

VERIZON PENNSYLVANIA LLC
AND VERIZON NORTH LLC
STATEMENT NO. 3.0

VERIZON PENNSYLVANIA LLC AND
VERIZON NORTH LLC

V.

METROPOLITAN EDISON COMPANY,
PENNSYLVANIA ELECTRIC COMPANY
AND PENN POWER COMPANY

DOCKET NO. C-2020-3019347

VERIZON PENNSYLVANIA LLC
AND VERIZON NORTH LLC

STATEMENT NO. 3.0
(DIRECT TESTIMONY)

WITNESS: Timothy J. Tardiff

DATED: April 21, 2020

PUBLIC VERSION

1 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

2 A. My name is Timothy J. Tardiff. I am a Principal at Advanced Analytical Consulting
3 Group, Inc. My business address is 112 Water Street, Boston, MA 02109.

4 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
5 **BACKGROUND.**

6 A. I received a B.S. degree from the California Institute of Technology in mathematics (with
7 honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in
8 1974. I have specialized in telecommunications policy issues for over 35 years. My
9 research has included the theoretical and applied aspects of methodologies used to
10 establish regulated rates for, among other things, pole attachments and services identified
11 in the Telecommunications Act of 1996; studies of the demand for telephone services,
12 such as local measured service and toll; analysis of the market potential for new
13 telecommunications products and services; assessment of the growing competition for
14 telecommunications services; and evaluation of regulatory frameworks consistent with
15 the growing competitive trends. I have published articles in the regulatory economics
16 literature, which in recent years have focused on policies for the increasingly competitive
17 telecommunications industry. My educational and professional background is more fully
18 described in Exhibit TJT-2.

19 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA**
20 **PUBLIC UTILITY COMMISSION OR OTHER STATE REGULATORY**
21 **AGENCIES?**

22 A. Yes. I have participated in numerous legal and regulatory proceedings on issues of
23 telecommunications economics and regulation. Since the passage of the
24 Telecommunications Act of 1996, I have performed analyses, filed declarations and

1 testimony, and/or appeared as a witness in pole attachment disputes, interconnection
2 arbitrations, unbundled network element proceedings, universal service investigations,
3 applications by incumbent local exchange carriers for authorization to provide
4 interLATA long-distance, and implementation of the Triennial Review Order rules for
5 unbundling network elements in over 25 states (including testimony in proceedings
6 before this Commission on economic costs for unbundled network elements and
7 universal service support) and before the Federal Communications Commission (“FCC”).
8 Most recently, I have participated in regulatory and legal proceedings related to
9 broadband competition issues, with primary emphasis on economic rates for pole
10 attachments. My prior testimony is more fully described in Exhibit TJT-2.

11 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?**

12 A. I am providing this testimony at the request of Verizon Pennsylvania LLC (“Verizon
13 PA”) and Verizon North LLC (“Verizon North”) (collectively, “Verizon”).

14 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

15 A. The purpose of my testimony is to provide my independent assessment of the pole
16 attachment rates that the Pennsylvania operating subsidiaries of FirstEnergy Corp. known
17 as Metropolitan Edison Company (“Met-Ed”), Pennsylvania Electric Company
18 (“Penelec”), and Pennsylvania Power Company (“Penn Power”) (collectively,
19 “FirstEnergy”) have charged Verizon, to detail the proper application of the FCC’s new
20 telecom rate formula, to explain the principle of competitive neutrality as it applies to the
21 determination of just and reasonable pole attachment rates, and to identify the just and
22 reasonable pole attachment rate for Verizon’s use of FirstEnergy’s poles.

1 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS CASE?**

2 A. Yes. In the prior phase of this case at the FCC, I executed a sworn Affidavit, with one
3 Exhibit, on November 19, 2019. My November 19, 2019 sworn Affidavit and Exhibit
4 were filed at the FCC as Exhibit C to Verizon's November 20, 2019 Pole Attachment
5 Complaint against FirstEnergy in FCC Proceeding No. 19-354, Bureau ID No. EB-19-
6 MD-008. My November 19, 2019 sworn Affidavit is attached to this direct testimony as
7 Exhibit TJT-1. The Exhibit filed at the FCC was my curriculum vitae as of November
8 19, 2019. I have omitted that Exhibit and attached instead an updated version of my
9 curriculum vitae as Exhibit TJT-2.

10 **Q. PLEASE DESCRIBE THE TESTIMONY YOU PROVIDE IN EXHIBIT TJT-1.**

11 A. I detail my conclusion that the pole attachment rental rates that FirstEnergy has charged
12 and continues to charge Verizon are unjust and unreasonable. I also explain my
13 conclusion that a proper application of the FCC's new telecom formula produces the just
14 and reasonable and competitively neutral rate for Verizon's attachments to FirstEnergy's
15 joint use poles consistent with Orders issued by the FCC in 2011 and 2018. I enumerate
16 flaws with FirstEnergy's unsupported and unfounded assertion that Verizon enjoys net
17 material benefits over its competitors that would justify a departure from the new telecom
18 rate.

19 In particular, the net pole attachment rental charges that FirstEnergy invoiced and
20 Verizon paid under the current agreements for 2018 [REDACTED] were more than [REDACTED]
21 percent as large as net payments produced by the just and reasonable rates that result
22 from proper application of the FCC's new telecom rate formulas (\$1.29 million).
23 FirstEnergy's substantial overcharge was not unique to the 2018 rental year, as

1 FirstEnergy overcharged Verizon by over [REDACTED], on average, each year from the
2 2011 effective date of the FCC's 2011 Order and Verizon's request for just and
3 reasonable rates in early 2012 through the 2018 rental year, which is the most recent
4 rental year invoiced by all three FirstEnergy companies. FirstEnergy's imposition and
5 continued charging of these rental rates in spite of the FCC's Orders reflects
6 FirstEnergy's exercise of the superior bargaining power it possesses as a result of its
7 owning about 73 percent of the joint use poles in the service territories at issue in this
8 matter.

9 **Q. DO YOU HAVE ANY CORRECTIONS TO MAKE TO EXHIBIT TJT-1?**

10 A. No.

11 **Q. DO YOU REAFFIRM AND ADOPT THE SWORN AFFIDAVIT ATTACHED AS**
12 **EXHIBIT TJT-1 AS YOUR DIRECT TESTIMONY IN THIS PHASE OF THE**
13 **PROCEEDING?**

14 A. Yes. Rather than repeating my November 19, 2019 sworn Affidavit, I adopt Exhibit TJT-
15 1 in its entirety as my direct testimony.

16 **Q. ARE YOU SPONSORING ANY OTHER EXHIBITS WITH YOUR DIRECT**
17 **TESTIMONY?**

18 A. Yes. Exhibit TJT-2 includes my curriculum vitae.

19 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

20 A. Yes, although I reserve the right to supplement my direct testimony should it become
21 necessary to do so.

Exhibit TJT-1
Redacted Public Version

Exhibit C

Before the
Federal Communications Commission
Washington, DC 20554

VERIZON PENNSYLVANIA LLC and)	
VERIZON NORTH LLC,)	
)	
Complainants,)	Docket No.
)	File No.
v.)	
)	
METROPOLITAN EDISON COMPANY,)	
PENNSYLVANIA ELECTRIC COMPANY, and)	
PENNSYLVANIA POWER COMPANY,)	
)	
Defendants.)	

AFFIDAVIT OF TIMOTHY J. TARDIFF, PH.D.

COMMONWEALTH OF MASSACHUSETTS)
) ss.
COUNTY OF SUFFOLK)

I, TIMOTHY J. TARDIFF, being sworn, depose and say:

I. Introduction

1. My name is Timothy J. Tardiff. My business address is 112 Water Street, Boston, MA 02109. I am a Principal at Advanced Analytical Consulting Group, Inc. I have specialized in telecommunications policy issues for over 35 years. I received a B.S. degree from the California Institute of Technology in mathematics (with honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in 1974. My research has included the theoretical and applied aspects of methodologies used to establish regulated rates for, among other things, pole attachments and services identified in the Telecommunications Act of 1996; studies of the demand for telephone services, such as local measured service and toll; analysis of the market potential for new telecommunications products and services; assessment of the growing competition for telecommunications services; and evaluation of regulatory frameworks consistent with the growing competitive trends. I have published

articles in the regulatory economics literature, which in recent years have focused on policies for the increasingly competitive telecommunications industry.

2. I have participated in numerous legal and regulatory proceedings on issues of telecommunications economics and regulation. Since the passage of the Telecommunications Act of 1996, I have performed analyses, filed declarations and testimony, and/or appeared as a witness in pole attachment disputes, interconnection arbitrations, unbundled network element proceedings, universal service investigations, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the Federal Communications Commission (“FCC”). Most recently, I have participated in regulatory and legal proceedings related to broadband competition issues. In particular, I have advised telecommunications clients, filed economic analyses, and written articles on topics such as (1) rates for the use of network infrastructure such as utility poles to facilitate the efficient provision of broadband services, (2) rates for the exchange of traffic between landline carriers that avoid uneconomic arbitrage opportunities and encourage efficient investment in telecommunications networks, and (3) development of an analytical framework for determining whether incumbents’ high capacity (e.g., special access and broadband Internet access) services face enough competition to justify relaxed regulation or effective deregulation.
3. Between 2013 and 2016, I filed affidavits in support of pole attachment complaints filed by Verizon Florida LLC against Florida Power and Light Company (File No. EB-15-MD-006, Docket No. 15-190) and by Verizon Virginia LLC and Verizon South Inc. against Virginia Electric and Power Company d/b/a Dominion Virginia Power (File No. EB-15-MD-002, Docket No. 15-73), as well as in support of pole attachment complaints filed by subsidiaries of Frontier Communications Corporation against subsidiaries of Duke Energy Corporation (File Nos. EB-13-MD-007, EB-14-MD-001, and EB-14-MD-002, Docket Nos. 14-213, 14-214, 14-215), UGI Utilities, Inc.—Electric Division (File No. EB-14-MD-007, Docket No. 14-217), and subsidiaries of FirstEnergy Corporation (File No. EB-14-MD-008, Docket No. 14-218). I am also filing an affidavit today in support of a related pole attachment complaint filed by Verizon Maryland LLC against the Maryland subsidiary of the FirstEnergy Corporation: Potomac Edison Company.

4. My international research and consulting experience includes studies and expert reports on telecommunication competition and interconnection issues in Canada, Japan, New Zealand, Peru, Thailand, Australia, the Commonwealth of the Northern Mariana Islands, and Trinidad and Tobago. I attach a copy of my full resume as Exhibit T-1.
5. The purpose of this affidavit is to detail my conclusion that the pole attachment rental rates that Metropolitan Edison Company (“Met-Ed”), Pennsylvania Electric Company (“Penelec”), and Pennsylvania Power Company (“Penn Power”) (collectively, “FirstEnergy”) have charged and continue to charge Verizon Pennsylvania and Verizon North (collectively, “Verizon”) are unjust and unreasonable. I also explain my conclusion that a proper application of the FCC’s new telecom formula produces the just and reasonable and competitively neutral rate for Verizon’s attachments to FirstEnergy’s joint use poles consistent with the FCC’s 2011 and 2018 Orders.¹ I enumerate flaws with FirstEnergy’s unsupported and unfounded assertion that Verizon enjoys net material benefits over its competitors that would justify a departure from the new telecom rate.²
6. In particular, the net pole attachment rental charges that FirstEnergy invoiced and Verizon paid under the current agreements for 2018 [REDACTED] were more than [REDACTED] percent as large as net payments produced by the just and reasonable rates that result from proper application of the FCC’s new telecom rate formulas (\$1.29 million). FirstEnergy’s substantial overcharge was not unique to the 2018 rental year, as FirstEnergy overcharged Verizon by over [REDACTED], on average, each year from the 2011 effective date of the FCC’s 2011 Order and Verizon’s request for just and reasonable rates in early 2012 through the 2018 rental year, which is the most recent rental year invoiced by all three FirstEnergy companies.³ FirstEnergy’s imposition and continued charging of these rental rates in spite of the FCC’s Orders reflects FirstEnergy’s exercise of the superior bargaining power it

¹ *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment; Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket Nos. 17-84 and 17-79, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705 (“2018 Order”); *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, WC Docket No. 07-245; GN Docket No. 09-51, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240, ¶ 217 (“2011 Report and Order”).

² See Email from David J. Karafa to Brian Trospen, June 7, 2018.

³ See Affidavit of M. Calnon ¶¶ 28-29.

possesses as a result of its owning about 73 percent of the joint use poles in the service territories at issue in this matter.

II. Economic Background

7. The FCC's 2018 Order updated the Commission's approach to ensuring that incumbent local exchange carriers ("ILECs") are charged just and reasonable rates for use of poles owned by investor-owned electric utilities. The Commission explained that the policy it adopted in 2011 that "similarly situated attachers should pay similar pole attachment rates for comparable access" had not achieved its intended goal because "electric utilities continue to charge [ILECs] pole attachment rates significantly higher than the rates charged to similarly situated telecommunications providers."⁴
8. In its 2011 Report and Order, the Commission sought to enforce the right of ILECs to just and reasonable rates by providing guidance and establishing reference points for evaluating the rates charged to ILECs. Under the approach adopted in 2011, the FCC stated that if the terms and conditions in a new joint use agreement are materially comparable to corresponding terms and conditions in a third-party license agreement, the just and reasonable rate would be the same as the cable rate or new telecom rate that applies to the comparable cable or telecommunications provider.⁵ If the terms and conditions of the new joint use agreement instead materially advantage the ILEC (*relative to third party attachers*), the pre-existing (or old) telecom rate served as an upper bound reference point for the just and reasonable rate.⁶ For existing joint use agreements, the Commission would also consider whether the rates were negotiated by parties with relatively equal bargaining power (with relative pole ownership being a key indicator) and whether the ILEC generally lacked the ability to terminate the rates and achieve new, just and reasonable rates through negotiations. In applying this framework to an existing joint use agreement that the electric utility claimed

⁴ 2018 Order, ¶ 123.

⁵ 2011 Report and Order, ¶ 217.

⁶ For areas that are urbanized within the Commission's rules, which I understand includes the service areas of each FirstEnergy defendant, the FCC intended the pre-existing telecom rate to be approximately 50 percent higher than the new telecom rate. In particular, for urbanized areas, the new telecom rate formula includes a 0.66 cost allocator that leads to a new telecom rate that is 0.66 times the pre-existing telecom rate. 47 C.F.R. § 1.1406(d)(2). Therefore, the pre-existing telecom rate is $(1/0.66 = 1.52) \times$ the new telecom rate.

had terms that were competitively advantageous to the ILEC, the Enforcement Bureau requested a quantification of the net monetary value of those terms before it would set the just and reasonable and competitively neutral rate to be charged the ILEC.⁷

9. The Commission anticipated that electric utilities would negotiate just and reasonable rates using the guidance provided by the 2011 Report and Order. Instead, the Commission received evidence that electric utilities had failed to do so.⁸ As a result, in the 2018 Order, the Commission (1) established the new telecom rate as the presumptive just and reasonable rate for “new and newly renewed” agreements, unless the electric utility can establish by clear and convincing evidence that the agreement provides net material advantages to the ILEC relative to third party attachers, and (2) determined that, if the electric utility can meet this standard, the pre-existing telecom rate is a hard cap on the rate that may be charged the ILEC, instead of a reference point.⁹ Accordingly, proper calculation of the new and pre-existing (old) telecom rates is of great importance as the new telecom rate presumptively applies and the electric utility cannot lawfully charge more than the pre-existing telecom rate for new and newly renewed agreements.¹⁰

⁷ *Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent*, Docket No. 14-216, File No. EB-14-MD-003, Memorandum Opinion and Order, 30 FCC Rcd 1140, ¶¶ 23 and 26.

⁸ 2018 Order, ¶ 123 and note 459.

⁹ 2018 Order, ¶¶ 126-129.

¹⁰ 2018 Order, ¶ 127. Note 475 defines “new or newly renewed” agreement as “one entered into, renewed, or in evergreen status after the effective date of this Order, and renewal includes agreements that are automatically renewed, extended, or placed in evergreen status.” This definition appropriately captures agreements that predate the 2018 Order because, as an economic matter, there is little if any distinction between a disputed rate in a newly executed agreement and the insistence by an electric utility that an ILEC continue to pay disputed rates under an existing agreement that has been in effect for a number of years. Under a principle of competitive neutrality, evaluation of the reasonableness or unreasonableness of the rate does not change based on the age of the terms and conditions to which it is attached, but on whether those terms and conditions provide an advantage relative to those in actual license agreements between the electric utility and the ILEC’s competitors. Had the FCC excluded existing agreements from the standard set forth in the 2018 Order (or the 2011 Report and Order), it would have created improper incentives for an electric utility with superior bargaining power, as it would be advantaged by refusing to agree to a new agreement, and by otherwise inhibiting, complicating, and/or lengthening the duration of the negotiation process. This, in turn, would perpetuate outdated agreements and rate disparities, in contravention of the Commission’s stated objective.

III. Calculating Just and Reasonable Rates

10. Under the 2018 Order, the threshold question is whether the electric utility charges an ILEC a rate higher than the presumptively reasonable new telecom rate. The FCC’s new telecom rate formula boils down to the following common-sense propositions: (1) determine how much it costs a pole owner to provide space on its poles for itself and other attaching entities each year and (2) assign a portion of that total cost to each attaching entity. The FCC designed the new telecom formula so that, with default inputs, it produces a pole attachment rate for a telecommunications provider that recovers virtually the same percentage (7.4 percent) of the annual pole cost that the cable rate recovers.¹¹

A. Annual Pole Costs

11. The total annual pole costs included in the new telecom rate calculation are analogous to the costs that an office building owner would need to charge individual tenants—including itself if the owner occupied space in the building—so that the total rent (including the building owner’s rent) would recover the annual investment in the building (*e.g.*, cover the owner’s cost of investing in the purchase and improvement of the building)¹² plus any associated annual “out-of-pocket” operating and maintenance costs.¹³ To achieve this result, the annual pole costs included in the new telecom rate calculation: (1) calculate the net investment per pole for the pole owner’s stock of poles and (2) multiply the net investment per pole by an

¹¹ Specifically, annual pole cost is defined in 47 C.F.R. § 1.1406(d) as the net cost of a bare pole times the carrying charge rate times a cost allocator designed to rationalize rates across geographic areas. The cost allocator produces a rate virtually the same as the cable rate, which with default inputs equals 7.4 percent of the net cost of a bare pole times the carrying charge rate.

¹² In this stylized example, the cost of investing in the purchase and improvement of a building is analogous to the recovery of depreciation and cost of capital in a regulated rate.

¹³ The FCC’s carrying charge rate is the sum of five specific components: (1) administrative, (2) maintenance, (3) depreciation, (4) taxes, and (5) rate of return. *Implementation of Section 703(e) of the Telecommunications Act of 1996*, CS Docket No. 97-98; CS Docket No. 97-151, Consolidated Order on Reconsideration, 16 FCC Rcd 12103 (2001), Appendices E-1 and E-2 (“Reconsideration Order”), available at <https://www.fcc.gov/edocs/search-results?t=quick&dockets=97-98>. The first two components are analogous to “out-of-pocket” expenses and the last three recover the owner’s investment in pole facilities.

annual charge factor (carrying charge factor).¹⁴ A cost allocator is then applied based on the average number of attaching entities on the pole owner's poles.¹⁵

12. The FCC has identified the calculations and inputs needed to calculate net investment per pole, the annual charge factor, and the cost allocator.¹⁶ Most of the specific inputs are directly available from FERC Form 1 accounts for calculating rates for use of poles owned by electric utilities and ARMIS accounts for calculating rates for use of poles owned by ILECs. In addition, three categories of inputs for electric utilities require reasonable allocations from accounts that include assets other than utility poles. These are (1) accumulated depreciation for poles, which requires an allocation of an accumulated depreciation account that includes all distribution facilities, of which distribution poles are one of nine specific categories, (2) deferred taxes, which are reported for all electric facilities in the FERC 1 data, and (3) maintenance expense, for which distribution poles are one of three categories for which maintenance of overhead lines is reported.

13. I reviewed the new telecom rate calculations that Verizon performed for poles owned by FirstEnergy,¹⁷ and they reasonably assign the amounts in the broader categories as follows:

Accumulated Depreciation. The proportion of the accumulated depreciation for distribution assigned to poles equals the ratio of gross investment (plant in service) for poles to the gross investment for distribution facilities. Both gross investment amounts are available in FERC Form 1.

¹⁴ There are two possible cases where only “out-of-pocket” costs would be included in calculating new telecom rates. First, when maintenance costs exceed a certain percentage of total annual pole costs (*e.g.*, 66 percent in urbanized areas and 44 percent in non-urbanized areas), the new telecom rate is based only on administrative and maintenance expenses. *See* 47 C.F.R. § 1.1406(d)(ii). Second, in a 2017 Order, the FCC amended its rules to exclude capital costs in calculating pole attachment rates if they are otherwise recovered in non-recurring charges, such as make-ready fees. *See Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 36 FCC Rcd 11128, ¶¶ 7-8. The Order added the following language to the end of 47 C.F.R. § 1.1406(b): “The Commission shall exclude from actual capital costs those reimbursements received by the utility from cable operators and telecommunications carriers for non-recurring costs.”

¹⁵ 47 C.F.R. § 1.1406(d)(2)(i).

¹⁶ Reconsideration Order, Appendices E-1 and E-2 and 47 C.F.R. § 1.1406(d)(2)(i).

¹⁷ Affidavit of M. Calnon, Exhibits C-1 to C-3.

Deferred Taxes. The proportion of the deferred taxes for all electric facilities assigned to poles equals the ratio of gross investment minus accumulated depreciation (from the previous step) for poles to gross investment for electric facilities minus the corresponding accumulated depreciation for all electric facilities. The gross investment and accumulated depreciation amounts for electric facilities are available in FERC Form 1.¹⁸

Maintenance Expense. The proportion of overhead line maintenance expenses assigned to poles equals the ratio of net investment for poles to net investment for overhead lines, where net investment equals gross investment minus accumulated depreciation minus deferred taxes. The gross investment amounts for overhead lines are available in FERC Form 1. For the accumulated depreciation amounts for overhead lines, the proportion of the distribution accumulated depreciation assigned to overhead lines equals the ratio of gross investment for overhead lines (Accounts 364, 365, and 369) to the gross investment for distribution facilities. Both gross investment amounts are available in FERC Form 1. The amount of the deferred taxes assigned to overhead line accounts equals the ratio of gross investment minus accumulated depreciation for overhead lines to gross investment for electric facilities minus the corresponding accumulated depreciation for all electric facilities.

Rate of Return and Other Inputs. In addition to the allocations of broader accounts, application of the FCC formulas also require (1) the count of distribution poles owned by the electric utility, which is not reported in FERC Form 1 data, but which is typically available from the electric utility and (2) the rate of return. The proper rate of return is the weighted cost of debt and equity, which has traditionally been based on the most recent rate of return authorized by a state regulatory body.¹⁹ When such information is publicly available and recent, its use in rate calculations is generally uncontroversial and economically sound. However, in certain cases, publicly available authorized rates of

¹⁸ The assignment of total deferred tax amounts based on net investment is equivalent to how states that do not include deferred taxes in the rate base, e.g., Florida, adjust the rate of return. In particular, the rate of return in such states is reduced by the ratio of what the rate base would have been had the deferred tax reserve been included to the rate base without the deferred tax reserve.

¹⁹ *Amendment of Rules and Policies Governing Pole Attachments*, CS Docket No. 97-98, Report and Order, 15 FCC Rcd 6453, ¶ 74 (2000).

return may have been established at a time when the costs of debt and/or equity—the components of the rate of return—depart from their actual economic costs at a later date. For example, I understand [REDACTED] [REDACTED] Penn Power used a 1988 rate of return of 11.14.²⁰ But between 1988 and a 2016 proceeding that resulted in a settlement, Penn Power reported its cost of debt had decreased from 10.15 percent to 5.88 percent and Penn Power decreased the cost of equity it requested from 14.75 percent to 11.50 percent.²¹ If the 1988 rate of return were updated with Penn Power’s more current costs of debt and equity (and no other components were changed), the adjusted rate of return would be 7.86 percent.²² This result is very close to the average of the rate of return of 8.70 percent that Penn Power requested in the 2016 proceeding²³ and Commission Staff’s recommended rate of return of 7.07 percent in the 2016 proceeding²⁴—an average rate of return of 7.89 percent. This illustration shows that Verizon’s use of the outdated 11.14 percent rate of return to calculate pole attachment rates for Verizon’s use of Penn Power’s poles based on 2010 to 2013 FERC data (2011 to 2014 rate years) was conservative, and that Verizon’s reliance on publicly available information to calculate a rate of return of 8.01 percent to calculate pole attachment rates based on 2014 and 2015 FERC data and a rate of return of 7.72 percent to calculate pole attachment rates based on 2016 and 2017 FERC data is reasonable.

²⁰ Pennsylvania Public Utility Commission, Opinion and Order in Case No. R-87073, May 3, 1988, p. 65.

²¹ Direct Testimony of Rachel Maurer (Commission Staff), Case Nos. R-2016-2537349, R-2016-2537352, R-2016-2537355, R-2016-2537359, pp. 6-7 and 1988 Pennsylvania Opinion and Order in Case No. R-87073, p. 58.

²² In the 1988 Pennsylvania Opinion and Order, debt was 48.4 percent and common equity 37.4 percent of the capital structure. Therefore, a 4.27 percentage point reduction in the cost of debt (from 10.15 percent to 5.88 percent) and a 3.25 percentage point reduction in the cost of equity (from 14.75 percent to 11.5 percent) would lower the rate of return by 4.27 percentage points x 0.484 + 3.5 percentage points x 0.374, which equals 3.28 percentage points.

²³ Direct Testimony of Rachel Maurer (Commission Staff), Case Nos. R-2016-2537349, R-2016-2537352, R-2016-2537355, R-2016-2537359, pp. 6-7.

²⁴ Surrebuttal Testimony of Rachel Maurer (Commission Staff), Case Nos. R-2016-2537349, R-2016-2537352, R-2016-2537355, R-2016-2537359, p. 2.

B. Share of Annual Pole Costs Charged to Attaching Entities (Space Factor)

14. The FCC’s new telecom rate formula assigns annual pole costs as follows:²⁵

$$\text{Space Factor} = \frac{\text{Space Occupied} + \frac{2}{3} \frac{\text{Unusable Space}}{\text{Average Number of Attachers}}}{\text{Pole Height}}$$

Accordingly, the inputs needed to calculate the space factor are (1) the average amount of space occupied by an attacher, (2) the average height of the utility poles, (3) the average amount of total space that cannot be used for attachments (unusable space), and (4) the average number of entities (including the pole owner) attached to the poles. The FCC’s rules include presumptions for these inputs, which are: (1) one foot occupied by a telecommunications attacher, (2) 37.5-foot average pole height, (3) 24 feet of unusable space, and (4) five attaching entities if any part of the utility’s service area in the state is urbanized. Using these presumptions, the space factor is 0.1120, or 11.2 percent.²⁶ Verizon correctly used this value when calculating new telecom rates for use of FirstEnergy’s poles.

IV. FirstEnergy’s Unjust and Unreasonable Rates

15. Describing the unreasonableness of the rates that FirstEnergy has charged and collected from Verizon is complicated by the fact that there are three rate provisions (and 10 joint use agreements) that FirstEnergy has relied upon to collect large annual net rental payments from Verizon for use of poles in Met-Ed’s, Penelec’s, and Penn Power’s service areas. Nonetheless, the “big picture” is summarized in the table below, which shows the parties’ disparate pole ownership numbers and their impact on the rental rates paid by Verizon. In particular, the table includes:

- (1) the disparate pole ownership shares of each of the parties at the operating company level as well as overall. First Energy’s pole ownership percentage ranges from a low of 66.7 percent (Penelec) to a high of 81.2 percent (Met-Ed) for an overall average of 73.1 percent. That is, FirstEnergy owns about three times the number of joint use poles as does Verizon.

²⁵ 47 C.F.R. § 1.1406(d)(2)(i).

²⁶ Reconsideration Order, ¶¶ 47-48.

- (2) the net annual rental payment Verizon made to FirstEnergy, which totaled [REDACTED] [REDACTED] for the 2018 rental year.
- (3) the “net payment per net pole” that Verizon’s net rental payments to FirstEnergy reflect for the 2018 rental year. I calculated this “net payment per net pole” by dividing Verizon’s net rental payment by the number of FirstEnergy poles used by Verizon less the number of Verizon poles used by FirstEnergy. I performed this calculation in order to provide a basis for comparing rental rates across the FirstEnergy companies, which have different rate formulas. In particular, for the 2018 rental year (1) Met-Ed charged Verizon [REDACTED] for each pole reflecting the difference between 45 percent of total poles²⁷ and the 18.8 percent of total poles owned by Verizon, with no corresponding rate for Met-Ed’s use of Verizon’s poles; (2) Penelec charged Verizon [REDACTED] per pole for use of Penelec’s poles, but paid a lower [REDACTED] per pole rate for use of Verizon’s poles even though Penelec occupies far more space than Verizon on joint use poles;²⁸ and (3) Penn Power charged Verizon per pole rates that are disproportionately high relative to the rates it paid for use of far more space on Verizon’s poles.²⁹

²⁷ See, for example, Verizon Pennsylvania Inc. and FirstEnergy – Met-Ed, Memorandum of Understanding for Agreements # 11011 and 11002, June 1, 2009, Item I. for the formula for net payment, based on the difference between Verizon’s actual share of joint use poles and 45 percent of total joint use poles.

²⁸ For example, a 1988 agreement between Penelec and Continental Telephone Company assigns 8 2/3 feet of space to Penelec (not including the safety space) and 3 feet to Verizon, even though Verizon does not require that amount of space. See Affidavit of S. Mills ¶ 64. Therefore, Verizon pays about [REDACTED] times as much per foot of assigned space as Penelec pays [REDACTED]). As the Enforcement Bureau’s Order in the dispute between Verizon and Dominion Virginia Power observed, this type of discrepancy is an indication of the electric utility’s superior bargaining power and the unreasonableness of the rates charged Verizon. *Verizon Virginia, LLC and Verizon South, Inc., Complainant v. Virginia Electric and Power Company d/b/a Dominion Virginia Power, Respondent*, Proceeding No. 15-190, Bureau ID No. EB-15-MD-006, Order, 30 FCC Rcd 1140, ¶ 13 (“Dominion Order”) The ratio of Verizon’s per-foot rate to First Energy’s would be even higher than [REDACTED] if the safety space, which the FCC has a number of times explained is usable space that electric utilities in fact use, was added to FirstEnergy’s assigned space. See for example, *Amendments of Rules and Policies Governing Pole Attachments*, CS Docket No. 97-98, Report and Order, 15 FCC Rcd 6453, ¶¶ 20-22 (2000), which is a 2000 Report and Order that confirms the safety space determination made in FCC orders from the 1970s.

²⁹ For 2018, Verizon paid [REDACTED] per pole per year to attach to Penn Power’s poles, while Penn Power paid [REDACTED] per pole per year for attaching to Verizon’s poles. While the “net payment per net pole” calculation provides a common framework for comparing payments that result from disparate rates levels and structures, the calculation understates the unreasonableness of the rates that FirstEnergy charges Verizon because it treats FirstEnergy’s use of Verizon’s poles as equivalent to Verizon providing an in-kind payment for the same number of poles. FirstEnergy, however, uses far more space on a joint use pole than Verizon uses and the Commission anticipated that electric

(4) the percentage of annual pole cost accounted for by Verizon's net payments, based on the annual pole costs from Verizon's proposed rate calculations.³⁰

16. Table 1 presents the results of the calculations described above, with each column presenting the net payments Verizon made to each FirstEnergy operating company. While there is some variation across the three operating companies, the overall results are as follows: (1) 2018 rates produced net payments from Verizon to FirstEnergy [REDACTED] that are more than [REDACTED] times as high as net payments produced by just and reasonable and proportional new telecom rates; (2) FirstEnergy's annual overcharges have resulted from FirstEnergy's exercise of the superior bargaining power it has due to its ownership of about three joint use poles for every one joint use pole owned by Verizon, and (3) FirstEnergy has collected from Verizon a substantially larger percentage of FirstEnergy's pole cost ([REDACTED] percent)³¹ than is covered by the rates charged Verizon's competitors (7.4 percent)—a result that violates the Commission's competitive neutrality principle.

utilities would pay a proportional rate given their greater space requirements. 2011 Report and Order ¶ 218 and note 662.

³⁰ Affidavit of M. Calnon, Exhibits C-1 to C-3. In Table 1, annual pole cost equals the net cost of a bare pole times the carrying charge rate.

³¹ This [REDACTED] percent is the percentage of pole cost that Verizon pays for each pole in excess of the ones it pays for in-kind (i.e., by having FirstEnergy attachments on Verizon joint-use poles).

Table 1: 2018 Net Payments from Verizon to FirstEnergy

	I. 2018 Rates				
	Met-Ed	Penelec	Pem Power	Potomac	FirstEnergy
VZ on FE poles	129,421	146,859	25,574	79,434	301,854
FE on VZ poles	30,027	73,400	7,416	21,654	110,843
Total Joint Use Poles	159,448	220,259	32,990	101,088	412,697
FirstEnergy Ownership	81.2%	66.7%	77.5%	78.6%	73.1%
Net Payment	[REDACTED]				
Per Net Pole	[REDACTED]				
Pole Cost	[REDACTED]				
VZ cost share	[REDACTED]				
	II. New Telecom Rates (based on 2017 FERC and ARMIS Costs)				
	Met-Ed	Penelec	Pem Power	Potomac	FirstEnergy
VZ on FE Rate	\$12.20	\$10.49	\$11.18	\$6.07	
FE on VZ Rate	\$19.11	\$19.11	\$19.11	\$16.91	
Net Payment	\$1,005,120	\$137,877	\$144,198	\$115,995	\$1,287,195

17. As described in the previous paragraph, FirstEnergy’s 2018 net rental charges were more than [REDACTED] as large as the net payments produced by the just and reasonable rates that result from proper application of the FCC’s new telecom rate formulas. Table 1 further shows that FirstEnergy has overcharged Verizon at the operating company level as well,³² indicating exercise of superior bargaining power from owning at least two-thirds of joint use poles in each service territory.

18. For example, the top of Table 1 shows that Met-Ed charged Verizon a 2018 net rental amount of [REDACTED],³³ or [REDACTED] per net pole,³⁴ when Met-Ed’s annual pole cost was [REDACTED]. Therefore, Met-Ed recovered from Verizon about [REDACTED] percent of Met-Ed’s annual pole cost for 2018, which is about [REDACTED] times the 7.4 percent share of annual pole cost

³² For example, Met Ed’s 2018 net rental charges ([REDACTED]) were almost [REDACTED] as large as the net payments produced by the just and reasonable rates that result from proper application of the FCC’s new telecom rate formulas (\$1 million).

³³ [REDACTED].

³⁴ Net poles are the difference between FirstEnergy’s joint use poles and Verizon’s joint use poles, which equals 99,394, producing a per net pole amount of [REDACTED].

included in the FCC's new telecom and cable pole attachment rates.³⁵ In contrast, the bottom part of the table shows that the new telecom rates that Verizon calculated (\$12.20 per pole for Verizon's attachments to Met-Ed poles and \$19.11 per pole for Met-Ed's attachments to Verizon's poles) would produce net payments of \$1 million,³⁶ *i.e.*, Verizon's 2018 net payment to Met-Ed exceeded the net payment that just and reasonable rates produce by [REDACTED], which reflects the exercise of FirstEnergy's superior bargaining power from owning 81.2 percent of the joint use poles in the common territory that it shares with Verizon.

19. Table 1 shows that Penelec and Penn Power³⁷ have substantially overcharged Verizon as well. For example, the [REDACTED] percent of annual pole costs paid by Verizon to Penelec is [REDACTED] times the levels recovered by the FCC's new telecom and cable formulas.³⁸ The new telecom rates calculated by Verizon would reduce its 2018 net payment from [REDACTED] to about \$138 thousand.

20. In summary, Table 1 illustrates that similar to the FCC's concerns in its Dominion Order, (1) FirstEnergy's pole ownership share of about 73 percent—which is larger than Dominion's ownership share of 65 percent³⁹—is a source of FirstEnergy's

³⁵ With the FCC's default inputs, these rates are 7.4 percent of annual pole costs.

³⁶ The net payment of \$1,005,120 equals the number of FirstEnergy poles with Verizon attachments (129,421) x the corresponding rate (\$12.20 per pole) minus the number of Verizon poles with FirstEnergy attachments (30,027) x the corresponding rate (\$19.11 per pole).

³⁷ Verizon informs me that the parties have charged each other for 2019 for attaching to each other's joint use poles in the Penn Power service territory, resulting in a net payment of [REDACTED]. Affidavit of M. Calnon ¶ 28. This amount exceeds the net payment of \$166,475 produced by properly calculated proportional just and reasonable rates (\$11.80 for Verizon's attachments on Penn Power poles and \$18.28 for Penn Power's attachments on Verizon's poles) by [REDACTED]. Verizon has informed me that its FCC Reports 43-01, which provide inputs for the calculation of maximum rates Verizon can charge to other parties attaching to its poles, are based on generally accepted accounting principles (GAAP). Its FCC Reports 43-01 for previous years had been based on Part 32 Uniform System of Accounts (USOA) accounting. Accordingly, as specified in a 2017 FCC order, Verizon's proposed rates include an Implementation Rate Difference (IRD), which is subtracted from the rate that would be calculated by applying the FCC's pole attachment rate formulas to FCC Report 43-01 inputs based on GAAP accounting. The IRD is the difference in rates obtained by applying the pole attachment rate formulas to FCC Report 43-01 inputs based on GAAP and USOA accounting, respectively, for the last year in which an ILEC filed Forms 43-01 based on USOA accounting (the reports for 2017 for Verizon). 47 C.F.R. § 1.1406(e); *Comprehensive Review of the Part 32 Uniform Systems of Accounts*, WC Docket No. 14-130; *Jurisdictional Separations and Referral to the Federal-State Joint Board*, CC Docket No. 80-286, Report and Order, 32 FCC Rcd 1735, ¶ 36.

³⁸ This [REDACTED] percent ratio of net payment per pole to pole cost is the percentage of pole cost that Verizon pays for each pole in excess of the ones it pays for in-kind (*i.e.*, by having FirstEnergy attachments on Verizon joint-use poles).

³⁹ Dominion Order, ¶ 5.

enjoying superior bargaining power. Further, despite the fact that Verizon should have paid about \$1.29 million in net 2018 pole attachment rent at properly calculated proportional just and reasonable rates, FirstEnergy argues that Verizon’s net annual payment of [REDACTED] is “just and reasonable” and “entitled to deference by the FCC”—even though it is [REDACTED] higher than the net payment produced by proportional just and reasonable rates.⁴⁰

V. Comparative Advantages and Disadvantages in Agreement Terms

21. Under the 2018 Order, a rental rate higher than the new telecom rate for a “new or newly renewed” agreement requires clear and convincing evidence from the electric utility of net material benefits that advantage Verizon relative to the third-party attachers with which Verizon competes. Absent such evidence, the FCC’s long standing objective that pole attachment rates provide competitive neutrality would be undermined. FirstEnergy has not provided the required evidence. Instead, FirstEnergy has provided only a list of alleged advantages, with no attempt to quantify how much higher than the new telecom rate (if at all) a rate charged to Verizon would need to be to offset the purported advantages.⁴¹ Importantly, FirstEnergy has also not accounted for the significant costs that Verizon bears that its competitors do not.
22. The 2018 Order observed that “In the interest of promoting infrastructure deployment, the Commission adopted a policy in 2011 that similarly situated attachers should pay similar pole attachment rates for comparable access.”⁴² The FCC’s shifting of the burden of demonstrating and quantifying the value of alleged advantages to the electric provider and the establishment of a hard cap when such advantages have been demonstrated was

⁴⁰ See Email from Stephen F. Schafer to James Slavin, May 11, 2018 and Email from David J. Karafa to Brian Trosper, June 7, 2018. Lowering the rates that Verizon pays to the hard cap of the pre-existing telecom rate (approximately 50 percent higher than the new telecom rates Verizon calculated for use of FirstEnergy’s poles) and assigning FirstEnergy proportional pre-existing telecom rates for its use of Verizon’s poles would produce a net 2018 pole attachment rental payment of \$1.95 million, [REDACTED] lower than the [REDACTED] that FirstEnergy collected from Verizon.

⁴¹ Mr. Mills’ affidavit describes how the items offered by FirstEnergy either provide no advantages relative to third party attachers and/or are offset by reciprocal benefits that FirstEnergy receives from Verizon under the joint use agreements.

⁴² 2018 Order, ¶ 123.

motivated by the fact that the competitive neutrality objective established and explained in detail in the 2011 Report and Order has not been realized in practice.

23. The competitive neutrality objective articulated in the FCC's 2011 Report and Order was intended to create rate parity for all broadband providers by (1) revising the new telecom rate formula so that it produces a rate that approximates the rate resulting from the cable rate formula, (2) recognizing the statutory right of ILECs to just and reasonable rates, terms, and conditions to poles owned by investor-owned utilities, and (3) adopting a principle of competitive neutrality to define the rates that are just and reasonable for ILEC pole attachments. For example, in introducing the new telecom rate formula, the FCC observed that:⁴³

[T]he new formula will minimize the difference in rental rates paid for attachments that are used to provide voice, data, and video services, and thus will help remove market distortions that affect attachers' deployment decisions. Removing these barriers to telecommunications and cable deployment will enable consumers to benefit through increased competition, affordability, and availability of advanced communications services, including broadband. Increasing competitive neutrality also improves the ability of different providers to compete with each other on an equal footing, better enabling efficient competition.

24. Competitive neutrality was also the economic rationale for specifying that just and reasonable rates for new agreements between electric utilities and ILECs be at parity with third-party rates when other terms and conditions are comparable:⁴⁴

Where incumbent LECs are attaching to other utilities' poles on terms and conditions that are comparable to those that apply to a telecommunications carrier or a cable operator—which generally will be paying a rate equal or similar to the cable rate under our rules—competitive neutrality counsels in favor of affording incumbent LECs the same rate as the comparable provider (whether the telecommunications carrier or the cable operator).

⁴³ 2011 Report and Order, ¶ 126.

⁴⁴ 2011 Report and Order, ¶ 217.

25. Similarly, to the extent that the terms and conditions of a joint use agreement are on a net basis materially advantageous to the ILEC relative to its competitors, the FCC noted that: “Just as considerations of competitive neutrality counsel in favor of similar treatment of similarly situated providers, so too should differently situated providers be treated differently.”⁴⁵
26. The principle of competitive neutrality is particularly important in the context of pole attachments and broadband deployment. In the most general case, the principle of competitive neutrality (which is synonymous with competitive parity) amounts to the following proposition: when a particular input is essential (in this case pole attachments) for competition among providers of a downstream service (in this case broadband), then the prices charged for the essential input should neither favor nor disfavor particular providers of the downstream service (including the owner of the essential input if it competes for the downstream service).⁴⁶
27. A competitively neutral outcome is readily apparent when there are no net material differences between the terms and conditions of a pole attachment license agreement and a joint use agreement—namely, the same rental rate should be charged. When a provider does not enjoy a net material benefit as compared to its competitors, the total cost of providing broadband for each competitor is the sum of its cost of providing broadband on the facilities in its network plus the rental rates charged by the utility. Since the latter cost (the rental rate) must be the same under the FCC’s competitive neutrality principle, competition among broadband providers would be based on comparative network costs.

⁴⁵ 2011 Report and Order, ¶ 218.

⁴⁶ Kahn and Taylor describe the principal of competitive parity as follows:

[T]he purpose and effect of [the principles of competitive parity] are to ensure that the competition between the... supplier of the essential input and its actual or potential rivals is efficient. That is to say, rules framed in accordance with those principles should produce a distribution of responsibility for performing the contested function among the several rivals on the basis of their respective costs so as to minimize the total cost of supplying the contested service.

Kahn, A.E. and Taylor, W.E., “The Pricing of Inputs Sold to Competitors: A Comment,” *Yale Journal on Regulation*, Volume 11, 1994, p. 227.

28. In the event that an electric utility claims that a higher rate is justified because an ILEC enjoys net material benefits under a joint use agreement as compared to its competitors, there are several specific considerations in evaluating whether the alleged advantages justify charging the ILEC higher rental rates than third party attachers. A mere listing of purported advantages, with no quantification of how the advantages should flow to an annual rate differential, and ignoring the unique and substantial costs imposed on an ILEC, falls far short of “clear and convincing evidence” necessary to establish a net material advantage.⁴⁷

- *First*, since possible relative advantages would be incorporated as a difference in the annual joint use and third party rental rates, the proper measure of cost is the total *annually recurring* cost advantage divided by the number of ILEC attachments. In this regard, statements of putative total cost advantages over some unspecified duration are meaningless. In particular, many of the putative advantages asserted by FirstEnergy in this matter and by electric utilities in general have been one-time charges and/or costs associated with new attachments, e.g., engineering, application, inspection fees, and any necessary make-ready work. To the extent that any of these provided a relative advantage to Verizon (which is not apparent), the one-time cost would need to be converted into an *annually recurring* value that is divided by the number of poles on which Verizon pays the rental rate to determine how much value the advantage has relative to an annually recurring rental rate. Because the proffered one-time costs are themselves generally quite low, the annually recurring per-pole value associated with such alleged benefit can be vanishingly small.⁴⁸
- *Second*, some of the terms that FirstEnergy alleges to be competitively advantageous are actually reciprocal provisions that are offset by comparable benefits that Verizon (but not its competitors) provides to FirstEnergy. For example, in enumerating terms such as bonds, insurance, and indemnity provision,⁴⁹ FirstEnergy appears to have

⁴⁷ For example, in response to Verizon’s request “to monetize” any net material advantage, FirstEnergy provided a list of alleged “competitive advantages” and stated only that it was “willing to discuss” them. *See* Email from David J. Karafa to Brian Trosper, June 7, 2018.

⁴⁸ Affidavit of M. Calnon ¶ 34.

⁴⁹ Email from David J. Karafa to Brian Trosper, June 7, 2018.

ignored the fact that Verizon has paid “in-kind” by providing mutual terms to FirstEnergy.

- *Third*, for work for which FirstEnergy may charge a third party, Verizon is not competitively advantaged if it incurs the cost to perform that work itself. In this regard, the FCC’s Dominion Order observed: “Where Verizon performs a particular service itself and incurs costs comparable to its competitors in performing that service, we agree with Verizon that Dominion may not ‘embed in Verizon’s rental rate costs the Dominion does not incur.’”⁵⁰
- *Fourth*, some differences in agreement terms may have no (or even negative) value. For example, FirstEnergy lists the amount of space designated as communications space (but not reserved for Verizon’s exclusive use) in the joint use agreements as a benefit. The space designations established decades ago are not a benefit now, if they ever were. Verizon has explained that it uses the same types of facilities as its competitors today, and thus a comparable amount of space.⁵¹ Further, not only does Verizon not need the amounts of space indicated in the agreements, but Verizon’s competitors also attach in the space designated for Verizon.⁵² Insisting on terms that perpetuate outdated space allocations (and/or a cost-allocation formula that assumes occupancy of the unneeded space) is equivalent to a landlord requiring that a tenant pay for more space than it requires and then pocketing additional rents from another tenant occupying the unneeded space.
- *Fifth*, there can be minuses associated with differences in agreement terms that offset any alleged plus. For example, FirstEnergy claims that Verizon’s occupying the lowest portion of the communications space provides an easy access advantage.⁵³ If true (and it is not apparent that it is given the close proximity of communications attachments), offsetting any such advantage is the greater danger that Verizon’s

⁵⁰ Dominion Order, ¶ 23.

⁵¹ Affidavit of S. Mills ¶ 64.

⁵² *Ibid.*

⁵³ Email from David J. Karafa to Brian Trosper, June 7, 2018.

attachments are damaged, e.g., by oversized vehicles.⁵⁴ When (as Mr. Mills describes) the minuses are greater than any plus, the alleged advantage is a net disadvantage.

- *Sixth*, a difference in contractual “evergreen” provisions reflects a difference in statutory rights enjoyed by ILECs and third parties that is a competitive disadvantage for ILECs. In particular, since 1996, third party attachers (but not ILECs) have had a statutory right to access. As the FCC has previously explained, voluntary access is a unique *disadvantage* that an ILEC faces in deploying and upgrading its network. After the Commission implemented the statutory right of access for third parties specified in the 1996 Telecommunications Act, an electric utility tried to substantially increase rates to cable companies that had previously attached pursuant to voluntarily-entered agreements on the grounds that statutorily guaranteed access was more valuable than voluntarily granted access. The FCC rejected the attempt, but only because it found that such an increase would be an exercise of monopoly power over an essential facility.⁵⁵

In light of the statutory right of access, evergreen provisions (which specify that existing attachments can remain on joint use poles at the rates in effect at the termination of an agreement)⁵⁶ would have little to no value to third parties, since they already have a right to be on poles. With respect to ILECs such as Verizon, evergreen provisions have been used to perpetuate the imbalance in rental payments and are an important contributor to Verizon’s inability to terminate existing rental rate provisions and secure new just and reasonable rates.

- *Finally*, ILECs and third parties have attached to electric utility poles for decades. Accordingly, hypothetical costs that the electric utility would incur in providing attachments to ILECs and third parties, relative to what it would incur if only its attachments were on its poles are completely irrelevant to determining competitive


⁵⁴ Affidavit of S. Mills ¶¶ 66-68.

⁵⁵ *Alabama Cable Telecomms. Assocs. v. Alabama Power Co.*, 16 FCC Rcd 12209, ¶¶ 1 and 55 (2001).

⁵⁶ Email from David J. Karafa to Brian Trosper, June 7, 2018.

parity. A rate would favor the ILEC only if the net (real world) costs incurred in providing pole attachments to ILECs were less than the costs for providing attachments to third parties.⁵⁷ FirstEnergy's listing and cursory discussion of allegedly advantageous terms and conditions does not establish that Verizon would receive any competitive advantage (much less a net material advantage) were it to pay the same new telecom rate as its competitors.

⁵⁷ For example, Florida Power and Light's June 29, 2015 Response to Verizon's Complaint, (Proceeding 15-73, p. iii), Alabama Power's Answer to AT&T's June 21, 2019 Complaint (Proceeding 19-119, p. 1), and Florida Power and Light's Brief in Support of its Answer to AT&T's September 16, 2019 Complaint (Proceeding 19-187, p. 25) claim that its poles are taller than they otherwise would be to accommodate joint use, resulting in the ILEC paying lower make-ready costs. When third parties attach to these joint use poles, they also benefit to a similar extent. Further, because third parties have also been attaching to poles for more than a half century, electric utilities have installed taller poles to accommodate third-party attachments, even when there are no ILEC attachments. Indeed, Florida's investor-owned utilities in a 2008 filing in the FCC's pole attachment proceeding clearly explained that their networks are designed to accommodate third party attachments: "Third party attachment standards...do not exist in a vacuum. They are part in parcel of an electric utility's overhead distribution construction standards." (Initial Comments of Florida Power and Light, Tampa Electric and Progress Energy Florida Regarding Safety and Reliability in WC Docket No. 07-245, March 7, 2008, p. 6.) In other words, electric utilities design their networks to accommodate other parties'—both ILECs and third parties'—attachments; therefore, costs that would prevail in a hypothetical world where no other parties used FirstEnergy's poles are of no economic relevance.

By: 
Timothy J. Tardiff
Dated: November 19, 2019

Sworn to before me this 19th day of November, 2019.

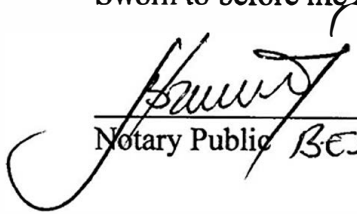

Notary Public *BESLIDHJE SHAW*



Exhibit TJT-2

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Professional Summary

Dr. Timothy J. Tardiff has more than 30 years of academic and consulting experience. He has participated in numerous legal and regulatory proceedings regarding telecommunications, economics, intellectual property antitrust, and regulation issues. His research consulting, and expert witness experience in telecommunications has addressed pricing and costing issues involving increasingly competitive services, such as wireless and traditional wireline services. This experience has also included extensive examination and economic evaluation of all facets of the costing methodologies used to establish prices in rate-regulated industries—including expert reports and testimonies in a U.S. Department of Transportation proceeding on the reasonableness from an economic perspective of the rates international carriers at Los Angeles International Airport pay for use of terminal space. His work has included the telecommunications, software, transportation, energy, and public utility industries, and he has published extensively in economics, telecommunications, and transportation journals.

Dr. Tardiff is an economic consultant with clients in the telecommunications and regulated utilities industries. From 2006 to 2009, he was a Managing Director at Huron Consulting Group. Prior to joining Huron, Dr. Tardiff served as a vice president in the telecommunication practice at NERA Economic Consulting. During his career, he has served as the director of Marketing Research and senior member of the transportation practice at Charles River Associates, Inc. and assistant professor in the Department of Civil Engineering and Division of Environmental Studies at the University of California, Davis.

Dr. Tardiff's research has addressed the demand, cost, and competitive aspects of converging technologies, including wireless and broadband. He has evaluated pricing policies for increasingly competitive telecommunications markets, including appropriate mechanisms for pricing access services to competitors and studied actual and potential competition for services provided by incumbent telephone operating companies. Most recently, he has analyzed the effects of convergence and growing intermodal competition on whether incumbent firms should be considered dominant in the provision of certain services and the regulatory and antitrust implication of such determinations.

Since the passage of the United States Telecommunications Act, Dr. Tardiff has participated in interconnection arbitrations, unbundled element proceedings, universal service investigation,

applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the United States Federal Communications Commission. His international research and consulting experience includes studies and expert reports on telecommunication competition issues in Canada, Japan, New Zealand, Peru, Australia, and Trinidad and Tobago, where he was an economic expert in an interconnection arbitration between two wireless carriers.

Education

- Ph.D., Social Sciences, University of California, Irvine, CA
- B.S., Mathematics, California Institute of Technology, Pasadena, CA

Testimony experience

- Reply Affidavit of Timothy J. Tardiff on the economic evaluation of just and reasonable pole attachment rates, prepared for filing with the Federal Communications Commission on behalf of Verizon Maryland LLC, Verizon Maryland LLC, Complainant v. Potomac Edison Company, Defendant, Proceeding No. 19-355, Bureau ID No. EB-19-MD-009, March 5, 2020.
- Reply Affidavit of Timothy J. Tardiff on the economic evaluation of just and reasonable pole attachment rates, prepared for filing with the Federal Communications Commission on behalf of Verizon Pennsylvania LLC and Verizon North LLC, Verizon Pennsylvania LLC and Verizon North LLC, Complainants v. Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania Power Company, Defendants, Proceeding No. 19-354, Bureau ID No. EB-19MD-008, March 3, 2020.
- Affidavit of Timothy J. Tardiff on the economic evaluation of just and reasonable pole attachment rates, prepared for filing with the Federal Communications Commission on behalf of Verizon Maryland LLC, Verizon Maryland LLC, Complainant v. Potomac Edison Company, Defendant, Proceeding No. 19-355, Bureau ID No. EB-19-MD-009, November 21, 2019.
- Affidavit of Timothy J. Tardiff on the economic evaluation of just and reasonable pole attachment rates, prepared for filing with the Federal Communications Commission on behalf of Verizon Pennsylvania LLC and Verizon North LLC, Verizon Pennsylvania LLC and Verizon North LLC, Complainants v. Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania Power Company, Defendants, Proceeding No. 19-354, Bureau ID No. EB-19MD-008, November 20, 2019.
- Reply Witness Statement of Dr. Timothy J. Tardiff on international interconnection rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference Nos: 4/07/07/5 and 4/07/06/6, April 17, 2019.
- Witness Statement of Dr. Timothy J. Tardiff on international interconnection rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of

Telecommunications Services of Trinidad and Tobago Limited, Reference Nos: 4/07/07/5 and 4/07/06/6, February 25, 2019.

- Reply Comments of Timothy J. Tardiff on broadband deployment and availability, prepared for filing with the Federal Communications, Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, WC Docket No. 18-238, October 1, 2018.
- Reply Comments of Timothy J. Tardiff on broadband deployment and availability, prepared for filing with the Federal Communications, Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, WC Docket No. 17-199, October 6, 2017.
- Comments of Timothy J. Tardiff on trends in the availability of competitive broadband alternatives, prepared for filing with the Federal Communications, Restoring Internet Freedom, WC Docket No. 17-108, July 17, 2017.
- Deposition Testimony, Susan Mojica and Thomas Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, May 31, 2017.
- Expert Report, Susan Mojica and Thomas Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, April 26, 2017 (Supplemental Report May 16, 2017).
- Deposition Testimony, Virginia Electric and Power Company d/b/a Dominion Virginia Power v. Verizon Virginia LLC and Verizon South Inc., Case No. CL15-3029-00, Virginia: In the Circuit Court of the County of Henrico, March 10, 2017.
- Expert Report, Walter Chruby, et al. v. Global Tel*Link Corporation, Civil Action No. 5:15-cv-05136-TLB, U.S. District Court for the Western District of Arkansas, February 16, 2016.
- Expert Rebuttal Report, Global Tel*Link Corporation ICS Litigation, Civil Action No. 5:14-cv-5275-TLB, U.S. District Court for the Western District of Arkansas, October 20, 2016.
- Expert Rebuttal Report, Susan Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, October 7, 2016.
- Deposition Testimony, Global Tel*Link Corporation ICS Litigation, Civil Action No. 5:14-cv-5275-TLB, U.S. District Court for the Western District of Arkansas, August 9, 2016.
- Deposition Testimony, Susan Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, July 12, 2016 and August 30, 2016.
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Professional associations

- Member, American Economic Association
- Associate Member, American Bar Association
- Member, Federal Communications Bar Association

Fellowships, grants and awards

- First Place, Dissertation Contest of the Transportation Science Section of the Operations Research Society of America.
- National Science Foundation (NSF) Research Initiation Grant (Engineering Division), 1976-1978.
- NSF Grant for Improving Doctoral Dissertation Research in the Social Sciences, 1973-1974.
- NSF Predoctoral Fellowship, 1972-1974.
- Public Health Service Traineeship, 1971-1972.