee**, in *Re: General Rate Case*, 86-20, on behalf of Arizona Corporation Committee, filed March 6, 1989.

1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

Before **Rhode Island Public Utilities Commission**, in *Re: New England Telephone*, 1475, on behalf of RI Bankers Association, filed August 11, 1987, cross-examination August 21, 1987.

Before the **New York State Public Service Commission**, in *Re: General Rate Case Subject to Competition*, 29469, on behalf of AMEX Co., Capital Cities/ ABNC, Inc., NBC, Inc., filed April 17, 1987, cross-examination May 20, 1987.

Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

Before the **Kansas Public Utilities Commission**, in *Re: Southwestern Bell*, 127, 140-U, on behalf of Boeing Military, et al., filed August 15, 1986.

1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

EXHIBIT 2

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ADOPTION OF A STANDARD)
METHODOLOGY FOR ESTABLISHING) ADMINISTRATIVE CASE
RATES FOR CATV POLE ATTACH-) NO. 251
MENTS)

O R D E R

On petitions of regulated telephone utilities (Case No. 8040) and regulated electric utilities (Case No. 8090), which were consolidated, the Commission on August 26, 1981, asserted jurisdiction over the rates, terms and conditions for pole attachment space made available to cable television ("CATV") systems by telephone and electric utilities. Tariffs ordered to be filed were rejected by the Commission, which by its Order of October 28, 1981, established this administrative case to determine a standard methodology for calculating rates for pole attachment space.

Hearings were held on February 2, 3, and 4, 1982, for direct testimony. Rebuttal testimony was prefiled, and witnesses subjected to cross-examination on March 18, 1982, with final oral argument on March 25, 1982.

Parties of record were Louisville Gas & Electric Company, South Central Bell Telephone Company, Union Light, Heat and Power Company, Cincinnati Bell, Inc., General Telephone Company of

Kentucky, Kentucky Power Company, Continental Telephone Company, Echo Telephone Company (now Allied Telephone Company of Kentucky), Kentucky Utilities Company, Kentucky Cable Television Association, Consumer Protection Division of the Attorney General's Office, Kentucky Association of Electric Cooperatives, and Duo County Telephone Cooperative. Others who submitted information or testimony were Thacker-Grigsby Telephone Company, Foothills Rural Telephone Cooperative Corporation, Inc., Peoples Rural Telephone Cooperative Corporation, Inc., Ballard Rural Telephone Cooperative Corporation, Inc., and Logan Telephone Cooperative, Inc.

DISCUSSION

In its Order of August 26, 1981, the Commission directed regulated utilities which provide CATV pole attachment services to file tariffs concerning the provision of such service. The tariffs which were filed proposed rates, terms and conditions which varied widely, and in some cases did not afford CATV operators rights equal to those afforded other utility customers. For these and reasons of convenience, the Commission determined that a uniform methodology should be established by which fair, just and reasonable pole attachment rates could be determined.

At the hearings on methodology, it developed that some minimum equitable standards for terms and conditions would be required to assure CATV operators that to the extent possible they would have the same rights as other utility customers.

First, as a tariff customer, each qualified CATV operator must have the right to receive service (make pole attachments), just as a telephone or electric customer has the right to receive service. Similarly, the CATV operator must be allowed to remain a customer by observing the usual customer obligations, such as payment of bills and conformance to applicable safety standards.

Objectionable Provisions in Agreements

CATV operators assert that the present practice of some utilities in requiring bonds for satisfactory construction practices and payment of billings imposes restrictions more burdensome than those imposed on other utility customers. However, while the CATV operator will be a utility customer, it must be recognized that it forms a separate classification of customer, with different rights and responsibilities. The imposition of a bonding requirement is not unlike the deposit requirement for other utility customers, except that the CATV operator climbs and works on poles, and makes pole attachments, a situation uniquely different from that of utility customers merely receiving electric or telephone service. For this reason, the Commission does not find it discriminatory to allow a bonding requirement to assure safe and adequate construction and operating practices on the part of the CATV operator, especially during the initial phases of construction and operation. However, the Commission will expect that the size of the bond or

other required assurances will be reasonably related to the size and scope of the proposed CATV system, and will be reduced or lifted after the operator has proven itself a reliable utility customer.

The CATV operators complained of the charges imposed by the utilities for periodic inspections of the attachments to the poles, but generally were not dissatisfied with "make-ready" charges determined by agreement of the parties after a "walk-through" inspection of the proposed CATV system by representatives of the operator and the utility. The Commission recognizes the necessity for periodic inspections of utility plant for safety and other reasons, and Commission regulations (807 KAR 5:006, Section 22) require them, without any provision for additional payment by customers. Of course, when substandard installations are found which are not created by the utility but by the CATV operator, the utility should charge the CATV operator for the cost of correcting them, plus some contribution toward administrative costs and labor and materials costs for making such corrections.

Similarly, since the CATV operator is making the attachments, and the utility must rely, between inspections, on voluntary reporting by such operator, it will be considered reasonable for the utility to charge the operator (for each connection theretofore unreported) an amount equal to the rate that would have been due had the installation been made the day after the last previous required inspection.

CATV operators argue that some utilities have unfairly imposed provisions in their agreements that required the operators to reimburse the utilities for changes made after the initial CATV attachments have been made, when such changes were not required by CATV operations. They cite some instances when, after initially allowing CATV attachment to their poles, the utilities changed the use of the pole and required the CATV operator to pay for the changes.

The Commission agrees that a number of these provisions and charges may have been unfair or unnecessary. When a utility subsequently requires a change in its poles or attachments for reasons unrelated to CATV operations, the CATV operator should be given notice of the changes required (e.g., relocation to another pole), and sufficient time to accomplish the CATV-related change. Normally, 48 hours will be sufficient time for advance notice of a change, unless an emergency requires a shorter period. If the CATV operator is unable or unwilling to meet the utility's time schedule for such changes, the utility may do the work and charge the CATV operator its reasonable costs for performing the change of CATV attachments.

Also, the CATV operators argue that a number of the agreements imposed on them for pole attachments have included "hold harmless clauses" and have required them to maintain insurance coverage against their negligence and that of the utility. The Commission is of the opinion that such requirements generally

are excessive. Except for compelling reasons requiring additional protective provisions, the Commission will approve only tariff provisions which require insurance or a bond (at CATV's option) to protect the utility and the public against the actions of the CATV operator.

CATV Operators Are Not Joint Users

Considerable argument, and some evidence, was offered on behalf of the CATV operators that they have been treated unfairly by the utilities in not being accorded many of the rights granted each other by the utilities in their joint use arrangements. This issue is resolved by the decision of this Commission to treat CATV operators as customers of the utilities, with concomitant customer rights. CATV operators do not argue that they should be allowed to construct pole line systems of their own to share with the regulated utilities under typical joint use arrangements, and we see no reason why they should. Since they have no poles to "share," they need not be offered terms equivalent to those in prevailing joint use agreements between utilities both of which own and share poles.

Methodology

The CATV operators contend that the FCC methodology should be adopted by this Commission. We do not agree. While the FCC methodology purports to recover for the utility its incremental

cost of providing pole attachment service, it does not provide for the allocation of the utility's full cost of providing such service among all its classifications of customers. This Commission cannot accept a formula which allocates costs so unevenly.

The Commission recognizes, as recommended by the CATV operators and most of the utilities represented at the proceeding, that the formula should be simple and easily applied. Further, the formula should produce a fair, just and reasonable rate, based on the fully allocated costs of the utility in furnishing pole attachment services.

Ideally, the various cost factors needed to apply the formula should be readily available public information, such as that disclosed in the utility's required annual reports to the Commission or other public agencies. When this is not the case, we find that each utility shall file with its proposed tariffs the source and justification for cost factors used in applying the formula to compute its rate to the CATV operator.

The Commission has determined that the methodology shall be (1) the embedded cost of an average bare pole of the utility of the type and size which is or may be used for the provision of CATV attachment (2) multiplied by an annual carrying charge, and (3) this product multiplied by the percentage of usable space used for CATV pole attachments.

Bare Pole Costs

In determining the embedded cost of a bare pole, the Commission finds that poles less than 30 feet or more than 45 feet long are used so infrequently for CATV purposes that they should be excluded from the calculation. Cross arms, anchors, guy wires, grounds and other appurtenances not installed for CATV purposes will be excluded to establish the cost of a bare pole.

South Central Bell used 78 percent of its gross pole accounts as a "bare pole factor" to exclude investment attributable to appurtenances, i.e., cross arms, guys, anchors, etc. CATV's testimony was that 85 percent of pole accounts was an accepted industry standard for bare poles, which standard includes investment in anchors and guy wires and excludes all other appurtenances. General Telephone has also used an 85 percent factor, but has testified that this factor excludes "cross arms, anchors and other fixtures," which appears inconsistent with the testimony of other parties.

Therefore, for telephone utilities the Commission finds that 22 percent of the utility's pole account consists of appurtenances and should be excluded.

For electric utilities, the cost of major appurtenances such as cross arms can be specifically identified in sub-accounts and excluded, but lesser appurtenances such as aerial cable clamps, pole top pins, and ground wires are not segregated in the basic

pole accounts. Kentucky Power offered the only specific evidence on ground wire costs, for which it adds \$12.41 to the pole accounts, and estimated that 8.7 percent of the unsegregated pole accounts represents lesser appurtenances. It was acknowledged generally by CATV operators and the telephone utilities that an exclusion of 15 percent for pole appurtenances would be reasonable, but this percentage did not include the cost of anchors.

Consistent with our finding that 22 percent of the utility's pole account is a reasonable exclusion for telephone utilities, and that the ratio of the cost of anchors to the basic pole accounts should not vary significantly between telephone and electric utilities, the Commission finds that an adjustment of 15 percent and a deduction of \$12.50 per ground will reasonably approximate the cost of an average bare wooden electric utility pole.

Each utility must determine its weighted average cost of two-user and three-user poles. For telephone utilities, the average cost of a two-user pole will be assumed to be the weighted average cost of all 30-foot and 35-foot poles, and for a three-user pole, the weighted average cost of 40-foot and 45-foot poles. For electric utilities, the average cost of a two-user pole will be assumed to be the weighted average cost of 35-foot and 40-foot poles, and for a three-user pole, the weighted average cost of 40-foot and 45-foot poles. Each of these averages must then be multiplied by the bare pole factors stated herein.

Annual Carrying Charge

Having determined that the CATV operator will be considered a customer of the utility, the Commission finds that such customers should be required to pay their equitable share of all the utility's costs in providing service.

CATV operators argue that certain costs of the utility have no relationship to the services provided to them such as directory advertising, insurance and administrative overhead. However, no classification of utility customers can or should be allowed to pick and choose the categories of expense to which it will be subject.

A representative list of items to be included in computing the annual carrying charge includes operation and maintenance, general administrative expenses, depreciation, property or ad valorem taxes, income taxes (where applicable), gross receipts taxes and cost of money.

There should be included in the "cost of money" factor a reasonable amount representing a return on the utility's investment in the poles. For convenience and certainty of computation, the Commission finds that this return should be equal to the return on investment (or margin) allowed in the utility's last rate case.

Usable Space

Three distinct situations arise with respect to calculation of usable pole space: poles with only telephone and CATV connections, poles with only electric and CATV connections, and poles with all three connections.

In the first case, the Commission concludes that poles 30 and 35 feet long are commonly used, and that an average length for convenience of calculation would be 32.5 feet. Electric and CATV connections are commonly made on 35-foot and 40-foot poles, and therefore a 37.5-foot average pole will be reasonable for computation of the charge for that pole use. Poles with three users (telephone, electric, and CATV) are commonly 40 feet and 45 feet long, with an average length of 42.5 feet. An equal distribution of the pole population and utilization would produce a composite average pole of 37.5 feet in length. The Commission notes that an average pole length of 37.5 feet was supported by CATV testimony.

All parties have agreed that CATV operators should be responsible for the use of one foot of the usable space on poles.

When a telephone and CATV attachment occupy a single pole the amount of usable space will be calculated as if it were a 32.5-foot pole. It will be assumed that the pole is buried six feet in the ground. There was much testimony concerning the height of the lowest attachment. Neither the 18 feet of CATV nor the 21 feet of some of the utilities appears to be realistic. An

18-foot attachment would not allow for sag in those places where safety requirements demand 18 feet of clearance, and a 21-foot attachment would be unnecessarily high for most installations. CATV should not be penalized for connections that telephone utilities have placed unnecessarily high on their poles, but neither will this Commission assume that any connections are made so low as to produce violations of the National Electric Safety Code ("NESC"). Therefore, the Commission finds that an average height of the lowest connection on the pole of 20 feet is reasonable, and will allow for adequate clearances for cable spans. The top foot of a pole of this two-user configuration is not normally used.

Assuming the average two-user (telephone and CATV) pole of 32.5 feet in length, less 6 feet buried, 20 feet to the lowest attachment, and a foot of unused space at the top, there would be 5.5 feet of usable pole space. The CATV operator must be responsible for 1 foot. ($1/5.5$ or .1818.)

The typical two-user electric and CATV pole is assumed to be an average of 37.5 feet. NESC regulations for poles on which high voltage electrical current is carried require a 40-inch clearance between the lowest electrical conductor and the highest communications conductor. There was some evidence that on occasion the electric utilities have used a small portion of the safety clearance space for electrical appurtenances such as transformers. Similarly, the CATV operators have pointed to

occasional use of the top foot of the pole by electrical utilities as an argument that this space should be included in "usable space" for all poles. To take these situations into account, the Commission finds that it is reasonable to assign the top foot of the pole as usable space by the electric utility, while retaining the integrity of the NESC-required 40-inch clearance as non-usable space in situations involving the electric utility.

Assuming the typical two-user electric and CATV pole of an average 37.5 feet in length, less 6 feet buried, 20 feet to the lowest attachment, and 3.33 feet required safety space, there would be 8.17 feet of usable pole space. The CATV customer must be responsible for 1 foot. ($1/8.17$ or $.1224$.)

Assuming the typical three-user pole of 42.5 feet in length, less 6 feet buried, 20 feet to the lowest attachment, 3.33 feet required safety space, there would be 13.17 feet of usable pole space. The CATV customer must be responsible for 1 foot. ($1/13.17$ or $.0759$.)

In summary, the Commission finds that the use to which a pole is subjected will determine the appropriate factors in computing the rate to be charged the attaching CATV operator.

The telephone utility with a two-user situation (telephone and CATV), should take its weighted average cost of 30-foot and 35-foot poles, multiplied by its bare pole factor of 78 percent, multiplied by its annual carrying charges, and finally multiplied

by the appropriate usage factor of .1818 to arrive at an annual pole charge for CATV attachments for such use.

The electric utility with a two-user situation (electric and CATV), should take its weighted average cost of 35-foot and 40-foot poles multiplied by its bare pole factor of 85 percent, less \$12.50 per ground, multiplied by its annual carrying charges, and finally multiplied by the appropriate usage factor of .1224 to arrive at an annual pole charge for CATV attachments for such use.

Finally, in the case of the three-user pole, the utility should take its weighted average cost of 40-foot and 45-foot poles, multiplied by its bare pole factor [85 percent for electric (less \$12.50 per ground) and 78 percent for telephone utilities], multiplied by its annual carrying charges, and finally multiplied by the appropriate usage factor of .0759 to arrive at an annual pole charge for CATV attachments for such use.

Anchor Attachments

Much testimony was offered by CATV operators that anchor costs be included in pole costs. However, since CATV operators generally have the option of installing their own anchors or utilizing an existing anchor previously installed by the utility, it would be inappropriate to include a charge for anchor usage as a part of the pole attachment costs. When anchors of the utilities are used, the Commission finds that a fully allocated portion of the utility's cost for such anchors should be identified and paid for separately.

The method should be essentially the same as for pole attachments, being (1) the embedded cost of anchors, multiplied by (2) annual carrying charges, multiplied by (3) the appropriate usage factor. When a utility has recorded its embedded cost of anchors, that figure should be used. In the absence of such information, it is reasonable to assume that a utility's cost development of anchors parallels the cost development of poles used by CATV. Therefore, the embedded investment for an anchor should equal the average current investment for a typical anchor, multiplied by the ratio of the average embedded investment for 30- to 45-foot poles to the average current costs for 30- to 45-foot poles. The annual carrying charge factors should be the same as for poles. Finally, as to the usage factor, CATV should be responsible for one-half of the costs for two-user anchors, and one-third of the cost of three-user anchors.

Conduit

Very little attention was paid at the hearings to charges for sharing conduit space. South Central Bell maintained that conduit space should be charged at a rate based on current costs rather than embedded costs because once wire is placed in conduit, that portion of the conduit is no longer available for any other use by the utility. Hence, current conduit costs more nearly reflect the utility's costs for sharing this type of installation.

Although not offered in evidence by any of the parties, the Commission takes official notice that the National Electric Code ("NEC") sets forth the maximum allowable fill percentage for wire placed in the various sizes of conduit.

Therefore the Commission finds that the appropriate charge for conduit use by CATV operators should be (1) the current cost per foot for the type and size of conduit used, divided by (2) the NEC-specified maximum allowable percentage fill for the size of conduit used, multiplied by (3) the current annual charge factors developed for pole attachments herein.

Findings and Order

The Commission, after considering the matter and all evidence of record and being advised, finds that:

(1) The CATV operator, as a user of utility poles for attachment of its cables, is a customer of the regulated utility pole owner;

(2) As a customer of the regulated utility, the CATV operator should be obligated to pay its share of the fully allocated costs of providing service to it;

(3) The rights and obligations of the CATV operator and the regulated utility are as set forth herein;

(4) The method for determining the applicable rates and charges are as set forth herein;

(5) The Commission will allow deviations from the mathematical elements found reasonable herein only when a major

discrepancy exists between the contested element and the average characteristics of the utility, and the burden of proof should be upon the utility asserting the need for such deviation;

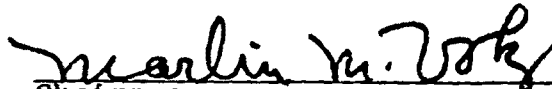
(6) Each utility should file tariffs for CATV pole attachments and charges conforming to the principles and findings in this Order; and

(7) On and after the effective date of the tariffs required herein, all existing pole attachment agreements should be superseded.

IT IS THEREFORE ORDERED that within 45 days of the date of this Order electric and telephone utilities providing or proposing to provide CATV pole attachments shall file with the Commission tariffs in the form prescribed by the Commission's regulations, according to the principles and findings in this Order.

Done at Frankfort, Kentucky, this 12th day of August, 1982.

PUBLIC SERVICE COMMISSION


Chairman


Vice Chairman


Commissioner

ATTEST:

Secretary

EXHIBIT 3

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke)
Energy Ohio, Inc. to Amend Its Pole)
Attachment Tariff) Case No. 22-0164-EL-ATA

REVIEW AND RECOMMENDATION
SUBMITTED ON BEHALF OF THE STAFF OF
THE PUBLIC UTILITIES COMMISSION OF OHIO

On March 4, 2022, Duke Energy Ohio, Inc. (DEO) filed an application seeking to revise its pole attachment and conduit occupancy rates primarily using 2020 FERC Form 1 data initially seeking to increase the pole attachment rate from \$9.81 per year to \$17.05 per year and the conduit occupancy rate from \$.40 per foot, per year to \$.49 per foot, per year.

This application was filed pursuant to Ohio Adm.Code 4901:1-3-04 as adopted in Case No. 19-834-AU-ORD. Pursuant to Ohio Adm. Code 4901:1-3-04 the application is subject to a 60-day automatic approval process.

On March 23, 2020, the Ohio Cable Telecommunications Association (OCTA) filed a motion to intervene. On March 25, 2022, OCTA filed objections to DEO’s application primarily focusing on pole count, depreciation reserve and pole height used in DEO’s rate calculations. The OCTA also objected to a few non-rate terms and conditions contained in DEO’s pole and conduit occupancy tariff that DEO has agreed to accept.

While responding to a staff data request, DEO discovered that they used a formula to calculate the accumulated depreciation for FERC Accounts 364, 365, 366, 367, and 369 used in the calculations that had not been previously used. DEO provided updated inputs with the data request response utilizing the accumulated depreciation values for these accounts sourced from the company’s fixed asset system which is tied to the general ledger.

During the investigation, Staff determined that poles associated with non-unitized investment in Account 364 were not included in the pole count used in the initial pole attachment rate calculation. The pole count initially used in the calculation was the number of unitized poles contained in the company’s continuing property records (CPR) as of December 31, 2020. Since then, all of the non-unitized Account 364 investment as of December 31, 2020, has been unitized

and it has been determined that the non-unitized Account 364 investment on December 31, 2020, contained 1,957 poles.

Pursuant to Ohio Adm.Code 4901:1-3-04(D)(4), there is a rebuttable presumption with respect to the pole attachment formula that the average pole height is thirty-seven and one-half feet and that unusable space is presumed to be twenty-four feet, which leaves thirteen and one-half feet of usable space. During the investigation, it was determined that the average height of a pole contained in the Account 364 CPR was 41.1 feet, which allows OCTA to rebut the 37.5 feet presumption and adds 3.6 feet of usable space to the presumed 13.5 yielding usable space of 17.1 feet per pole.

On May 2, 2022, DEO filed an amendment to the application. The amended application includes updated calculations to include the 1,957 poles associated with non-unitized Account 364 investment at the end of 2020, an increase to the amount of usable space used in the calculation from 13.5 feet to 17.1 feet, and revisions to the accumulated depreciation for FERC Accounts 363, 364, 365, 366, 367 and 369, as described above. As a result, the proposed pole attachment rate is now \$12.42 per attachment, per year and the proposed conduit occupancy rate is \$.48 per foot, per year.

Staff has reviewed the pole attachment and conduit occupancy rate calculations as well as the source of the data used in the calculations provided by DEO and has found them to be consistent with the formulas contained in Ohio Adm.Code 4901:1-3-4(D)(2) and (D)(3).

As such, Staff believes that approval of the application will promote public convenience and result in the provision of adequate service for a reasonable rate, rental, toll, or charge. Therefore, Staff recommends that the application be automatically approved on May 3, 2022, with an effective date of May 4, 2022.

**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

5/3/2022 2:43:17 PM

in

Case No(s). 22-0164-EL-ATA

Summary: Staff Review and Recommendation electronically filed by Jason Well on
behalf of PUCO Staff

EXHIBIT 4

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Toledo)
Edison Company to update its pole)
attachment rate) Case No. 20-1645-EL-ATA

**REVIEW AND RECOMMENDATION
SUBMITTED ON BEHALF OF THE STAFF OF
THE PUBLIC UTILITIES COMMISSION OF OHIO**

On October 30, 2020, Toledo Edison Company (TE) filed an application to revise its pole attachment rate using 2019 data, initially seeking to increase the rate from \$9.83 per year to \$10.51 per year.

This application is being filed pursuant to Section 4901:1-3-4 Ohio Administrative Code (O.A.C.), as adopted in Case No. 13-579-AU-ORD, Commission Entry dated November 30, 2016 in Case No. 13-579-AU-ORD and Commission Finding and Order dated October 24, 2018 in Case No. 18-47-AU-COI. Pursuant to Commission Entry dated November 30, 2016, in Case No. 13-579-AU-ORD, the application is subject to a 60-day automatic approval process.

On November 20, 2020, the Ohio Cable Telecommunications Association (OCTA) filed a motion to intervene as well as objections to TE’s application. In regard to the rate calculation, OCTA objects to a flat change in the pole count despite an increase in Account 364 – Poles, Towers and Fixtures investment and a significant increase in Account 926 - Pension Costs compared to the prior year’s levels.

On November 30, 2020, TE filed a response to OCTA’s objections. In regard to the use of unadjusted Account 364 and Account 926 as inputs, TE argues that they are required as inputs by the formula approved by the Commission and that the inputs come directly from the company’s FERC Form 1 Report. TE argues that the Commission has already established that the approved formula used by the company produces rates that are just and reasonable and that formula calls for the amounts included in FERC Account 364 and FERC Account 926.

During the course of the investigation, Staff determined that poles associated with non-unitized investment in Account 364 were not included in the pole count used in the rate calculation. On December 23, 2020, TE amended its application to include an estimate of the number of poles

associated with non-unitized Account 364 investment. To do so, the company calculated the actual, average cost of a pole placed and unitized in 2019. It then divided the non-unitized pole investment in Account 364 by the actual, average cost of a pole placed in 2019 to arrive at an estimate of the number of poles associated with non-unitized Account 364 investment. As a result, 1,338 poles were added to the pole count used in the rate formula yielding a new proposed rate of \$10.45.

Staff has reviewed the pole attachment rate calculations as well as the source of the data used in the calculations provided by TE and has found them to be consistent with the formula contained in rule 4901:1-3-4(D)(2) as well as prior Commission decisions. Staff believes TE's methodology for estimating the number of poles associated with non-unitized Account 364 investment is reasonable. Staff also agrees with TE that unadjusted FERC Form 1 Accounts 364 and 926 balances are the inputs required to be used in the pole attachment rate formula approved by the Commission.

As such, Staff believes that approval of the application will promote public convenience and result in the provision of adequate service for a reasonable rate, rental, toll, or charge. Therefore, Staff recommends that the application be automatically approved on December 29, 2020, with an effective date of January 1, 2021.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/28/2020 3:19:05 PM

in

Case No(s). 20-1645-EL-ATA

Summary: Staff Review and Recommendation electronically filed by Jason Well on behalf of PUCO Staff

EXHIBIT 5

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Cleveland)
Electric Illuminating Company to update its) Case No. 20-1644-EL-ATA
pole attachment rate)

**REVIEW AND RECOMMENDATION
SUBMITTED ON BEHALF OF THE STAFF OF
THE PUBLIC UTILITIES COMMISSION OF OHIO**

On October 30, 2020, Cleveland Electric Illuminating Company (CEI) filed an application to revise its pole attachment rate using 2019 data initially seeking to increase the rate from \$12.06 per year to \$13.34 per year.

This application is being filed pursuant to Section 4901:1-3-4 Ohio Administrative Code (O.A.C.), as adopted in Case No. 13-579-AU-ORD, Commission Entry dated November 30, 2016 in Case No. 13-579-AU-ORD and Commission Finding and Order dated October 24, 2018 in Case No. 18-47-AU-COI. Pursuant to Commission Entry dated November 30, 2016, in Case No. 13-579-AU-ORD, the application is subject to a 60-day automatic approval process.

On November 20, 2020, the Ohio Cable Telecommunications Association (OCTA) filed a motion to intervene as well as objections to CEI's application. In regard to the rate calculation, OCTA objects to a flat change in the pole count despite an increase in Account 364 – Poles, Towers and Fixtures investment and a significant increase in Account 926 - Pension Costs compared to the prior year's levels.

On November 30, 2020, CEI filed a response to OCTA's objections. In regard to the use of unadjusted Account 364 and Account 926 as inputs, CEI argues that they are required as inputs by the formula approved by the Commission and that the inputs come directly from the company's FERC Form 1 Report. CEI argues that the Commission has already established that the approved formula used by the company produces rates that are just and reasonable and that formula calls for the amount included in FERC Account 364 and FERC Account 926.

During the course of the investigation, Staff determined that poles associated with non-unitized investment in Account 364 were not included in the pole count used in the rate calculation. On December 22, 2020, CEI amended its application to include an estimate of the number of poles

associated with non-unitized Account 364 investment. To do so, the company calculated the actual, average cost of a pole placed and unitized in 2019. It then divided the non-unitized pole investment in Account 364 by the actual, average cost of a pole placed in 2019 to arrive at an estimate of the number of poles associated with non-unitized Account 364 investment. As a result, 3,795 poles were added to the pole count used in the rate formula yielding a new proposed rate of \$13.21.

Staff has reviewed the pole attachment rate calculations as well as the source of the data used in the calculations provided by CEI and has found them to be consistent with the formula contained in rule 4901:1-3-4(D)(2) as well as prior Commission decisions. Staff believes CEI's methodology for estimating the number of poles associated with non-unitized Account 364 investment is reasonable. Staff also agrees with CEI that unadjusted FERC Form 1 Accounts 364 and 926 balances are the inputs required to be used in the pole attachment rate formula approved by the Commission.

As such, Staff believes that approval of the application will promote public convenience and result in the provision of adequate service for a reasonable rate, rental, toll, or charge. Therefore, Staff recommends that the application be automatically approved on December 29, 2020, with an effective date of January 1, 2021.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/28/2020 3:17:20 PM

in

Case No(s). 20-1644-EL-ATA

Summary: Staff Review and Recommendation electronically filed by Jason Well on behalf of PUCO Staff

EXHIBIT 6

Central Hudson Gas & Electric Corporation
Case No. 17-E-0170
Response to Interrogatory / Document Request

Request No: DPS-1

From: DPS Staff

Date of Request: May 8, 2017

Subject: Central Hudson Gas & Electric Corporation Tariff Filing to Reflect New Pole Attachment Rates

Question: Referring to the rate leaf, the 8th Revised Leaf No. 120, included in this filing, please provide the following:

- 1) A detailed explanation of what temporary closings represents, including examples of how and why plant qualifies as temporary closings including;
 - a) are new poles included,
 - b) are double wood poles included,

Response: “Temporary Closing” is also commonly referred to as non-unitization. Since in-service construction should be considered in Plant-In-Service balances, and if depreciable, in the depreciation base and tax basis, Central Hudson makes a classification of assets to utility account even when we have not unitized the work order to the retirement/property unit level. In this case, our system keeps the charges on a CWIP Charge table, but the results are sent to the Continuing Property Records (CPR), where they are posted to an unspecified property unit. By doing this, all in-service plant balances are available for reporting, book depreciation, and for income tax basis reconciliation.

When charges are non-unitized, they are posted to the CPR to a utility account, but not to a specified property unit. This, in essence, adds the investment dollars to the CPR, but not the corresponding number of units. As such, by including the non-unitized investment dollars in the net pole investment calculation and not having the related number of units to be included in our equivalent number of poles calculation, we would overstate the cost of a bare pole, which would, in turn, cause us to overstate our rate.

The need for non-unitization processing traditionally stemmed from a unitization backlog, but also arose from the natural timing problem of waiting a month or more for final charges before unitization. Within FERC these non-unitized closings are generally processed to account 106, which is the account used by Central Hudson to record this activity.

Central Hudson Gas & Electric Corporation
Case No. 17-E-0170
Response to Interrogatory / Document Request

2) what time period qualifies under temporary closings;

Response: Temporary closing occurs when an asset is placed in service. The temporary close balance is continually changing. The balance is reduced by assets when they are unitized and increased by assets that are placed in service and then become non-unitized.

3) an aging of how long plant has been included in temporary closings that is listed in Attachment A;

Response: Previously submitted reports were reviewed and were able to confirm that temporary closings have been reported since at least 2004.

4) the balances for the FYE for 2012-2015 for Temporary Closing Account 136400 Distr-Poles Towers & Fixtures, in the same format as shown in Appendix A.

Response: Please see attached PDF file titled "CHGE Response to DPS Staff IR-1.pdf" and summary table below.

	Total Investment in Account	Temporary Closing in Account	Gross Pole Investment in Account	Temporary closings as a percentage of Total dollars in account 36400
FYE:	36400	36400	36400	
2012	170,696,487	10,810,918	159,885,569	6.33%
2013	190,271,619	16,388,576	173,883,043	8.61%
2014	201,404,820	17,383,417	184,021,403	8.63%
2015	208,461,804	15,308,323	193,153,481	7.34%

Response by: Jay Tompkins
Title: Cost & Rate Analyst
Date of Response: May 12, 2017

EXHIBIT 7

Duke Energy Kentucky

Case No. 2022-00372

Revised CATV Pole Attachment Formula - Administrative Case No. 251

For Use of Electric Utility Poles

BASED UPON 2021 FERC FORM 1 DATA

FCC Pole Attachment Rate Formula

	Amount	35'	40'	45'	Two User	Three User
1 Gross Pole Investment	\$5,063,896	\$16,761,296	\$19,253,744	\$21,825,192	\$36,015,040	
2 Pole Depreciation Reserve	\$1,898,245	\$6,283,117	\$7,217,433	\$8,181,362	\$13,500,550	
3 Apportionment Factor	\$380,975	\$1,261,011	\$1,448,527	\$1,641,986	\$2,709,539	
4 Accumulated Deferred Taxes (Poles)	(\$625,819)	(\$2,071,436)	(\$2,379,464)	(\$2,697,255)	(\$4,450,900)	
5 Net Pole Investment	\$2,539,832	\$8,406,743	\$9,656,847	\$10,946,575	\$18,063,590	
6 Number of Poles	6,787	17,386	12,518	24,173	29,904	
7 Net Investment Per Bare Pole	\$318.09	\$411.01	\$655.71	\$384.92	\$513.44	
8 Pole Maintenance						
A. Maintenance of Overhead Lines	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	
B. Total Investment in Poles, Conductors, Services	\$248,780,121	\$248,780,121	\$248,780,121	\$248,780,121	\$248,780,121	
C. Depreciation Reserve	\$72,815,839	\$72,815,839	\$72,815,839	\$72,815,839	\$72,815,839	
D. Accumulated Deferred Taxes	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	
E. Total Investment in Poles - Net	\$145,228,631	\$145,228,631	\$145,228,631	\$145,228,631	\$145,228,631	
F. Pole Maintenance Ratio	4.37%	4.37%	4.37%	4.37%	4.37%	
9 Depreciation	4.17%	4.17%	4.17%	4.17%	4.17%	
10 Administration	2.19%	2.19%	2.19%	2.19%	2.19%	
11 Taxes (Normalized)	2.16%	2.16%	2.16%	2.16%	2.16%	
12 Rate of Return	7.530%	7.530%	7.530%	7.530%	7.530%	
13 Total Carrying Charge	20.42%	20.42%	20.42%	20.42%	20.42%	
14 Allocated Space				12.24%	7.59%	
15 Maximum Rate Per Attachment				\$9.62	\$7.96	

Reference/Source

A Below
B1 below
(1 - 2 + R1) * 15%
R1 Below
1 - 2 + R1
D Below
(5 - 3) / 6
E Below
A + F + G
B1+B2+B3
R1+R2+R3
8B - 8C + 8D
8A / 8E
(1 / (1 - 2 + R1)) * H.
I / (J - K + R)
(L + M + N + O + P + Q) / (J - K + R)
S Below
8F + 9 + 10 + 11 + 12
T / U
7 * 13 * 14

Cost	# of Poles Included in Duke Rate Calc.	Qty	Non-Utilized Inv	
			# Non-Utilized Poles Excluded by Duke	# Poles Including All Non-utilized
\$5,063,896	6,584	35'	203	6,787
\$16,761,296	16,707	40'	679	17,386
\$19,253,744	10,936	45'	1582	12,518
\$41,078,936	34,227	Sum	2464	36,691
\$74,482,036				
0.067988152				
0.225038104				
0.258501848				
0.551528105				

Input Data

A. Poles, Towers, & Fixtures (Acctg.364)	\$74,482,036	\$74,482,036	\$74,482,036	\$74,482,036	\$74,482,036	FERC Form 1, Page 207, Line 64, Column g
B. Accum. Depr. - Distribution Plant	\$150,530,889	\$150,530,889	\$150,530,889	\$150,530,889	\$150,530,889	FERC Form 1, Page 219, Line 26, Column c.
1. Accum Depr. for FERC Acctg 364	\$27,920,237	\$27,920,237	\$27,920,237	\$27,920,237	\$27,920,237	Provided by Plant Accounting
2. Accum Depr. for FERC Acctg 365	\$34,254,142	\$34,254,142	\$34,254,142	\$34,254,142	\$34,254,142	Provided by Plant Accounting
3. Accum Depr. for FERC Acctg 369	\$10,641,460	\$10,641,460	\$10,641,460	\$10,641,460	\$10,641,460	Provided by Plant Accounting
C. Gross Investment - Distribution Plant	\$622,687,366	\$622,687,366	\$622,687,366	\$622,687,366	\$622,687,366	FERC Form 1, Page 207, Line 75, Column g
D. Number of Distribution Poles	41,110	41,110	41,110	41,110	41,110	Provided by Cost Accounting
E. Mice of Overhead Lines (Acctg. 593)	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	FERC Form 1, Page 322, Line 149, Column b.
F. Overhead Conductors & Devices (Acctg. 365)	\$152,067,838	\$152,067,838	\$152,067,838	\$152,067,838	\$152,067,838	FERC Form 1, Page 207, Line 65, Column g.
G. Services (Acctg. 369)	\$22,230,247	\$22,230,247	\$22,230,247	\$22,230,247	\$22,230,247	FERC Form 1, Page 207, Line 69, Column g.
H. Depreciation Rate - Distribution Property	2.09%	2.09%	2.09%	2.09%	2.09%	Provided by Plant Accounting
I. Admin. & Gen. Exps. (Acctgs. 920-935)	\$22,907,236	\$22,907,236	\$22,907,236	\$22,907,236	\$22,907,236	FERC Form 1, Page 323, Line 197, Column b.
J. Utility Plant in Service	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	FERC Form 1, Page 200, Line 8, Column c.
K. Accum. Depr. - Utility Plant in Service	\$840,267,458	\$840,267,458	\$840,267,458	\$840,267,458	\$840,267,458	FERC Form 1, Page 200, Line 22, Column c.
1. ADIT - Accelerated Amort. Property (Acctg. 281)	\$0	\$0	\$0	\$0	\$0	FERC Form 1, Page 273, Line 8, Column k.
2. ADIT - Other Property (Acctg. 282)	\$227,752,649	\$227,752,649	\$227,752,649	\$227,752,649	\$227,752,649	FERC Form 1, Page 275, Line 2, Column k.
3. ADIT - Other (Acctg. 283)	\$31,279,406	\$31,279,406	\$31,279,406	\$31,279,406	\$31,279,406	FERC Form 1, Page 277, Line 9, Column k.
L. Taxes Other Than Income Taxes (Acctg. 408.1)	\$15,842,108	\$15,842,108	\$15,842,108	\$15,842,108	\$15,842,108	FERC Form 1, Page 115, Line 14, Column g.
M. Income Taxes - Federal (Acctg. 409.1)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	FERC Form 1, Page 115, Line 15, Column g.
N. Income Taxes - Other (Acctg. 409.1)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	FERC Form 1, Page 115, Line 16, Column g.
O. Prov. for Deferred Inc. Taxes (Acctg 410.1)	\$47,582,356	\$47,582,356	\$47,582,356	\$47,582,356	\$47,582,356	FERC Form 1, Page 115, Line 17, Column g.
P. (Less) Prov. for Def. Inc. Taxes - Cr. (Acctg 411.1)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	FERC Form 1, Page 115, Line 18, Column g.
Q. Investment Tax Credit Adj. - Net (Acctg 411.4)	(\$428)	(\$428)	(\$428)	(\$428)	(\$428)	FERC Form 1, Page 115, Line 19, Column g.
R. Accumulated Deferred Inc. Taxes (Acct 190, 281, 282, 283)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	Deferred Tax Calculation Worksheet
1. ADIT for Poles (Acct 364)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	Deferred Tax Calculation Worksheet
2. ADIT for Overhead Conductor (Acct 365)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	Deferred Tax Calculation Worksheet
3. ADIT for Services (Acct 369)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	Deferred Tax Calculation Worksheet
S. Rate of Return	7.53%	7.53%	7.53%	7.53%	7.53%	Proposed in KYPS Case No. 2022-00372
T. Space Occupied (feet)	1.00	1.00	1.00	1.00	1.00	Administrative Case No. 251
U. Usable Space (feet) - Two Users				8.17	8.17	Administrative Case No. 251
V. Usable Space (feet) - Three Users				13.17	13.17	Administrative Case No. 251
W. Pole Height (feet) - Two Users				37.5	37.5	Administrative Case No. 251
X. Pole Height (feet) - Three Users				42.5	42.5	Administrative Case No. 251

Duke Energy Kentucky

Case No. 2022-00372

Revised CATV Pole Attachment Formula - Administrative Case No. 251

For Use of Electric Utility Poles

BASED UPON 2021 FERC FORM 1 DATA

FCC Pole Attachment Rate Formula

	Amount	35'	40'	45'	Two User	Three User
1 Gross Pole Investment	\$5,063,896	\$16,761,296	\$19,253,744	\$21,825,192	\$36,015,040	
2 Pole Depreciation Reserve	\$1,898,245	\$6,283,117	\$7,217,433	\$8,181,362	\$13,500,550	
3 Apurtenance Factor	\$380,975	\$1,261,011	\$1,448,527	\$1,641,986	\$2,709,539	
4 Accumulated Deferred Taxes (Poles)	(\$625,819)	(\$2,071,436)	(\$2,379,464)	(\$2,697,255)	(\$4,450,900)	
5 Net Pole Investment	\$2,539,832	\$8,406,743	\$9,656,847	\$10,946,575	\$18,063,590	
6 Number of Poles	6,787	17,386	12,518	24,173	29,904	
7 Net Investment Per Bare Pole	\$318.09	\$411.01	\$655.71	\$384.92	\$513.44	
8 Pole Maintenance						
A. Maintenance of Overhead Lines	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	
B. Total Investment in Poles, Conductors, Services	\$248,780,121	\$248,780,121	\$248,780,121	\$248,780,121	\$248,780,121	
C. Depreciation Reserve	\$72,815,839	\$72,815,839	\$72,815,839	\$72,815,839	\$72,815,839	
D. Accumulated Deferred Taxes	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	(\$30,735,651)	
E. Total Investment in Poles - Net	\$145,228,631	\$145,228,631	\$145,228,631	\$145,228,631	\$145,228,631	
F. Pole Maintenance Ratio	4.37%	4.37%	4.37%	4.37%	4.37%	
9 Depreciation	4.17%	4.17%	4.17%	4.17%	4.17%	
10 Administration	2.19%	2.19%	2.19%	2.19%	2.19%	
11 Taxes (Normalized)	2.16%	2.16%	2.16%	2.16%	2.16%	
12 Rate of Return	7.530%	7.530%	7.530%	7.530%	7.530%	
13 Total Carrying Charge	20.42%	20.42%	20.42%	20.42%	20.42%	
14 Allocated Space				10.50%	7.21%	
15 Maximum Rate Per Attachment				\$8.26	\$7.56	

Reference/Source

A Below
B1 below
(1 - 2 + R1) * 15%
R1 Below
1 - 2 + R1
D Below
(5 - 3) / 6
E Below
A + F + G
B1+B2+B3
R1+R2+R3
8B - 8C + 8D
8A / 8E
(1 / (1 - 2 + R1)) * H.
I / (J - K + R)
(L + M + N + O + P + Q) / (J - K + R)
S Below
8F + 9 + 10 + 11 + 12
T / U
7 * 13 * 14

Cost	# of Poles Included in Duke Rate Calc.		See Tab "Qty Non-Utilized Inv"	
			# Non-Utilized Poles Excluded by Duke	# Poles Including All Non-utilized
\$5,063,896	6,584	35'	203	6,787
\$16,761,296	16,707	40'	679	17,386
\$19,253,744	10,936	45'	1582	12,518
\$41,078,936	34,227	Sum	2464	36,691
\$74,482,036				
0.067988152				
0.225038104				
0.258501848				
0.551528105				

Input Data

A. Poles, Towers, & Fixtures (Acctg.364)	\$74,482,036	\$74,482,036	\$74,482,036	\$74,482,036	\$74,482,036	FERC Form 1, Page 207, Line 64, Column g
B. Accum. Depr. - Distribution Plant	\$150,530,889	\$150,530,889	\$150,530,889	\$150,530,889	\$150,530,889	FERC Form 1, Page 219, Line 26, Column c.
1. Accum Depr. for FERC Acctg 364	\$27,920,237	\$27,920,237	\$27,920,237	\$27,920,237	\$27,920,237	Provided by Plant Accounting
2. Accum Depr. for FERC Acctg 365	\$34,254,142	\$34,254,142	\$34,254,142	\$34,254,142	\$34,254,142	Provided by Plant Accounting
3. Accum Depr. for FERC Acctg 369	\$10,641,460	\$10,641,460	\$10,641,460	\$10,641,460	\$10,641,460	Provided by Plant Accounting
C. Gross Investment - Distribution Plant	\$622,687,366	\$622,687,366	\$622,687,366	\$622,687,366	\$622,687,366	FERC Form 1, Page 207, Line 75, Column g
D. Number of Distribution Poles	41,110	41,110	41,110	41,110	41,110	Provided by Cost Accounting
E. Mice of Overhead Lines (Acctg. 593)	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	\$6,352,091	FERC Form 1, Page 322, Line 149, Column b.
F. Overhead Conductors & Devices (Acctg. 365)	\$152,067,838	\$152,067,838	\$152,067,838	\$152,067,838	\$152,067,838	FERC Form 1, Page 207, Line 65, Column g.
G. Services (Acctg. 369)	\$22,230,247	\$22,230,247	\$22,230,247	\$22,230,247	\$22,230,247	FERC Form 1, Page 207, Line 69, Column g.
H. Depreciation Rate - Distribution Property	2.09%	2.09%	2.09%	2.09%	2.09%	Provided by Plant Accounting
I. Admin. & Gen. Exps. (Acctgs. 920-935)	\$22,907,236	\$22,907,236	\$22,907,236	\$22,907,236	\$22,907,236	FERC Form 1, Page 323, Line 197, Column b.
J. Utility Plant in Service	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	\$2,149,668,551	FERC Form 1, Page 200, Line 8, Column c.
K. Accum. Depr. - Utility Plant in Service	\$840,267,458	\$840,267,458	\$840,267,458	\$840,267,458	\$840,267,458	FERC Form 1, Page 200, Line 22, Column c.
1. ADIT - Accelerated Amort. Property (Acctg. 281)	\$0	\$0	\$0	\$0	\$0	FERC Form 1, Page 273, Line 8, Column k.
2. ADIT - Other Property (Acctg. 282)	\$227,752,649	\$227,752,649	\$227,752,649	\$227,752,649	\$227,752,649	FERC Form 1, Page 275, Line 2, Column k.
3. ADIT - Other (Acctg. 283)	\$31,279,406	\$31,279,406	\$31,279,406	\$31,279,406	\$31,279,406	FERC Form 1, Page 277, Line 9, Column k.
L. Taxes Other Than Income Taxes (Acctg. 408.1)	\$15,842,108	\$15,842,108	\$15,842,108	\$15,842,108	\$15,842,108	FERC Form 1, Page 115, Line 14, Column g.
M. Income Taxes - Federal (Acctg. 409.1)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	(\$8,317,550)	FERC Form 1, Page 115, Line 15, Column g.
N. Income Taxes - Other (Acctg. 409.1)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	(\$2,533,237)	FERC Form 1, Page 115, Line 16, Column g.
O. Prov. for Deferred Inc. Taxes (Acctg 410.1)	\$47,582,356	\$47,582,356	\$47,582,356	\$47,582,356	\$47,582,356	FERC Form 1, Page 115, Line 17, Column g.
P. (Less) Prov. for Def. Inc. Taxes - Cr. (Acctg 411.1)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	(\$30,003,029)	FERC Form 1, Page 115, Line 18, Column g.
Q. Investment Tax Credit Adj. - Net (Acctg 411.4)	(\$428)	(\$428)	(\$428)	(\$428)	(\$428)	FERC Form 1, Page 115, Line 19, Column g.
R. Accumulated Deferred Inc. Taxes (Acct 190, 281, 282, 283)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	(\$264,506,468)	Deferred Tax Calculation Worksheet
1. ADIT for Poles (Acct 364)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	(\$9,204,825)	Deferred Tax Calculation Worksheet
2. ADIT for Overhead Conductor (Acct 365)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	(\$18,779,959)	Deferred Tax Calculation Worksheet
3. ADIT for Services (Acct 369)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	(\$2,750,867)	Deferred Tax Calculation Worksheet
S. Rate of Return	7.53%	7.53%	7.53%	7.53%	7.53%	Proposed in KYPS Case No. 2022-00372
T. Space Occupied (feet)	1.00	1.00	1.00	1.00	1.00	Administrative Case No. 251
U. Usable Space (feet) - Two Users				9.52	9.52	Administrative Case No. 251
V. Usable Space (feet) - Three Users				13.87	13.87	Administrative Case No. 251
W. Pole Height (feet) - Two Users				38.85	38.85	Admin. 251, adj, per Kravtin DR 02-022 Worksheet
X. Pole Height (feet) - Three Users				43.2	43.2	Admin. 251, adj, per Kravtin DR 02-022 Worksheet

Kraytin Worksheet based on Duke Response to KBCA 02-005

Duke Energy Kentucky

Quantity of poles noted as "Non-Unitized/Estimated Retirements" included in KBCA-DR-01-011 as of Qty Excluded 2,464

	2020*	Quantity	2021*	% "Finalized"	Quantity Excluded	Total Quantity
Pole: Wood, 35'	6,509	75	6,584	0.08	203	6,787
Pole: Wood, 40'	16,456	251	16,707	0.28	679	17,386
Pole: Wood, 45'	10,351	585	10,936	0.64	1,582	12,518
		911	34,227	1.00	2,464	36,691

* per response to KBCA-DR-01-004 Attachment

35 - 40			23,291			24,173
40-45			27,643			29,904

EXHIBIT 8

Duke Energy Kentucky
Case No. 2022-00372
KBCA's Second Set Data Requests
Date Received: February 17, 2023

KBCA-DR-02-002

REQUEST:

Please refer to KBCA-DR-01-004_Attachment.xlsx. For the various pole categories identified in this attachment, please identify the categories on which third party pole attachments are currently attached, and provide a breakdown of the number of third party attachments on each for the year ending 2021.

RESPONSE:

See the table below for the third-party pole attachments currently attached to poles for the year ending 2021.

2021	Description	Quantity	%
	Pole: steel, all sizes	-	0%
	Pole: Wood, 30' or less	2,192	3%
	Pole: Wood, 35'	8,606	12%
	Pole: Wood, 40'	28,669	39%
	Pole: Wood, 45'	23,245	31%
	Pole: Wood, 50'	7,164	10%
	Pole: Wood, 55'	2,574	3%
	Pole: Wood, 60'	993	1%
	Pole: Wood, 65'	282	0%
	Pole: Wood, 70'	142	0%
	Pole: Wood, 75'	35	0%
	Pole: Wood, 80'	16	0%
	Pole: Wood, 85'	3	0%
	Pole: Wood, 90'	-	0%
	Pole: Wood, 95'	-	0%
	Unknown	886	
		73,921	1.00

Source:
KBCA-DR-02-002

2021	Description	Quantity	%
	Pole: Wood, 30' or less	2,192	3.0%
	Pole: Wood, 35'	8,606	11.6%
	Pole: Wood, 40'	28,669	38.8%
	Pole: Wood, 45'	23,245	31.4%
	Pole: Wood, 50'	7,164	9.7%
	Pole: Wood, 55'	2,574	3.5%
	Pole: Wood, 60'	993	1.3%
	Pole: Wood, 65'	282	0.4%
	Pole: Wood, 70'	142	0.2%
	Pole: Wood, 75'	35	0.05%
	Pole: Wood, 80'	16	0.02%
	Pole: Wood, 85'	3	0.004%
		73,921	1.00

Source:
KBCA-DR-02-002

2021	Description - 3 User Poles	Quantity	% Atts.	Pole Ht	Wtd by %Atts
	Pole: Wood, 40'	28,669	49%	40	19.4
	Pole: Wood, 45'	23,245	39%	45	17.7
	Pole: Wood, 50'	7,164	12%	50	6.1
	Total	59,078	100%		43.2

2021	Description - 2 User Poles	Qty of Atts.	% Atts	Pole Ht	Wtd by % Atts
	Pole: Wood, 35'	8,606	23.1%	35	8.1
	Pole: Wood, 40'	28,669	76.9%	40	30.8
	Total	37,275	100%		38.85

Source:

KBCA-DR-02-002

Case No. 2022-00372

Duke Energy Kentucky

Allocation of Accumulated Deferred Tax Balances (Acct. 190)

To Plant Accounts 364, 365 and 369

Twelve Months Ended December 31, 2021

Poles

	Allocated ADIT Amounts	FERC Form No. 1 Source
	(\$)	
Accumulated Deferred Taxes (Acct. 190)	\$53,751,239	Pg 234, line 8, column c
ADIT - Accelerated Amort. Property (Acctg. 281)	\$0	Pg 272, Line 8, Column k.
ADIT - Other Property (Acctg. 282)	(\$227,752,649)	Pg 274, Line 2, Column k.
ADIT - Other (Acctg. 283)	(31,279,406)	Pg 276, Line 9, Column k.
ADIT - Tax Reform Act (Acctg. 254)	(59,225,652)	Attachment H-22A of Rate Case (Protected + Unprotected)
Accumulated Deferred Taxes for Electric	<u>(\$264,506,468)</u>	

	(\$)	% of Total	(\$)	
Electric Plant in Service				
Total Plant	<u>\$2,141,261,295</u>	100.00%		Pg 207, line 104, column g
Poles (Acct. 364)	\$74,482,036	3.48%	(\$9,204,825)	FERC Form 1, Page 207, Line 64, Column g
Overhead Conductor (Acct. 365)	\$152,067,838	7.10%	(18,779,959)	FERC Form 1, Page 207, Line 65, Column g.
Services (Acct. 369)	\$22,230,247	1.04%	<u>(2,750,867)</u>	FERC Form 1, Page 207, Line 69, Column g.
Total Accts 364, 365 and 369			<u>(\$30,735,651)</u>	

Source: Duke Energy Kentucky 2021 FERC Form No. 1