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**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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|---|---|---|
| **Pennsylvania Public Utility Commission** | **:** | **Docket Nos. R-2024-3047068** |
| | **:** | |
| **v.** | **:** | |
| | **:** | |
| **FirstEnergy Pennsylvania Electric Company** | **:** | |
| | **:** | |

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**TESTIMONY AND EXHIBITS**
**ADMITTED INTO THE EVIDENTIARY RECORD**
**OF THE OFFICE OF SMALL BUSINESS ADVOCATE**

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The Office of Small Business Advocate ("OSBA") admitted the attached

testimony and exhibits as evidence into the evidentiary record at the Evidentiary Hearings

scheduled on August 15, 2024 and August 19, 2024, in the above-captioned proceeding:

- Direct Testimony, labelled, OSBA Statement No. 1, with associated Exhibit IEc-1, and signed Verification of Mark D. Ewen

- Surrebuttal Testimony, labelled OSBA Statement No. 1-S, with associated Exhibit IEc-S1, and signed Verification of Mark D. Ewen

Date: August 19, 2024

June 25, 2024

The Honorable Katrina L. Dunderdale
Administrative Law Judge
Pennsylvania Public Utility Commission
Piatt Place, Suite 220
201 Fifth Avenue
Pittsburgh, PA 15222

**Re:     Pennsylvania Public Utility Commission v. FirstEnergy Pennsylvania Electric Company / Docket No. R-2024-3047068**

Dear Judge Dunderdale:

     Enclosed for please find the Direct Testimony of Mark D. Ewen, labelled, OSBA Statement No. 1 with Exhibit, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceeding.

     Copies will be served on all known parties in this proceeding, as indicated on the attached Certificate of Service.

     If you have any questions, please do not hesitate to contact me.

               Sincerely,

               */s/ Sharon E. Webb*

               Sharon E. Webb
               Assistant Small Business Advocate
               Attorney ID No. 73995

*Enclosures*
cc:    PA PUC, Secretary Rosemary Chiavette (Cover Letter and Certificate of Service)
       Mark Ewen
       Parties of Record

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| Pennsylvania Public Utility Commission | : | |
| | : | |
| v. | : | Docket No.  R-2024-3047068 |
| | : | |
| FirstEnergy Pennsylvania Electric | : | |
| Company | : | |
| | : | |
| | : | |

**Direct Testimony and Exhibit of**

**MARK D. EWEN**

**On Behalf of the**

**Pennsylvania Office of Small Business Advocate ("OSBA")**

**Company:**
**FirstEnergy Pennsylvania Electric Company**

**Topics:**
**Cost Allocation**
**Revenue Allocation**
**Rate Design**

**Date Served:   June 25, 2024**

**Date Submitted for the Record:** _____

# DIRECT TESTIMONY OF MARK D. EWEN

1  **Q.**  **Mr. Ewen, please state your name and briefly describe your qualifications.**

2  A.  My name is Mark D. Ewen.  I am a Principal and President of Industrial Economics,

3  Incorporated ("IEc"), a consultancy of 165 professionals headquartered at 2067

4  Massachusetts Avenue, Cambridge, MA 02140. My consulting practice focuses on

5  regulatory and environmental economics, expert case management and economic damages

6  estimation in a variety of litigation contexts, and financial analysis. I obtained a B.A degree

7  in Economics and Political Science from the University of North Dakota, and a Master of

8  Public Policy degree from the University of Michigan. I have participated and provided

9  testimony in a variety of proceedings before the Pennsylvania Public Utilities Commission

10  ("the Commission"), including electric and gas base rates cases, 1307(f) purchased gas cost

11  filings; energy efficiency and conservation cases, merger and acquisition cases, and default

12  service plan ("DSP") petitions. My résumé and a listing of the expert testimony that I have

13  filed in various litigation and utility regulatory proceedings are attached in Exhibit IEc-1.

14  **Q.**  **Please describe your assignment in this matter.**

15  A.  I was retained by the OSBA to review certain aspects of FirstEnergy Pennsylvania Electric

16  Company's base rates filing, and to evaluate whether its proposed rate increases and tariff

17  changes for small businesses are consistent with sound regulatory and economic principles.

18  My review includes the filings for the following related entities and rate districts: Met-Ed,

19  Penelec, Penn Power; and West Penn ("FE Companies" or "Companies").  In preparing this

20  testimony, I utilize portions of the contextual detail and background information from the

21  testimony of my colleague Robert D. Knecht in the FE Companies prior base rates case.

22  **Q.**  **Do you have any preliminary comments?**

23  A.  Yes, I wish to note at that at the outset that my recommendations and schedules reflect the

24  Companies' full rate requests in this proceeding. Any such reference is intended for

25  comparison purposes only and should not be construed as a recommendation by the OSBA

26  that the Commission grant the Companies' requests in whole or in part.

27  **Q.**  **Please summarize your primary recommendations.**

1    A.    Based on my analysis of the Company's filing and discovery responses, I recommend that

2          the Commission:

3          • Adopt OSBA's recommended revenue allocations, which makes greater progress

4            towards moving rates into line with allocated costs in a fair and equitable way; and

5          • Employ OSBA's guidance concerning rate design adjustments for the General

6            Service Small and General Service Medium classes.

7          The specific details associated with my recommendations are discussed below.

8    Q.    **How is the remainder of your testimony organized?**

9    A.    Section I of my testimony provides a brief overview of the non-residential customer classes,

10         focusing on the primary small business classes. Section II covers the Companies' cost of

11         service results. Section III reviews the Companies' proposed class revenue allocation and

12         presents the OSBA's recommended revenue allocation. Section IV examines issues of rate

13         design.

14         **I. Overview of Non-Residential Customer Classes**

15   Q.    **Please summarize the relevant rate schedules for Met-Ed?**

16   A.    Met-Ed serves approximately 595,801 customers via 11 different rate schedules. However,

17         over 99 percent of Met-Ed's customers are served via three rate schedules, i.e., Rate RS,

18         Rate GSS and Rate GSM. For purposes of this proceeding, I focus on Rates GSS and GSM

19         as the primary small business constituency. Rate GSS is available to non-residential

20         customers without demand meters that take service at secondary voltage and use no more

21         than 1,500 kWh per month. Rate GSM is available to non-residential customers that take a

22         service at secondary voltage, use more than 1,500 kWh per month and exhibit a registered

23         monthly demand that is less than or equal to 400 kW.

24   Q.    **Please summarize Penelec's rate classes.**

25   A.    Penelec serves approximately 584,383 customers via 11 different rate schedules. Similar to

26         Met-Ed, over 99 percent of Penelec's customers are served via three rate schedules, i.e.,

27         Rate RS, Rate GSS and Rate GSM. I again focus on rates GSS and GSM, which have

28         identical eligibility requirements to those of Met-Ed.  As noted above, Rate GSS is available

| 1 | | to non-residential customers without demand meters that take service at secondary voltage |
|---|---|---|
| 2 | | and use no more than 1,500 kWh per month. Rate GSM is available to non-residential |
| 3 | | customers that take a service at secondary voltage, use more than 1,500 kWh per month and |
| 4 | | exhibit a registered monthly demand that is less than or equal to 400 kW. |
| 5 | Q. | **Please summarize Penn Power's rate classes.** |
| 6 | A. | Penn Power serves approximately 173,652 customers via 10 different rate schedules. Rate |
| 7 | | class eligibility for GSS and GSM is also harmonized with the other entities. |
| 8 | Q. | **Please summarize West Penn's rate classes.** |
| 9 | A. | West Penn serves approximately 742,485 customers via 11 different rate schedules. Rate |
| 10 | | class eligibility for GSS and GSM are again harmonized with the other three entities. |

11 **II. Cost Allocation**

| 12 | Q. | **What is the purpose of a utility's allocated cost of service study ("ACOSS")?** |
|---|---|---|
| 13 | | The most important criterion for setting regulated utility rates is the cost incurred by the |
| 14 | | utility for providing the service.[1] To assign costs to specific customers, utilities aggregate |
| 15 | | customers into rate classes, within which the customers have similar load sizes, seasonal |
| 16 | | consumption, peak demand patterns, and other characteristics. An ACOSS is an analytical |
| 17 | | tool with which the utility's total cost (or "revenue requirement") is allocated among each |
| 18 | | of the rate classes. These allocated costs are then used as a key input in determining the total |
| 19 | | revenues that the utility plans to recover from each rate class through tariff rates. |
| 20 | | In using the results from an ACOSS to develop class revenue requirements, utilities and |
| 21 | | regulatory authorities usually have a longer-term goal of moving the revenue recovered |
| 22 | | from each class as close as possible to the costs allocated to that class. Thus, rate classes |
| 23 | | whose revenues substantially exceed allocated costs are assigned either relatively low rate |
| 24 | | increases or rate decreases. Rate classes whose revenues are well below allocated costs are |

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[1] The Commonwealth Court affirmed this basic principle, referring to cost of service as the "polestar" criterion. Lloyd v. Pennsylvania Public Utility Commission, 904 A.2d 1010, 1020 (Pa. Cmwlth. 2006).

| 1 | | assigned relatively larger rate increases than those classes whose revenues are only slightly |
| 2 | | below allocated costs. |

3   In addition to class revenue requirement issues, an ACOSS can provide useful cost
4   information regarding the specific nature of utility tariff charges. In particular, an ACOSS
5   provides a cost basis for the relative magnitude of the various individual tariff charges,
6   including the customer charge, demand charges and commodity charges.

7   **Q.**   **How does an ACOSS assign costs to the various rate classes?**

8   A.   The underlying principle of an ACOSS is that costs are assigned to the rate classes that
9        *cause* the utility to incur those costs. This principle of cost causation is both equitable and
10       economically efficient. It is equitable because costs are borne by those customers who cause
11       them. It is economically efficient because the price signal for consumption from a particular
12       rate class is reasonably consistent with the cost incurred by the utility to provide the service.
13       In that way, the consumer receives the correct price signal for determining whether he
14       should purchase more or less of the utility service. In effect, the consumer balances the value
15       that he receives from the purchase of that service against the utility's cost of providing the
16       service.

17  **Q.**   **Overall, what are the FE Companies results of the cost allocation approach?**

18  A.   The cost allocation methodology and the associated ACOSS for each of the four entities are
19       presented by Mr. Timothy Lyons at FE PA Statement No. 7. In Table IEc-1a below, I
20       present these results minus "Other Revenues" that are excluded from the FE's and IEc's
21       revenue allocations. These "Other Revenues" are presented in Exhibit TSL-1 in FE PA
22       Statement No. 7.

23       The costs presented in this table serve as the basis for the Companies and IEc revenue
24       allocation calculations, summarized in subsequent sections of this testimony. I have
25       reviewed the cost allocation studies for each of the four entities included in this base rates
26       case. While my review is ongoing, I have made no specific adjustments to the Companies
27       presentation.

| | | Table IEc-1a<br>Class Revenue Requirement Net of Miscellaneous Revenues<br>($000s) | | |
|---|---|---|---|---|
| Class | Met-Ed | Penelec | Penn Power | West Penn |
| R | 474,004 | 426,451 | 138,340 | 431,295 |
| GSV | 342 | 760 | 87 | 592 |
| GSS | 33,255 | 43,999 | 9,775 | 37,424 |
| GSM | 52,809 | 63,847 | 18,645 | 63,965 |
| GSL | 10,648 | 13,434 | 3,693 | 19,449 |
| GP | 29,303 | 22,765 | 7,477 | |
| TP | 5,534 | 10,086 | 535 | |
| GP/TP | | | | 19,715 |
| BRD | 125 | 136 | | |
| MS | 113 | | | |
| POL | 1,011 | 3,357 | 843 | 3,266 |
| STLT | 7,845 | 19,139 | 2,162 | 15,763 |
| H | | 581 | | |
| PNP | | | 111 | |
| PP44 | | | | 27 |
| PSU | | | | 1,421 |
| **System** | 614,989 | 604,555 | 181,668 | 597,941 |
| Source: MDE WP1. | | | | |

1 **Q.    What are the implications of these ACOSS outcomes?**

2 A.    Table IEc-1b below shows class revenue to cost ratios at current rates under the approach

3       used by the FE Companies. I first note that the revenue requirements are substantially related

4       to the Residential class.  Across the four entities, the Residential class is under-recovering

5       costs for the Met-Ed, Penelec, and Penn Power districts, and is at full recovery for West

6       Penn.  The GSS class is more substantially under-recovering costs, while the GSM and GSL

7       classes significantly over-recovers costs.  Other rate class have a mix of over- and under-

8       recovery.

| Table IEc-1b Normalized R/C Ratio Current Rates | | | | |
|---|---|---|---|---|
| Class | Met-Ed | Penelec | Penn Power | West Penn |
| R | 95.5% | 97.3% | 99.0% | 100.1% |
| GSV | 212.9% | 166.1% | 166.9% | 190.9% |
| GSS | 65.6% | 54.4% | 76.2% | 54.4% |
| GSM | 138.7% | 144.1% | 102.1% | 122.4% |
| GSL | 128.4% | 162.8% | 155.2% | 154.6% |
| GP | 115.5% | 108.3% | 80.9% | |
| TP | 176.4% | 114.8% | 745.7% | |
| GP/TP | | | | 83.2% |
| BRD | 46.2% | 14.8% | | |
| MS | 180.7% | | | |
| POL | 82.4% | 122.4% | 95.9% | 183.9% |
| STLT | 106.6% | 48.6% | 66.0% | 53.5% |
| H | | 184.8% | | |
| PNP | | | 102.6% | |
| PP44 | | | | 175.7% |
| PP46 | | | | 79.9% |
| PSU | | | | 99.9% |
| **System** | 100.0% | 100.0% | 100.0% | 100.0% |

Source: MDE WP1.

1

2 **III. Class Revenue Allocation**

3 **Q.** **What is revenue allocation?**

4 A. Revenue allocation is the assignment of the dollar net increase or decrease to each of the

5     Company's rate classes in a base rates proceeding. In contrast, *rate design* determines how

6     the allocated revenue is recovered from individual ratepayers within each class. From a cost

7     recovery standpoint, revenue allocation addresses *inter-class* cross-subsidization issues,

8     while rate design addresses *intra-class* cross-subsidization issues.

9 **Q.** **What are the primary economic and regulatory criteria for revenue allocation?**

10 A. In general, allocated cost is the primary criterion used by regulators in the revenue allocation

11     process. Most utilities and regulators adopt a policy in a base rates proceeding of attempting

12     to move revenues more into line with allocated costs by varying the magnitude of the rate

13     increases for the individual classes. However, regulators also subject the rate increases to

| | other non-cost criteria of ratemaking. Of the traditional rate design criteria, the most |
|1| |

1    other non-cost criteria of ratemaking. Of the traditional rate design criteria, the most

2    common non-cost considerations in the revenue allocation process are:

3        • the *gradualism* principle (or avoidance of "rate shock"), in which large rate

4          increases for individual customers or classes of customers are avoided; and

5        • the *value of service* principle, which is often used to mitigate rate increases for

6          customers or customer classes with relatively price-elastic demand. [2]

7    Using these criteria, the utility will develop a proposal for assigning the increase in the

8    revenue requirement among the classes that reflects both cost and non-cost considerations.

9    With this proposal, the ACOSS can be simulated at both present and proposed rates to

10    evaluate the magnitude of "progress" has been made toward the policy of achieving cost-

11    based rates.

12  **Q.**    **What is the Commission's standard for measuring progress toward cost-based rates?**

13  A.    For many years, participants in many Pennsylvania utility regulatory proceedings have

14    relied on a metric known as the "indexed rate of return," or "relative rate of return." The

15    conceptual and practical problems associated with this metric are reviewed in detail in

16    Appendix A.

17    Based on the analysis in Appendix A, for this proceeding, I relied on the revenue-cost ("R-

18    C") ratio metric.  The "R-C" metric represents the ratio of class revenues to class allocated

19    costs, and thus implicitly recognizes the subsidy as a percentage of the class revenue

20    requirement.  As discussed further below, the Company's evaluation of measuring progress

21    toward cost-based rates in its revenue allocation proposal is arithmetically consistent with

22    the revenue-cost ratio metric.

23  **Q.**    **Generally, across the four entities, are the proposed revenue allocations consistent**

24        **with each respective ACOSS?**

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[2] See, for example, <u>Principles of Public Utility Rates</u>, Second Edition, Bonbright, Danielsen, Kamerschen, 1988, pages 383 to 387.  Note that the criteria in this text apply to the overall development of a utility rate structure.  The criteria that I discuss in this testimony are those that apply to the revenue allocation portion of the process, which is only one aspect of the overall development of utility rates.

| 1 | A. | The Company's revenue allocation proposal is somewhat directionally consistent with its |
|---|---|---|
| 2 | | ACOSS results, although it is relatively cautious in terms of moving rates into line with |
| 3 | | allocated costs. The Company proposes that the revenue allocation serve to move class cost |
| 4 | | recovery 10 percent of the way from its current status toward fully allocated costs. Thus, |
| 5 | | for example, if a class is recovering 90 percent of its allocated costs in revenues under |
| 6 | | current rates, the proposed rates will recover 91 percent of allocated costs. As shown in IEc |
| 7 | | WP1, more cost-based revenue allocation would generally assign lower rate increases to the |
| 8 | | GSV, GSM, GSL, TP, MS, PNP, PP46 and H classes. In contrast, greater alignment with |
| 9 | | allocated costs would generally result in a higher rate increase to the R, GSS, PP44, and |
| 10 | | PSU classes. Rate changes vary in direction across rate districts for the GP, POL, and STLT |
| 11 | | classes. |

| 12 | Q. | **What specific guidelines did the FE Companies employ to arrive at their proposed** |
|---|---|---|
| 13 | | **revenue allocations?** |
| 14 | A. | In Statement No. 7, Witness Lyons notes that the proposed 10 percent movement to system |
| 15 | | ROR strikes a "balance of fairness and bill continuity considerations." In other words, a full |
| 16 | | shift to system ROR may be viewed as fair but would raise concerns related to bill impacts. |
| 17 | | A uniform increase across rate classes would mitigate these bill continuity concerns but may |
| 18 | | be viewed as unfair. The 10 percent movement towards system ROR falls between these |
| 19 | | options, albeit with limited movement towards system ROR. |

| 20 | Q. | **What are your conclusions regarding this revenue allocation approach?** |
|---|---|---|
| 21 | A. | Although the revenue allocation proposal moves in the direction of aligning revenues with |
| 22 | | allocated costs, a 10 percent shift effectively perpetuates significant misalignment between |
| 23 | | these two measures. I observe that the last FirstEnergy base rates case was 8 years ago, in |
| 24 | | 2016. At the progress toward cost-based rates proposed in this proceeding (10 percent per |
| 25 | | year) with eight years between rate cases, FirstEnergy will reduce the subsidies from/to each |
| 26 | | rate class by 90 percent in about 175 years.[3] Overall, I conclude that the Companies' |

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[3] In each proceeding, the subsidy is reduced by a factor of 0.9. In 22 rate proceedings, the remaining subsidy would be $0.9^{22} = .0985$. At eight years between proceedings, that's 176 years.

| 1 | approach is too heavily weighted toward arguments of rate gradualism. I developed an |
| 2 | alternative revenue allocation based on the cost allocation results, presented in IEc WP1. |

| 3 | To develop my alternative revenue allocation proposal, I adapted the Company's general |
| 4 | framework of progress towards system ROR and implemented several adjustments to those |
| 5 | values. First, I increased the progress towards system ROR as a means of better allocating |
| 6 | revenues to align with rate class costs. These measures, ranging from 50 and 75 percent, |
| 7 | differ by rate district to ensure inter-class fairness, that is, to ensure that select classes |
| 8 | (namely Residential Service) do not bear a disproportionate share of cost increases. Second, |
| 9 | I limited the maximum increase to 1.5 times system average. For example, if the proposed |
| 10 | system average for a rate district is 20 percent, the maximum increase would be set at 30 |
| 11 | percent (20 * 1.5). Finally, I set the minimum rate change at zero, to avoid rate reductions. |
| 12 | The aggregate effect of these two limits—capping class rate increases at 1.5X system |
| 13 | average and restricting negative rate changes—results in a relatively small need for |
| 14 | reallocation of the remaining revenue requirements. I reallocated these revenues to those |
| 15 | classes that are not capped by the 1.5X rule, based on current rate revenues. In this way, the |
| 16 | unconstrained classes all contribute to the net subsidy needed for the constrained classes.[4] |
| 17 | My alternative revenue allocation is shown in Tables IEc-2, IEc-3, IEc-4, and IEc-5 below, |
| 18 | compared to the Company's filed proposal. I also present the R-C metric at proposed rates. |

**19 Q. Please discuss the proposed revenue allocations for each rate district and your**
**20 alternative.**

| 21 | A. | Table IEc-2 presents the revenue allocations proposed by the FE Companies and by IEc for |
| 22 | | the Met-Ed rate district. In contrast with the 10 percent movement to system ROR proposed |
| 23 | | by the Company, I conclude that the Company can better align Met-Ed revenues with costs |
| 24 | | with 75 percent movement to system ROR while still ensuring rate gradualism through the |
| 25 | | limits described above. This approach results in greater rate increases for the R, GSS, and |
| 26 | | POL classes and smaller rate increases for the GSM, GSL, GP, BRD, and STLT classes. |
| 27 | | Three rate classes in the IEc proposal (GSV, TP, MS) would experience no rate increases. |

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[4] The details for these calculations are provided in MDE WP1.

| | | | | | | |
|---|---|---|---|---|---|---|
1        The R-C metric demonstrates that revenues are generally more aligned with costs (i.e.,
2        closer to 100 percent) under IEc's proposed revenue allocation.

| Table IEc-2<br>Comparative Revenue Allocation Proposals<br>Met-Ed Rate District | | | | | | |
|---|---|---|---|---|---|---|
| **Target Movement to System ROR:** | | | | 75% | | |
| Class | FirstEnergy | | | IEc | | |
| | $000 | % | R/C % | $000 | % | R/C % |
| R | 454,614 | 29.0 | 95.9 | 472,808 | 34.2 | 99.7 |
| GSV | 689 | 21.6 | 201.6 | 567 | 0.0 | 165.8 |
| GSS | 22,970 | 35.1 | 69.1 | 24,242 | 42.6 | 72.9 |
| GSM | 71,191 | 24.8 | 134.8 | 58,382 | 2.4 | 110.6 |
| GSL | 13,366 | 25.6 | 125.5 | 11,497 | 8.0 | 108.0 |
| GP | 33,403 | 26.7 | 114.0 | 30,701 | 16.4 | 104.8 |
| TP | 9,337 | 22.9 | 168.7 | 7,600 | 0.0 | 137.3 |
| BRD | 65 | 43.8 | 51.8 | 64 | 42.6 | 51.3 |
| MS | 195 | 22.6 | 172.5 | 159 | 0.0 | 140.7 |
| POL | 851 | 31.1 | 84.2 | 926 | 42.6 | 91.6 |
| STLT | 8,308 | 27.6 | 105.9 | 8,043 | 23.5 | 102.5 |
| **System** | 614,988 | 28.4 | 100.0 | 614,989 | 28.4 | 100.0 |
| Source: MDE WP1. Minor differences in system revenues between Company and IEc values result from rounding. | | | | | | |

3        Table IEc-3 presents the revenue allocations proposed by the FE Companies and by IEc for

4        the Penelec rate district. In contrast with the 10 percent movement to allocated costs

5        proposed by the Company, I conclude that the Company can better align Penelec revenues

6        with costs with 50 percent movement to allocated costs while still ensuring rate gradualism

7        through the limits described above. This approach results in greater rate increases for the R

8        and GSS classes and smaller rate increases for the GSV, GSM, GSL, GP, TP, BRD, POL,

9        and STLT classes. One rate class in the IEc proposal (H) would experience no rate increase.

10       The R-C metric demonstrates that revenues are generally more aligned with costs (i.e.,

11       closer to 100%) under IEc's proposed revenue allocation.

| Table IEc-3 Comparative Revenue Allocation Proposals Penelec Rate District | | | | | | |
|---|---|---|---|---|---|---|
| **Movement to System ROR:** | | | | 50% | | |
| Class | FirstEnergy | | | IEc | | |
| | $000 | % | R/C % | $000 | % | R/C % |
| R | 415,932 | 26.4 | 97.5 | 429,718 | 30.6 | 100.8 |
| GSV | 1,213 | 21.0 | 159.6 | 1,028 | 2.6 | 135.2 |
| GSS | 25,933 | 36.6 | 58.9 | 26,397 | 39.0 | 60.0 |
| GSM | 89,187 | 22.2 | 139.7 | 79,289 | 8.6 | 124.2 |
| GSL | 21,022 | 21.2 | 156.5 | 17,937 | 3.4 | 133.5 |
| GP | 24,462 | 25.1 | 107.5 | 24,194 | 23.7 | 106.3 |
| TP | 11,428 | 24.4 | 113.3 | 11,047 | 20.2 | 109.5 |
| BRD | 32 | 97.5 | 23.2 | 22 | 39.0 | 16.4 |
| H | 1,024 | 20.2 | 176.2 | 852 | 0.0 | 146.6 |
| POL | 4,033 | 23.7 | 120.1 | 3,804 | 16.7 | 113.3 |
| STLT | 10,288 | 39.3 | 53.8 | 10,266 | 39.0 | 53.6 |
| **System** | 604,553 | 26.0 | 100.0 | 604,554 | 26.0 | 100.0 |
| Source: MDE WP1. Minor differences in system revenues between and Company and IEc values result from rounding. | | | | | | |

1    Table IEc-4 presents the revenue allocations proposed for the Penn Power rate district. In
2    contrast with the 10 percent movement to system ROR proposed by the Company, I
3    conclude we can better align Penn Power revenues with costs with 75 percent movement to
4    system ROR while still ensuring rate gradualism through the limits described above. This
5    approach results in greater rate increases for the R, GSS, GP, POL, and STLT classes and
6    smaller rate increases for the GSM, GSL, and PNP classes. Two rate classes in the IEc
7    proposal (GSV, TP) would experience no rate increases. The R-C metric demonstrates that
8    revenues are generally more aligned with costs (i.e., closer to 100 percent) under IEc's
9    proposed revenue allocation.

| Table IEc-4 Comparative Revenue Allocation Proposals Penn Power Rate District | | | | | | |
|---|---|---|---|---|---|---|
| **Movement to System ROR:** | | | | 75% | | |
| Class | FirstEnergy | | | IEc | | |
| | $000 | % | R/C % | $000 | % | R/C % |
| R | 137,069 | 42.5 | 99.1 | 137,769 | 43.2 | 99.6 |
| GSV | 139 | 36.5 | 160.0 | 102 | 0.0 | 117.2 |
| GSS | 7,678 | 46.8 | 78.5 | 8,553 | 63.5 | 87.5 |
| GSM | 18,990 | 42.1 | 101.8 | 18,711 | 40.0 | 100.4 |
| GSL | 5,528 | 37.3 | 149.7 | 4,197 | 4.2 | 113.6 |
| GP | 6,191 | 45.7 | 82.8 | 6,947 | 63.5 | 92.9 |
| TP | 3,644 | 30.0 | 681.0 | 2,803 | 0.0 | 523.9 |
| PNP | 115 | 43.3 | 103.2 | 112 | 39.8 | 100.7 |
| POL | 812 | 42.9 | 96.3 | 833 | 46.6 | 98.8 |
| STLT | 1,501 | 49.7 | 69.4 | 1,640 | 63.5 | 75.9 |
| **System** | 181,666 | 42.3 | 100.0 | 181,668 | 42.3 | 100.0 |
| Source: MDE WP1. Minor differences in system revenues between and Company and IEc values result from rounding. | | | | | | |

1    Table IEc-5 presents the revenue allocations proposed by the Company and by IEc for the
2    West Penn rate district. In contrast with the 10 percent movement to system ROR proposed
3    by the Company, I conclude that the Company can better align West Penn revenues with
4    costs with 50 percent movement to system ROR while still ensuring rate gradualism through
5    the limits described above. This approach results in greater rate increases for the R, GSS,
6    GP/TP, PP46, STLT, and PSU classes and smaller rate increases for the GSV, GSM, GSL,
7    PP44, and POL classes. The R-C metric demonstrates that revenues are generally more
8    aligned with costs (i.e., closer to 100 percent) under IEc's proposed revenue allocation; the
9    R class is a notable but minor (in relative terms) exception.

10

| Table IEc-5 Comparative Revenue Allocation Proposals West Penn Rate District | | | | | | |
|---|---|---|---|---|---|---|
| **Movement to System ROR:** | | | | 50% | | |
| Class | FirstEnergy | | | IEc | | |
| | $000 | % | R/C % | $000 | % | R/C % |
| R | 431,724 | 39.5 | 100.1 | 437,964 | 41.5 | 101.5 |
| GSV | 1,077 | 33.0 | 181.9 | 870 | 7.4 | 147.0 |
| GSS | 22,062 | 51.2 | 59.0 | 23,239 | 59.3 | 62.1 |
| GSM | 76,861 | 37.0 | 120.2 | 72,083 | 28.5 | 112.7 |
| GSL | 29,012 | 34.6 | 149.2 | 25,052 | 16.2 | 128.8 |
| GP/TP | 16,726 | 42.4 | 84.8 | 18,348 | 56.2 | 93.1 |
| PP44 | 45 | 32.4 | 166.7 | 37 | 10.0 | 138.5 |
| PP46 | 4,115 | 43.0 | 81.9 | 4,594 | 59.7 | 91.4 |
| POL | 5,733 | 33.2 | 175.5 | 4,685 | 8.8 | 143.5 |
| STLT | 9,166 | 51.7 | 58.1 | 9,627 | 59.3 | 61.1 |
| PSU | 1,419 | 39.5 | 99.9 | 1,441 | 41.7 | 101.4 |
| **System** | 597,941 | 39.5 | 100.0 | 597,941 | 39.5 | 100.0 |
| Source: MDE WP1. Minor differences in system revenues between Company and IEc values result from rounding. | | | | | | |

1

2 **IV. Rate Design**

3 **Q. What are the basic rate design characteristics that the FE Companies propose with**
4 **respect to the GS Small class?**

5 A. As I noted previously, the eligibility requirements for this class have been harmonized
6 across all four entities. Eligibility is limited to customers with monthly energy consumption
7 below 1500 kWh and taking service at secondary voltage. The base rate design consists of
8 a flat monthly customer charge and a per-kWh energy charge.

9 **Q. What specific proposals do the Companies offer for the GSS tariffs?**

10 A. Table IEc-6 below presents the GSS rate design proposals for all four entities. As shown in
11 this table, while the Companies have harmonized the eligibility and basic tariff design for
12 this class, considerable diversity remains in the magnitude of the actual tariff charges. Also,
13 as shown, the Companies have not made any effort to better align customer rates with

1     allocated costs, as the same percentage charges are assigned to both the customer charge
2     and the energy charge.

| Table IEc-6 | | | |
|---|---|---|---|
| **FE Companies Proposed Tariff Design for General Services Small** | | | |
| **Rates** | **Company** | **Customer Charge** | **Energy (per kWh)** |
| Current | Met-Ed | $21.88 | $0.04069 |
| | Penelec | $18.33 | $0.03624 |
| | Penn Power | $24.89 | $0.03623 |
| | West Penn | $9.52 | $0.03529 |
| Proposed | Met-Ed | $29.57 | $0.05499 |
| | Penelec | $25.04 | $0.04950 |
| | Penn Power | $36.54 | $0.05318 |
| | West Penn | $14.40 | $0.05337 |
| % Increase | Met-Ed | 35.1% | 35.1% |
| | Penelec | 36.6% | 36.6% |
| | Penn Power | 46.8% | 46.8% |
| | West Penn | 51.3% | 51.2% |
| Source: FE Filings Vol. III, Figure 10 | | | |

3

4     **Q.    Do you have any proposed changes to the FE Companies proposed rate design for the**
5     **GSS class?**

6     A.    Given the uncertainties concerning revenue allocation outcomes, it is not possible to offer a
7           specific tariff design at this time.  In addition, it is likely that the outcome of this proceeding
8           will yield lower revenue requirements than those proposed by the companies, which will
9           require a scale back of proposed tariff charges.  As such, I recommend the following
10          directional modifications for implementing the revenue allocation and any scale-back for
11          purposes of rate design:

12    •     The proposed West Penn customer charge is considerably lower than those for the other
13          companies, while the energy charge is relatively high.  I therefore recommend that any
14          scale-back should be more than proportionally deducted from the energy charge.

15    •     The proposed Penn Power customer charge is higher than that for all the other FE
16          Companies, while the proposed energy charge is within the range of the other
17          companies.  As such, if the revenue requirement for the class is scaled back, the scale-

15

1      back should be more that proportionally applied to the proposed increase in the customer

2      charge.  If a larger increase is applied to this class, the increase should be recovered in

3      the energy charge.

4      • For Penelec and Met-Ed, the proposed customer and energy charges, and the relationship

5      between the two charges, fall between the extremes of West Penn and Penn Power.

6      Accordingly, I would recommend that any scale-back be applied proportionally between

7      the customer and energy charge.

8

9   **Q.   What are the basic rate design characteristics that the Companies propose with respect**

10      **to GS Medium class?**

11  **A.**   This class includes non-residential customers with loads in excess of 1500 kWh per month

12      and below maximum demand of 400 kW.  The contemplated tariff for Rate GSM for all

13      four entities contains a customer charge, a demand (kW) charge applicable to all billing kW,

14      and a reactive power demand charge.  In addition, West Penn maintains an energy (kWh)

15      charge applicable to all billing (kWh). Table IEc-7 below summarizes this tariff design for

16      all four entities.

| Table IEc-7 | | | | | |
|---|---|---|---|---|---|
| **FE Companies Proposed Tariff Design for General Services Medium** | | | | | |
| **Rates** | **Company** | **Customer Charge (Single Phase)** | **Customer Charge (Three Phase)** | **Demand (kW)** | **Energy (per kWh)** |
| Current | Met-Ed | $24.07 | $43.03 | 5.11 | |
| | Penelec | $19.58 | $39.38 | 6.30 | |
| | Penn Power | $26.87 | $26.87 | 3.40 | |
| | West Penn | $18.91 | $18.91 | 2.81 | $0.00400 |
| Proposed | Met-Ed | $30.05 | $53.72 | 6.38 | |
| | Penelec | $23.92 | $48.11 | 7.70 | |
| | Penn Power | $38.17 | $38.17 | 4.83 | |
| | West Penn | $25.90 | $25.90 | 3.85 | $0.00548 |
| % Increase | Met-Ed | 24.8% | 24.8% | 24.9% | |
| | Penelec | 22.2% | 22.2% | 22.2% | |
| | Penn Power | 42.1% | 42.1% | 42.1% | |
| | West Penn | 37.0% | 37.0% | 37.0% | 37.0% |
| Source: FE Filings Vol. III, Figure 11; Vol. I, p. 70 | | | | | |

| 1 | Q. | **Do you agree with the proposed tariff design for the GS Medium class?** |
|---|---|---|
| 2 | A. | At this time, I do, although I may adjust this conclusion based on further discovery and |
| 3 | | testimony reviewed as this case proceeds. |
| | | |
| 4 | Q. | **What are your directional recommendations regarding tariff design for the GS** |
| 5 | | **Medium class for revenue allocation and scale-back?** |
| 6 | A. | For Met-Ed, to the extent that final GSM class revenues are to be reduced from its proposed |
| 7 | | level at the conclusion of this proceeding, I recommend that the Company apply a |
| 8 | | proportionate scale-back to its proposed GSM customer and demand charges. For Penelec, |
| 9 | | I recommend any reduction focus on reducing the demand charge. For Penn Power, I |
| 10 | | recommend that any reduction focus on the customer charge. For West Penn, any reductions |
| 11 | | in class revenue requirement be focused on reducing the energy charge. |
| | | |
| 12 | Q. | **Does this conclude your direct testimony?** |
| 13 | A. | Yes, it does. |
| 14 | | |

**EXHIBIT IEc-1**


**RÉSUMÉ AND EXPERT TESTIMONY LIST**



**FOR**



**MARK D. EWEN**

# IEc

## Overview

Mr. Ewen has a strong background in applied economics, empirical methodologies, and financial analysis.  As a Principal at Industrial Economics, Incorporated (IEc), he focuses on expert case management and economic damages estimation in a variety of litigation contexts, regulatory and environmental economics, and financial analysis.  Within his areas of expertise, Mr. Ewen has been qualified as an expert witness before judicial and regulatory bodies (see schedule of testimony and appearances). He has also served as a Managing Director of the firm.

## Education

Master of Public Policy, University of Michigan

Bachelor of Arts, summa cum laude in Economics and Political Science, University of North Dakota

## Project Experience

Examples of his project work include the following:

Mr. Ewen has participated in various proceedings concerning energy markets and regulated utilities.  These efforts, which focus on issues related to cost allocation and rate design, include working on behalf of industry and consumer intervenor groups in rate-making cases before the public utility commissions in Pennsylvania and Alberta, Canada, and the U.S. Postal Rate Commission.  For example, for the **PENNSYLVANIA OFFICE OF SMALL BUSINESS ADVOCATE**, he has provided consulting and analytic support relating to electricity and natural gas tariff design, revenue requirements, and other regulatory initiatives concerning electrical and natural gas distribution utilities. For the **RHODE ISLAND ATTORNEY GENERAL,** Mr. Ewen conducted a due diligence review of PPL's proposed acquisition of Narragansett Electric Company and its potential impacts on the state's ratepayers.

For the **NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY (NYSERDA) AND DEPARTMENT OF PUBLIC SERVICE (DPS)**, Mr. Ewen provided expert services assessing the economic impacts to municipal governments of extended electricity outages related to Tropical Storm Isaias. As part of this work, he constructed a model to estimate various costs of incremental staffing requirements for over 500 localities, including excess overtime, surge time (i.e., bringing on extra staff for outage response coordination and logistics), and idle time (e.g., crews waiting extended periods for downed lines to be de-energized).  The review also included consideration of other direct costs, including, among others: effects to water systems; delivery of bottled water; operation of generators; and other constraints on the provision of essential governmental services. The litigation was settled to the satisfaction of the involved parties.

For the **NYSERDA AND NEW YORK DPS,** Mr. Ewen directed the development of a Generic Environmental Impact Statement (GEIS), pursuant to the requirement of the State Environmental Quality Review Act (SEQRA) that assessed the environmental and economic impacts of the "Reforming the Energy Vision" and "Clean Energy

Fund" initiatives within the state. He also directed the preparation of a Supplemental EIS to assess the environmental and economic impacts of the newly proposed Clean Energy Standard (CES). The CES is being developed to support the state's goal of supplying 50 percent of electricity demand with renewable generation resources by the year 2030. More recently, he directed the development of a model to assess the financial viability of various waste-to-energy technologies, and related social welfare benefits. This model uses detailed capital budgeting scenarios for specific facilities to generate forecast scenarios.

For the **U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM)**, directing an assessment of the Bureau's approach to calculating and presenting the operating fee included in offshore wind leases under BOEM's jurisdiction. As part of this engagement, IEc provided a number of recommendations for simplifying the implementation of the operating fee formula and identified available data sources and approaches to estimating individual components of the fee formula. The review also addressed the structure and levels of fees associated with operations of renewable wind energy projects in the U.S. and worldwide. More recently, IEc has been supporting the development of Standard Operating Procedures for the fee calculation and lease management process. The overall goal is to provide information resources and a methodological approach that will allow lessees to derive accurate data for fee equation variables efficiently and consistently, and for BOEM to present the fee calculation clearly in the lease.

For **NYSERDA,** conducting a market analysis examining the potential economic development opportunities that could accrue in New York from hydrogen playing a role in achieving components of its Climate Leadership and Community Protection Act.

For the **U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF OCEAN ENERGY MANAGEMENT**, managed the development of a model to assess the economic and fiscal impacts of offshore oil and gas activity in the Gulf of Mexico and other BOEM OCS regions. This model, the Lifecycle Impacts Model (LCIM), assesses the economic and fiscal impacts associated with a specific lease or group of leases, over the time horizon of the lease(s). IEc's framework for the model was to build a capital budgeting forecasting tool for lease development, yielding estimates of industry expenditures, OCS revenues, industry profits, and employment impacts for a single lease or a set of leases. A key component of model development was to dynamically simulate the complex and unique timing parameters of lease development, incorporating the influence of critical exogenous factors like market prices and lease geology.

For the **U.S. COAST GUARD, NATIONAL POLLUTION FUNDS CENTER**, Mr. Ewen provides ongoing support to the NPFC in adjudicating damages claims resulting from oil spills. These claims include damages for business interruption, lost profits, property damage or value diminution, increased costs, and lost wages or employment, among other categories. Cases have also included damages for contract delays to construction projects and shipping demurrage. Industry sectors that Mr. Ewen has evaluated include: *electricity generation (nuclear and coal); railroads; cruise ships; oil ship transport; lodging and tourism; food and beverage; gambling; fisheries; marinas; real estate development, oil and gas development; and oil refining.*

Mr. Ewen's analytic work includes expert financial analysis and economic damages estimation in the context of general litigation and environmental enforcement actions. These efforts include assessing damages in breach of contract, nuisance, and cost recovery actions, and assessing the financial capabilities and economic benefit of noncompliance of firms accused of environmental violations. Clients in this area of his practice include the **U.S. DEPARTMENT OF JUSTICE, U.S. COAST GUARD, U.S. ENVIRONMENTAL PROTECTION AGENCY, STATES,** and private parties.

**IEc**

## Testimony and Appearances

Mr. Ewen has provided testimony or appeared in the following cases and regulatory proceedings.

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning cost allocation, revenue allocation, and rate design in the base rates case for PECO Gas (Docket No. R-2024-3046932, June 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning cost allocation, revenue allocation, and rate design in the base rates case for PECO Gas (Docket No. R-2024-3046932, June 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning cost allocation, revenue allocation, and rate design in the base rates case for Columbia Gas of Pennsylvania (Docket No. R-2024-3046519, June 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning the Default Service Plan for PPL Electric (Docket No. P-2024-3047290, June 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning the Default Service Plan for PECO Energy Company (Docket No. P-2024-3046008, April/May 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning recovery of purchased gas costs and revenue sharing for National Fuel Gas Distribution Corporation (Docket No R-2024-3045177, March 2024).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning the Default Service Plan for Pike County Light and Power Company (Docket No. P-2023-3039927, July 2023).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning cost allocation, revenue allocation, and rate design in the base rates case for Columbia Gas of Pennsylvania (Docket No. R-2022-3031211, June 2022).

On behalf of Attorney General of the State of Rhode Island, submitted testimony before the Rhode Island Division of Public Utilities and Carriers concerning due diligence and related reviews of PPL Corporation's proposed acquisition of Narragansett Electric Company from National Grid USA (Docket No. D-21-09, November 2021).

Expert report and deposition testimony concerning economic damages and related financial matters, *Seaplane Adventures, LLC, vs. County of Marin, California*; expert report filed September 2021, deposition testimony given September 2021.

Expert reports and deposition testimony on bankruptcy reorganization plan feasibility and related financial matters, *in re: First Energy Solutions Corp., et al., Debtors, Case No. 18-50757*; expert reports filed July 2019, deposition testimony given August 9, 2019.

**INDUSTRIAL ECONOMICS, INCORPORATED**

# IEc

Expert declaration concerning economic damages and related financial matters, *in re: Outer Banks Power Outage Litigation, all actions, No. 4:17-CV-141-D*, March 2018.

Expert report and deposition testimony on Economic Damages in *State of Alaska v. Williams Alaska Petroleum, Inc., et al., Case No. 4FA-14-01544 CI;* expert report filed December 2016, deposition testimony given February 15, 2017.

Expert reports and deposition testimony on Economic Benefit in *Sierra Club v. Energy Future Holdings Corp. et al., Case No. 5:10-cv-156 (E.D. Tex.)* and *Sierra Club v. Energy Future Holdings Corp. et al., Case No. 6:12-cv-108 (W.D. Tex.)*; expert reports filed in June and July 2013, deposition testimony given August 2013. Trial testimony given in Case No. *6:12-cv-108 (W.D. Tex.) in March 2014.*

Expert testimony on ability-to-pay provided, in the matter of Mercury Vapor Processing Technologies, Inc., et al. (No. RCRA-05-2010-0015), July 2011.

Expert Declaration in a patent case concerning economic and financial matters in the context of environmental credits valuation -- In re Patent Application of: Jeff Andrilenas et al., Application No.: 12/328,219, For: VALUING ENVIRONMENTAL CREDITS, submitted June 2011.

Export report and deposition testimony on financial matters in Evansville Greenway and Remediation Trust v. Southern Indiana Gas and Electric Company, Inc., et al. (03:07-cv-0066-SEB-WGH); expert report filed July 2009, deposition testimony given January 2010.

Expert testimony on ability-to-pay provided, in the matter of Robert J. Heser, Andrew J. Heser, and Heser Farms (No. CWA-05-2006-0002), May 2007.

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning tariff design issues for Columbia Gas of Pennsylvania (Docket No. R-00049783, May 2005).

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning cost allocation, revenue assignment, and rate design for Pennsylvania Power and Light (Docket No. R-00049255, August 2004).

Expert report on economic damages in United States v. Southern California Edison No. CIV. F-01-5167 OWW DLB (E.D. Cal)., July 2004; deposition testimony provided September 2004.

Expert testimony on ability-to-pay provided in U.S. v. Peter Thorson, Managed Investments, Inc., Construction Management, Inc., and Gerke Excavating, Inc. (No. 03-C-0074), May 2004.

Expert testimony on ability-to-pay provided in U.S. v. Paul A. Heinrich and Charles Vogel Enterprises, Inc. (No. 03-C-0075-S), October 2003.

Expert testimony on ability-to-pay provided in the matter of Dearborn Refining Company (No. RCRA-05-2001-0019), February 2003.

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning recovery of purchased gas costs and revenue sharing for PFG Gas and Northern Penn Gas (Docket No. R-00027389, July 2002).

IEc

Expert report and testimony on economic damages in Carol Marmo et al. v. IBP, Inc.; expert report filed March 2002, deposition testimony given June 2002, September 2004, and testimony at trial given February 2005.

On behalf of Pennsylvania's Office of Small Business Advocate, submitting testimony before the Pennsylvania Public Utility Commission, concerning recovery of purchased gas costs and revenue sharing for National Fuel Gas Distribution Corporation (Docket No. R-00016789, March 2002).

On behalf of the Office of the Consumer Advocate, providing testimony before the United States Postal Rate Commission regarding cost allocation of city carrier street time costs. Docket No. R2000-1, July 11, 2000.

Expert report and declaration on ability-to-pay in re Indspec Chemical Corporation and Associated Thermal Services, Inc., and related testimony in U.S. EPA administrative court on February 24, 1998 (No. CAA-III-086).

Expert report on ability-to-pay in re Harrisburg Hospital and First Capital Insulation, Inc. and related testimony in U.S. EPA administrative court on October 8, 1997 (No. CAA-III-076).

*2024*

# APPENDIX A

## MEASURES OF PROGRESS TOWARD COST BASED RATES

## PENNSYLVANIA UTILITY COST AND REVENUE ALLOCATION

1  **<u>Introduction</u>**

2      The Pennsylvania Commonwealth Court held that cost of service is "the polestar" criterion

3  for assigning a utility rate increase among the various rate classes.[5]   Parties to Pennsylvania base

4  rates proceedings generally agree that this criterion implies that the revenues for each class at the

5  rates approved by the Commission should be closer to allocated costs than the rates in place when

6  the rate case is filed.  Thus, parties to the proceeding will typically compare some metric for cost

7  recovery under "proposed rates" with that same metric for cost recovery under "current rates."

8  This comparison can show (a) *whether* the proposed rates result in class revenues that are closer

9  to allocated costs, and (b) *how much* progress the proposed rates make toward moving class

10  revenues toward allocated costs.

11      While different metrics are used for this analysis, the most common metric in Pennsylvania

12  is the "indexed rate of return" metric (also called the "relative rate of return" or "unitized rate of

13  return" metric).  This appendix demonstrates why the indexed rate of return is not a reliable metric

14  for identifying whether proposed rates are closer to allocate costs than current rates, and that even

15  where the indexed rate of return correctly implies that there is progress toward cost-based rates, it

16  is not a reliable indicator of the amount of progress that is achieved.[6]  This appendix also compares

17  the indexed rate of return to three other metrics for evaluating progress toward cost-based rates,

18  namely the dollar subsidy, the rate of return differential, and revenue-cost ratio metrics.

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[5] <u>Lloyd v. Pennsylvania Public Utility Commission</u>, 904 A.2d 1010, 1020 (Pa. Cmwlth. 2006).

[6] This problem with the indexed rate of return metric was identified in OSBA-sponsored testimony at least as early as 1994.  This critique has been presented in expert testimony many times since.   No credible rebuttal to these basic conclusions has been submitted, but the widespread use of this flawed metric continues.

## The Structure of the Cost Allocation Study

The indexed rate of return metric is derived from the method that is most often used for utility cost allocation in Pennsylvania. When a utility or regulator develops a revenue requirement for a test year, it simply sums all of the individual cost items for that year, including operating and maintenance ("O&M"), administrative and general ("A&G"), depreciation, taxes other than income, income taxes and allowed return on rate base. Thus, the objective of a cost allocation study should be to simply allocate each of these cost elements to the various rate classes. Because the allowed return and associated income tax are derived from rate base, the cost allocation study allocates all net plant and other rate base items to the various rate classes, and the return and income taxes can then be allocated in proportion to rate base.

Cost allocation studies in Pennsylvania, however, are most often conducted on a class rate of return basis. That is, the cost allocation study calculates a class rate of return by taking revenues, deducting the allocated O&M, A&G, depreciation, and taxes other than income, to produce a pre-tax class net income. Income taxes are then most often allocated based on the calculated pre-tax class income, and a net income by class value is derived by difference. The allocated pre-tax and net income figures are thus not a cost of capital, but represent the implied return provided by each class under the revenues (current or proposed) used in the cost allocation study. These net income values are then divided by the allocated rate base, to produce percentage class rates of return.[7] Thus, with this approach to cost allocation, there is a desire by utilities and regulators to develop a metric for evaluating progress toward cost-based rates that is based on the class rates of return produced by the cost allocation study.

## Defining Progress Toward Cost-Based Rates

It is not necessarily obvious what it means to "move rates more into line with allocated cost" between current and proposed rates. At the simplest level, one could argue that if the current rate revenues for a particular class are below the allocated cost for that class at the full proposed revenue requirement, any increase in rates will move that class's revenues closer to allocated cost. However, the objective of this exercise is to measure the progress toward cost-based rates for each

---

[7] Some Pennsylvania utilities also calculate cost of service using a "levelized rate of return" method, in which return and income tax costs are allocated such that each class produces the system average rate of return. This approach is arithmetically equivalent to allocating return and income tax costs in proportion to rate base, as described above.

1    rate class compared to that for all of the other classes.  Thus, a revenue allocation proposal must

2    be evaluated for its impact on all of the rate classes.

3    Also at the simplest level, of course, a proposed revenue allocation will by definition move

4    rates more into line with allocated cost if each class's revenues are moved exactly to the full

5    proposed allocated cost of service.  Or, equivalently, rates are exactly cost-based when each class's

6    revenues are set such that the class produces the system average rate of return.  Therefore, there is

7    no question that moving a class exactly to an indexed rate of return of unity (1.0) is necessarily

8    consistent with making rates more cost-based.

9    In many base rate proceedings, however, moving rates fully into line with allocated costs

10   cannot be achieved due to consideration of other rate design factors, most notably "rate

11   gradualism," which serves to limit the increase for any particular class of customers in any rate

12   proceeding, and has the aim of gradually moving rates into line with allocated cost.

13   Thus, in terms of determining whether a particular rate proposal moves rates into line with

14   allocated cost, this appendix takes the position that there is progress toward cost-based rates if the

15   proposed relative rate increases across the various classes, when followed for a number of base

16   rates proceedings (in which there is no change in the relative cost structure), will eventually result

17   in cost-based rates.  Thus, for any particular metric, it is important to consider not only the

18   difference between the metric and current rates and proposed rates in one base rates case, but also

19   what that metric will imply going into the next base rates case.

20   As shown further in the numerical example below, this standard for defining progress

21   implies that for classes with revenues below allocated cost at current rates (or, equivalently, with

22   a class rate of return below system average), progress can only be achieved by assigning that class

23   a rate increase above the system average increase.  This, of course, is just plain common sense.  If

24   a class is under-recovering costs, it should be assigned an above average increase.  As shown

25   below, however, the indexed rate of return metric fails at common sense.

## The Numerical Example

2       This appendix takes the approach of defining a specific numerical example, and showing

3    the implications of various different metrics on different rate increase scenario.  The calculations

4    associated with this example are also provided in MS Excel electronic format (IEc WP2), and

5    parties are able to simulate alternative examples to evaluate the rigor of this analysis.

6       The example attached to this appendix shows the arithmetic impacts of a single two-class

7    utility example under four different rate increase proposals.  Each page shows the implications of

8    a different revenue-cost metric, namely the indexed rate of return, dollar subsidy, differential rate

9    of return, the revenue-cost ratio and the normalized revenue-cost ratio.

10       The example involves two rate classes, A and B, in which each generates the same revenue

11    at current rates, but in which Class A has a moderately higher cost to serve.   The four rate increase

12    scenarios are (I) an across-the-board increase in which both classes get the same percentage

13    increase, (II) a scenario with a moderately higher percentage increase for Class B, and (III) a

14    slightly higher percentage increase for Class A, and (IV) a moderately higher percentage increase

15    for Class B.

16       The common-sense answer is that the across-the-board scenario (I) should show no

17    progress toward cost-based rates, Scenario II should indicate that revenues are moving farther

18    away from costs, and Scenarios III and IV should show that revenues are moving slightly and

19    modestly closer to allocated costs.  The discussion of each metric below highlights where the

20    metric produces results that are at odds with these expectations.

21       To evaluate the question as to whether there is consistent progress toward cost-based rates,

22    the metrics are evaluated at both proposed rates in the "current" base rates proceeding, and for

23    what the values would imply going into the next base rates case after a uniform increase in costs.

## The Indexed Rate of Return Metric

25       The indexed rate of return metric is measured as the class rate of return divided by the

26    system average rate of return, at current and proposed rates.  If revenues are fully in line with

27    allocated costs, the class indexed rate of return is unity (1.0).  Thus, if a class has an indexed rate

28    of return at present rates that is higher than system average, it is deemed to be over-recovering

1   costs, and conversely, where the indexed rate of is below unity, the class is under-recovering

2   allocated costs.

3       As a standalone measure for relative cost performance, there is nothing wrong with the

4   indexed rate of return metric – for any particular system average rate of return scenario, the farther

5   a class's indexed rate of return is from unity, the farther it is from allocated costs.

6       Moreover, since an indexed rate of return of unity represents cost-based rates, it is

7   conceptually appealing to conclude that if the indexed rate of return moves closer to unity, there

8   is progress toward cost-based rates.  Moreover, it is similarly appealing to conclude that progress

9   toward cost-based rates could be measured by how much closer the index gets toward unity

10  between current and proposed rates.  Unfortunately, this intuitive approach fails in the actual

11  arithmetic.

12      Utilities have used this approach for decades in Pennsylvania.  While it is not clear why

13  alternative methods have not been adopted, it may be that the metric is attractive to both utilities

14  and regulators in that it tends to show significant progress toward.[8] cost-based rates when in fact

15  there is little such progress.  This then allows utilities to claim that they are following the cost

16  standard without having to make politically unpopular decisions regarding differentiating rate

17  increases among the various rate classes.

18      When applied in an actual example, the indexed rate of return fails even the simplest test.

19  In the example shown, the current rates class rates of return are 2.50% and 5.71% for Classes A

20  and B respectively, producing indexed rates of return of 0.625 and 1.429 relative to the system

21  average return of 4.00%.   When a 30% increase is applied to both classes, the system average rate

22  of return rises to 8.00%, and the class returns rise to 6.25% and 10.00% respectively, yielding

23  indexed rates of return of 0.781 and 1.250.

24      Thus, despite the fact that both classes get the same percentage increase and common sense

25  says that there should be no progress toward cost-based rates, the indexed rate of return metric not

26  only implies that there is progress, but that there is significant progress.  The Class A indexed rate

---

[8] The Commission has, on occasion, adopted methods other than indexed rate of return.   See, for example,
*Pennsylvania Public Utility Commission v. City of Bethlehem -- Water Department*, Docket No. R-2020-3020256,
Order entered April 15, 2021, at 36.

1  of return moves from 0.625 to 0.781, which appears to imply that the class has moved 42 percent

2  of the way to cost-based rates.[9]

3       The fallacy of this logic is shown in the implications for the next rate case. When costs

4  increase, the system average rate of return falls back to its lower level and the indexed rate of

5  return metrics all shift farther away from unity. Thus, as shown, an across-the-board increase in

6  the current rate case followed by an across-the-board cost increase for the next case will

7  demonstrate that, in fact, there is no progress toward cost-based rates and the indexed rates of

8  return are right back where they started.

9       The other revenue increase scenarios show similar problems with the indexed rate of return

10  metric. In Scenario II, despite a smaller percentage increase for the higher-cost Class A, the

11  indexed rate of return again implies that there is progress toward cost-based rates, which is

12  obviously nonsense. This is again demonstrated by the implications for the next base rates case,

13  which understandably show that rates are farther out of line than they were going into the current

14  rate case. It is simply unreasonable to believe that assigning larger percentage increases to the rate

15  class that is already over-recovering costs will somehow reduce inter-class subsidies. And yet

16  that is the implication of the indexed rate of return metric.

17       In Scenarios III and IV, the indexed rate of return does produce the correct directional

18  answer, namely that rates are moving more into line with allocated cost. But the indexed rate of

19  return metric implies that both scenarios result in enormous progress toward cost-based rates, when

20  in fact there is relatively little progress, particularly in Scenario III. As shown in the example,

21  despite a small differential in the rate increases, the indexed rate of return implies that revenues

22  have moved 50 percent of the way toward allocated cost. Realistically, however, as shown in the

23  implications for the next base rates case, the actual progress is much lower.

24       Thus, the indexed rate of return metric is a wholly unreliable guide for evaluating progress

25  toward cost-based rates in a utility rate proceeding, because it (a) may show progress toward cost-

26  based rates when in fact revenues are moving farther away from costs, and (b) will overstate the

27  magnitude of progress toward cost-based rates when progress is occurring.

---

[9] "Progress" is measured by how much the metric has moved divided by how far it needs to move to become fully cost-based. Thus, in the residential class example, the index moves from 0.625 to 0.781, a difference of 0.156, compared to moving fully to cost-based rates, which would require the index to move from 0.625 to 1.000, a difference of 0.375. Progress is measured as 0.156/0.375, or 42 percent.

## The Dollar Subsidy Method

1
2      While the indexed rate of return metric is the most common approach used by Pennsylvania

3 utilities, the Commission has also supported the use of the dollar subsidy metric. In an order

4 involving the City of Bethlehem – Water Department, the Commission concluded:

5
6
7
> "As noted by the OSBA, the proper yardstick for measuring the degree of
> movement toward cost of service is the change in the absolute level of class
> subsidies at present and proposed rates."[10]

8      In the dollar subsidy method, the total cost to provide service is calculated using the method

9 described above, in which each component to cost, including return and income taxes, is allocated

10 to each cost. The difference between current rate revenues and the allocated cost is the dollar

11 subsidy.[11]

12      In allocating the return and income tax costs under the "current rates" evaluation, the values

13 used represent only the return that the utility would achieve and the income taxes that it would

14 incur if it were assigned no rate increase. These values therefore do not represent the utility cost

15 of capital, but simply residual values of what is left from current rate revenues after O&M, A&G,

16 depreciation and other taxes are deducted.

17      When the dollar subsidy metric is applied to the four alternative revenue allocation

18 proposals in the attached example, it implies the following:

19
20
21
22
- For the across-the-board increase, the dollar subsidy metric indicates that the dollar value of the revenue-cost difference increases under proposed rates, implying that rates are moving farther away from costs. In dollar terms, that conclusion is correct, although in percentage terms the subsidies remain the same.

23
24
25
- When a larger increase is assigned to Class B, the dollar subsidy metric indicates correctly that rates are moving farther away from allocated cost, and that the problem will be worse with the next base rates proceeding.

---

[10] *Pennsylvania Public Utility Commission v. City of Bethlehem -- Water Department*, Docket No. R-2020-3020256, Order entered April 15, 2021, at 36.

[11] This appendix uses the term "subsidy" as the difference between revenues and fully allocated cost in a utility cost allocation study. Theoretical economics generally defines subsidy based on incremental cost concepts, rather than fully allocated cost.

1        •    When a modestly larger increase is assigned to Class A, the dollar subsidy metric

2             implies that there is no progress toward cost-based rates in the current rate proceeding,

3             and that the situation will be worse in the next base rates case.  In effect, even though

4             the slightly higher rate increase for Class A will (eventually) lead to cost-based rates,

5             the dollar subsidy method implies that there is no progress.

6        •    When a materially larger increase is assigned to Class A, the dollar subsidy metric

7             correctly indicates that there is progress toward cost-based rates.

8        Thus, overall, the dollar subsidy metric will tend to slightly understate progress toward

9 cost-based rates, but the distortion is far smaller (and in the opposite direction) of that of the

10 indexed rate of return metric.

11 **The Differential Rate of Return**

12        The differential rate of return metric is similar to the indexed rate of return metric, in that

13 both approaches calculate class rates of return and current and proposed rates, and compares each

14 class's return to the system average.   However, where the indexed rate of calculates the *ratio* of

15 class to average return, the differential rate of return calculates the *difference* between class and

16 average rates of return.   In the indexed rate of return, cost-based rates are achieved with an indexed

17 rate of return of unity (1.0); for the differential rate of return, cost-based rates are achieved with a

18 differential rate of return of zero.

19        When applied to the four revenue allocation scenarios in the example, the differential rate

20 of return produces results that are nearly the same as the dollar subsidy method.    That is, the

21 differential rate of return calculation will slightly understate progress toward cost-based rates, but

22 the results are much less distorted than those from the indexed rate of return metric.

23 **Revenue-Cost Ratio**

24        The revenue cost ratio is similar to the dollar subsidy metric, except rather than taking the

25 difference between revenues and allocated costs, it takes the ratio of revenues to allocated cost.

26 Like the indexed rate of return, cost-based rates are achieved at a revenue-cost ratio of unity (1.0

27 or 100 percent).

28        Unlike the indexed rate of return metric, however, the revenue-cost ratio generally does

29 not distort the implications of a revenue allocation proposal.  As shown in the example, in all four

revenue allocation proposals, the revenue-cost ratio correctly indicates when there is progress toward cost-based rates and when there is not.

The only downside to this unadjusted revenue-cost ratio approach is that the progress toward cost-based rates in the current case is not the same as that going into the next base rates case. This results because the mix of operating costs allocated to each class is different from the mix of rate base costs. This minor distortion is addressed in the final metric below.

**Normalized Revenue-Cost Ratio**

The normalized revenue-cost ratio makes a technical correction to the revenue-cost ratio metric to reduce the distortion associated with using a non-cost parameter, namely the residual return and income tax costs, as a measure of cost at current rates. This metric uses fully allocated costs including the utility's allowed return on capital as the cost metric at both current and proposed rates. In this metric, however, the revenues at current rates are "normalized" by applying the system average rate increase to each class. Thus, in this metric, the current rates revenue-cost ratio is the revenues that would be earned from each class if an across-the-board rate increase were applied divided by the fully allocated class revenue requirement. This is then compared to the revenue-cost ratio that results from the actual proposed revenue allocation.

As shown in the attached example, this metric correctly shows the progress toward cost-based rates in each of the scenarios, and it also correctly predicts what each class's revenue-cost performance will be going into the next base rates case if there is no change in the underlying cost structure.

**Summary**

The indexed rate of return is a metric that has intuitive appeal, in that cost-based rates are achieved when the index is at unity (1.0), and that it would seem therefore that moving the index closer to 1.0 would represent progress toward cost-based rates.

Alas, it is not that simple. As shown in the examples attached, and as evidenced in hundreds of utility rate proceedings in Pennsylvania, the indexed rate of return is not a reliable metric for gauging progress toward cost-based rates for any particular revenue allocation proposal. It may give a directionally correct answer, and it may not. And even when it does correctly show progress, it implies that there is much more progress toward cost-based rates than actually exists.

1   Of the five metrics evaluated in this review, the indexed rate of return is the only metric to

2 fail the test and imply that there is progress toward cost-based rates when there is none, and even

3 when rates are moving substantially away from allocated cost.

4   All the other metrics evaluated in this review are superior to the indexed rate of return

5 approach. The dollar subsidy and differential rate of return have a modest disadvantage in that

6 they may imply that there is no progress toward cost-based rates when in fact some small progress

7 is occurring. This is a relatively modest disadvantage since the distortion is much smaller than

8 that in the indexed rate of return, and more so because it will encourage Pennsylvania utilities and

9 regulators to adopt revenue allocation proposals that are more aggressive in moving revenues into

10 line with allocated cost, consistent with the legal standard that cost of service be the polestar

11 criterion.

12   Overall, however, the revenue-cost metric, particularly the normalized revenue-cost

13 metric, does not suffer from the distortions of any of the other methods, and is the most reliable of
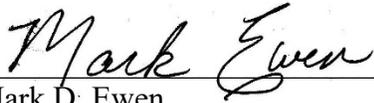
14 the methods on offer.

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**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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| | | |
|---|---|---|
| Pennsylvania Public Utility Commission | : | |
| | : | |
| v. | : | Docket No.  R-2024-3047068 |
| | : | |
| FirstEnergy Pennsylvania Electric Company | : | |

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**VERIFICATION**

</div>

I, Mark D. Ewen, hereby state that the facts set forth in the Direct Testimony labelled OSBA Statement No. 1 and referenced Exhibits are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 19 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Date:  6/24/2024               *Mark Ewen*
                                          Mark D. Ewen

| Pennsylvania Public Utility | : | Docket Nos. R-2024-3047068 |
| Commission | : | C-2024-3048411 |
| v. | : | |
| FirstEnergy Pennsylvania Electric | : | |
| Company | : | |

## CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless otherwise noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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DATE:  June 25, 2024

*/s/ Sharon E. Webb*
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Assistant Small Business Advocate
Attorney ID No. 73995

August 8, 2024

The Honorable Katrina L. Dunderdale
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The Honorable Emily DeVoe
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**Re:  Pennsylvania Public Utility Commission v. FirstEnergy Pennsylvania Electric Company / Docket No. R-2024-3047068**

Dear Presiding Judges:

Enclosed for please find Surrebuttal Testimony of Mark D. Ewen, labelled OSBA Statement No. 1-S with associated Exhibit IEc-S1, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceeding.

Copies will be served on all known parties in this proceeding, as indicated on the attached Certificate of Service.

If you have any questions, please do not hesitate to contact me.

Sincerely,

*/s/ Rebecca Lyttle*

Rebecca Lyttle
Assistant Small Business Advocate
Attorney ID No. 201399

*Enclosures*
cc:  PA PUC, Secretary Rosemary Chiavette (Cover Letter and Certificate of Service)
Mark Ewen
Parties of Record

# BEFORE THE
# PENNSYLVANIA PUBLIC UTILITY COMMISSION

| | | |
|---|---|---|
| **Pennsylvania Public Utility Commission** | : | |
| | : | |
| **v.** | : | **Docket No. R-2024-3047068** |
| | : | |
| **FirstEnergy Pennsylvania Electric** | : | |
| **Company** | : | |
| | : | |

### Surrebuttal Testimony and Exhibit of

### MARK D. EWEN

### On Behalf of the

### Pennsylvania Office of Small Business Advocate

### Topics:

**Cost Allocation**
**Revenue Allocation**
**Rate Design**

**Date Served:  August 8, 2024**

**Date Submitted for the Record:** _____

**SURREBUTTAL TESTIMONY OF MARK D. EWEN**

1 **1.** <u>**Introduction and Context**</u>

2 **Q.** **Please state your name and briefly describe your qualifications.**

3 A. My name is Mark D. Ewen. I submitted direct testimony and associated exhibits on behalf
4 of the Pennsylvania Office of Small Business Advocate earlier in these proceedings and my
5 qualifications were presented therein.

6 **Q.** **What is the purpose of this surrebuttal testimony?**

7 A. This surrebuttal testimony responds to the rebuttal testimony of FE PA (the "Company" or
8 "Companies") witness Timothy Lyons, Pennsylvania Office of Consumer Advocate
9 ("OCA") witness Karl R. Pavlovic, and Large User Groups ("LUG") witness Brian C.
10 Andrews

11 **2.** <u>**Cost Allocation**</u>

12 **Q.** **What are the positions of the various parties regarding the appropriate method for**
13 **classifying distribution costs for this proceeding?**

14 A. The parties' positions are as follows:

15 • Met-Ed, Penelec, Penn Power; and West Penn ("FE Companies" or "Companies"):
16 the Companies classify plant accounts 364, 365, 366, 367, and 368 based on the
17 minimum-size method (or minimum system method). The minimum-size method
18 classifies distribution facility costs between customer-related and demand-related
19 costs. The minimum-size method recognizes that there are scale economies
20 associated for serving larger customers. The customer component is derived as the
21 cost of a minimum size distribution system (comprising distribution poles, lines,
22 transformers, and other supporting infrastructure). Costs in excess of the minimum
23 system are deemed to be demand-related.

24 • OCA: Witness Pavlovic argues that the Companies' use of the minimum-sized
25 method to classify distribution costs as customer-related in Accounts 364-368 is
26 inappropriate and inconsistent with the principle of cost causation. Given that

| 1 | | demand is both the cause and driver of the Companies' distribution system costs, |
|---|---|---|
| 2 | | says Pavlovic, distribution costs do not vary with the number of customers and as |
| 3 | | such should not be classified as customer-related. Witness Pavlovic recommends that |
| 4 | | the Commission adopt OCA's alternative COSSs for the Companies without |
| 5 | | minimum-size classification of plant accounts as a guide for revenue allocation and |
| 6 | | rate design. |

7 • OSBA: I did not oppose the Companies' COSSs in my direct testimony, and I based

8 my alternative revenue allocations on the Companies' proposed cost allocations.

9 **Q. Please address Witness Pavlovic's objections presented in his rebuttal to the minimum-**

10 **size methods filed by the Companies to classify distribution plant costs.**

11 A. Witness Pavlovic summarizes OCA's objections on page 4, namely that "there is no basis in

12 theory, system design and operation practice, or empirical quantitative data to support

13 FirstEnergy's use of the minimum-size system method to classify as customer-related any

14 portion of its distribution costs.". As a result, Witness Pavlovic contends that the Company

15 should not classify any portion of the 364-368 distribution accounts as customer-related

16 costs.

17 I disagree that the minimum-size method has no basis in theory, system design, and operation

18 practice. The Companies' method is consistent with the NARUC Manual,[1] Commission

19 precedent (e.g., the PPL Electric matter),[2] and cost causation for electricity distribution. In

20 addition, absent the data to support that the Companies' distribution costs do not vary with

21 the number of customers, Witness Pavlovic relies on analysis in his direct and rebuttal

22 positions that is unrelated to this proceeding (Bonbright, 1988). Therefore, Witness Pavlovic

23 does not present sufficient evidence to justify rejecting the Companies' use of the minimum-

24 size method.

---

[1] The "NARUC Manual" refers to "Electric Utility Cost Allocation Manual," National Association of Regulatory Utility Commissioners, January 1992

[2] The Commission approved method for classifying both primary and secondary distribution system costs using the minimum system method was established in the PPL Electric matter at R-2010-2161694, and affirmed in the PPL Electric matter at R-2012-2290597.

1  **Q.**  **What data would support the claim that the Companies' distribution costs do not vary**
2  **with the number of customer?**

3  A.  Both the minimum-size and minimum-intercept methods for classifying distribution costs
4  are, at best, relatively rough approximations to the actual costs incurred to serve different
5  types of customers.

6  The only accurate method to measure if distributions costs vary with the number of
7  customers would be to track the specific individual system components used to serve
8  individual customers and to assign the cost for that equipment to those customers. Even this
9  method would require the use of allocation factors for each system component used by more
10  than one class, as well as adjustments for customers who can be served through alternative
11  paths.  Moreover, such an approach can only be undertaken by the utilities themselves, and
12  then only if detailed system configuration information is available.

13  The Companies did not provide planning, design and operating standards and procedures for
14  plant accounts 364-368, to verify if customers impact facilities costs in these accounts.
15  However, Witness Pavlovic does not provide any empirical evidence to support the claim
16  that the Companies' distribution costs do not vary with the number of customers. Absent
17  empirical data, the conceptual basis for and Commission precedent regarding methods to
18  classify distribution costs support the Companies' use of the minimum-size method.

19  The conceptual basis for the various methods that are in common use, including the
20  minimum-size method approved by the Commission, is that smaller, dispersed customers
21  tend to cost more to serve, per unit of demand, than larger customers.  While meeting peak
22  demand is certainly one of the design requirements of a distribution utility, another
23  requirement is that all customers be interconnected on the grid.  Moreover, the equipment
24  used to serve larger customers is typically less costly per unit of demand than that used to
25  serve smaller customers.  It is this need to interconnect all customers, plus the recognition
26  of the scale economies for the equipment, that conceptually gives rise to customer-related
27  distribution costs.

28  From a common-sense perspective, it is reasonable to conclude that it costs more in terms
29  of poles, conductors, conduit and transformers to serve 50 residential customers, each with

| | | |
|---|---|---|
| 1 | | 5 kW in maximum demand, than to serve one medium sized commercial customer with 250 |
| 2 | | kW of maximum demand. The 50 residential customers are likely spread over a wider |
| 3 | | geographic area, whereas the commercial customer can be served at a single location. |
| 4 | | Moreover, the costs for the distribution equipment located nearest to the individual |
| 5 | | customers exhibit economies of scale, in that unit costs decrease as customer size increases |
| 6 | | (e.g., transformers). It is both of these types of economies for serving larger customers that |
| 7 | | the various classification methods are conceptually designed to address. Contrary to Witness |
| 8 | | Pavlovic, in my view the number of customers directly impacts the cost of distribution |
| 9 | | infrastructure, not just the amount and costs of customer equipment. |
| 10 | **Q.** | **Do you agree with Witness Andrews' criticism of Professor Bonbright's 1988 text** |
| 11 | | **concerning the correlation between distribution costs and the number of customers?** |
| 12 | A. | Witness Andrews addresses Bonbright's claim that there is a lack of empirical data showing |
| 13 | | the correlation between distribution costs and the number of customers. Andrews argues that |
| 14 | | "the absence of a strong correlation at the system-wide level does not negate the existence |
| 15 | | of customer-related costs. There is a minimum level of distribution equipment that must be |
| 16 | | installed simply to add a new customer; therefore, a portion of distribution costs are incurred |
| 17 | | to connect customers regardless of their demands. This distribution connection cost should |
| 18 | | be classified as customer-related." (LUG St. No. 1R, p 7). |
| 19 | | I generally agree with this sentiment. Moreover, similar evidence of Professor Bonbright |
| 20 | | cited by an OCA witness was before the Commission in a prior PPL Electric matter, and it |
| 21 | | was rejected in that proceeding.[3] Consistent with Witness Andrews's conclusion, I would |
| 22 | | aver that Bonbright's analysis did not settle, once and for all, the question of how to classify |
| 23 | | distribution facility costs between customer-related and demand related costs. |
| 24 | **Q.** | **Should the Commission accept Witness Pavlovic's alternative COSSs for the** |
| 25 | | **Companies without minimum-size classification of plant accounts?** |
| 26 | A. | No, the Commission should reject the proposal, for the reasons outlined above. |
| 27 | | |

---

[3] See, for example, Main Brief of the Office of Consumer Advocate, Docket No. R-2012-2290597, pages 79-80.

| | | |
|---|---|---|
| 1 | **2.** | **Revenue Allocation** |

2 **Q. Please summarize the FE PA's rebuttal testimony with respect to the proposed**
3 **revisions to its filed revenue requirement and revenue allocation.**

4 A. Witness Lyons continues to recommend a uniform movement towards cost-based rates of
5 10 percent and claims this strikes an appropriate balance of minimizing inter- and intra-class
6 inequities and bill continuity considerations. Mr. Lyons rejects recommendations presented
7 in intervenor testimonies for a larger percentage movement to cost-based rates (FE PA St.
8 No. 7-R).

9 **Q. Have you adjusted your revenue allocation approach based on the Company or other**
10 **party positions?**

11 A. I have not modified my approach to revenue allocation. I continue to recommend what I
12 presented in my direct testimony. Although the revenue allocation proposed by Mr. Lyons
13 moves in the direction of aligning revenues with allocated costs, a 10 percent shift effectively
14 perpetuates significant misalignment between these two measures and more aggressive
15 progress towards cost-based rates is necessary. I concluded that the Companies' approach is
16 too heavily weighted toward arguments of rate gradualism. In so doing, the Companies have
17 relegated the "polestar" criterion for revenue allocation, namely the cost of service, to little
18 more than a guide to where class revenue requirements should be decades from now.

19 However, I have adjusted my revenue allocation to align with slight adjustments made by
20 the Companies to the revenue requirement and for a cost allocation adjustment made by
21 LUG witness Andrews.

22 To develop my updated alternative revenue allocation proposal, I adapted the Company's
23 general framework of progress towards system ROR and implemented several adjustments
24 to those values. First, I increased the progress towards system ROR as a means of better
25 allocating revenues to align with rate class costs. These measures, ranging from 50 and 75
26 percent, differ by rate district to ensure inter-class fairness, that is, to ensure that select
27 classes (namely Residential Service) do not bear a disproportionate share of cost increases.
28 Second, I limited the maximum increase to 1.5 times system average. For example, if the
29 proposed system average for a rate district is 20 percent, the maximum increase would be

1      set at 30 percent (20 * 1.5). Finally, I set the minimum rate change at zero, to avoid rate

2      reductions. The aggregate effect of these two limits—capping class rate increases at 1.5X

3      system average and restricting negative rate changes—results in a relatively small need for

4      reallocation of the remaining revenue requirements. I reallocated these revenues to those

5      classes that are not capped by the 1.5X rule, based on current rate revenues. In this way, the

6      unconstrained classes all contribute to the net subsidy needed for the constrained classes.[4]

7      As mentioned in my direct testimony, I observed that the last FirstEnergy base rates case

8      was eight years ago, in 2016.  At the progress toward cost-based rates proposed by witness

9      Lyson with eight years between rate cases, FirstEnergy will reduce the subsidies from/to

10     each rate class by 90 percent in about 175 years.[5]

11     Furthermore, the traditional "proportional scaleback" approach for adjusting the approved

12     revenue increases at the filed revenue requirement down to a reduced revenue requirement

13     will generally reduce progress toward cost-based rates. This approach simply applies the

14     same factor to each class's increase at the full requirement; e.g., if the overall increase is

15     reduced from $500mm to $300mm, each class's proposed increase is multiplied by 0.6.[6]

16     This effect supports a more aggressive approach toward cost-based rates at the full claimed

17     revenue requirement.

18 **Q.**     **What are the current positions of the other intervening parties with respect to revenue**

19         **allocation?**

20 A.     I summarize the current positions of the parties and the Company in IEC WP1-S. In

21       reviewing these positions, I conclude that my proposed revenue allocations and rate

22       increases for the Companies, which I presented in my direct testimony, would best align

23       class revenues with class costs relative to other proposed allocations in this proceeding.

---

[4] The details for these calculations are provided in IEc WP1-S. Adjustments to the Companies' revenue requirement and Andrews' cost allocation adjustment are reflected in Tables IEc 1-7. Tables IEC 8-13 compare the proposed revenue allocation at the full revenue requirement for the Companies, OCA, I&E, LUG and OSBA.

[5] In each proceeding, the subsidy is reduced by a factor of 0.9.  In 22 rate proceedings, the remaining subsidy would be $0.9\textasciicircum{}22 = .0985$.   At eight years between proceedings, that's 176 years.

[6] Sample calculations for Met-Ed are provided in IEc WP1-S showing the impact of a proportional scaleback on progress towards cost-based rates. See worksheet titled "Met-Ed Cost Based Rates Example".

| 1 | | Further, my results are consistent with rate gradualism. Note that, if the Commission |
|---|---|---|
| 2 | | approves, or the parties agree to, lower revenue requirements in this proceeding, any |
| 3 | | scaleback for purposes of revenue allocation should be completed in a way that is cognizant |
| 4 | | of my related note above concerning the regressive effect of a proportional scaleback. |

5  **Q.**    **Please comment on Witness Andrews' rebuttal testimony regarding your proposed**
6           **revenue allocation.**

7  A.    Witness Andrews acknowledges the need for additional movement towards cost-based rates.
8        He also makes an adjustment to the Company's cost of service study for West Penn
9        concerning the allocation of primary system costs to subtransmission customers. I accept the
10       corrections and have made refinements to my proposed revenue allocation based on the
11       adjusted cost of service study shown in IEC WP1-S.

12  **Q.**    **Do you have any specific comments on Witness Pavlovic's revenue allocation, given**
13          **you critiqued OCA's alternative cost allocation methodology?**

14  A.    Witness Pavlovic's revenue allocation is based on the results of OCA's alternative COSS
15       without minimum-size classification of distribution plant costs. For the reasons detailed in
16       the preceding section, I conclude that this cost allocation methodology does not represent a
17       reasonable basis upon which to allocate revenues.

18  **Q.**    **Please comment on Witness Kubas's testimony regarding your proposed revenue**
19          **allocation.**

20  A.    I&E Witness Kubas recommends small reallocations of the proposed revenue for Penelec
21       and West Penn Rate districts including increasing the proposed revenue for General Service
22       Small (GSS) and Street Lighting (STLT). Witness Kubas proposes to reduce the proposed
23       revenue for General Service Large (GSL) and All-Electric SCH (H) class to offset the
24       increase. This recommendation moved the relative rate of return for the GSS class to 0.00
25       and the STLT class to -0.73 which keeps the increases for these classes at about 38 percent,
26       just below twice the system average of 19.7 percent.  I continue to maintain that my
27       allocation approach better aligns revenue with costs within the confines of proper rate
28       gradualism, using measures of such progress that are superior to other measures like relative
29       rate of return.

## 3. Rate Design

1  **3.**    **Rate Design**

2  **Q.**    **Please comment on the Company's response to your rate design testimony.**

3  A.    Witness Lyons recognizes that I provided a series of recommendations concerning rate

4         design for the General Service Small and General Service Medium customer classes,

5         focusing on directional scaleback adjustments for the customer and energy charges in the

6         event of a reduction in revenue requirement (FE PA St. No. 7-R, p 20).    My

7         recommendations are not rebutted and I retain my position on appropriate rate design

8         adjustments for these classes in the event of revenue requirement reductions.

9  **Q.**    **Does this conclude your surrebuttal testimony?**

10 A.    Yes, it does.

**EXHIBIT IEc-S1**


**IEc ELECTRONIC WORKPAPERS**



IEc WP1-S**


**\*\* The above referenced Electronic Workpaper, "IEc WP1-S", will be served electronically only, as it is available in Excel format only and will be served simultaneous to the OSBA's Surrebuttal Testimony\*\***

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Pennsylvania Public Utility Commission** | : | |
| | : | |
| **v.** | : | **Docket No. R-2024-3047068** |
| | : | |
| **FirstEnergy Pennsylvania Electric** | : | |
| **Company** | : | |

## <u>VERIFICATION</u>

I, Mark D. Ewen, hereby state that the facts set forth in the Surrebuttal Testimony labelled OSBA Statement No. 1-S and associated Exhibit IEc-S1 are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 19 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).


Date:   August 8, 2024                                   _Mark Ewen_                                   
                                                                        Mark D. Ewen

| | | |
|---|---|---|
| Pennsylvania Public Utility Commission | : | Docket Nos. R-2024-3047068 |
| v. | : | C-2024-3048411 |
| FirstEnergy Pennsylvania Electric | : | |
| Company | : | |
| | : | |

## CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless otherwise noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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DATE:  August 8, 2024

*/s/ Rebecca Lyttle*
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