

Petition of PPL Electric
Utilities Corporation
for a Waiver of the
Distribution System
Improvement Charge Cap
of 5% of Billed Revenues

Docket No.:
P-2024-3048732

Call-In Telephonic
Hearing

Pages 44 - 146

Judge's Chambers
State Office Building
801 Market Street
Philadelphia, PA

Wednesday, September 4, 2024
Commencing at 10:00 a.m.

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Docket No. P-2024-3048732

Hearing Date: September 4, 2024

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Devin Ryan

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April 26, 2024

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
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P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution
System Improvement Charge Cap of 5% of Billed Revenues
Docket No. P-2024-**

Dear Secretary Chiavetta:

Attached for filing please find the Petition of PPL Electric Utilities Corporation ("PPL Electric" or the "Company") for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Revenues.

Copies are being provided as indicated on the attached Certificate of Service.

Respectfully submitted,



Devin Ryan

DR/kl
Attachment

cc: Certificate of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

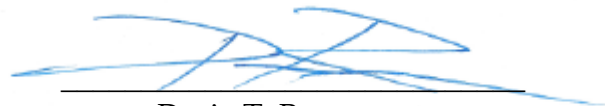
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Devin T. Ryan

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities :
Corporation for a Waiver of the : Docket No. P-2024-_____
Distribution System Improvement :
Charge Cap of 5% of Billed Revenues :

**PETITION OF PPL ELECTRIC UTILITIES CORPORATION FOR A
WAIVER OF THE DISTRIBUTION SYSTEM IMPROVEMENT CHARGE
CAP OF 5% OF BILLED REVENUES**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

Pursuant to Section 1358(a) of the Public Utility Code, 66 Pa. C.S. § 1358(a), PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) hereby files this Petition requesting that the Pennsylvania Public Utility Commission (“Commission”) waive the Company’s Distribution System Improvement Charge (“DSIC”) cap of 5% of billed revenues and increase the maximum allowable DSIC to 9% for bills rendered on or after January 1, 2025, because a higher DSIC cap is necessary to ensure and maintain adequate, efficient, safe, reliable, and reasonable service for the benefit of PPL Electric’s customers and as required by Section 1501 of the Public Utility Code, 66 Pa. C.S. § 1501.

The DSIC accelerates the repair and replacement of aging infrastructure by providing timely recovery of investments in eligible property, which help improve or maintain the adequacy, efficiency, safety, reliability, or reasonableness of utility service. However, in certain situations, the DSIC’s existing cap limits full utilization of the DSIC to address the issues on its distribution system. Accordingly, the General Assembly empowered the Commission to waive the DSIC cap when necessary to “ensure and maintain adequate, efficient, safe, reliable and reasonable service.” 66 Pa. C.S. § 1358(a). PPL Electric currently faces issues that warrant such a waiver.

Right now, PPL Electric must confront ever-increasing challenges to maintain and improve reliability of service for a number of reasons, including severe weather events, aging infrastructure and rising supply costs. Specifically, the Company has missed the System Average Interruption Duration Index (“SAIDI”) benchmark in nine quarters since 2021 and has failed to meet the Customer Average Interruption Duration Index (“CAIDI”), benchmark in every quarter since 2020. While the Company’s System Average Interruption Frequency Index (“SAIFI”) performance historically met the Commission’s benchmark, PPL Electric missed the Commission’s SAIFI benchmark in the first quarter of 2024 (with a performance of 0.361 versus a target of 0.25) and is projected to miss the Commission’s SAIFI benchmark for 2024 (with an estimated performance of 0.982 versus a target of 0.98). Critically, the recent downward trend in the Company’s SAIFI performance is driven by the distribution system’s SAIFI performance. The Company’s distribution SAIFI performance was 0.722 versus a target of 0.882 in 2023 but is projected to be 0.934 versus a target of 0.882 in 2024.¹ Additionally, PPL Electric’s Customers Experiencing Multiple Interruptions (“CEMI”) performance shows that through the end of the first quarter of 2024, 5.8% of PPL Electric’s customers were at CEMI 4 or higher for the 12 rolling months ending March 31, 2024.

PPL Electric’s reliability performance is affected by a variety of factors. For example, over the past several years, PPL Electric has experienced more frequent and severe weather events in its service territory. Moreover, the cost of materials has increased due to inflation and supply chain constraints, which, in turn, forces PPL Electric to absorb these increased costs within its existing budgets for projects that are designed to improve service reliability. Due to these cost pressures

¹ To achieve the Commission’s reliability performance metrics, PPL Electric uses a 90/10 split of the target for distribution SAIFI and transmission/substation SAIFI. Hence, the Company targets achieving a distribution SAIFI performance of at least 0.882 (*i.e.*, 90% of the overall SAIFI performance target of 0.98).

and the Company's ongoing investment in reliability-focused projects, PPL Electric's estimates that its DSIC would remain at the cap of 5% until rates established in the Company's next base rate case become effective.

The proposed DSIC cap increase will help the Company address those issues in an effective and efficient manner by: (1) timely recovering its investments in projects that will support and improve reliability of service that are outlined in PPL Electric's current LTIIP and its Petition for Approval of Major Modifications to its Existing LTIIP at Docket No. P-2022-3034972 ("Modified LTIIP")²; and (2) freeing up funding for additional projects that can improve service reliability but are not set forth in the LTIIP or Modified LTIIP. In fact, if the proposed DSIC cap waiver were approved, PPL Electric can increase and accelerate infrastructure investments that consistently improve SAIFI, SAIDI, CAIDI and CEMI performance, such as targeted vegetation removal of trees outside of the right-of-way ("ROW"), additional non-wires alternatives similar to dynamic line rating ("DLR") technology and battery energy storage systems ("BESS"), vehicle-mounted camera systems, drones, ground rovers, and, as set forth in the Modified LTIIP, Predictive Failure Technology ("PFT").³

Further, the Company's proposal aligns with the increased capital expenditure projections set forth in the Modified LTIIP. PPL Electric also proposed to add a new program to the Company's existing LTIIP (*i.e.*, PFT) and update the Company's total capital expenditure projections set forth in the current LTIIP. The increased investments in the New Electronic

² See note 3, *infra*, for a list of the categories with the largest budget increases under the modified LTIIP. PPL Electric notes that this is the first time the Company has proposed any "major" modifications to its LTIIPs since the first LTIIP was approved over a decade ago on January 10, 2013.

³ In particular, the total increase in spending is being driven largely by additional and necessary investments in: (1) New Electronic Reclosers; (2) Low Tension Network Primary Cable, Equipment and Structures; (3) Substations; (4) Reliability; and (5) Protection and Control. Additionally, the projected increase in spending is partly due to the potential available funding for projects under the Infrastructure Investment and Jobs Act ("IIJA"), which is providing a customer benefit by offsetting more than \$45 million in investments and enabling the Company to accelerate these investments.

Reclosers and Reliability programs in the modified LTIIP are estimated to improve SAIFI performance by 0.056 and reduce the Company's rolling 12 months CEMI 4 or higher performance to 5.7%. Additionally, through the new PFT program, the Company estimates a possible savings between 10-15% for SAIFI once fully deployed. The Company also is deploying weather stations strategically across the system. Benefits of these weather stations include, but are not limited to, improved modeling of end-of-life assets and improved weather and outage prediction modeling. Collectively, these modifications are designed to improve SAIFI reliability performance going forward by 0.0835, Momentary Average Interruption Frequency Index ("MAIFI") performance by 0.0628, and CEMI 4 or higher performance by 0.2%. Thus, by increasing the Company's DSIC cap to 9%, the Commission would better facilitate these projects.⁴

Also, the Commission previously approved increases in the DSIC cap when necessary to better address service reliability. For instance, the Commission approved a settlement that increased Pennsylvania Power Company's ("Penn Power") DSIC cap when Penn Power was having difficulty meeting the Commission's reliability benchmarks.⁵ Likewise, the Commission has approved other utilities' DSIC cap waiver petitions after finding that such waivers would enhance their accelerated infrastructure replacement programs and address the utilities' safety and reliability issues.⁶ As explained previously, the Company must accelerate its investments in aging

⁴ Even if the January 27, 2024 Petition is not approved, the requested DSIC cap waiver would still assist with the Company undertaking the projects set forth in its current LTIIP and free up additional capital to be used on other projects that are designed to improve safety and reliability.

⁵ See *Petition of Pa. Power Co. for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Distribution Rate Revenue and Approval to Increase the Maximum Allowable Distribution System Improvement Charge Cap to 11.81%*, Docket No. P-2019-3012628, at 21-22 (Recommended Decision dated Feb. 5, 2020) ("Penn Power RD"), adopted without modification, Docket No. P-2019-3012628 (Order entered Mar. 12, 2020) ("Penn Power Order") (collectively referred to herein as "Penn Power").

⁶ See *Petition of UGI Central Penn Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues*, Docket No. P-2016-2537609, at 65 (Order entered May 10, 2017) (finding that "increase of the DSIC cap to 7.5% will enhance UGI-CPG's accelerated main replacement program as well as address the Company's safety and reliability issues to ensure 'adequate, efficient, safe, reliable and reasonable service.'") (Continued on following page...)

infrastructure to improve its reliability performance. Thus, the Commission should follow suit here and approve PPL Electric's Petition.

Notwithstanding, PPL Electric is mindful that an increase in the DSIC cap will impact customers' bills. Therefore, the Company carefully analyzed and selected a cap percentage that would facilitate the necessary investments on its distribution system and have a minimal impact on customers' bills. As part of that process, the Company analyzed how much the DSIC rate would be if no cap were in place for the remainder of the 2023-2027 LTIP. The Company found that the Company's DSIC would exceed 5% in every quarter for the remainder of the 2023-2027 LTIP, potentially reaching as high as 11.84% under the current LTIP and 14.53% under the Modified LTIP. Although a DSIC cap higher than 9% could be justified based on those figures, PPL Electric decided to propose a DSIC cap of 9% because it would increase the DSIC for a residential customer using 1,000 kWh per month by \$2.37. Thus, PPL Electric's proposal appropriately balances the need for timely cost recovery of investments with the impact on customers' bills.

For these reasons, and as set forth herein, the Commission should approve this Petition because the proposed increase in the DSIC cap from 5% to 9% of billed revenues is reasonable and in the public interest and will ensure that the Company can provide and maintain adequate,

("UGI-CPG"), reconsideration denied, Docket No. P-2016-2537609 (Order entered Sept. 21, 2017); *Petition of UGI Penn Natural Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues*, Docket No. P-2016-2537594, at 60 (Order entered May 10, 2017) ("UGI-PNG") (concluding that "a 7.5% increase will enhance UGI-PNG's accelerated main replacement program as well as address the Company's safety and reliability issues to ensure 'adequate, efficient, safe, reliable and reasonable service.'"); *Petition of Phila. Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket Nos. P-2015-2501500, *et al.*, at 55 (Order entered Jan. 28, 2016) ("PGW") (determining that "allowing PGW to increase its DSIC cap to 7.5% will permit the Company to significantly accelerate its main replacement efforts to address the problems resulting from its aging infrastructure, as discussed above, and PGW has met its burden of proof to demonstrate that an increase to 7.5% is necessary to ensure 'adequate, efficient, safe, reliable and reasonable service.'"), reconsideration granted, Docket Nos. P-2015-2501500, *et al.*, at 30 (Order entered July 6, 2016) (granting PGW's petition for reconsideration and temporarily increasing the DSIC cap to 8.84% to a period not to exceed 2 years, after which it would decrease to 7.5%).

efficient, safe, reliable and reasonable service. PPL Electric also respectfully requests Commission approval of this Petition no later than the Commission's public meeting on December 5, 2024, so that the Company can implement the increase to its DSIC cap for the bills rendered on or after January 1, 2025.

I. BACKGROUND

1. This Petition is filed by PPL Electric, a public utility that provides electric distribution, transmission, and provider of last resort services in Pennsylvania subject to the regulatory jurisdiction of the Commission.

2. PPL Electric's address is as follows:

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Two North Ninth Street
Allentown, Pennsylvania 18101

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4. PPL Electric’s attorneys are authorized to receive all notices and communications regarding this filing.

5. PPL Electric provides electric distribution, transmission and provider of last resort services to approximately 1.5 million customers in a certificated service territory that spans approximately 10,000 square miles in all or portions of 29 counties in eastern and central Pennsylvania.

6. PPL Electric is a “public utility” and an “electric distribution company” (“EDC”) as those terms are defined under the Public Utility Code, 66 Pa. C.S. §§ 102 and 2803.

7. PPL Electric’s distribution system serves both urban and rural areas. Currently, PPL Electric owns and operates approximately 28,144 miles of overhead distribution lines, 8,017 miles of underground distribution lines, 368 substations.

8. On December 22, 2022, the Company’s third LTIP was approved by the Commission at Docket No. P-2022-3034972.⁷ The Company’s third LTIP is set to expire on December 31, 2027.

9. On January 17, 2024, PPL Electric filed a Petition for Approval of Major Modifications to its third LTIP.⁸

10. PPL Electric’s current Commission-approved DSIC tariff is attached hereto as **Appendix A.**

⁷ *Petition of PPL Electric Utilities Corp. for Approval of its Third Long-Term Infrastructure Improvement Plan*, Docket No. P-2022-3034972 (Order entered Dec. 22, 2022).

⁸ The Petition remains pending before the Commission, as of the date of this filing.

11. Pertinent to this Petition, PPL Electric’s current Commission-approved DSIC tariff includes, among other things, a 5% cap on the total amount of revenue that can be collected through the DSIC as determined on an annualized basis.⁹

II. LEGAL STANDARDS

12. On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 (“Act 11”), which, among other things, amends Chapter 13 of Title 66 of the Public Utility Code to allow the Commission to approve a DSIC for EDCs. The DSIC is designed to facilitate the recovery of reasonable and prudent capital costs incurred to repair, improve or replace certain eligible distribution property that is part of the EDC’s distribution system in order to encourage investment into the distribution system while including important customer protections.

13. Eligible property for DSIC recovery is defined in Section 1351 of the Public Utility Code. *See* 66 Pa. C.S. § 1351.

14. Under Section 1352 of the Public Utility Code, a utility must file an LTIP, which identifies the types and age of eligible property owned or operated by the utility for which the utility would seek recovery through the DSIC. *See id.* § 1352.

15. Section 1358 of the Public Utility Code sets forth several customer protections related to the DSIC. *See id.* § 1358.

16. For example, Section 1358(e) sets out specific audit and reconciliation procedures, including refunds with interest to customers of any over-collections. *See id.* § 1358(e).

⁹ Consistent with 66 Pa. C.S. § 1358 and the Commission’s Model Tariff, PPL Electric’s Commission-approved DSIC also includes: annual reconciliations performed by PPL Electric; audits conducted by the Commission; customer notice of any changes in the DSIC; a reset of the DSIC to zero as of the effective date of new base rates that include the DSIC-eligible plant; and provisions for the charge to be set at zero if, in any quarter, PPL Electric’s most recent earnings report shows that PPL Electric is earning a rate of return that exceeds the allowable rate of return used to calculate its DSIC revenue requirement. *See* Appendix A.

17. Furthermore, under Section 1358(a)(1), the DSIC for an EDC “may not exceed 5% of the amount billed to customers under the applicable rates of the” EDC. *Id.* § 1358(a)(1).

18. However, the Commission “may upon petition grant a waiver of the 5% limit under this paragraph for a utility in order to ensure and maintain adequate, efficient, safe, reliable and reasonable service.” *Id.* § 1358(a)(1).

III. THE COMMISSION SHOULD INCREASE PPL ELECTRIC’S DSIC CAP FROM 5% TO 9%

19. Through this Petition, PPL Electric respectfully requests that the Commission exercise its authority under Section 1358(a)(1) of the Public Utility Code to increase the Company’s DSIC cap from 5% to 9%, as set forth in the *pro forma* tariff supplement attached hereto as **Appendix B**.

20. As explained previously and in the following sections, the Company’s Petition should be approved because an increase in the DSIC cap will allow PPL Electric to address the reliability of its distribution system in an efficient and effective manner, while having a minimal impact on customers’ bills.

A. BACKGROUND ON THE DSIC

21. The Commission has long been an innovative regulator, and the DSIC is but one example.

22. Pennsylvania was the first state in the country to implement a DSIC for any type of utility, when the Commission approved Petitions by Philadelphia Suburban Water Company and

Pennsylvania-American Water Company to establish DSICs in their tariffs pursuant to Section 1307(a) of the Public Utility Code.¹⁰

23. In those Orders, the Commission also adopted “sample tariff language to be implemented for tariff supplements to establish a DSIC.”¹¹

24. Act 156 of 1996 was subsequently enacted on December 18, 1996, which amended Section 1307 of the Public Utility Code and enabled water utilities to establish DSICs in their tariffs subject to Commission approval. See 1996 Pa. Laws 156.

25. “Due to DSIC and other innovative regulatory mechanisms, the PUC was recognized for effectively encouraging water company investment by Standard & Poor’s.”¹²

26. Act 11 built upon the successes of the water utilities’ DSIC and expanded DSICs to electric distribution companies, natural gas distribution companies, city natural gas distribution operations, and wastewater utilities. See 66 Pa. C.S. § 1351, *et seq.*

27. The Commission has recognized that DSICs can produce several benefits, such as (a) accelerating the replacement of aging infrastructure; (b) recovering fixed costs of certain non-revenue producing, non-expense reducing infrastructure improvement costs placed into service between rate cases; (c) reducing the number of base rate cases and the associated expenses; (d)

¹⁰ *Petition of Phila. Suburban Water Co. for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, 1996 Pa. PUC LEXIS 211, at *21 (Order entered Aug. 22, 1996) (“*Philadelphia Suburban 1996*”); *Petition of Pennsylvania-American Water Co. for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, 1996 Pa. PUC LEXIS 182, at *22 (Order entered Aug. 26, 1996) (“*PAWC 1996*”).

¹¹ *Philadelphia Suburban 1996* at *22-28; *PAWC 1996* at *23-30.

¹² *System Improvement Charges Distribution and Collection*, Pennsylvania Public Utility Commission, available at https://www.puc.pa.gov/general/consumer_ed/pdf/dsic_fs.pdf (“*DSIC Summary*”).

better absorbing increases in other categories of costs for a longer period of time; (e) implementing solutions to regional supply problems; and (f) promoting economic development.¹³

28. For more than a decade, PPL Electric has utilized the DSIC to accelerate its repair and replacement of aging infrastructure with a focus on safety and reliability of service.

29. Since the Company's DSIC was implemented in March 2013, approximately 39% of PPL Electric's DSIC eligible investments have been in automation and reliability improvement programs, approximately 46% of the DSIC-eligible investments have been in improving the underground and overhead infrastructures, and approximately 15% of DSIC-eligible investments have been in upgrading the substation infrastructure and restoring and improving pole plant system wide.

30. Additionally, the DSIC has helped reduce the frequency of PPL Electric's base rate case filings and, by extension, the time and expenses parties and the Commission must dedicate to those proceedings. Indeed, the Company's last base rate case was filed in 2015 at Docket Nos. R-2015-2469275, *et al.*

31. Nevertheless, PPL Electric's current ability to optimize the potential of the DSIC is limited by the 5% cap.

¹³ See *DSIC Summary*. On economic development, Governor Shapiro recognized the critical importance of electric infrastructure in driving economic development over the 2024-2033 period in his Economic Development Strategy, stating, in pertinent part:

- Critically, energy production, transmission, and distribution are a key enablers of our entire economy. Each are especially important for energy-intensive industries, like additive and advanced manufacturing.
- Our diverse energy resources position us well to innovate across the energy space. We can leverage our formidable electric grid to deploy next generation power technologies and deliver businesses the energy needed to manufacture the products that will help the world decarbonize.

A Ten-Year Strategic Plan for Economic Development in Pennsylvania, Governor Shapiro, available at https://pagetsitdone.com/wp-content/uploads/EconomicDevelopmentStrategy-DCED_2024_FINAL.pdf.

32. As explained below, the Commission should increase the Company's DSIC cap to 9% because the proposed increase in the DSIC cap: (a) is needed to improve and maintain service reliability; (b) will facilitate the implementation of projects that are beneficial to customers; and (c) will have a minimal impact on customers' bills.

B. THE PROPOSED INCREASE IN THE DSIC CAP IS NEEDED BECAUSE IT WILL FACILITATE ADDITIONAL INVESTMENT IN RELIABILITY

1. Summary of PPL Electric's Reliability Performance

33. PPL Electric is critically focused on the safety and reliability of its electric service.

34. However, PPL Electric has proposed an increase in the DSIC cap to best address the Company's recent reliability performance and trends.

35. In particular, PPL Electric has missed the Commission's SAIDI benchmark in nine quarters since 2021 and has failed to meet the Commission's CAIDI benchmark in every quarter since 2020.

36. Moreover, although the Commission has touted PPL Electric as "an excellent SAIFI benchmark performer,"¹⁴ more recent data and trends have shown declines in the Company's SAIFI performance. In fact, PPL Electric missed the Commission's SAIFI benchmark in the first quarter of 2024 (with a performance of 0.361 versus a target of 0.25) and is projected to miss the Commission's SAIFI benchmark for 2024 (with an estimated performance of 0.982 versus a target of 0.98).

37. Notably, the distribution system's SAIFI performance is the reason for the Company's overall SAIFI performance declining.

¹⁴ 2022 *Pennsylvania Electric Reliability Report*, Pennsylvania Public Utility Commission, at 77 (Apr. 2024), available at https://www.puc.pa.gov/media/2898/electric-reliability-report_final.pdf ("2022 *Pennsylvania Electric Reliability Report*").

38. The Company’s distribution SAIFI performance was 0.722 versus a target of 0.882 in 2023.

39. However, through the end of the first quarter of 2024, PPL Electric’s distribution SAIFI was 0.356 versus a target of 0.245.¹⁵

40. Even if the Company’s distribution SAIFI performance for the remainder of 2024 were to equal its performance in the second through fourth quarters of 2023, PPL Electric’s distribution SAIFI is projected to be 0.934 versus a target of 0.882 in 2024.

41. Additionally, PPL Electric’s Customers Experiencing Multiple Interruptions (“CEMI”) performance shows that through the end of the first quarter of 2024, 5.8% of PPL Electric’s customers were at CEMI 4 or higher for the 12 rolling months ending March 31, 2024.

42. Also, in the Commission’s recently issued *2022 Pennsylvania Electric Reliability Report*, the “Commission recognize[d], overall, that that PPL’s reliability is beginning to decline” and that “the number of PPL customers interrupted annually is on a sharp trend upward.”¹⁶

43. In conclusion, the Company’s actual and projected overall reliability performance can be summarized as follows¹⁷:

	PUC 2023 YE	PUC 2024 Q1	PUC 2024 EOY Projected
SAIFI (Benchmark = 0.98, Standard = 1.18)	0.78	0.36	0.982
CAIDI (Benchmark = 145, Standard = 172)	189	137	265
SAIDI (Benchmark=142, Standard = 205)	147	380	260
CEMI 4	3.4%	5.8%	4.0%
	IEEE 2023 YE	IEEE 2024 Q1	IEEE EOY Projected
IEEE SAIFI (1st Quartile = 0.82)	0.64	0.14	0.650
IEEE CAIDI (1st Quartile = 101)	142	131	115
IEEE SAIDI (1st Quartile = 85)	91	18.3	74.6

¹⁵ See note 1, *supra*, for an explanation about the distribution SAIFI target.

¹⁶ *2022 Pennsylvania Electric Reliability Report* at 77.

¹⁷ The Company notes that CAIDI equals SAIDI divided by SAIFI. See 52 Pa. Code § 57.192. Therefore, if SAIDI remains equal, improvements in SAIFI actually increase CAIDI. Thus, CAIDI performance is not always a true reflection of a utility’s reliability performance and improvements thereto.

2. The Company Faces Challenges to Maintaining and Improving Service Reliability

44. Meanwhile, PPL Electric confronts several factors that make it challenging to maintain and improve reliability of service.

45. A leading factor is more frequent and severe weather events.

46. Although these more frequent and severe weather events are affecting many electric utilities, PPL Electric's service territory is being particularly impacted.

47. As the Commission recently observed in its *2022 Pennsylvania Electric Reliability Report*, PPL Electric saw 36 total storms in 2022, "which is the second most on record in terms of PUC storm cases and third most for PUC Storm customers interrupted."¹⁸ Furthermore, PPL Electric observed a total of 45 storms in 2023, surpassing the previous high of 42 storms in 2021. So far in 2024, PPL Electric has seen a total of 11 storms, 8 of which were "reportable" storms.¹⁹

48. The Commission further stated:

As noted in Section 3 of this report, EDCs experienced 42 reportable outage events (ROEs) in 2022. EDCs had 63 ROEs in 2021, which was the highest number reported to the Commission since 1994 (the first year of the five-year benchmarking period). All of the ROEs were caused by weather impacts on the EDC distribution systems. Noting this fact is not to excuse a slip in reliability performance of the EDCs, but rather to reiterate the importance of EDCs continuing to invest in reliability improvement and resiliency to weather events.²⁰

49. In addition, the cost of materials has increased due to inflation and supply chain constraints, which are being driven by commodity shortages, transportation costs, and increased industry demand. For example, the procurement costs for transformers between 2016 and 2020

¹⁸ *2022 Pennsylvania Electric Reliability Report* at 76.

¹⁹ Reportable storms are those that cause unscheduled service interruptions in a single event to 2,500 or more customers for six or more consecutive hours; non-reportable storms are all other storms. See 52 Pa. Code § 67.1(b).

²⁰ *2022 Pennsylvania Electric Reliability Report* at 103-04 (emphasis added).

averaged approximately \$590,000. Since 2021, however, those costs have averaged over \$1 million. Industry demand also remains at the highest levels seen in the last five years and continues to drive higher costs and extend lead times for distribution units from vendors.

50. PPL Electric must absorb these increased costs within its existing budgets for projects that are designed to improve service reliability.

51. Because PPL Electric continues to invest in DSIC-eligible projects focused on reliability despite these cost increases, the Company currently exceeds the 5% cap on a regular basis and projects that the DSIC will, absent the requested waiver and increase to 9%, remain at the cap of 5% until rates established in the Company's next base rate case become effective.

52. As such, the current DSIC cap of 5% is inhibiting the accelerated repair and replacement of aging infrastructure that PPL Electric could undertake to improve and maintain service reliability.

53. In fact, the Commission recommended in its *2022 Pennsylvania Electric Reliability Report* that PPL Electric pursue "continued and increased efforts in vegetation management, equipment replacement and improvement under LTIIP, and a continuing emphasis on improving response times."²¹

3. Increasing the DSIC Cap Will Help Improve and Maintain Service Reliability

54. PPL Electric's proposal to increase the DSIC cap from 5% to 9% will help the Company address those issues in an effective and efficient manner by: (1) timely recovering its investments in projects that will support and improve reliability of service that are outlined in PPL Electric's current LTIIP and its Modified LTIIP; and (2) freeing up funding for additional projects that can improve service reliability but are not set forth in the LTIIP or Modified LTIIP.

²¹ *Id.* at 77.

55. First, if the proposed DSIC cap waiver were approved, PPL Electric can increase and accelerate infrastructure investments that that are proven to improve SAIFI, SAIDI, CAIDI and CEMI performance.²²

56. Under the Company's current LTIP, approximately \$13 million is dedicated to the New Electronic Reclosers and Reliability programs in 2024 and 2025 and is projected to reduce customer interruptions by approximately 20,100, improve SAIFI performance by 0.014, reduce to 1.4% of current customer interruptions, and reduce the percentage of CEMI 4 or higher customers from 3.4% to 3.35%.

57. Moreover, the Company's Petition for Approval of Major Modifications to its Existing LTIP at Docket No. P-2022-3034972 sets forth increased capital expenditure projections.²³

58. Under the Modified LTIP, PPL Electric would spend approximately \$58 million on the New Electronic Reclosers and Reliability programs.

59. The increased investments in the New Electronic Reclosers and Reliability programs in the modified LTIP are estimated to improve SAIFI performance by 0.056, reduce the Company's rolling 12 months CEMI 4 or higher performance to 5.7%, and reduce the percentage of CEMI 4 or higher customers from 3.4% to 3.2%.

²² In particular, the total increase in spending is being driven largely by additional and necessary investments in: (1) New Electronic Reclosers; (2) Low Tension Network Primary Cable, Equipment and Structures; (3) Substations; (4) Reliability; and (5) Protection and Control. Additionally, the projected increase in spending is partly due to the potential available funding for projects under the Infrastructure Investment and Jobs Act ("IIJA"), which is providing a customer benefit by offsetting more than \$45 million in investments and enabling the Company to accelerate these investments.

²³ See note 3, *supra*, for a list of the categories with the largest budget increases under the modified LTIP. PPL Electric notes that this is the first time the Company has proposed any "major" modifications to its LTIPs since the first LTIP was approved over a decade ago on January 10, 2013.

60. Also, PPL Electric proposed to add a new program to the Company's existing LTIIIP (*i.e.*, PFT) and update the Company's total capital expenditure projections set forth in the current LTIIIP.

61. Based on a reliability analysis looking back at the 2023 PFT installations alone, reliability benefits are projected to produce SAIFI savings of 0.0275 and MAIFI savings of 0.0628.

62. In addition to the predictive failure sensors being deployed with this new PFT program, the Company is deploying weather stations strategically across the system. Benefits of these weather stations include, but are not limited to, improved modeling of end-of-life asset modeling and improved weather modeling and outage prediction modeling.

63. In total, the modifications to the LTIIIP and these weather stations are designed to improve SAIFI reliability performance going forward by 0.0835, MAIFI performance by 0.0628, and CEMI 4 or higher performance from 3.4% to 3.2%.

64. In addition, if the proposed DSIC cap waiver were approved, PPL Electric can increase and accelerate infrastructure investments that consistently improve SAIFI, SAIDI, CAIDI and CEMI performance, such as targeted vegetation removal of trees outside of the ROW, additional non-wires alternatives similar to DLR technology and BESS, vehicle-mounted camera systems, drones, ground rovers, and PFT (as set forth in the Modified LTIIIP).

65. Specifically, Pacific Gas & Electric Company's ("PG&E") successful deployment of early fault detection technology, similar to PPL Electric's PFT, yielded consistent and similar results, such as detecting asset defects and vegetation encroachment, which were remediated eliminating outage exposure for their customers.²⁴

²⁴ See "EPIC Final Report," PG&E (dated Nov. 12, 2020), available at <https://www.pge.com/assets/pge/docs/about/corporate-responsibility-and-sustainability/PGE-EPIC-Project-2.34.pdf>.

66. DLR technology also has shown to provide increased situational awareness and condition-based monitoring of transmission lines, which is something the Company has started to deploy on the distribution system.²⁵

67. Further, through the use of data modeling and analytics, the Company is strategically identifying and prioritizing high risk areas that are prone to vegetation overgrowth and trees falling outside of the ROW that would otherwise impact reliability.

68. As for non-wires alternatives, the Company projects, based on its existing non-wires alternatives investments to date, that outage exposure will be reduced by approximately 90% for 72 customers and that capital-intensive grid investments driven by line capacity limitations can be further deferred.

69. Moreover, by deploying vehicle-mounted camera systems, several operational efficiencies can be gained, such as minimizing truck rolls and optimizing labor spent on visual patrol of assets, increasing public safety via timely replacements of degraded assets, and mitigating personnel exposure necessitated by traditional patrols.

70. By increasing the Company's DSIC cap to 9%, the Commission would better facilitate these projects.

71. Thus, the Commission should grant PPL Electric's requested waiver of the existing DSIC cap of 5% and increase the cap to 9%.

4. The Commission Has Previously Recognized that Increases in the DSIC Cap Can Help Improve and Maintain Service Reliability

72. PPL Electric's proposal also comports with the Commission's prior approval of DSIC cap increases when necessary to better address service reliability.

²⁵ See "Dynamic Line Rating," U.S. Dep't of Energy (dated June 2019), *available at* <https://www.energy.gov/oe/articles/dynamic-line-rating-report-congress-june-2019>.

73. In *Penn Power*, the Commission approved a settlement that allowed Penn Power to increase its DSIC cap for the remainder of its LTIP or until new base rates take effect, whichever would be earlier.²⁶

74. This followed the Commission's review of Penn Power's LTIP, where the Commission noted Penn Power's failure to achieve its benchmark reliability goals in one year and its standard reliability goals over a two-year period.²⁷

75. In the *Penn Power LTIP Review Order*, the Commission directed Penn Power to modify its LTIP and consider not only its spending but also utilizing "the full capacity of the DSIC mechanism, as capped at 5% by statute or otherwise capped by the Commission via waiver."²⁸

76. Similarly, the Commission has approved other utilities' DSIC cap waiver petitions after finding that such waivers would enhance their accelerated infrastructure replacement programs and address the utilities' safety and reliability issues.²⁹

77. Here, as explained previously, PPL Electric has been under-performing in SAIDI and CAIDI and is projected to under-perform in SAIFI in 2024, and the Company must accelerate its investments in aging infrastructure to improve its reliability performance.

78. Moreover, electric service reliability is important to the Company's existing customers and potential new electric service applicants.

79. With projected increases in electric service load due to electrification efforts, the adoption of electric vehicles ("EVs") and related build-out of EV charging infrastructure, and new

²⁶ *Penn Power Order* at 2.

²⁷ *Periodic Review of Pa. Power Company's Long-Term Infrastructure Improvement Plan*, Docket Nos. M-2018-3000948, *et al.*, at 16 (Order entered Sept. 20, 2018) ("*Penn Power LTIP Review Order*").

²⁸ *Id.* at 19.

²⁹ See note 6, *supra*.

large users of electricity, such as data centers, EDCs must be well-positioned to: (a) continue providing reliable service to their existing customers; and (b) provide reliable service to any new customers.

80. Otherwise, EDCs may be unable to help attract and facilitate the economic development occurring in their service territories.

81. Thus, consistent with the Commission’s encouragement for Penn Power to “utilize the full capacity of the DSIC mechanism, as capped at 5% by statute or otherwise capped by the Commission via waiver,” the Company has submitted this Petition seeking to increase the DSIC cap from 5% to 9% so that PPL Electric can, among other things, pursue reliability-focused investments in the most efficient and effective manner.

C. THE PROPOSED INCREASE IN THE DSIC CAP WILL HAVE A MINIMAL IMPACT ON CUSTOMERS’ BILLS

82. When evaluating DSIC cap waiver proposals, the Commission has “emphasize[d] that [its] approval of an increased DSIC recovery level must be balanced by the need to consider the impact on the Company’s ratepayers.”³⁰

83. In this case, PPL Electric is mindful that an increase in the DSIC cap will impact customers’ bills.

84. As such, the Company carefully analyzed and selected a cap percentage that would facilitate the necessary investments on its distribution system and have a minimal impact on customers’ bills.

85. As part of that process, the Company analyzed how much the DSIC rate would be if no cap were in place for the remainder of the 2023-2027 LTIP.

³⁰ PGW at 55.

86. The Company found that the Company's DSIC would exceed 5% in every quarter for the remainder of the 2023-2027 LTIP, potentially reaching as high as 11.84% under the current LTIP and 14.53% under the modified LTIP.

87. Although a DSIC cap higher than 9% could be justified based on those figures, PPL Electric decided to propose a DSIC cap of 9% because it would increase the DSIC for a residential customer using 1,000 kWh per month by only \$2.37.³¹

88. Therefore, PPL Electric's proposal appropriately balances the need for timely cost recovery of investments with the impact on customers' bills and is a reasonable way to accelerate infrastructure repairs and replacements to improve reliability while balancing reliability and affordability for customers.

89. Based on the foregoing, and as explained further in the Company's direct testimony and exhibits attached hereto, the Commission should approve PPL Electric's Petition and increase the Company's DSIC cap from 5% to 9%.

IV. CUSTOMER NOTICE

90. PPL Electric has served copies of the filing on the Office of Consumer Advocate, Office of Small Business Advocate, and the Commission's Bureau of Investigation and Enforcement. This filing will be posted on PPL Electric's website at www.pplelectric.com.

91. The Company also requests that the Commission publish notice of this filing in the *Pennsylvania Bulletin* and that a reasonable deadline for intervention be set as part of that notice.

³¹ Essentially, for every 1% increase in the DSIC cap, residential customers would see a \$0.59 increase in their monthly bill. However, because the DSIC rate fluctuates based on plant-in-service and revenue projected, changes to the price are likely to be more gradual than an immediate increase to 9%.

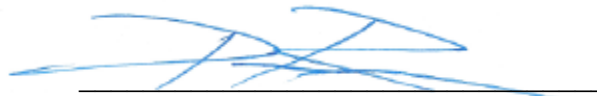
92. PPL Electric believes that these various communications initiatives will provide all interested parties with full notice of the Company's proposal to increase its maximum DSIC to 9% and an opportunity to participate in any Commission proceeding about this Petition.

93. However, if the Commission concludes that additional notice would be appropriate, the Company will provide such additional notice as the Commission may direct.

V. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission issue an Order no later than its December 5, 2024 public meeting, which: (1) grants a waiver of the current Distribution System Improvement Charge cap of 5% of billed revenues, and (2) approves an increase the maximum allowable Distribution System Improvement Charge from 5% to 9% of billed revenue for bills rendered on or after January 1, 2025, as set forth in the *pro forma* a tariff supplement provided in Appendix B.

Respectfully submitted,



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Date: April 26, 2024

Attorneys for PPL Electric Utilities Corporation

Appendix A

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)

In addition to the net charges provided for in this Tariff, a charge of 5.00% will apply consistent with the Commission Order dated May 23, 2013, at Docket No. P-2012-2325034, approving the DSIC. This charge will be effective during the period April 1, 2024 through June 30, 2024. (C)

GENERAL DESCRIPTION

A. Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide PPL Electric with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional supply problems.

The costs of extending facilities to serve new customers are not recoverable through the DSIC.

B. Eligible Property: The DSIC-eligible property will consist of the following:

- Poles and towers (Account 364);
- Overhead conductors (Account 365) and underground conduit and conductors (Accounts 366 and 367);
- Line transformers (account 368) and substation equipment (Account 362);
- Any fixture or device related to eligible property listed above, including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers;
- Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities; and
- Other related capitalized costs.

C. Effective Date: The DSIC will become effective for bills rendered on and after July 1, 2013.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC

A. Calculation: The initial DSIC, effective July 1, 2013, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base and will have been placed in service between March 1 through May 31, 2013. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the three-month periods ending one month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

(C)

<u>Effective Date of Change</u>	<u>Date to which DSIC-Eligible Plant Additions Reflected</u>
April 1st	December 1st – February 28th
July 1st	March 1st – May 31st
October 1st	June 1st – August 31st
January 1st	September 1st – November 30th

B. Determination of Fixed Costs: The fixed costs of eligible distribution system improvements projects will consist of depreciation and pre-tax return, calculated as follows:

1. Depreciation: The depreciation expense shall be calculated by applying the annual accrual rates employed in PPL Electric's most recent base rate case for the plant accounts in which each retirement unit of DSIC-eligible property is recorded to the original cost of DSIC-eligible property.

2. Pre-tax return: The pre-tax return shall be calculated using the statutory state and federal income tax rates, PPL Electric's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day for the three-month period ending one month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in PPL Electric's last fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission in the most recent Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

C. Application of DSIC: The DSIC will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer for distribution service under PPL Electric's otherwise applicable rates and charges, excluding amounts billed for the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by PPL Electric's projected revenue for distribution service (including all applicable clauses and riders) for the quarterly period during which the charge will be collected, exclusive of the STAS.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC (Continued)

D. Formula: The formula for calculation of the DSIC is as follows: **(C)**

$$\text{DSIC} = \frac{((\text{DSI} \times \text{PTRR}) + \text{STFT} + \text{Dep} + e) \times \frac{1}{(1-T)}}{\text{PQR}}$$

Where:

- DSI = Original cost of eligible distribution system improvement projects net of accrued depreciation and associated accumulated deferred income taxes pertaining to property-related book/tax depreciation timing differences resulting from the use of accelerated depreciation per Internal Revenue Code, 26 U.S. Code § 168.
- PTRR = Pre-tax return rate applicable to DSIC-eligible property.
- STFT = (State Tax Flow Through) Pre-tax flow through calculated on book-tax timing differences between accelerated tax depreciation and book depreciation net of federal tax.
- Dep = Depreciation expense related to DSIC-eligible property.
- e = Amount calculated (+/-) under the annual reconciliation feature or Commission audit, as described below.
- PQR = Projected quarterly revenues for distribution service (including all applicable clauses and riders) from applicable customers. The quarterly revenues will be determined on the basis of the summation of projected revenues for the applicable three-month period.
- T = Pennsylvania gross receipts tax rate in effect during the billing month, expressed in decimal form.

Minimum bills shall not be reduced by reason of the DSIC, nor shall charges hereunder be a part of the monthly rate schedule minimum. The DSIC shall not be subject to any credits or discounts. The State Tax Adjustment Surcharge (STAS) included in this Tariff is applied to charges under the DSIC.

QUARTERLY UPDATES

Supporting data for each quarterly update will be filed with the Commission and served upon the Commission's Bureau of Investigation and Enforcement, the Bureau of Audits, the Office of Consumer Advocate, and the Office of Small Business Advocate at least ten (10) days prior to the effective date of the update.

(Continued)

(I) Indicates Increase (D) Indicates Decrease (C) Indicates Change

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS

A. Cap: The DSIC is capped at 5.0% of the amount billed to customers for distribution service (including all applicable clauses and riders) as determined on an annualized basis.

B. Audit/Reconciliation: The DSIC is subject to audit at intervals determined by the Commission. Any cost determined by the Commission not to comply with any provision of 66 Pa C.S. §§ 1350, *et seq.*, shall be credited to customer accounts. The DSIC is subject to annual reconciliation based on a reconciliation period consisting of the twelve months ending December 31 of each year or PPL Electric may elect to subject the DSIC to quarterly reconciliation but only upon request and approval by the Commission. The revenue received under the DSIC for the reconciliation period will be compared to PPL Electric's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with Section 1307(e), over a one-year period commencing on April 1 of each year, or in the next quarter if permitted by the Commission. If DSIC revenues exceed DSIC-eligible costs, such over-collections will be refunded with interest. Interest on over-collections and credits will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P.S. §§ 101, *et seq.*) and will be refunded in the same manner as an over-collection. PPL Electric is not permitted to accrue interest on under collections. (C)

C. New Base Rates: The DSIC will be reset at zero upon application of new base rates to customer billings that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base will be reflected in the quarterly updates of the DSIC.

D. Customer Notice: Customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert also shall be included with the first billing.

E. Customer classes: Effective July 1, 2013, the DSIC shall be applied equally to all customer classes except Rate Schedule LP-5, consistent with the Commission Order entered April 9, 2015 at Docket No. P-2012-2325034. Effective January 1, 2016, the DSIC shall be applied equally to all customer classes except Rate Schedules LP-5 and LPEP.

F. Earning Reports: The DSIC also will be reset at zero if, in any quarter, data filed with the Commission in PPL Electric's then most recent Annual or Quarterly Earnings reports (Schedule D-2) show that PPL Electric would earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the pre-tax return section. PPL Electric shall file a tariff supplement implementing the reset to zero due to overearning on one-days' notice and such supplement shall be filed simultaneously with the filing of the most recent Annual or Quarterly Earnings reports indicating that PPL Electric has earned a rate of return that would exceed the allowable rate of return used to calculate its fixed costs. (C)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS (Continued)

G. Residual E-Factor Recovery Upon Reset to Zero: PPL Electric shall file with the Commission interim rate revisions to resolve the residual over/under collection or E-factor amount after the DSIC rate has been reset to zero. PPL Electric can recoup or refund the residual over/under collection balance when the DSIC rate is reset to zero. PPL Electric shall refund any overcollection to customers and is entitled to recover any undercollections as set forth in Customer Safeguard Section B. The tariff supplement shall be submitted in accordance with the Quarterly Updates section of this tariff. (C)

Appendix B



PPL Electric Utilities Corporation

GENERAL TARIFF

RULES AND RATE SCHEDULES FOR ELECTRIC SERVICE

In the territory listed on pages 4, 4A, and 4B
and in the adjacent territory served.

ISSUED: TBD

EFFECTIVE: January 1, 2025

CHRISTINE M. MARTIN, PRESIDENT

Two North Ninth Street
Allentown, PA 18101-1179

NOTICE

THIS TARIFF MAKES CHANGES **(C)** IN EXISTING RATES. SEE PAGE TWO.

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)

In addition to the net charges provided for in this Tariff, a charge of ~~X.XX%~~5.00% will apply (C) consistent with the Commission Order dated May 23, 2013, at Docket No. P-2012-2325034, approving the DSIC. This charge will be effective during the period ~~January 1, 2025~~April 1, 2024 through ~~March 31, 2025~~June 30, 2024.

GENERAL DESCRIPTION

A. Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide PPL Electric with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional supply problems.

The costs of extending facilities to serve new customers are not recoverable through the DSIC.

B. Eligible Property: The DSIC-eligible property will consist of the following:

- Poles and towers (Account 364);
- Overhead conductors (Account 365) and underground conduit and conductors (Accounts 366 and 367);
- Line transformers (account 368) and substation equipment (Account 362);
- Any fixture or device related to eligible property listed above, including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers;
- Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities; and
- Other related capitalized costs.

C. Effective Date: The DSIC will become effective for bills rendered on and after July 1, 2013.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)**COMPUTATION OF THE DSIC**

A. Calculation: The initial DSIC, effective July 1, 2013, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base and will have been placed in service between March 1 through May 31, 2013. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the three-month periods ending one month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

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October 1st	June 1st – August 31st
January 1st	September 1st – November 30th

B. Determination of Fixed Costs: The fixed costs of eligible distribution system improvements projects will consist of depreciation and pre-tax return, calculated as follows:

1. Depreciation: The depreciation expense shall be calculated by applying the annual accrual rates employed in PPL Electric's most recent base rate case for the plant accounts in which each retirement unit of DSIC-eligible property is recorded to the original cost of DSIC-eligible property.

2. Pre-tax return: The pre-tax return shall be calculated using the statutory state and federal income tax rates, PPL Electric's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day for the three-month period ending one month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in PPL Electric's last fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission in the most recent Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

C. Application of DSIC: The DSIC will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer for distribution service under PPL Electric's otherwise applicable rates and charges, excluding amounts billed for the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by PPL Electric's projected revenue for distribution service (including all applicable clauses and riders) for the quarterly period during which the charge will be collected, exclusive of the STAS.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC (Continued)

D. Formula: The formula for calculation of the DSIC is as follows: **(C)**

$$\text{DSIC} = \frac{((\text{DSI} \times \text{PTRR}) + \text{STFT} + \text{Dep} + e) \times \frac{1}{(1-T)}}{\text{PQR}}$$

Where:

- DSI = Original cost of eligible distribution system improvement projects net of accrued depreciation and associated accumulated deferred income taxes pertaining to property-related book/tax depreciation timing differences resulting from the use of accelerated depreciation per Internal Revenue Code, 26 U.S. Code § 168.
- PTRR = Pre-tax return rate applicable to DSIC-eligible property.
- STFT = (State Tax Flow Through) Pre-tax flow through calculated on book-tax timing differences between accelerated tax depreciation and book depreciation net of federal tax.
- Dep = Depreciation expense related to DSIC-eligible property.
- e = Amount calculated (+/-) under the annual reconciliation feature or Commission audit, as described below.
- PQR = Projected quarterly revenues for distribution service (including all applicable clauses and riders) from applicable customers. The quarterly revenues will be determined on the basis of the summation of projected revenues for the applicable three-month period.
- T = Pennsylvania gross receipts tax rate in effect during the billing month, expressed in decimal form.

Minimum bills shall not be reduced by reason of the DSIC, nor shall charges hereunder be a part of the monthly rate schedule minimum. The DSIC shall not be subject to any credits or discounts. The State Tax Adjustment Surcharge (STAS) included in this Tariff is applied to charges under the DSIC.

QUARTERLY UPDATES

Supporting data for each quarterly update will be filed with the Commission and served upon the Commission's Bureau of Investigation and Enforcement, the Bureau of Audits, the Office of Consumer Advocate, and the Office of Small Business Advocate at least ten (10) days prior to the effective date of the update.

(Continued)

(I) Indicates Increase (D) Indicates Decrease (C) Indicates Change

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS

A. Cap: The DSIC is capped at ~~9.0%~~~~5.0%~~ of the amount billed to customers for distribution service (including all applicable clauses and riders) as determined on an annualized basis.

B. Audit/Reconciliation: The DSIC is subject to audit at intervals determined by the Commission. Any cost determined by the Commission not to comply with any provision of 66 Pa C.S. §§ 1350, *et seq.*, shall be credited to customer accounts. The DSIC is subject to annual reconciliation based on a reconciliation period consisting of the twelve months ending December 31 of each year or PPL Electric may elect to subject the DSIC to quarterly reconciliation but only upon request and approval by the Commission. The revenue received under the DSIC for the reconciliation period will be compared to PPL Electric's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with Section 1307(e), over a one-year period commencing on April 1 of each year, or in the next quarter if permitted by the Commission. If DSIC revenues exceed DSIC-eligible costs, such over-collections will be refunded with interest. Interest on over-collections and credits will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P.S. §§ 101, *et seq.*) and will be refunded in the same manner as an over-collection. PPL Electric is not permitted to accrue interest on under collections.

C. New Base Rates: The DSIC will be reset at zero upon application of new base rates to customer billings that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base will be reflected in the quarterly updates of the DSIC.

D. Customer Notice: Customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert also shall be included with the first billing.

E. Customer classes: Effective July 1, 2013, the DSIC shall be applied equally to all customer classes except Rate Schedule LP-5, consistent with the Commission Order entered April 9, 2015 at Docket No. P-2012-2325034. Effective January 1, 2016, the DSIC shall be applied equally to all customer classes except Rate Schedules LP-5 and LPEP.

F. Earning Reports: The DSIC also will be reset at zero if, in any quarter, data filed with the Commission in PPL Electric's then most recent Annual or Quarterly Earnings reports (Schedule D-2) show that PPL Electric would earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the pre-tax return section. PPL Electric shall file a tariff supplement implementing the reset to zero due to overearning on one-days' notice and such supplement shall be filed simultaneously with the filing of the most recent Annual or Quarterly Earnings reports indicating that PPL Electric has earned a rate of return that would exceed the allowable rate of return used to calculate its fixed costs.

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS (Continued)

G. Residual E-Factor Recovery Upon Reset to Zero: PPL Electric shall file with the Commission interim rate revisions to resolve the residual over/under collection or E-factor amount after the DSIC rate has been reset to zero. PPL Electric can recoup or refund the residual over/under collection balance when the DSIC rate is reset to zero. PPL Electric shall refund any overcollection to customers and is entitled to recover any undercollections as set forth in Customer Safeguard Section B. The tariff supplement shall be submitted in accordance with the Quarterly Updates section of this tariff.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-_____

PPL Electric Utilities Corporation

Statement No. 1

Direct Testimony of Steven D. Selkregg

Dated: April 26, 2024

Direct Testimony of Steven D. Selkregg

I. INTRODUCTION

Q. Please state your full name and business address.

A. My name is Steven David Selkregg. My business address is 7231 Windsor Drive, Allentown, PA 18106.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric" or the "Company") as Director of T&D Operations.

Q. What are your duties as Director of T&D Operations?

A. I currently oversee the following departments:

- Distribution Control Center
 - 24/7 operations center consisting of distribution system operators and system dispatchers. These personnel oversee all system operations as well as dispatch crews to trouble locations.
- Transmission Control Center
 - 24/7 operations center consisting of transmission system operators and system dispatchers. These personnel oversee all system operations.
- Respond to Customer Field Team - Troubeman Journeyman Lineman
 - Qualified Journey Linemen who respond to outages or other issues on the distribution system during second, third and weekend shifts.
- Metering department - Metering field crews and engineering responsible for PPL Electrics metering installs, change outs, and overall maintenance.

1

2 **Q. What is your educational background?**

3 A. I have a Bachelor's of Science in Civil Engineering from Temple University. I
4 also have completed 12 of 16 classes from DeSales University for a Masters in
5 Business of Administration.

6

7 **Q. Please describe your professional experience.**

8 A. I have held several positions with PPL Electric from 2013 to present, as outlined
9 below:

- 10 • Transmission Line Engineer 2013 to 2015
- 11 • T&S Design Supervisor- Transmission Engineering 2015 to 2016
- 12 • Project Engineering Manager 2016 to 2018
- 13 • Manager of Distribution Design 2018 to 2021
- 14 • Manager of Distribution Planning and Asset Management 2021 to 2022
- 15 • Director of Asset Management and Engineering 2022 to 2023
- 16 • Director of Distribution Operations 2023 to 2024

17

18 In addition, before joining PPL Electric in 2013, I worked as a Structural
19 Engineer for Fabcon Precast, LLC from 2008 to 2012 and as a Structural
20 Engineer for WorleyParsons Constructors, Inc. (now Worley Constructors, Inc.)
21 from 2012 to 2013.

22

23 **Q. Have you previously testified as a witness in other Commission**
24 **proceedings or any other jurisdiction's proceedings?**

25 A. No.

26

27 **Q. Please briefly describe the subject matter of your direct testimony in this**

1 **proceeding.**

2 A. My testimony will provide an overview of the Company's Long-Term
3 Infrastructure Improvement Plan ("LTIIIP") and support the Company's request
4 that the Commission waive the 5% Distribution System Improvement Charge
5 ("DSIC") cap provided in 66 Pa. C.S. § 1358(a) and increase the cap to 9%.

6
7 **Q. Are you sponsoring any exhibits in this proceeding?**

8 A. Yes. I am sponsoring PPL Electric Exhibits SDS-1 through SDS-3.
9

10 **II. Overview of the Company's LTIIIP**

11 **Q. Briefly describe the Company's LTIIIP.**

12 A. PPL Electric's current LTIIIP sets forth the DSIC-eligible property that the
13 Company plans to repair and replace over the 2023-2027 term of the LTIIIP.
14 This is the Company's third LTIIIP since Act 11 of 2012 ("Act 11"), which
15 amended Chapters 3, 13, and 33 of Title 66 of the Code to allow, among other
16 things, EDCs, natural gas distribution companies, water utilities, wastewater
17 utilities and city natural gas distribution operations to establish a DSIC, became
18 effective. A copy of the third LTIIIP is attached as PPL Electric Exhibit SDS-1.

19 As required by the Commission's regulations, the third LTIIIP includes the
20 following eight major elements: (a) identification of types and age of eligible
21 property owned and operated by the utility for which it is seeking DSIC recovery;
22 (b) an initial schedule for planned repair and replacement of eligible property;
23 (c) a general description of location of the eligible property; (d) a reasonable
24 estimate of quantity of eligible property to be improved or repaired; (e) projected

1 annual expenditures and means to finance the expenditures; (f) a description of
2 the manner in which infrastructure replacement will be accelerated and how
3 repair, improvement or replacement will ensure and maintain adequate,
4 efficient, safe, reliable and reasonable service; (g) a workforce management
5 and training program designed to ensure that the utility will have access to a
6 qualified workforce to perform work in a cost-effective, safe and reliable manner;
7 and (h) a description of a utility's outreach and coordination activities with other
8 utilities, Department of Transportation and local governments regarding the
9 planned maintenance/construction projects and roadways that may be impacted
10 by the LTIP. See 52 Pa. Code § 121.3.

11
12 **Q. When was the third LTIP approved by the Commission?**

13 A. On December 22, 2022, the Company's third LTIP was approved by the
14 Commission at Docket No. P-2022-3034972. The Company's third LTIP is set
15 to expire on December 31, 2027.

16
17 **Q. Have there been any modifications to the third LTIP?**

18 A. Yes. Under the Commission's Annual Asset Optimization Plan ("AAOP") review
19 process, PPL Electric has made "minor" modifications to its third LTIP. A copy
20 of the Company's 2023 AAOP filing, which amended the proposed budgets in
21 the third LTIP, is attached as PPL Electric Exhibit SDS-2. Moreover, PPL
22 Electric filed a Petition for Approval of Major Modifications to its Third LTIP on
23 January 17, 2024. That Petition remains pending before the Commission. A
24 copy of the Company's January 17, 2024 Petition, which sets forth the proposed

“major” modifications to the third LTIP, is attached as PPL Electric Exhibit SDS-3.

Q. How does the LTIP affect the costs that can be recovered through the DSIC?

A. Under Act 11, the LTIP must set forth the “eligible property” that a utility can seek to recover through its Commission-approved DSIC. See 66 Pa. C.S. §§ 1351 (defining “eligible property”), 1352(a)(1)-(4) (requiring LTIPs to provide details about the “eligible property”).

III. Support for Increasing the DSIC Cap from 5% to 9%

Q. Could you please provide some background on the Company’s DSIC and how it has been utilized by PPL Electric?

A. PPL Electric’s DSIC was implemented in March 2013 and has been utilized to accelerate the Company’s repair and replacement of aging infrastructure with a focus on safety and reliability of service. In particular, since the Company’s DSIC was originally implemented, approximately 39% of PPL Electric’s DSIC eligible investments have been in automation and reliability improvement programs, approximately 46% of the DSIC-eligible investments have been in improving the underground and overhead infrastructures, and approximately 15% of DSIC-eligible investments have been in upgrading the substation infrastructure and restoring and improving pole plant system wide.

Q. Has the Commission recognized that DSICs can produce several

benefits?

A. Yes, the Commission has noted that DSICs produce several benefits, such as (a) accelerating the replacement of aging infrastructure; (b) recovering fixed costs of certain non-revenue producing, non-expense reducing infrastructure improvement costs placed into service between rate cases; (c) reducing the number of base rate cases and the associated expenses; (d) better absorbing increases in other categories of costs for a longer period of time; (e) implementing solutions to regional supply problems; and (f) promoting economic development.

Q. Can you please explain why the Company is proposing to increase the DSIC cap from 5% to 9%?

A. Right now, the Company is facing challenges to maintain and improve service reliability on its distribution system. PPL Electric's proposal to increase the DSIC cap from 5% to 9% will help the Company address those challenges in an effective and efficient manner by: (1) timely recovering its investments in projects that will support and improve reliability of service that are outlined in PPL Electric's current LTIIP and its Petition for Approval of Major Modifications to its Existing LTIIP at Docket No. P-2022-3034972 ("Modified LTIIP"); and (2) freeing up funding for additional projects that can improve service reliability but are not set forth in the LTIIP or Modified LTIIP. Also, as explained by Ms. Bethany L. Johnson (PPL Electric Statement No. 2), the proposed increases in the DSIC cap will have a minimal impact on customers' bills. Furthermore, I have been advised by counsel that PPL Electric's proposal is permitted by law

1 and consistent with prior findings and approvals by the Commission.

2
3 **Q. Please summarize the Company's recent reliability performance.**

4 A. PPL Electric is critically focused on the safety and reliability of its electric
5 service. However, PPL Electric has missed the Commission's SAIDI
6 benchmark in nine quarters since 2021 and has failed to meet the Commission's
7 CAIDI benchmark in every quarter since 2020. Moreover, although the
8 Commission has touted PPL Electric as "an excellent SAIFI benchmark
9 performer,"¹ more recent data and trends have shown declines in the
10 Company's SAIFI performance. In fact, PPL Electric missed the Commission's
11 SAIFI benchmark in the first quarter of 2024 (with a performance of 0.361 versus
12 a target of 0.25) and is projected to miss the Commission's SAIFI benchmark
13 for 2024 (with an estimated performance of 0.982 versus a target of 0.98).

14 Notably, the distribution system's SAIFI performance is the reason for
15 the Company's overall SAIFI performance declining. The Company's
16 distribution SAIFI performance was 0.722 versus a target of 0.882 in 2023 but
17 is projected to be 0.934 versus a target of 0.882 in 2024. Additionally, PPL
18 Electric's Customers Experiencing Multiple Interruptions ("CEMI") performance
19 shows that through the end of the first quarter of 2024, 5.8% of PPL Electric's
20 customers were at CEMI 4 or higher for the 12 rolling months ending March 31,
21 2024.

¹ 2022 *Pennsylvania Electric Reliability Report*, Pennsylvania Public Utility Commission, at 77 (Apr. 2024), available at https://www.puc.pa.gov/media/2898/electric-reliability-report_final.pdf ("2022 *Pennsylvania Electric Reliability Report*").

Also, in the Commission's recently issued *2022 Pennsylvania Electric Reliability Report*, the "Commission recognize[d], overall, that PPL's reliability is beginning to decline" and that "the number of PPL customers interrupted annually is on a sharp trend upward."²

In conclusion, the Company's actual and projected overall reliability performance can be summarized as follows³:

	PUC 2023 YE	PUC 2024 Q1	PUC 2024 EOY Projected
SAIFI (Benchmark = 0.98, Standard = 1.18)	0.78	0.36	0.982
CAIDI (Benchmark = 145, Standard = 172)	189	137	265
SAIDI (Benchmark=142, Standard = 205)	147	380	260
CEMI 4	3.4%	5.8%	4.0%
	IEEE 2023 YE	IEEE 2024 Q1	IEEE EOY Projected
IEEE SAIFI (1st Quartile = 0.82)	0.64	0.14	0.650
IEEE CAIDI (1st Quartile = 101)	142	131	115
IEEE SAIDI (1st Quartile = 85)	91	18.3	74.6

Q. What challenges is the Company facing to maintain and improve its reliability of service?

A. PPL Electric is facing several factors that make it difficult to maintain and improve reliability of service. A leading factor is more frequent and severe weather events. Although these more frequent and severe weather events are affecting many electric utilities, PPL Electric's service territory is being particularly impacted. As the Commission recently observed in its *2022 Pennsylvania Electric Reliability Report*, PPL Electric saw 36 total storms in 2022, "which is the second most on record in terms of PUC storm cases and

² *Id.*

³ The Company notes that CAIDI equals SAIDI divided by SAIFI. See 52 Pa. Code § 57.192. Therefore, if SAIDI remains equal, improvements in SAIFI actually increase CAIDI. Thus, CAIDI performance is not always a true reflection of a utility's reliability performance and improvements thereto.

1 third most for PUC Storm customers interrupted.”⁴ Furthermore, PPL Electric
2 observed a total of 45 storms in 2023, surpassing the previous high of 42 storms
3 in 2021. So far in 2024, PPL Electric has seen a total of 11 storms, 8 of which
4 were “reportable” storms.⁵ The Commission further stated:

5 As noted in Section 3 of this report, EDCs experienced 42 reportable
6 outage events (ROEs) in 2022. EDCs had 63 ROEs in 2021, which
7 was the highest number reported to the Commission since 1994 (the
8 first year of the five-year benchmarking period). All of the ROEs were
9 caused by weather impacts on the EDC distribution systems. Noting
10 this fact is not to excuse a slip in reliability performance of the EDCs,
11 but rather to reiterate the importance of EDCs continuing to invest in
12 reliability improvement and resiliency to weather events.⁶

13 In addition, the cost of materials has increased due to inflation and supply
14 chain constraints, which are being driven by commodity shortages,
15 transportation costs, and increased industry demand. For example, the
16 procurement costs for transformers between 2016 and 2020 averaged
17 approximately \$590,000. Since 2021, however, those costs have averaged
18 over \$1 million. Industry demand also remains at the highest levels seen in the
19 last five years and continues to drive higher costs and extend lead times for
20 distribution units from vendors. Those cost increases force PPL Electric to
21 absorb these increased costs within its existing budgets for projects that are
22 designed to improve service reliability. Because PPL Electric continues to
23 invest in DSIC-eligible projects focused on reliability despite these cost
24 increases, the Company currently exceeds the 5% cap on a regular basis. As

⁴ 2022 Pennsylvania Electric Reliability Report at 76.

⁵ Reportable storms are those that cause unscheduled service interruptions in a single event to 2,500 or more customers for six or more consecutive hours; non-reportable storms are all other storms. See 52 Pa. Code § 67.1(b).

⁶ 2022 Pennsylvania Electric Reliability Report at 103-04 (emphasis added).

1 noted in Ms. Johnson's direct testimony (PPL Electric Statement No. 2), the
2 Company projects that the DSIC will, absent the requested waiver and increase
3 to 9%, remain at the cap of 5% until rates established in the Company's next
4 base rate case become effective.

5 Therefore, the current DSIC cap of 5% is inhibiting the accelerated repair
6 and replacement of aging infrastructure that PPL Electric could undertake to
7 improve and maintain service reliability. In fact, the Commission recommended
8 in its *2022 Pennsylvania Electric Reliability Report* that PPL Electric pursue
9 "continued and increased efforts in vegetation management, equipment
10 replacement and improvement under LTIIP, and a continuing emphasis on
11 improving response times."⁷

12
13 **Q. How will the Company's proposal to increase the DSIC cap help improve**
14 **and maintain reliability of service?**

15 A. PPL Electric's proposal to increase the DSIC cap from 5% to 9% will help the
16 Company address those issues in an effective and efficient manner by: (1)
17 timely recovering its investments in projects that will support and improve
18 reliability of service that are outlined in PPL Electric's current LTIIP and its
19 Modified LTIIP; and (2) freeing up funding for additional projects that can
20 improve service reliability but are not set forth in the LTIIP or Modified LTIIP.

21 First, if the proposed DSIC cap waiver were approved, PPL Electric can
22 increase and accelerate infrastructure investments that that consistently

⁷ *Id.* at 77.

1 improve SAIFI, SAIDI, CAIDI and CEMI performance.⁸ Under the Company's
 2 current LTIP, approximately \$13 million is dedicated to New Electronic
 3 Reclosers and Reliability in 2024 and 2025 and is projected to reduce customer
 4 interruptions by approximately 20,100, improve SAIFI performance by 0.014,
 5 reduce to 1.4% of current customer interruptions, and reduce the percentage of
 6 CEMI 4 or higher customers from 3.4% to 3.35%.

7 Moreover, the Company's Modified LTIP sets forth increased capital
 8 expenditure projections.⁹ Under the Modified LTIP, PPL Electric would spend
 9 approximately \$58 million on the New Electronic Reclosers and Reliability
 10 programs. The increased investments in the New Electronic Reclosers and
 11 Reliability programs in the Modified LTIP are estimated to improve SAIFI
 12 performance by 0.056, reduce the Company's rolling 12 months CEMI 4 or
 13 higher performance to 5.7%, and reduce the percentage of CEMI 4 or higher
 14 customers from 3.4% to 3.2%.

15 Also, PPL Electric proposed to add a new program to the Company's
 16 existing LTIP (*i.e.*, PFT) and update the Company's total capital expenditure
 17 projections set forth in the current LTIP. Based on a reliability analysis looking
 18 back at the 2023 PFT installations alone, reliability benefits are projected to
 19 produce SAIFI savings of 0.0275 and MAIFI savings of 0.0628.

⁸ In particular, the total increase in spending is being driven largely by additional and necessary investments in: (1) New Electronic Reclosers; (2) Low Tension Network Primary Cable, Equipment and Structures; (3) Substations; (4) Reliability; and (5) Protection and Control. Additionally, the projected increase in spending is partly due to the potential available funding for projects under the Infrastructure Investment and Jobs Act ("IIJA"), which is providing a customer benefit by offsetting more than \$45 million in investments and enabling the Company to accelerate these investments.

⁹ See note 8, *supra*, for a list of the categories with the largest budget increases under the modified LTIP. I note that this is the first time the Company has proposed any "major" modifications to its LTIPs since the first LTIP was approved over a decade ago on January 10, 2013.

1 In addition to the predictive failure sensors being deployed with this new
2 PFT program, the Company is deploying weather stations strategically across
3 the system. Benefits of these weather stations include, but are not limited to,
4 improved modeling of end-of-life asset modeling and improved weather
5 modeling and outage prediction modeling.

6 In total, the modifications to the LTIP and these weather stations are
7 designed to improve SAIFI reliability performance going forward by 0.0835,
8 MAIFI performance by 0.0628, and CEMI 4 or higher performance from 3.4% to
9 3.2%.

10 In addition, if the proposed DSIC cap waiver were approved, PPL Electric
11 can increase and accelerate infrastructure investments that consistently
12 improve SAIFI, SAIDI, CAIDI and CEMI performance, such as targeted
13 vegetation removal of trees outside of the ROW, additional non-wires
14 alternatives similar to DLR technology and BESS, vehicle-mounted camera
15 systems, drones, ground rovers, and PFT (as set forth in the Modified LTIP).

16 Specifically, Pacific Gas & Electric Company's ("PG&E") successful
17 deployment of early fault detection technology, similar to PPL Electric's PFT,
18 yielded consistent and similar results, such as detecting asset defects and
19 vegetation encroachment, which were remediated eliminating outage exposure
20 for their customers.¹⁰ DLR technology also has shown to provide increased
21 situational awareness and condition-based monitoring of transmission lines,

¹⁰ See "EPIC Final Report," PG&E (dated Nov. 12, 2020), available at <https://www.pge.com/assets/pge/docs/about/corporate-responsibility-and-sustainability/PGE-EPIC-Project-2.34.pdf>.

1 which is something the Company has started to deploy on the distribution
2 system.¹¹

3 Further, through the use of data modeling and analytics, the Company is
4 strategically identifying and prioritizing high risk areas that are prone to
5 vegetation overgrowth and trees falling outside of the ROW that would
6 otherwise impact reliability.

7 As for non-wires alternatives, the Company projects, based on its
8 existing non-wires alternatives investments to date, that outage exposure will
9 be reduced by approximately 90% for 72 customers and that capital-intensive
10 grid investments driven by line capacity limitations can be further deferred.

11 Moreover, by deploying vehicle-mounted camera systems, several
12 operational efficiencies can be gained, such as minimizing truck rolls and
13 optimizing labor spent on visual patrol of assets, increasing public safety via
14 timely replacements of degraded assets, and mitigating personnel exposure
15 necessitated by traditional patrols.

16 Thus, by increasing the Company's DSIC cap to 9%, the Commission
17 would better facilitate these projects.¹²

¹¹ See "Dynamic Line Rating," U.S. Dep't of Energy (dated June 2019), *available at* <https://www.energy.gov/oe/articles/dynamic-line-rating-report-congress-june-2019>.

¹² Even if the Modified LTIP is not approved, the requested DSIC cap waiver would still assist with the Company undertaking the DSIC-eligible projects set forth in its current LTIP and free up additional capital to be used on other projects that are designed to improve safety and reliability.

1 **Q. Do you believe that the proposed increase in the DSIC cap is reasonable**
2 **and in public interest?**

3 A. Yes. As I explained previously, the Company's proposal to increase the DSIC
4 cap from 5% to 9% is necessary to ensure and maintain adequate, efficient,
5 safe, reliable, and reasonable service. Given that a DSIC cap of 9% has a small
6 impact on customers' bills, as explained in Ms. Johnson's direct testimony (see
7 PPL Electric Statement No. 2), and the reliability benefits tied to the accelerated
8 and additional investments facilitated by the increased DSIC cap, I believe the
9 Company's proposal to increase the DSIC cap to 9% is reasonable and in the
10 public interest.

11
12 **Q. Does this conclude your direct testimony?**

13 A. Yes, it does.

PPL Electric Exhibit SDS-1

Devin Ryan

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717-612-6052 Direct
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File #: 153362

September 2, 2022

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Petition of PPL Electric Utilities Corporation for Approval of its Long-Term
Infrastructure Improvement Plan for the Period January 1, 2023 through
December 31, 2027
Docket No. P-2022-**

Dear Secretary Chiavetta:

Enclosed for filing is the Petition of PPL Electric Utilities Corporation for Approval of a Long-Term Infrastructure Improvement Plan. Copies are being served on the statutory advocates and all parties of record to the Company's most recent base rate proceeding at Docket No. R-2015-2469275 as indicated on the Certificate of Service.

Respectfully submitted,



Devin Ryan

DR/dmc
Enclosures

cc: Certificate of Service

CERTIFICATE OF SERVICE

Docket No. P-2022-_____

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

VIA E-MAIL and FIRST-CLASS MAIL

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Environmental Defense Fund

Heather M. Langeland
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Environmental Defense Fund

Date: September 2, 2022



Devin T. Ryan

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities Corporation :
for Approval of its Long-Term Infrastructure : Docket No. P-2022-_____
Improvement Plan for the Period January 1, :
2023, through December 31, 2027 :

**PETITION OF PPL ELECTRIC UTILITIES CORPORATION FOR
APPROVAL OF A LONG-TERM INFRASTRUCTURE
IMPROVEMENT PLAN**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

Pursuant to 66 Pa. C.S. § 1352(a) and 52 Pa. Code §§ 121.1 *et seq*, PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) hereby requests approval of its third Long-Term Infrastructure Improvement Plan (“LTIIIP”) for the period January 1, 2023, through December 31, 2027. A copy of the Company’s proposed third LTIIIP is provided as “**Attachment 1**” to this Petition. This third LTIIIP replaces the Company’s current second LTIIIP that was approved on December 21, 2017, at Docket No. P-2017-2622393, which is set to expire on December 31, 2022. Under the third LTIIIP, the Company proposes to continue its accelerated repair, improvement, and replacement of aging infrastructure as described below and in further detail in the proposed LTIIIP.

PPL Electric respectfully requests that the Pennsylvania Public Utility Commission (“Commission”) approve the third LTIIIP, as further described in this Petition for the period January 1, 2023, through December 31, 2027.

I. INTRODUCTION

1. This Petition is filed by PPL Electric, a public utility subject to the regulatory jurisdiction of the Commission.

2. PPL Electric's address is PPL Electric Utilities Corporation, Two North Ninth Street, Allentown, Pennsylvania 18101.

3. PPL Electric's attorneys are:

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Phone: 717-731-1970
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PPL Electric's attorneys are authorized to receive all notices and communications regarding this filing.

4. PPL Electric furnishes electric distribution, transmission and default supply services to approximately 1.4 million customers throughout its certificated service territory, which includes all or portions of twenty-nine counties and encompasses approximately 10,000 square miles in eastern and central Pennsylvania.

5. PPL Electric is a "public utility," an "electric distribution company" ("EDC"), and a "default service provider" as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 102, 2803.

6. On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 (“Act 11”), which amended Chapters 3, 13, and 33 of Title 66 of the Code to allow, among other things, EDCs, natural gas distribution companies, water utilities, wastewater utilities and city natural gas distribution operations to establish a distribution system improvement charge (“DSIC”).

7. Act 11 provides utilities with the ability to implement a DSIC to recover reasonable and prudent costs incurred to repair, improve, or replace certain eligible distribution property that is part of the utility’s distribution system. Eligible property for EDCs is defined in Section 1351 of the statute. *See* 66 Pa. C.S. § 1351(1). As a precondition to the implementation of a DSIC, a utility must file an LTIP with the Commission that is consistent with the provisions of Section 1352 of the statute. *See* 66 Pa. C.S. § 1352(a).

8. On August 2, 2012, the Commission issued an Implementation Order establishing procedures and guidelines necessary to implement Act 11. *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Order entered August 2, 2012) (“*Implementation Order*”). The *Implementation Order* adopted the requirements established in Section 1352, provided additional standards that each LTIP must meet, and gave guidance to utilities for meeting the Commission’s standards.

9. On January 10, 2013, the Company’s first LTIP was approved by the Commission at Docket No. P-2012-2325034. The Company’s first LTIP expired on December 31, 2017.

10. On January 15, 2013, PPL Electric filed a petition seeking approval of a DSIC. By Orders entered May 23, 2013 and April 9, 2015, the Commission approved PPL Electric’s DSIC.

11. On December 21, 2017, the Company's second LTIIP was approved by the Commission at Docket No. P-2017-2622393. The Company's second LTIIP is set to expire on December 31, 2022.

12. The Commission's LTIIP regulations became effective on December 20, 2014. See 52 Pa. Code §§ 121.1 *et seq.* The LTIIP regulations provide the elements that an LTIIP must include to be approved. Specifically, an LTIIP must include the following eight major elements:

- (a) Identification of types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery;
- (b) An initial schedule for planned repair and replacement of eligible property;
- (c) A general description of location of the eligible property;
- (d) A reasonable estimate of quantity of eligible property to be improved or repaired;
- (e) Projected annual expenditures and means to finance the expenditures;
- (f) A description of the manner in which infrastructure replacement will be accelerated and how repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service;
- (g) A workforce management and training program designed to ensure that the utility will have access to a qualified workforce to perform work in a cost-effective, safe and reliable manner; and
- (h) A description of a utility's outreach and coordination activities with other utilities, Department of Transportation and local governments regarding the planned maintenance/construction projects and roadways that may be impacted by the LTIIP.

52 Pa. Code § 121.3.

13. The Commission's LTIIP regulations further provide that a utility seeking to continue its DSIC mechanism after the expiration of its LTIIP must file a new LTIIP with the

Commission at least 120 days prior to the expiration of the currently-effective LTIIIP. 52 Pa. Code § 121.5.

14. PPL Electric's proposed LTIIIP addresses each of the eight elements listed in the LTIIIP regulations, as summarized in this Petition, and is being filed at least 120 days prior to the second LTIIIP's expiration on December 31, 2022.

II. PROPOSED LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN

A. PROPERTY TO BE IMPROVED, REPAIRED AND REPLACED

15. In accordance with the Commission's *Implementation Order*, the LTIIIP regulations and statute, PPL Electric has focused its LTIIIP on distribution plant that is DSIC eligible. *Implementation Order*, p. 18; 52 Pa. Code § 121.3(b).

16. All of the property PPL Electric has included in its LTIIIP meets the definition of eligible property found in Section 1351(1), which includes the following items: poles; overhead conductors; distribution substation equipment; fixtures and devices related to the eligible property such as circuit breakers, fuses, reclosers, and crossarms; unreimbursed costs related to highway relocation projects; and other related capitalized costs.

17. Nearly half of PPL Electric's distribution system was constructed 50 or more years ago as a result of the economic expansion and building boom of the 1960's and 1970's. As this equipment deteriorates due to age, environmental exposure, and added load, it has become increasingly critical to plan for the repair, upgrade, and/or replacement of these assets through the initiatives outlined in the LTIIIP.

18. The LTIIIP covers a broad spectrum of distribution related equipment and facilities, which have been separated into various asset categories. (See Attachment 1, pp. 11-34.) Within each of these categories, PPL Electric has identified specific programs to address the various elements, equipment, and facilities that make up the asset classes. Each program is

described individually, with an estimated replacement schedule and estimated costs as applicable or appropriate.

19. For each individual program included in the LTIIP, PPL Electric has provided the following information: a description of the program and its purpose; a description of how PPL Electric identifies equipment for replacement within each program and the appropriate course of action to improve identified equipment; the scope of the program, including a reasonable estimate of the quantity of property to be improved where applicable; and the location of planned replacements where applicable. These detailed profiles of the individual programs are provided in the LTIIP. (See Attachment 1, pp. 13-34.)

20. Appendix A to the LTIIP provides a summary of the types and average age of eligible property to be replaced. (See Attachment 1, Appx. A.)

21. The LTIIP also provides the total amount projected to be spent by the Company annually and over the life of the five-year plan. (See Attachment 1, p. 9.)

B. SCHEDULE FOR REPAIR AND REPLACEMENT

22. The proposed LTIIP covers the five-year period January 1, 2023, through December 31, 2027.

23. The estimated schedule for each individual LTIIP program has been included in the program descriptions. (See Attachment 1, pp. 13-34.)

24. PPL Electric has estimated the number of replacements in a variety of distribution asset categories over the five-year LTIIP period. In estimating its replacement schedule, a number of factors were considered. Some of the initiatives, such as animal guarding, clearly have implied end-points, where no further opportunities for improvement remain. Others, such as distribution automation, eventually experience diminishing returns over time. Also, some programs, such as pole reinforcement and replacement, will be ongoing. Finally, some programs

may become obsolete, while new programs may become desirable as a result of the evolution of new technologies.

25. Because of these and other variables, the effectiveness of these programs is reviewed annually, and programs are added, deleted, and/or modified, as necessary, to ensure that the expenditures are providing the desired benefits to customers at a reasonable cost.

26. Therefore, while PPL Electric has provided an estimated schedule for when certain replacements will take place, that schedule is subject to change as a result of PPL Electric's ongoing review process and emergent resource requirements.

C. LOCATION OF ELIGIBLE PROPERTY

27. The individual program descriptions in the LTIIP provide a description of the location of eligible property to be repaired and replaced. (See Attachment 1, pp. 13-34.)

D. REASONABLE ESTIMATE OF THE QUANTITY OF PROPERTY TO BE IMPROVED

28. The individual program descriptions in the LTIIP provide an estimate of the quantity of eligible property to be improved or repaired, as well as the Company's basis for these estimates. (See Attachment 1, pp. 13-34.)

E. PROJECTED ANNUAL EXPENDITURES AND MEANS TO FINANCE THE EXPENDITURES

29. The LTIIP provides the Company's projected expenditures on a yearly basis for each of the individual programs for the five-year period, the total projected expenditures for each program at the conclusion of the five-year period, and the overall projected annual and total expenditures for all DSIC eligible distribution property. (See Attachment 1, p. 11.)

30. The Company intends to finance the costs of its DSIC-eligible work through its usual financing mechanisms: debt and equity. In each DSIC rate filing, the Company will identify its capital structure and cost of debt, in addition using the Return on Equity as

determined in its base rate case proceeding or as defined in the most recent applicable Commission Quarterly Financial Report.

31. To ensure that its individual programs are cost-effective investments, PPL Electric will routinely review the effectiveness of its programs. Program/project impact on System Average Interruption Duration Index (“SAIDI”) and System Average Interruption Frequency Index (“SAIFI”), in addition to potential reductions in outage response costs, is compared to the overall program/project costs. PPL Electric utilizes a project prioritization process that defines the cost-effectiveness of programs/projects to ensure effective optimization of reliability investments.

32. PPL Electric utilizes the information from its ongoing reviews of the effectiveness of its programs to determine the most cost-effective strategy for replacing its distribution infrastructure on a going forward basis. Reliability metric performance can result in the redirection of spending to help ensure the Company’s ability to meet targets.

F. ACCELERATION OF INFRASTRUCTURE IMPROVEMENT

33. In its *Implementation Order*, the Commission noted that some utilities had already taken substantial steps toward increasing capital investment to address the issue of aging infrastructure. For those utilities, the Commission requested that the LTIP “reflect how the DSIC will maintain or augment acceleration of infrastructure replacement and prudent capital investment.” *Implementation Order*, p. 19.

34. As described in the LTIP, PPL Electric has already significantly increased its capital expenditures on distribution related infrastructure over historical spend. (See Attachment 1, p. 7, Figure 4.) Specifically, as shown in Figure 4 of the LTIP, PPL Electric’s average annual capital investments increased from approximately \$88 million during the 2008-2012 period to approximately \$180 million during the 2018-2022 period.

35. As a result of these investments, PPL Electric arrested the increase in failed equipment and the current trend is flat to mildly decreasing. Even with these investments, the average age of equipment increased slightly since the second LTIP was approved.

36. In addition, while projected spending under this proposed LTIP is lower than the 2018-2022 period, continued capital investment is necessary to maintain or improve the recently flattened trend in equipment failure.

37. PPL Electric is aware of the direct impact the equipment included in the LTIP has on its reliability metrics. (See Attachment 1, Appx. B.) PPL Electric will use these metrics to monitor the success of its LTIP programs. Those programs are expected to prevent the growth in failures caused by aging equipment and will eventually reduce the number of equipment failures experienced on PPL Electric's distribution system.

G. WORKFORCE MANAGEMENT AND TRAINING PLAN

38. The Company's workforce management and training program is described in the LTIP. (See Attachment 1, pp. 8-10.)

39. PPL Electric utilizes a wide variety of programs and tools to ensure that it has a qualified workforce.

40. As a measure to ensure the use of a qualified workforce, PPL Electric has adopted the definition of a Qualified Electrical Worker from the Occupational Safety and Health Administration ("OSHA") Regulation 29 CFR § 1910.269 Electrical Power Generation, Transmission and Distribution, which is defined in the PPL Electric Safety Rule Book and is provided to each employee. It is also incorporated into the training and qualification process for all electrical workers.

41. PPL Electric administers a rigorous, formal training and evaluation process for all qualified electrical workers. Training is required before an employee may perform work

independently on exposed, energized electrical equipment greater than 50 volts. Training requirements and programs are unique to the job classification and work being performed. Curriculum documents, outlining subject areas and training durations by job classification have been developed. Training may require up to five years to complete and incremental qualifications, following assessment, are identified throughout the duration of the training program. Retraining is conducted on a periodic basis as required by OSHA or more frequently when determined necessary.

42. For its contractors, PPL Electric's Sourcing department administers a standard process for soliciting contractors to perform work identified to be completed by independent contractors. The process includes issuance of a Request for Proposal ("RFP") to various contractors. Responses to the RFP are evaluated based on detailed financial and technical schedules that compare respondents' capabilities. Part of the RFP evaluation process includes evaluating the qualification of contractors to perform work (both technical and financial capabilities to meet the contractual commitments, and level of qualification of employees) and may include reference checks if appropriate.

43. Most independent contractors employ personnel through the building trades, which includes Union apprenticeship programs to help ensure that employees are qualified to perform assigned work. Employee qualification programs for non-Union independent contractors are stringently reviewed to assess the contractor's training program, such as on-the-job training and certification programs.

44. PPL Electric monitors contractor performance through several activities that may include direct job oversight through on-site supervision, monthly scorecards that evaluate such

areas as job quality, safety performance, cost, and validating billing activities that meet contractual expectations.

H. OUTREACH AND COORDINATION ACTIVITIES

45. PPL Electric's outreach and coordination activities with other utilities, the Pennsylvania Department of Transportation, and local governments are described in the LTIP. (See Attachment 1, p. 8.) PPL Electric has established procedures for communicating with such entities regarding projects.

III. NOTICE AND EVIDENTIARY HEARINGS

46. Pursuant to the Commission's regulations, PPL Electric is serving this Petition and the attached LTIP on the statutory advocates and all parties of record in the Company's most recent base rate proceeding at Docket No. R-2015-2469275.

47. Neither Act 11 nor the Commission's regulations require hearings on a proposed LTIP.

48. The Commission's regulations provide a 30-day comment period for proposed LTIPs and state that those comments raising material factual issues will be referred to the Office of Administrative Law Judge. See 52 Pa. Code § 121.4(c).

49. Accordingly, it is unknown at this time whether PPL Electric's proposed third LTIP will be subject to evidentiary hearings.

IV. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the third Long-Term Infrastructure Improvement Plan for the period January 1, 2023, through December 31, 2027, as set forth in this Petition and the attachment hereto.

Respectfully submitted,



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Dated: September 2, 2022

Attorneys for PPL Electric Utilities Corporation

Attachment 1

2023-2027 LTIIP

PPL Electric Utilities Corporation

Long-Term Infrastructure Improvement Plan

PPL Electric Utilities Corporation

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Introduction

PPL Electric Utilities Corporation (“PPL Electric” or “Company”) is submitting this Long Term Infrastructure Improvement Plan (“LTIIIP”) pursuant to the requirements of Subchapter B, Distribution Systems, of the Public Utility Code, 66 Pa.C.S. §§ 1350-1360, the Public Utility Commission’s (“PUC”) Implementation Order for Establishment of a Distribution System Improvement Charge, entered on August 2, 2012 at Docket No. M-2012-2293611 and the Commission’s regulations at 52 Pa. Code §§ 121.1 et seq. This LTIIIP addresses a broad spectrum of Distribution Asset Management initiatives that the Company will use to continue its repair, improvement and replacement of aging infrastructure under this process, and is for the five-year period beginning January 1, 2023, and ending December 31, 2027.

PPL Electric strives to operate as efficiently as possible by performing the work required to maintain system integrity and reliability. Performance indicators such as System Average Interruption Frequency Index (“SAIFI”), Customer Average Interruption Duration Index (“CAIDI”) and System Average Interruption Duration Index (“SAIDI”) show that PPL Electric has been successful in its efforts. However, a generally flat to mildly decreasing trend in equipment failures, combined with an aging infrastructure, indicate that PPL Electric needs to continue to invest in its distribution system. As equipment failures remain flat to mildly decreasing, PPL Electric has been experiencing a significant increase in maintenance spending beyond normal inflationary pressures. The driver is a combination of both increased corrective and planned maintenance. PPL Electric has initiated and enhanced maintenance practices and programs to repair, improve, or replace certain distribution facilities in order to ensure adequate, efficient, safe and reliable service.

Addressing aging infrastructure will require ongoing investment. Such investment includes not only replacing aging equipment, but also investment in advanced equipment and communication technologies that can facilitate further system reliability improvements. If continued proactive re-investment does not occur, it is expected that system reliability will degrade, while the overall cost to maintain the distribution system will continue to rise. By investing in its distribution system, PPL Electric will ensure that its system continues to be safe, reliable, and able to meet the growing needs and expectations of its customers.

PPL Electric believes that managing finite resources to produce optimal results is essential for maintaining customer satisfaction. Criteria for program inclusion into the Long-Term Infrastructure Improvement Plan is not whether any single activity produces a positive reliability result, but rather, which portfolio of activities produces the best result for a given expenditure. PPL Electric’s goal is focused on results (i.e., the reliability experienced by customers and associated rate impacts), not the rote execution of particular tasks.

Reliability Experience

The Distribution Asset Planning process employed by PPL Electric has been focused on maintaining reliability at the level that existed prior to passage of the Electricity Generation Customer Choice and Competition Act (“Customer Choice Act”). Since the 1994-1998 benchmark period, which defines PPL Electric’s reliability performance targets, PPL Electric’s service reliability has experienced annual swings, positive and negative, resulting largely from varying weather conditions. Historical benchmark performance is illustrated in Figures 1 and 2.

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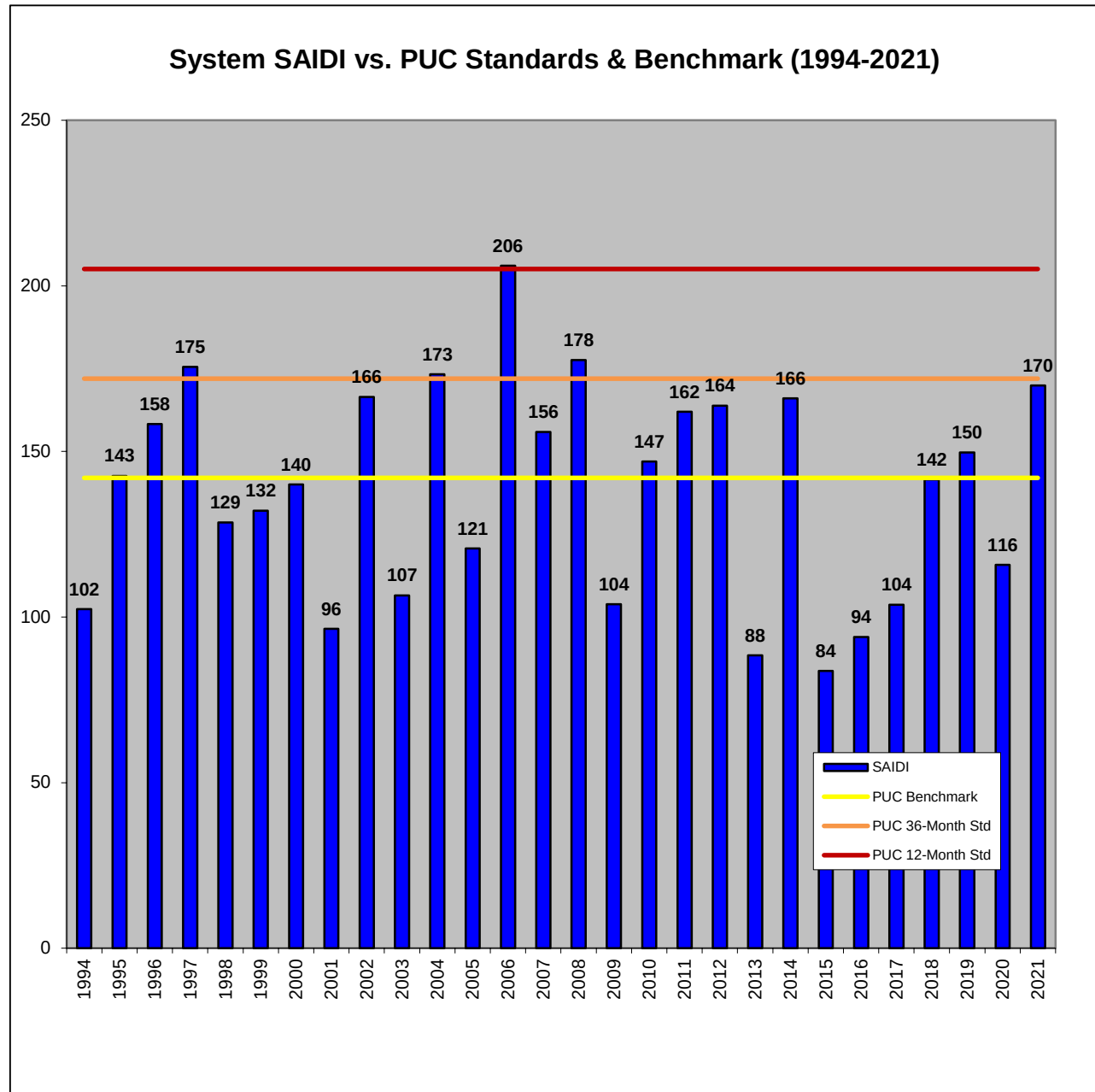


Figure 1: PPL Electric's SAIDI Performance

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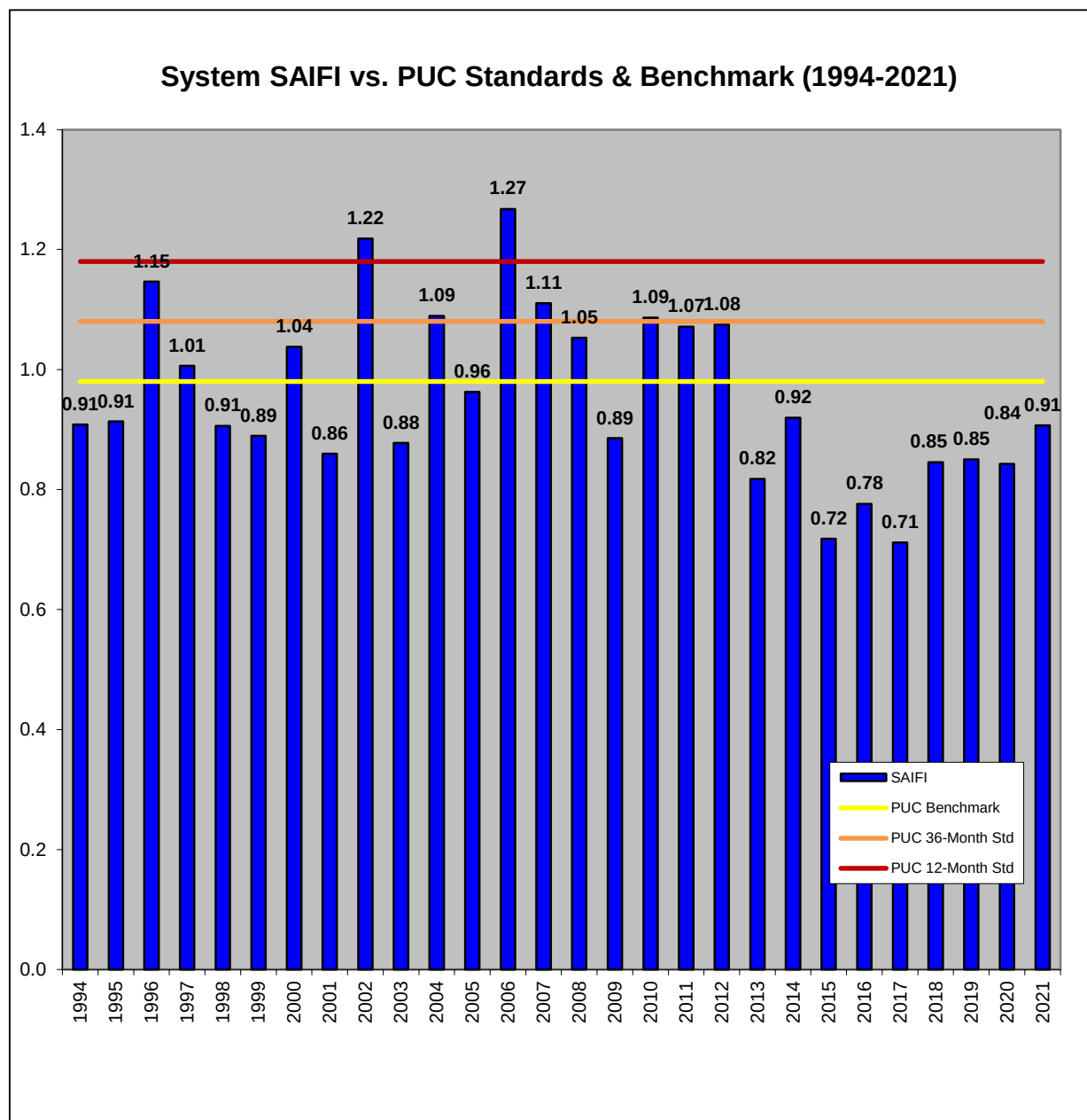


Figure 2: PPL Electric's SAIFI Performance

A significant risk to PPL Electric's ability to meet reliability benchmarks is the large portion of distribution facilities, many of which were installed in the 1960's and 1970's, that are now beyond or nearing the end of their design lifetime. See Appendix A for average age of major units of property. The resultant effect on non-storm-related equipment failures is illustrated by the chart in Figure 3 below.

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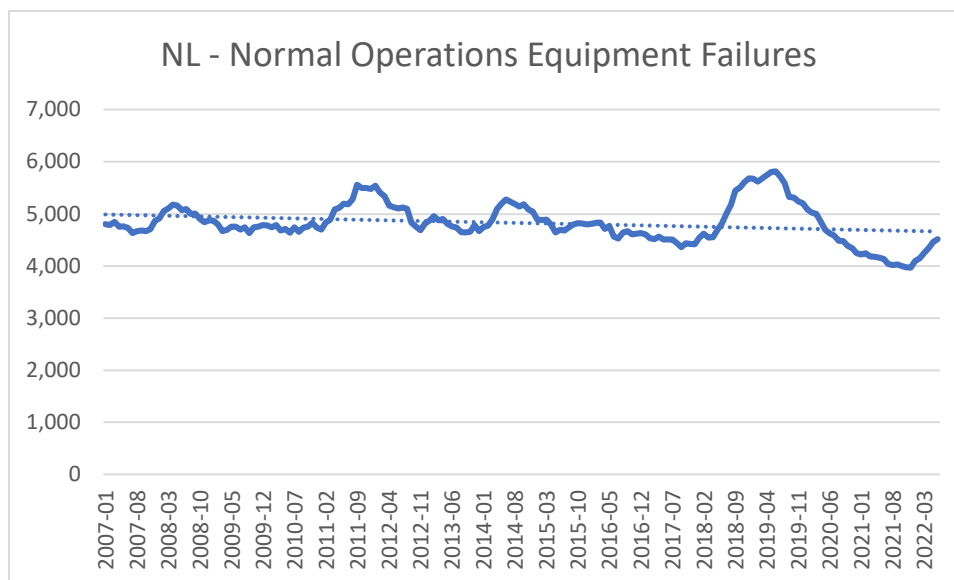


Figure 3: Equipment Failure Service Interruption Cases

The number of no-light cases due to equipment failures is trending slightly downward due to investments over the past five to ten years. The need to remediate that equipment which is at or near end-of-life remains to maintain or improve this favorable trajectory. Components contributing the most significantly to distribution equipment failures include poles/arms/attachments, overhead and underground conductors, switches, and substation equipment. See Appendix B for further details on asset contribution to reliability metrics.

Response to Aging Equipment

PPL Electric's reliability investment process is forward-looking and proactive. It consists of the following:

- Analyze and identify the drivers of historical trends of causes of service outages and other power service problems.
- Forecast future reliability metrics (SAIDI, SAIFI, and CAIDI) given existing mitigation programs' effect on the identified drivers.
- Identify new programs, policies, and activities to enhance or accelerate existing mitigation programs to avoid forecasted gaps between future reliability and benchmark targets.
- Identify, evaluate, and implement new technologies that enhance the Company's condition monitoring strategy.
- Evaluate and adjust existing programs, policies, and activities to produce the desired future results.
- Perform targeted data analytics against the Company's aging infrastructure utilizing real-time, or near real-time, operational data to further improve reliability performance.

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- Incorporate the resulting portfolio of existing and new programs, policies, and activities in PPL Electric's five-year business plan.

In February 2018, PPL Electric's Reliability Principles and Practices ("P&P") were revised to help reduce the overall impact to the Company's customers from outages due to various causes, including but not limited to, equipment failures. The P&P sets forth a set of Principles that PPL Electric follows to plan, protect, and operate the Electrical Distribution System ("EDS"). These Principles are implemented through a set of standard Practices that are used as guidelines in designing the EDS. These Practices are reasonable, acceptable, and consistent with leading utility practices. More specifically, to reduce the number of customers experiencing permanent outages and outage duration over the long term, the following circuit design guidelines are used wherever practical, starting with those identified as Worst Performing Circuits ("WPCs"):

- Provide three-phase line ties that will support the transfer of all but approximately 500-750 customers for 100% of the year.
- Provide sectionalizing devices to limit customer count to no more than approximately 500-750 customers between devices.
- Limit customer count to less than approximately 1,500 customers per circuit.
- Limit line length to approximately 70 circuit miles

Prioritization utilizing these design criteria is based on the greatest expected improvement in reliability for the entire system.

Several other mitigation initiatives have been undertaken to reduce the forecasted short-term equipment failure growth rate.

- **Enhanced Pole Inspection/Treatment Program:** Beginning in 2021, the Company's wood pole inspection and treatment program was enhanced from a subjective inspection process to an objective, resistance drill-based methodology. The resistance drill inspection allows a complete pole health assessment, with both interior and exterior decay accurately measured. This holistic strength assessment of the pole is the most accurate and thorough pole inspection possible. As an integral part of the twelve-year pole inspection process, PPL Electric observes, notes, and reports at-risk conditions of all pole attachments, specifically crossarms, braces, conductors, transformers, fuse cutouts, lightning arresters, reclosers, regulators, capacitors, switches, wildlife protection, vegetation encroachment, guys, anchors, ground wires, and ground rods.
- **Increased Utilization of Infrared Inspections:** PPL Electric conducted a trial of infrared inspections of multi-phase lines in 2006. The trial inspections cost \$122,500 and identified repairs costing \$100,000, saving an estimated 1,460,000-2,600,000 Customer Minutes Interrupted ("CMI"). Funding of infrared inspections and repairs was increased significantly during 2010 and has remained at a higher funding level. Infrared inspections occur on all 3-phase and 2-phase overhead lines adjacent to roadways every two years.
- **Proactive Circuit Analysis ("PCA"):** PCAs are performed on each circuit on a four-year cycle. The review analyzes and addresses both operational and reliability characteristics of each circuit. Voltage support, phase balancing, protection coordination, power factor maintenance and loading issues are

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addressed from an operational perspective. Service outage analysis, exposure analysis, and field checks address reliability and power quality.

- **Distribution Automation Strategy:** In 2010, PPL Electric launched a “smart grid” pilot project that enables the Company to react rapidly to changes on the delivery system, and to automatically re-route power around problems that occur. The project initially focused on the Harrisburg, Pa. area, but has since been expanded to cover all of the Company’s service territory. The project included the implementation of an advanced Distribution Management Systems (“DMS”), which was a breakthrough technology that enables the Company’s operators to see the status of PPL Electric’s distribution network in real-time. In 2016, PPL Electric completed a system wide rollout of Fault Isolation and Service Restoration (“FISR”) technology. FISR identifies faulted sections and quickly develops an optimized restoration plan, then automatically executes that plan. Customers typically can be restored within five minutes from the start of the outage. This milestone is an industry first and has saved over one million customer interruptions to date. Over 8,600 automated smart devices have been installed, which has allowed for remote operation and monitoring of circuit sectionalizing equipment.

Although these programs have successfully slowed failure growth rates in the short-term, PPL Electric faces a long-term issue regarding aging infrastructure. The surge in electrical construction in the 1960’s and 1970’s has resulted in a large number of assets that have reached or are nearing the end of their useful lifetime. Consequently, in 2008-2009, PPL Electric conducted a major condition assessment and maintenance study of its distribution system. The result was the implementation of the Asset Optimization Strategy (“AOS”). The study found that programmatic and accelerated replacement of infrastructure would be the most cost-effective strategy to address aging infrastructure and ensure system reliability and integrity.

Asset Optimization Strategy

The purpose of the AOS study was to develop a strategy for accelerated capital replacement improvements that would combat the anticipated effects of aging infrastructure and bolster PPL Electric’s ability to effectively maintain reliable electric service. With the Company entering a period where a significant number of assets are expected to reach the end of life, a plan was developed to intelligently replace assets prior to an unplanned failure that impacts customers. The plan includes replacements in kind, as well as upgrades to current standards.

Examples of AOS Projects include proactive replacement of substation equipment, Low Tension Network (“LTN”) equipment, and vintage underground cable based on condition-based health analysis.

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Accelerated Investment

As a result of the AOS study, PPL Electric approximately doubled its level of investment in DSIC-eligible property from 2009-2012. During this period, non-storm equipment failures fluctuated but continued to show a slight upward trend. PPL Electric continued to accelerate capital investments during the periods 2013-2017 and 2018-2022 to address an upward trend in equipment failures that peaked in 2018-2019 (see figure 3 above).

Period	Avg Annual Capital investment (in millions)
2008-2012	\$88
2013-2017	\$137
2018-2022	\$180

Figure 4: Approximate average annual capital investment in millions. Not adjusted for inflation.

As a result of these investments, PPL Electric arrested the increase in failed equipment and the current trend is flat to mildly decreasing. Even with these investments, the average age of equipment increased slightly since the 2018-2022 plan. While projected spending under this proposed LTIIP is lower than the 2018-2022 period, continued capital investment is necessary to maintain or improve the recently flattened trend in equipment failure.

Implementation of Long-Term Infrastructure Improvement Plan

The Long-Term Infrastructure Improvement Plan, in addition to various other prudent capital investments, helps to ensure the safety and reliability of the distribution system. The investments since the LTIIP was initially put into place have arrested and reversed the growth trend in equipment failures. Equipment failure trends and asset-specific contributions to system-level reliability metrics are analyzed on an ongoing basis to ensure funding is invested appropriately.

PPL Electric routinely reviews the effectiveness of programs to ensure cost-effective investment. Program/project impact on SAIDI and SAIFI, in addition to potential reductions in outage response costs, is compared to the overall program/project costs. PPL Electric utilizes a project prioritization process that defines the cost-effectiveness of programs/projects to ensure effective optimization of reliability investments. PPL Electric currently is improving the use of ongoing asset health indices to further refine asset replacement criteria.

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Ongoing review of the effectiveness of investments to address equipment failure trends will likely result in adjustments to the strategy over time. Future Long Term Infrastructure Improvement Plans will reflect such adjustments. Additionally, work plans may fluctuate throughout a given year due to the need to reallocate resources in response to changing business needs. Some examples include shifting resources for storm response activities, project construction delays caused by a backlog of material deliveries, and the redirection of investment to cure costly equipment failures. In addition, during the project engineering phase, issues such as right-of-way requirements and environmental considerations can result in scope changes that also can delay actual construction. During construction of larger projects, additional scope needs can be identified, creating the need to defer other projects. Finally, reliability metric performance can result in redirection of spending to help ensure the ability to meet targets.

Projected expenditures for the replacement of failed equipment are based on a review of historical trends while considering current failure rates and proactive mitigating measures. For such programs, it is difficult to project the specific scope and location. Therefore, PPL Electric has provided only planned expenditures based on historical trending information.

Utility Outreach

PPL Electric continues to remain engaged, seeking out opportunities with other utilities and government officials on the planning and execution of future construction projects. A forum exists with the Utility Highway Liaison Committee (“UHLC”), with whom PennDOT, the Turnpike Commission, other utilities, and the Energy Association of Pennsylvania meet quarterly to discuss policy issues, present and future projects, and relocation projects. The Company is a regular participant. Initiatives at these forums are focused primarily on improving state and utility interactions.

PPL Electric also participates in various Pennsylvania Coordinating Committees, including the Northeast PA (“NEPA”) Regional partnership, the Lancaster County Regional Partnership, the Lehigh Valley Regional Partnership, and the Lycoming County Area Coordinating Committee. These meetings are held monthly, bi-monthly, or quarterly to discuss and share project plans with stakeholders including utility companies, PennDOT, public works officials and planning commission members. PPL Electric currently hosts two of these meetings each calendar year.

Utilization of a Qualified Work Force

PPL Electric Workforce

As a measure to ensure the use of a qualified workforce, PPL Electric has adopted the definition of a Qualified Electrical Worker from the Occupational Safety and Health Administration (“OSHA”) Regulation 29 CFR § 1910.269 Electrical Power Generation, Transmission and Distribution, which is defined in the PPL Electric Safety Rule Book and is provided to each employee. It is also incorporated into the training and qualification process for all electrical workers.

PPL Electric administers a rigorous, formal training and evaluation process for all qualified electrical workers. Training is required before an employee may perform work independently on exposed, energized electrical equipment greater than 50 volts. Training requirements and programs are unique to the job classification and work being performed. Curriculum documents, outlining subject areas and training durations by job classification have been developed. Training may require up to 5 years to complete and incremental qualifications, following

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assessment, are identified throughout the duration of the training program. Retraining is conducted on a periodic basis as required by OSHA or more frequently when determined necessary.

PPL Electric's formal training programs are administered by the Technical Development & Improvement ("TD&I") group. The training section of the TD&I group is comprised of approximately 37 full time employees, both training professionals and craft employees. Experienced training professionals lead the design and development of the training programs with input from subject matter expertise provided by craft employees from the field. Training program (curriculum) content is approved by a curriculum committee which is comprised of business line managers. The basic job requirement for an instructor includes 5-years of experience performing the work and attainment of Journeyman level (or equivalent) qualifications. Craft instructors are then trained and mentored. Training delivery is governed by PPL Electric policies and procedures to ensure quality and consistency.

Training is delivered in phases. A phase typically consists of a grouping of training modules into one training period of several days to several weeks. Training consists of both classroom and field work to gain hands-on practical learning experience. Trainees are evaluated throughout the program. Evaluation includes written examination and/or a performance examination. Employees must successfully complete each training module before progressing to the next phase of training.

In addition, trainees in key programs must complete an additional skills assessment prior to advancement to the next step. These assessments are coordinated by the TD&I group. The employees are evaluated (graded) by a panel comprised of knowledgeable field supervisors and experienced bargaining unit craft members. This independent evaluation serves as a quality control check on the TD&I training section.

Over the next 5 years, PPL Electric will be executing a resource strategy which includes formal training classes to hire and train new employees in preparation for upcoming attrition.

Contractor Workforce

PPL Electric's Sourcing department administers a standard process for soliciting contractors to perform work identified to be completed by independent contractors. The process includes issuance of a Request for Proposal ("RFP") to various contractors. That process includes a meeting to review the technical and administrative components of the work and normally a walk-down of the project area. Responses to the RFP are evaluated based on detailed financial and technical schedules that compare respondents' capabilities. Part of the RFP evaluation process includes evaluating the qualification of contractors to perform work (both technical and financial capabilities to meet the contractual commitments, and level of qualification of employees) and may include reference checks if appropriate. Any specific required qualifications of contractors would typically be outlined in the RFP and/or contract (for example: pole installation, permit and tag authorities, line construction by specific voltage, live line work, foundations, directional bore/trenching, underground networks).

Most independent contractors employ personnel through the building trades, which includes Union apprenticeship programs to help ensure that employees are qualified to perform assigned work. (This approach is comparable to PPL Electric's Union labor qualification training program.) Employee qualification programs for non-Union independent contractors are stringently reviewed to assess the contractor's training program, such as on-the-job training and certification programs.

Prior to award, contractors are screened for their safety performance and, if applicable, environmental record. Contractors that do not have an acceptable record receive no further consideration. In the event that a contractor

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working for PPL Electric incurs safety incidents and/or does not take appropriate safety measures, the contractor is terminated and prohibited from performing work for PPL Electric in the future.

PPL Electric has instituted a contractor orientation program that provides new contractors an opportunity to understand company expectations for performing work safely, mindful of public and private landowner considerations and administrative concerns (such as billing). PPL Electric also performs weekly safety and workmanship review meetings with the Company's contractor work force to review safety issues and other relevant topics

PPL Electric sponsors a training program that allows the contractors' employees to become qualified in PPL Electric's permit-and-tag system. Contractor employees who successfully complete the training program can be permit holders on PPL Electric's system.

PPL Electric monitors the contractors' performance through several activities that may include direct job oversight through on-site supervision, monthly scorecards that evaluate such areas as job quality, safety performance, cost, and validating billing activities that meet contractual expectations. If safety concerns are identified at a job site, any person has the ability and express duty to cease work until the concerns have been appropriately addressed, and a safety review team could be assembled to formally request a contractor to respond to safety concern. Safety violations could result in immediate contractor termination.

PPL Electric's Project Construction Supervisors continuously monitor the quality of all contractor work and adherence to PPL Electric's Construction Standards. Where the contractor installs specialized equipment on critical facilities, special Quality Assurance review are performed which may include inspection of grounding, trench, foundations, final grade, structural components, poles/towers, conduits, electrical equipment, primary conductor, wiring, designations, and final completion of the Acceptance of Facilities form). Any failures are described along with description and dates of corrections to resolve the areas of concern before final acceptance of the contractor's quality of work.

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Summary

As a result of the economic expansion and building boom of the 1960's and 1970's, much of PPL Electric's distribution system was constructed 50 or more years ago. As this equipment deteriorates due to age, environmental exposure, and added load, it becomes increasingly critical to plan for the repair, upgrade, and/or replacement of these assets through the initiatives described above. In the absence of these initiatives, the efficiency, safety, and reliability of the electric distribution system is expected to be increasingly compromised. PPL Electric believes that the expenditures for these initiatives constitute a prudent and reasonable investment for managing its distribution assets and that each of the listed programs will successfully achieve one or more of the following benefits:

- Maintaining public and employee safety
- Reducing service outage durations and number of customers affected
- Reducing service outage restoration times
- Reducing service outage locating and repair times
- Controlling service outage repair costs
- Limiting failure-related damages and related costs, and
- Improving/maintaining power quality (voltage, flicker, etc.)

To achieve these results, PPL Electric anticipates the need for the following total capital expenditures over the 2023-2027 period. Note that planned expenditures for certain initiatives can fluctuate yearly due to the various factors identified previously.

	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 17.33	\$ 18.96	\$ 17.33	\$ 17.33	\$ 17.33	\$ 88.28
New Electronic Reclosers	\$ 5.07	\$ 4.69	\$ 4.13	\$ 3.63	\$ -	\$ 17.52
Distribution Animal Guarding	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 2.50
Failed Equipment	\$ 34.77	\$ 34.03	\$ 35.18	\$ 36.64	\$ 36.03	\$ 176.64
Underground Cable Replacement	\$ 0.42	\$ 1.11	\$ 1.67	\$ 1.59	\$ 1.59	\$ 6.37
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.60	\$ 1.54	\$ 0.38	\$ 2.40	\$ 2.40	\$ 7.32
Substation	\$ 3.04	\$ 7.71	\$ 14.05	\$ 13.31	\$ 13.08	\$ 51.19
LTN Upgrades	\$ 3.12	\$ 12.60	\$ 7.63	\$ 8.19	\$ -	\$ 31.54
Reliability	\$ 4.08	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 12.08
System Reliability Improvement Projects	\$ 12.77	\$ 8.11	\$ 13.79	\$ 17.80	\$ 13.29	\$ 65.76
Unreimbursed Highway Relocations	\$ 6.16	\$ 4.90	\$ 3.92	\$ 2.83	\$ 2.83	\$ 20.64
Protection and Control	\$ 4.70	\$ 6.06	\$ 7.35	\$ 6.83	\$ 6.83	\$ 31.77
Total	\$ 92.56	\$ 102.21	\$ 107.92	\$ 113.05	\$ 95.88	\$ 511.62

Almost all of the aforementioned initiatives take advantage of new technologies that did not exist when the associated assets were originally placed into service, and many of these technologies are very recent innovations. These technologies are expected not only to restore the assets to their original level of performance, but, in many cases, provide performance well beyond what previously was achievable in order to ensure and maintain adequate, efficient, safe, and reliable service.

Some of the initiatives, such as animal guarding, clearly have implied endpoints, where no further opportunities for improvement remain. Others, such as distribution automation, eventually experience diminishing returns over time. Other initiatives, such as pole reinforcement and replacement, will be ongoing. Finally, some programs may

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become obsolete, while new programs may become desirable as a result of the evolution of new technologies. Because of these and other variables, the effectiveness of these programs is reviewed annually, and programs are added, deleted, and/or modified, as necessary, to ensure that the expenditures are providing the desired benefits to customers at a reasonable cost.

Distribution Assets

The following pages detail 5-years projections for Long-Term Infrastructure Improvements initiatives that apply to distribution line assets. These assets include, but are not limited to, the following:

- Structures
 - o Poles
 - o Crossarms
 - o Vaults
 - o Manholes
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - o Air Break Switches
 - o Disconnect Switches
 - o Switching Cabinets
- Protective Devices
 - o Fuses
 - o Reclosers
 - o Network Protectors
 - o Lightning Arresters
- Transformers
 - o Overhead
 - o Pad-Mounted
 - o Submersible
 - o Low Tension Network

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Poles

This category includes the replacement and reinforcement of wood poles to maintain reliability, ensure public safety, and further storm harden the system.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$17.33	\$18.96	\$17.33	\$17.33	\$17.33	\$88.28

Distribution Pole Replacements

Program Description and Purpose

Replacement of distribution wood poles identified as non-restorable (cannot be reinforced) during the annual inspect and treat program or during a spot inspection in an effort to improve public and employee safety, as well as service reliability. This program contributes to storm hardening efforts and aims to improve public and employee safety, as well as service reliability, by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement while 30% are candidates for replacement. Replacing rejected poles avoids property damage and risk of accidental injury, and it mitigates the costs associated with extended service outages. Replacement rates are expected to fall as a result of PPL Electric's pole treatment program. The average age of an in-service wooden distribution pole is 43 years.

Scope

The scope of the program is a direct correlation to the number of wood pole inspections.

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
2000-2500	2000-2500	2000-2500	2000-2500	2000-2500	10000-12500

Locations

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Specific locations are a direct correlation to the wood pole inspection plan. Inspection locations are identified yearly primarily as a function of previous inspection dates, as well as ensuring cost-effectiveness of the program and minimizing inspection crew movements.

Pole Reinforcements

Program Description and Purpose

Reinforcement of deteriorated distribution wood poles in order to restore the pole's original strength, ensure public safety, and maintain reliable electric service through the reduction of potential pole failures. This program contributes to storm hardening efforts by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement. When applicable, this method achieves a significant savings over pole replacement.

Scope

Planned Reinforcements in Units					
2023	2024	2025	2026	2027	Total Scope
4000-5000	4000-5000	4000-5000	4000-5000	4000-5000	20000-25000

Locations

Locations identified for reinforcement are a direct correlation to the number of wood pole inspections.

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New Electronic Reclosers

Program Description and Purpose

Proactive installation of new electronic reclosers on both single-phase and three-phase lines, to improve reliability performance by increasing circuit sectionalizing ability. Reclosers minimize the number of customers affected by a sustained outage.

Identification/Justification Process

Locations are requested by regional reliability engineers and prioritized annually based on anticipated reliability savings. A gradual scope reduction is assumed in the outer years as a result of saturation of reclosers and other distribution automation equipment.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
210-250	170-200	110-140	50-70	0	540-660

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	90-110
Northeast	90-110
Central	90-110
Susquehanna	90-110
Harrisburg	90-110
Lancaster	90-110

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$5.07	\$4.69	\$4.13	\$3.63	\$0	\$17.52

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Distribution Animal Guarding

Program Description and Purpose

Proactive installation of animal guards on existing distribution overhead transformers and air break switches to improve circuit reliability. Animal guards help prevent animal-related contacts which cause service interruptions.

Identification/Justification Process

Transformers are identified both by opportunistic installation of guarding during other non-related work, and by on-the-spot or follow-up orders after responding to animal-caused outages.

Scope

Planned Animal Guards					
2023	2024	2025	2026	2027	Total Scope
240-360	240-360	240-360	240-360	240-360	1200-1800

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	200-300
Northeast	200-300
Central	200-300
Susquehanna	200-300
Harrisburg	200-300
Lancaster	200-300

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$2.50

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Failed Equipment

This category includes the replacement of failed or deteriorated distribution equipment, LTN equipment, underground cable, and underground getaways.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$34.77	\$34.03	\$35.18	\$36.64	\$36.03	\$176.64

Distribution Failed Equipment

Program Description and Purpose

Replacement or repair of failed or deteriorated capital units of distribution equipment, excluding underground cable, in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via inspections, both planned and ad-hoc, as well as actual outages and power service problems. Budget allocations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures. Examples include, but are not limited to, failed reclosers, poles, capacitor banks, and air breaks.

Scope & Locations

Scope and locations are determined as equipment fails.

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Replace Failed Underground Cable

Program Description and Purpose

Replacement of failed underground residential primary and secondary cables in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via actual failures. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cable fails.

Replace Failed 12 kV Underground Getaway Cables

Program Description and Purpose

Replacement of failed 12 kV underground getaway cables to maintain adequate service reliability. Getaway failures can result in long duration outages. Getaway cables connect substations to outgoing feeders beyond the substation perimeter.

Identification/Justification Process

Candidates are identified via actual failures and cables with poor test results. Budget recommendations are based on historical trends in getaway failure quantities and costs, in addition to projected trends of future getaway failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as getaway cables fail while in service or fail conditionally under testing.

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Replace Deteriorated/Failed Low Tension Network Equipment and Structures

Program Description and Purpose

Replacement or repair of deteriorated and failed equipment related to Low-Tension Networks, including network transformers, network protectors, manholes, and vault tops in order to maintain adequate service reliability. Low-Tension Networks are low voltage underground distribution facilities found in urban areas.

Identification/Justification Process

Candidates are identified via actual failures, inspections, testing, or work on the system. Budget recommendations are based on historical trends of corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as assets fail.

Replace Deteriorated/Failed Area Supply Substation Equipment

Program Description and Purpose

Replacement of failed or deteriorated station facilities at area supply substations with in-kind equipment to maintain safe and reliable service. Identified facilities include, but are not limited to, circuit breakers, power transformers, tie/transfer cables, disconnect switches, DC equipment, and instrument transformers.

Identification/Justification Process

Candidates are identified via actual failures, inspections, and test results. Budget recommendations are based on historical trends in equipment failure quantities and costs, in addition to projected trends of future equipment failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as station equipment fail while in service or fail conditionally under testing.

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Underground Cable Replacement

Program Description and Purpose

Programmatic replacement of deteriorated underground cable to maintain reliable electric service.

Identification/Justification Process

Candidates are selected based on history of cable failures and failure risk scores generated by a data analytics model that uses criteria such as segment length, cable age, customer count, and number of tap fuse outages.

Regional allocation of cable remediation is based on historical regional percent contribution to system-wide cable failures.

Scope

Planned Scope in Cable Segments					
2023	2024	2025	2026	2027	Total Scope
25-100	75-150	135-225	100-200	100-200	435-875

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	100-200
Northeast	45-125
Central	45-100
Susquehanna	45-100
Harrisburg	100-175
Lancaster	100-175

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.42	\$1.11	\$1.67	\$1.59	\$1.59	\$6.37

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Low Tension Network Primary Cable, Equipment and Structures

Program Description and Purpose

Programmatic replacement of deteriorated equipment related to Low Tension Networks, including primary underground cable, network transformers, network protectors, manholes, and vault tops. The purpose of this program is to ensure public safety and service reliability through the replacement of underground facilities that have reached the end of their expected life or that show signs of premature age from prolonged exposure to corrosive environments.

Identification/Justification Process

Primary underground cables for Low Tension Network feeders are reaching their end of useful life and proactive replacements mitigate feeder outages. Replacement and repairs of manhole and vault tops are determined by regular inspections. Network transformer and network protector replacements are determined through inspection and age, where assets exceeding 40 years in service are considered highest priority.

Scope

Planned Replacements in Units (in Work Orders)						
	2023	2024	2025	2026	2027	Total Scope
Primary Cable Replacements	0-2	0-2	0-2	0-3	0-3	0-12
LTN Equipment	6-18	6-18	6-18	6-18	6-18	30-90

Locations (Approximate total over 5-year plan)

Region	LTN Equipment	Cable
Lehigh	5-15	0-2
Northeast	5-15	0-2
Central	5-15	0-2
Susquehanna	5-15	0-2
Harrisburg	5-15	0-2
Lancaster	5-15	0-2

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Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.60	\$1.54	\$0.38	\$2.40	\$2.40	\$7.32

Substation

This category includes replacement of various substation assets, and substation animal guarding.

Substation assets include, but are not limited to, the following:

- Structures
 - Enclosures
 - Fences
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - Air Break Switches
 - Disconnect Switches
- Protective Devices
 - Circuit Breakers
 - Fuses
 - Reclosers
 - Lightning Arresters
- Transformers
 - Power
 - Station Service
 - Instrument

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$3.04	\$7.71	\$14.05	\$13.31	\$13.08	\$51.19

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Underground Getaway Cable Replacements and Life Extension

Program Description and Purpose

Proactive replacement of aging and deteriorating 12 kV underground getaway cables to prevent failures that can result in long duration outages.

Identification/Justification Process

Getaways are selected for proactive replacement based on data analytics risk models that quantify cable health and risk and provide a priority ranking based on risk factors such as age, repair history, installation type, length, load transferability, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
0-4	5-12	8-15	8-15	8-15	29-61

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	0-7
Northeast	12-17
Central	4-5
Susquehanna	2-7
Harrisburg	10-22
Lancaster	1-3

Miscellaneous Substation Equipment

Program Description and Purpose

Programmatic replacement of older substation equipment, including air break switches, potential transformers (“PTs”), capacitance-coupled voltage transformers (“CCVTs”), circuit switchers, lightning arresters, voltage regulators, and DC panels in order to prevent future maintenance concerns and to maintain reliable service.

Identification/Justification Process

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Candidates for replacement are identified based on age and/or operating condition, both indicators of potential failure. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-2	4-8	5-9	5-9	5-9	19-37

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	3-6
Northeast	4-7
Central	3-6
Susquehanna	3-6
Harrisburg	3-6
Lancaster	3-6

Distribution Substation Circuit Breakers

Program Description and Purpose

Proactive replacement of substation circuit breakers (“CBs”) based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 12 kV circuit breakers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, mis-operation history, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
7-12	22-32	42-62	39-58	39-58	149-222

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	40-50
Northeast	11-21
Central	17-26
Susquehanna	29-34
Harrisburg	29-57
Lancaster	23-34

69/12 kV & 138/12 kV Transformer Replacement

Program Description and Purpose

Proactive replacement of distribution substation transformers based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 69/12 kV and 138/12 kV transformers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, dissolved gas analysis trends/analytics, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
1-2	2-4	4-6	3-5	3-5	13-22

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	8-9
Northeast	2-3
Central	1-3
Susquehanna	0-1
Harrisburg	0-2
Lancaster	2-4

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Distribution Substation DC Equipment

Program Description and Purpose

Programmatic replacement of distribution substation DC equipment based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 24 V, 48 V, and 125 V batteries, chargers, and related equipment.

Identification/Justification Process

Candidates for replacement are identified based on age, operating issues, availability of spare parts, and failure trends. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, DC assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-1	4-6	6-8	6-8	6-8	22-31

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	3-5
Northeast	3-5
Central	3-5
Susquehanna	4-5
Harrisburg	6-7
Lancaster	3-4

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Substation Animal Guarding

Program Description and Purpose

Improvements to existing distribution substation equipment via the proactive installation of animal guards to prevent animal contacts and maintain reliable service. Guarded equipment includes transformer bushings, circuit breakers, fuse/disconnect switches, bus supporting insulators, surge arresters, station service transformers, PTs, and cable terminations. Future investments could be made in pilot products like internal perimeter electric fences for comprehensive rodent deterrents at high animal contact risk locations.

Identification/Justification Process

Distribution substations are regionally prioritized based on historical animal-related service outages (both at the substation and within a 1-mile perimeter), number of customers served, substation load, and transferability. High priority substations are animal guarded first with the lower priority substations guarded in outer years.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
0-1	1-3	1-3	1-3	0-1	3-11

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	2-3
Northeast	0-1
Central	1-2
Susquehanna	0-3
Harrisburg	0-1
Lancaster	0-1

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12 kV Underground Bus Tie & Transfer Cable Replacement

Program Description and Purpose

Proactive replacement of distribution substation underground bus tie and transfer cables based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement all 12 kV underground cables within the perimeter of the substation yard.

Identification/Justification Process

Underground bus tie and transfer cables are selected for proactive replacement based on data analytics risk models that quantify cable health and risk, and provide a priority ranking based on factors such as age, repair history, installation type, length, loading, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
2-4	3-5	4-6	4-6	4-6	17-27

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	1-2
Northeast	3-6
Central	7-8
Susquehanna	2-3
Harrisburg	1-3
Lancaster	3-5

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LTN Upgrades

Program Description and Purpose

The purpose of this program is to install remote monitoring and control equipment in all Low Tension Network (“LTN”) vaults, upgrade network devices up to the latest standard, replace vault equipment near its end of useful life, and install telemetry on secondary network cable. These improvements will allow for safer operation of LTNs, reduce maintenance costs, reduce failed equipment requiring replacement, and provide better data for asset planning and investments.

Identification/Justification Process

Rollout of this program began in the Lehigh and Harrisburg regions. By the completion of this program in 2026, all LTN vaults will receive automation.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
21	159	102	195	0	477

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	62
Northeast	111
Central	80
Susquehanna	33
Harrisburg	97
Lancaster	94

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$3.12	\$12.60	\$7.63	\$8.19	0	\$31.54

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Reliability

This category includes deployment of Smart Grid devices and distribution circuit upgrades to address reliability issues identified through inspections or various circuit or customer level performance metrics.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$4.08	\$2.00	\$2.00	\$2.00	\$2.00	\$12.08

Distribution Reliability Preservation

Program Description and Purpose

Upgrades to the distribution system as justified by regional reliability supervisors to improve reliability. Improvements are targeted towards Worst Performing Circuits (“WPCs”), circuits with a history of customer complaints, or recommendations as a result of PCAs. PCAs are detailed reliability and operational analysis performed on 25% of a region’s distribution circuits per year. Additional work is scoped on the basis of Customers Experiencing Multiple Interruptions (“CEMI”), and Customers Experiencing Multiple Momentary Interruptions (“CEMMI”).

Identification/Justification Process

Projects are identified and submitted for both small and large-scale circuit improvement. These projects are ranked utilizing PPL Electric’s investment prioritization tool to ensure funds are directed towards the most cost-effective projects. The number of projects and locations may vary depending on areas with reliability concerns. Examples include, but are not limited to, installation of fuses, fault indicators, reconductoring of vintage conductor, upgrading conductor to reduce impact of vegetation related service outages, and relocating sections of lines that may be inaccessible or prone to vegetation related service outages.

It should be noted projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
10-25	10-25	10-25	10-25	10-25	50-125

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Locations

Locations are identified based upon emergent reliability needs.

Reliability Preservation Emergent

Program Description and Purpose

Remediation of issues primarily associated with secondary voltage and emergent small-scale customer reliability needs in order to improve reliability.

Identification/Justification Process

Work is identified by line crews, as well as through customer calls, and is completed to avoid potential service outages, power quality concerns and safety issues. Examples include, but are not limited to, modifying capacitance to address voltage concerns, installing fusing to aid in sectionalizing, and replacing transformers to resolve transformer overload. Budget recommendations are based on historical trends of hours charged.

Scope & Locations

Scope and locations are determined as emergent needs arise.

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System Reliability Improvement Projects

Program Description and Purpose

Large-scale improvements to distribution circuits with a history of poor reliability. This program addresses long-term projects, primarily aimed at WPCs. However, other proactive long-term projects with proven reliability benefit are included.

Identification/Justification Process

Each quarter, distribution planners and regional reliability supervisors meet to propose projects to improve WPCs. Projects are approved by distribution planning supervisors and vetted against other projects for scheduling based on historical reliability, potential benefit, and cost. Projects may span multiple years and are listed in the years they are planned to go in service. Scope is expected to increase in outer years as circuits and projects are identified. Examples include, but are not limited to, circuit reconfigurations with new tie lines, new lines and terminals, or the installation of substations for increased reliability.

Additionally, PPL Electric monitors large customer impact outages on a daily basis. A circuit that begins to show reliability deterioration and notable impact on reliability metrics requires a root cause analysis. Such analysis can result in the identification of a long-term project.

Note that the projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
6-12	6-12	6-12	6-12	6-12	30-60

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	5-10
Northeast	5-10
Central	5-10
Susquehanna	5-10
Harrisburg	5-10
Lancaster	5-10

PPL Electric Utilities Corporation

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$12.77	\$8.11	\$13.79	\$17.80	\$13.29	\$65.76

Unreimbursed Highway Relocations

Program Description and Purpose

Unreimbursed customer requested relocations of PPL Electric distribution facilities in support of highway and bridge projects throughout service territory.

Identification/Justification Process

The customers (project sponsors) include PennDOT, the PA Turnpike Commission, and various counties and municipalities. PPL Electric and the project sponsor execute a reimbursement agreement, and PPL Electric is reimbursed for its work based on the “pole count method,” as defined in PennDOT’s DM-5 manual. Historically, reimbursement for distribution projects is approximately 35%.

To accommodate highway relocations and other municipal projects, approximately 70-120 projects per year are placed in service. PPL Electric typically is notified of distribution relocation work 12 months or less before the start of requested utility relocation activities.

Scope & Locations

Scope and locations are determined as requests are received.

Planned Expenditures (in millions)

PPL Electric’s expenditures to complete highway relocation projects are the net of total expenditures minus the project sponsor’s reimbursements.

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$6.16	\$4.90	\$3.92	\$2.83	\$2.83	\$20.64

PPL Electric Utilities Corporation

Protection and Control

Program Description and Purpose

Proactive replacement of protection and control equipment to maintain reliable distribution service to customers. Replacement of legacy relays with modern microprocessor relays will also improve fault monitoring and diagnosis processes and will provide added insight into circuit breaker health and risk. Replacement of obsolete Supervisory Control and Data Acquisition (“SCADA”) protocols and equipment will also enable relays to perform properly.

Identification/Justification Process

Candidates for replacement are identified based on obsolescence, availability of vendor support, age, and automation enhancement potential. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
2-6	59-89	72-108	67-100	67-100	267-403

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	54-81
Northeast	42-64
Central	32-49
Susquehanna	34-51
Harrisburg	51-77
Lancaster	54-81

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$4.70	\$6.06	\$7.35	\$6.83	\$6.83	\$31.77

PPL Electric Utilities Corporation

Appendix A: Average Age of Major Units of Property

The below chart is a summary of key distribution assets, targeted for planned replacement and proactive installation.

Average Age of Major Units of Distribution Property		
Utility Account	Description	Avg Asset Age
362.0 - Station Equipment	DC Sytem Equipment	18
362.0 - Station Equipment	Substation Animal Guards	10
362.0 - Station Equipment	Power Circuit Breakers	33
362.0 - Station Equipment	Power Transformers	42
362.0 - Station Equipment	Protection and Control Equipment	51
364.4 - Poles and Fixtures	Distribution Wood Poles	43
365.0 - Overhead Conductors, Device	Distribution Animal Guards	7
365.0 - Overhead Conductors, Device	OH Primary Conductor	50
365.0 - Overhead Conductors, Device	Air Break Switches	13
365.0 - Overhead Conductors, Device	Automatic Switches (Primarily OCRs/VCRs)	10
365.0 - Overhead Conductors, Device	Disconnect Switches	35
367 - Underground Conductors	UG Primary Conductor (includes Getaways and Cross Yard Ties)	27
366.0 - Underground Conduit	Equipment Foundation, Man Holes, Transformer Vaults (excl Conduit)	27
368.4 - Submersible or Padmt Type	UG Transformers (include LTN Transformers and Network Protectors)	25

PPL Electric Utilities Corporation

Appendix B: Asset Contribution to Reliability Metrics

The below table provides a summary of customers interrupted (“CI”) and Customer Minutes Interrupted (“CMI”) by failed component. Note that both transmission and distribution substation outages are included in the Substation component asset type.

Outage Contribution By Component - Equipment Failure Causes - Non Major Events											
Component Asset Type	Component Desc	2017		2018		2019		2020		2021	
		CI	CMI	CI	CMI	CI	CMI	CI	CMI	CI	CMI
Distribution	OH-Capacitor Bank	3,424	108,863	473	94,627	1,216	104,022	490	12,697	1,020	50,662
Distribution	OH-Lightning Arrester	6,301	566,653	8,154	731,871	6,200	712,771	2,702	290,321	2,151	293,442
Distribution	OH-Other Equipment(explain)	3,030	289,973	4,840	465,772	5,175	804,502	6,109	451,306	3,456	313,318
Distribution	OH-Pole/Arms Attachments	52,713	6,524,470	48,513	4,700,495	41,599	4,070,548	35,347	3,959,531	43,737	5,505,965
Distribution	OH-PRI Splices and Connectors	7,454	989,200	13,398	1,040,441	24,195	1,685,455	15,181	980,526	15,620	1,443,678
Distribution	OH-Primary/Neutral	85,443	9,923,218	122,999	15,577,602	110,511	12,776,083	116,882	14,222,141	103,375	13,167,440
Distribution	OH-SEC Splices and Connectors	1,813	134,821	1,497	145,830	1,392	102,066	1,710	151,429	1,690	208,053
Distribution	OH-Secondaries/Services	2,610	274,850	3,592	371,244	3,735	486,804	3,283	370,513	3,369	379,299
Distribution	OH-Switch/Automatic	20,631	1,619,275	24,333	2,167,680	20,436	1,663,225	15,214	1,330,628	25,270	2,014,136
Distribution	OH-Switch/Manual/AB/Disc/OS/LBD	13,402	1,170,281	12,348	1,128,002	5,081	505,950	6,291	401,764	5,692	297,479
Distribution	OH-Tap Fuse/Cutout	6,951	749,227	11,402	1,229,204	8,284	1,133,814	7,764	841,505	7,116	925,719
Distribution	OH-Transformer	5,671	968,793	8,079	1,220,182	9,353	1,197,199	7,292	1,225,848	8,189	1,171,421
Distribution	OH-Transformer Fuse/Cutout	16,744	1,778,312	25,048	2,830,029	19,132	2,096,787	20,863	2,208,699	18,545	2,025,416
Distribution	UG-Elbows	84	31,649	313	58,893	199	49,054	480	274,811	937	212,896
Distribution	UG-Lightning Arrester	61	14,383	97	14,711	98	23,831	120	21,331	76	12,064
Distribution	UG-Load Break Junctions	183	36,227	9	1,069	31	9,845	73	16,468	164	58,516
Distribution	UG-Low Tension Network							5	315		
Distribution	UG-Other Equipment(explain)	17	2,086	819	95,603	154	32,535	1,444	155,257	7	795
Distribution	UG-Pads/Vaults/MHs & Splice Boxes	83	18,854	44	7,021	91	19,727	102	18,971	801	150,036
Distribution	UG-PRI Splices and Connectors	151	28,502	82	16,355	1,666	136,146	343	38,591	791	53,784
Distribution	UG-Primary Cable/Neutral	13,539	2,118,561	21,525	2,962,012	18,980	2,779,215	15,006	2,304,340	12,565	2,377,282
Distribution	UG-Riser Pole Equip & Devices	749	88,313	551	70,197	1,404	115,247	306	41,973	948	131,556
Distribution	UG-SEC Splices and Connectors	40	1,200	22	2,575	40	2,814	2	324	33	1,193
Distribution	UG-Secondaries/Services	292	47,087	393	85,353	260	44,414	310	50,241	377	80,910
Distribution	UG-Switchgear	1,021	146,580	1,589	334,778	2,651	309,998	441	87,554	712	142,733
Distribution	UG-Transformer/Transformer Fuse	1,455	254,990	2,735	578,648	1,326	358,322	1,041	232,250	2,915	336,981
Substation	SUB-Circuit Breaker	10,859	1,162,641	6,129	217,364	5,658	605,760	28,289	1,766,321	9,349	202,774
Substation	SUB-Control/Relay	1,950	143,054			26,241	464,478			730	9,127
Substation	SUB-Insulator	84	4,990			5	3,312			3,539	31,055
Substation	SUB-Lightning Arrester					583	99,422				
Substation	SUB-Other Equipment(Explain)							35,104	366,321	499	14,436
Substation	SUB-Power Fuse							2,823	26,593	67	355
Substation	SUB-Switch/Automatic			1,340	14,843						
Substation	SUB-Switch/Manual/AB/Disc/LBD	654	54,045	3,353	82,506	1	1,014	22,157	486,661	4	1,982
Substation	SUB-Transformer	13	2,320	1,449	11,606	5,980	72,007	7,719	118,942		
Total		257,422	29,253,418	325,126	36,256,511	321,677	32,466,367	354,893	32,454,169	273,744	31,614,503

VERIFICATION

I, STEVEN D. SELKREGG, being the Director - Distribution Asset Management & Engineering at PPL Services Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 09/01/2022

Steven Selkregg
Steven Selkregg (Sep 1, 2022 15:14 EDT)

Steven D. Selkregg

PPL Electric Exhibit SDS-2

Kimberly A. Klock
Assistant General Counsel

PPL
Two North Ninth Street
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VIA FEDEX

February 29, 2024

Rosemary Chiavetta, Esquire
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

**Re: PPL Electric Utilities Corporation
2024 Annual Asset Optimization Plan
Docket No.**

Dear Ms. Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation is its 2024 Annual Asset Optimization Plan.

Copies have been provided as indicated on the Certificate of Service.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on February 29, 2024, which is the date it was deposited with an overnight delivery service.

If you have any questions or need additional information, please contact me or Colleen Lauver, Manager - Distribution Planning & Asset Management, at (610) 774-4411.

Respectfully submitted,

A handwritten signature in blue ink that reads "Kimberly A. Klock". The signature is fluid and cursive, with the first name "Kimberly" and last name "Klock" clearly legible.

Kimberly A. Klock

Enclosures

cc: Certificate of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

VIA ELECTRONIC MAIL

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Date: February 29, 2024



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PPL Electric Utilities Corporation
Annual Asset Optimization Plan
Year Ended December 31, 2023

PPL Electric Utilities Corporation

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Introduction

PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) files this Annual Asset Optimization Plan (“AAO Plan”) in compliance with 66 Pa.C.S. § 1356. Section 1356 requires a utility with an approved distribution system improvement charge (“DSIC”) and long-term infrastructure improvement plan (“LTIIIP”) to file an AAO Plan. Consistent with the requirements of Section 1356, PPL Electric’s AAO Plan will provide:

- (1) A description that specifies all eligible property repaired, improved and replaced in the immediately preceding 12-month period pursuant to the utility's long-term infrastructure improvement plan and prior year's asset optimization plan; and
- (2) A detailed description of all the facilities to be improved in the upcoming 12-month period.

The AAO Plan is part of PPL Electric’s overall strategy to repair, improve, and replace its aging distribution infrastructure to ensure that its system continues to be safe, reliable, and able to meet the needs and expectations of its customers. PPL Electric’s plans reflect the Company’s ongoing commitment to accelerate its investment, while managing finite resources and ensuring that its portfolio of activities is effective. As a result, PPL Electric’s plans for the upcoming 12-month period have been developed incorporating the lessons learned from the Company’s experience with an effective LTIIIP and DSIC.

In addition, in this AAOP, the projected installation and spending figures for 2024 do not assume Pennsylvania Public Utility Commission (“Commission”) approval of the Company’s Petition for Major Modifications to the LTIIIP, which is pending at Docket No. P-2022-3034972 (“Revised Third LTIIIP”). However, the projected installation and spending figures for 2024 match the projections set forth in the proposed Revised Third LTIIIP except for Predictive Failure Technology, which is a new program proposed in the Revised Third LTIIIP.

Procedural History

On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 (“Act 11”), which amends Chapters 3, 13 and 33 of the Public Utility Code. Act 11 authorizes electric distribution companies (“EDCs”), natural gas distribution companies (“NGDCs”), water utilities, wastewater utilities and city natural gas distribution operations to establish a DSIC. The DSIC allows utilities to recover reasonable and prudent costs incurred to repair, improve, or replace certain eligible property that is part of the utility’s distribution system. Eligible property for EDCs is defined in Section 1351 of the Public Utility Code. See 66 Pa.C.S. § 1351. As a precondition to the initial implementation of a DSIC, each utility must file and obtain approval of a LTIIIP that is consistent

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with the provisions of Section 1352 of the Public Utility Code. See 66 Pa.C.S. § 1352(a). Act 11 also requires a yearly compliance filing known as an AAO Plan. See 66 Pa.C.S. § 1356.

On August 2, 2012, the Commission issued its Final Implementation Order establishing procedures and guidelines necessary to implement Act 11. The Final Implementation Order adopted the requirements established in Act 11, provided additional standards that each utility must meet in developing an LTIIP and DSIC, and gave guidance to utilities for meeting the Commission's standards.

On March 14, 2013, the Commission entered a Proposed Rulemaking Order at Docket No. L-2012-2317274 in *Review of Long-Term Infrastructure Improvement Plan*. In its Order, the Commission provided proposed regulations regarding the LTIIP, including information on modification of a utility's LTIIP, and the annual review process for the AAO Plan. On May 23, 2014, after review of comments from interested stakeholders, the Commission entered a Final Rulemaking Order, which set forth the elements an LTIIP must contain and outlined the procedure and process for filing and review of LTIIPs and AAO Plans. The Final Rulemaking Order was published in the *Pennsylvania Bulletin* on December 20, 2014 (44 Pa.B. 7856), and the final regulations at 52 Pa. Code §§ 121.1-121.8 became effective upon that publication.

On September 21, 2016, the Commission entered a Supplemental Implementation Order at Docket No. M-2012-2293611 in *Implementation of Act 11 of 2012*. In that Order, the Commission addressed issues regarding the implementation, operation and computation of the DSIC. Specifically, the Commission addressed the requirement of quarterly financial reports for all utilities that use the DSIC mechanism; filing and computation issues for when the DSIC is reset to zero; treatment of over/under collections, or E-factor, after the DSIC is reset to zero; computation issues for determining the DSIC rate cap; and the requirement to file an LTIIP by water utilities that use the DSIC.

On October 27, 2022, the Commission entered a Supplemental Implementation Order ("October 2022 Order") at Docket No. M-2012-2293611 when it was determined that changes must be made to the DSIC calculation and the DSIC model tariff in order to implement changes required by the Pennsylvania Supreme Court's decision in *McCloskey v. Pa. PUC*, 255 A.3d 416 (Pa. 2021). In *McCloskey*, the Pennsylvania Supreme Court affirmed the Commonwealth Court of Pennsylvania's holding that new statutory language added by Act 40 applied to the DSIC and modified its calculation. In the October 2022 Order, the Commission directed utilities to file a proforma tariff supplement reflecting the updated formula for the calculation of the DSIC. Subsequently, on PPL Electric Utilities Corp.

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November 10, 2022, the Office of Consumer Advocate (“OCA”) filed a Petition for Clarification and Reconsideration (“Petition”) of the October 2022 Order. PPL Electric filed an Answer to OCA’s Petition on November 21, 2022. In compliance with the October 2022 Order, PPL Electric filed its DSIC proforma tariff supplement on December 1, 2022, with an amended version filed December 20, 2022.

PPL Electric has been a long-time supporter of implementing a DSIC for EDCs and has actively participated in the Commission’s process to develop the procedures and policies surrounding the Commission’s implementation of Act 11. PPL Electric was a participant in the Commission’s working groups and filed comments to both of the Commission’s Tentative Implementation Orders.

Background

PPL Electric is a public utility and an EDC as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 102, 2803. PPL Electric furnishes electric distribution, transmission, and default service electric supply services to approximately 1.4 million customers throughout its certificated service territory, which includes all or portions of 29 counties and encompasses approximately 10,000 square miles in eastern and central Pennsylvania.

On January 10, 2013, PPL Electric’s first LTIIP (“First LTIIP”) was approved by the Commission at Docket No. P-2012-2325034. PPL Electric’s First LTIIP covered the years 2013 through 2017. PPL Electric filed a petition seeking approval of a DSIC on January 15, 2013, which was approved in an Order entered on May 23, 2013, at Docket No. P-2012-2325034. PPL Electric’s second LTIIP (“Second LTIIP”) was filed with the Commission on August 31, 2017, and was approved in an Order entered on December 21, 2017, at Docket No. P-2017-2622393. The Company’s Second LTIIP covers the years 2018-2022. PPL Electric’s third LTIIP (“Third LTIIP”) was filed with the Commission on September 2, 2022, and was approved in an Order entered on December 22, 2022, at Docket No. P-2022-3034972. The Third LTIIP covers the years 2023-2027. In preparing its LTIIPs, PPL Electric followed the guidelines established in the Commission’s August 2, 2012 Final Implementation Order at Docket No. M-2012-2293611.

Within the LTIIPs, PPL Electric categorized its distribution system infrastructure planned for replacements into asset groups and provided descriptions of the DSIC-eligible projects. Details on each of the asset groups included factors used to identify the need for the project, average age of the asset, scope of the project including the number of units to be replaced or improved over the PPL Electric Utilities Corp.

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next five years, the approximate location by geographic region for the projects, and the yearly expenditures for the five-year period covered by the LTIIIPs for each asset class.

Executive Summary

The upcoming 12-month period (2024) is covered by PPL Electric's third LTIIIP, which contains a consolidated set of asset groups. As the table on page 9 shows, in 2023, PPL Electric spent \$105.11 million and plans to spend \$188.91 million on DSIC-eligible projects in 2024.

The 2024 planned expenditures appear in the chart labeled "2024 Projection of Work and Spend by Asset Group" on page 10.

Reliability Performance

Since the 1994-1998 benchmark period, which defines PPL Electric's reliability performance targets, PPL Electric's service reliability has significantly improved; however, year over year reliability performance is impacted by varying weather conditions. For 2023, PPL Electric was below the Commission's benchmark for SAIFI. Meanwhile, SAIDI and CAIDI were heavily impacted by the record number of storms (45) recorded in 2023.

Overall, PPL Electric has been nationally ranked as a 1st quartile SAIFI performer over the past 9 consecutive years by IEEE and over the past 10 consecutive years by EEI as a result of a decade of reducing permanent customer outages.

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The table below illustrates PPL Electric's past 5-year reliability performance as compared to the Commission benchmark and the IEEE 1366-2012 standard.

		2019	2020	2021	2022	2023
	Average Number of Customers Served	1,429,035	1,438,204	1,445,611	1,445,611	1,445,611
PUC METRICS	SAIFI (Benchmark = 0.98; rolling 12-month Std. = 1.18)	0.85	0.84	0.91	0.87	0.78
	CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	176	137	187	164	189
	SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	150	116	170	142	147
	MAIFI	5.7	5.3	2.6	1.4	0.3
	Number of Sustained Customer Interruptions (Trouble Cases)	21,497	20,877	24,241	23,882	23,082
	Number of Customers Affected	1,213,340	1,212,136	1,308,569	1,256,631	1,134,905
	Customer Minutes of Interruptions	231,915,481	166,414,603	245,413,282	206,385,043	214,249,565
	Number of Customer Momentary Interruptions	8,083,974	7,639,856	3,817,912	2,020,520	470,353
IEEE METRICS	SAIFI	0.66	0.69	0.68	0.74	0.64
	CAIDI	112	99	124	120	142
	SAIDI	74	69	85	89	91
	MAIFI	4.3	4.2	2.1	0.8	0.3
	Number of Sustained Customer Interruptions (Trouble Cases)	22,728	23,495	24,032	25,211	24,522
	Number of Customers Affected	943,894	990,900	988,372	1,071,806	935,297
	Customer Minutes of Interruptions	106,186,418	98,721,644	122,230,348	129,679,197	133,236,331
	Number of Customer Momentary Interruptions	6,095,576	6,066,279	3,100,572	1,232,315	404,981

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Approximately 35% of the capital dollars for distribution operations is allocated to Act 11 projects; therefore, the assumption was made that 35% of the Full Time Equivalent (“FTE”) positions would be used for Act 11 purposes as well. The only break down available is between PPL Electric (PPL) and contract (COC) employees; there is no further drill down available at a field/supervisory level. The data shown below are for FTE only.

Year	PPL	COC	Total
2023	159	98	257

LTIIP Category	2023 LTIIP	2023 In-service
Poles	\$17.33	\$9.59
New Electric Reclosers	\$5.07	\$2.10
Distribution Animal Guarding	\$0.50	\$0.28
Failed Equipment	\$34.77	\$39.01
Underground Cable Replacement	\$0.42	\$0.48
Low Tension Network Equipment and Structures	\$0.60	\$1.70
LTN Upgrades	\$3.12	\$9.39
Reliability	\$4.08	\$8.06
System Reliability Improvement Projects	\$12.77	\$4.82
Unreimbursed Highway Relocations	\$6.16	\$4.81
Substation	\$3.04	\$19.32
Protection and Control	\$4.70	\$5.55
Total	\$92.56	\$105.11
<i>Dollars in Millions</i>		

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2024 Projection of Work and Spend by Asset Group

LTIIP Category	2024 Forecast	2024 Units
Poles	\$19.70	Replacements 2000-2500 Reinforcements 4000-5000
New Electric Reclosers	\$10.10	120-250
Distribution Animal Guarding	\$0.34	240-360
Failed Equipment	\$42.44	As needed
Underground Cable Replacement	\$4.36	220-320
Low Tension Network Equipment and Structures	\$3.76	Primary Cable Replacements 0-2, LTN Equipment 6-18
LTN Upgrades	\$10.55	62
Reliability	\$32.97	100-135
System Reliability Improvement Projects	\$11.52	6-12
Unreimbursed Highway Relocations	\$4.50	As needed
Substation	\$26.94	Getaway Replacements 11-16, Misc. Equipment 4-8, CBs 30-50, Transformers 4-8, DC Equip. 2-5, Animal Guard 2- 10, Bus Tie and Transfer Cable 5- 10
Protection and Control	\$21.73	79-101
Total	\$188.91	
<i>Dollars in Millions</i>		

Distribution Assets

The following pages set forth actual results for calendar year 2023. These assets include, but are not limited to, the following:

- Structures
 - Poles
 - Crossarms
 - Vaults
 - Manholes
- Overhead Conductors and Hardware

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- Underground Cables and Hardware
- Switching Devices
 - o Air Break Switches
 - o Disconnect Switches
 - o Switching Cabinets
- Protective Devices
 - o Fuses
 - o Reclosers
 - o Network Protectors
 - o Lightning Arresters
- Transformers
 - o Overhead
 - o Pad-Mounted
 - o Submersible
 - o Low Tension Network

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Poles

This category includes the replacement and reinforcement of wood poles to maintain reliability, ensure public safety, and further storm harden the system.

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$17.33
2023 (AAOP Forecast)	\$17.33
2023 (Actual)	\$9.59
2024 (Forecast)	\$19.70

Distribution Pole Replacements

Program Description and Purpose

Replacement of distribution wood poles identified as non-restorable (cannot be reinforced) during the annual inspect and treat program or during a spot inspection in an effort to improve public and employee safety, as well as service reliability. This program contributes to storm hardening efforts and aims to improve public and employee safety, as well as service reliability, by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement while 30% are candidates for replacement. Replacing rejected poles avoids property damage and risk of accidental injury, and it mitigates the costs associated with extended service outages. Replacement rates are expected to fall as a result of PPL Electric's pole treatment program. The average age of an in-service wooden distribution pole is 43 years.

Scope

The scope of the program is a direct correlation to the number of wood pole inspections.

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Replacements in Units	
2023 (Third LTIP)	2000-2500
2023 (AAOP Forecast)	2000-2500
2023 (Actual)	1418
2024 (Forecast)	2000-2500

Locations

Specific locations are a direct correlation to the wood pole inspection plan. Inspection locations are identified yearly primarily as a function of previous inspection dates, as well as ensuring cost-effectiveness of the program and minimizing inspection crew movements.

Comments:

Most pole replacements are identified by the previous year's pole inspections. In 2020, PPL Electric started the second 12-year pole inspection cycle, resulting in fewer poles being inspected annually (compared to the previous 10-year pole inspection cycle). In the 2023 AAOP, PPL Electric explained that the shift in the pole inspection cycle led to fewer pole replacements and that the downward trend was expected to continue in 2023.

Pole Reinforcements

Program Description and Purpose

Reinforcement of deteriorated distribution wood poles in order to restore the pole's original strength, ensure public safety, and maintain reliable electric service through the reduction of potential pole failures. This program contributes to storm hardening efforts by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement. When applicable, this method achieves a significant savings over pole replacement.

Scope

Reinforcements in Units	
2023 (Third LTIP)	4000-5000
2023 (AAOP Forecast)	4000-5000
2023 (Actual)	711
2024 (Forecast)	4000-5000

PPL Electric Utilities Corporation

Locations

Locations identified for reinforcement are a direct correlation to the number of wood pole inspections.

Comments:

Poles that fail inspection are tested to see if they qualify for reinforcement rather than fully replacing the pole. The poles are reinforced using C-Truss or fiberwrap. In 2023, an effort to continue strategic storm hardening initiatives drove a process change to no longer reinforce poles that were over a certain age. This led to fewer poles being reinforced than originally forecasted in 2023.

New Electronic Reclosers

Program Description and Purpose

Proactive installation of new electronic reclosers on both single-phase and three-phase lines, to improve reliability performance by increasing circuit sectionalizing ability. Reclosers minimize the number of customers affected by a sustained outage.

Identification/Justification Process

Locations are requested by regional reliability engineers and prioritized annually based on anticipated reliability savings. A gradual scope reduction is assumed in the outer years as a result of saturation of reclosers and other distribution automation equipment.

Scope

Installations in Units	
2023 (Third LTIIP)	210-250
2023 (AAOP Forecast)	210-250
2023 (Actual)	182
2024 (Forecast)	120-250

Locations (2023 Actual)

Region	Units
Lehigh	26
Northeast	19
Central	35
Susquehanna	43
Harrisburg	29
Lancaster	30

PPL Electric Utilities Corporation

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIIP)	\$5.07
2023 (AAOP Forecast)	\$5.07
2023 (Actual)	\$2.10
2024 (Forecast)	\$10.10

Comments:

The number of installs for the new recloser program were lower than forecasted due to transitioning to a new style of three-phase recloser. Single-phase recloser installations were in line with forecast; however, they have a lower unit cost and account for a smaller portion of the overall budget.

Distribution Animal Guarding

Program Description and Purpose

Proactive installation of animal guards on existing distribution overhead transformers and air break switches to improve circuit reliability. Animal guards help prevent animal-related contacts which cause service interruptions.

Identification/Justification Process

Transformers are identified both by opportunistic installation of guarding during other non-related work, and by on-the-spot or follow-up orders after responding to animal-caused outages.

Scope

Areas To Address	
2023 (Third LTIIP)	240-360
2023 (AAOP Forecast)	240-360
2023 (Actual)	56
2024 (Forecast)	240-360

Locations (2023 Actual)

Region	Units
Lehigh	4
Northeast	13
Central	19
Susquehanna	9
Harrisburg	9
Lancaster	2

PPL Electric Utilities Corporation

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$0.50
2023 (AAOP Forecast)	\$0.50
2023 (Actual)	\$0.28
2024 (Forecast)	\$0.34

Comments:

The number of installs for animal guarding were down versus the forecast driven predominantly by an increase in higher priority work being executed by second shift crews.

Failed Equipment

Program Description and Purpose

This category includes the replacement of failed or deteriorated distribution equipment, Low Tension Network (“LTN”) equipment, underground cable, and underground getaways.

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$34.77
2023 (AAOP Forecast)	\$34.77
2023 (Actual)	\$39.01
2024 (Forecast)	\$42.44

Comments:

Planned expenditures were above the forecast.

Distribution Failed Equipment

Program Description and Purpose

Replacement or repair of failed or deteriorated capital units of distribution equipment, excluding underground cable, in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via inspections, both planned and ad-hoc, as well as actual outages and power service problems. Budget allocations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures. Examples include, but are not limited to, failed reclosers, poles, capacitor banks, and air breaks.

Scope & Locations

PPL Electric Utilities Corp.

PPL Electric Utilities Corporation

Scope and locations are determined as equipment fails.

Replace Failed Underground Cable

Program Description and Purpose

Replacement of failed underground residential primary cables in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via actual failures. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cable fails.

Replace Failed 12 kV Underground Getaway Cables

Program Description and Purpose

Replacement of failed 12 kV underground getaway cables in order to maintain adequate service reliability. Getaway failures can result in long duration outages. Getaway cables connect substations to outgoing feeders beyond the substation perimeter.

Identification/Justification Process

Candidates are identified via actual failures and cables with severely poor testing results. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cables fail in-service or fail testing.

Replace Deteriorated/Failed Low Tension Network Equipment and Structures

Program Description and Purpose

PPL Electric Utilities Corporation

Replacement or repair of deteriorated and failed equipment related to low-tension networks, including submersible transformers, network protectors, manholes, and vault tops in order to maintain adequate service reliability. Low-tension networks are low voltage underground distribution facilities found in urban areas.

Identification/Justification Process

Candidates are identified via actual failures, inspections, testing, or work on the system. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cable fails.

Replace Deteriorated/Failed Area Supply Substations

Program Description and Purpose

Replacement of failed or deteriorated station facilities at area supply substations with in-kind equipment to maintain safe and reliable service. Identified facilities include, but are not limited to, circuit breakers, power transformers, tie/transfer cables, disconnect switches, DC equipment, and instrument transformers.

Identification/Justification Process

Candidates are identified via actual failures, inspections, and test results. Budget recommendations are based on historical trends in equipment failure quantities and costs, in addition to projected trends of future equipment failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as station equipment fail while in service or fail conditionally under testing.

Underground Cable Replacement

Program Description and Purpose

Programmatic replacement and/or treatment of deteriorated underground cable to maintain reliable electric service.

PPL Electric Utilities Corporation

Identification/Justification Process

Candidates are selected based on history of cable failures and failure risk scores generated by a data analytics model that uses criteria such as segment length, cable age, customer count, and number of tap fuse outages.

Regional allocation of cable remediation is based on historical regional percent contribution to system-wide cable failures.

Scope

Scope In Cable Segments	
2023 (Third LTIIP)	25-100
2023 (AAOP Forecast)	15-50
2023 (Actual)	0
2024 (Forecast)	220-320

Locations (2023 Actual)

Region	Units
Lehigh	0
Northeast	0
Central	0
Susquehanna	0
Harrisburg	0
Lancaster	0

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIIP)	\$0.42
2023 (AAOP Forecast)	\$0.42
2023 (Actual)	\$0.48
2024 (Forecast)	\$4.36

Comments:

While no underground cable replacement jobs were placed in-service in 2023, a large percentage of the planned construction was completed in 2023. As such, these projects were placed in service in early 2024. The 2023 spend accounts for the construction labor costs from 2023 planned scope and the carryover jobs from 2022.

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Low Tension Network Primary Cable, Equipment and Structures

Program Description and Purpose

Programmatic replacement of deteriorated equipment related to Low Tension Networks, including primary underground cable, network transformers, network protectors, manholes, and vault tops. The purpose of this program is to ensure public safety and service reliability through the replacement of underground facilities that have reached the end of their expected life or that show signs of premature age from prolonged exposure to corrosive environments.

Identification/Justification Process

Primary underground cables for Low Tension Network feeders are reaching their end of useful life and proactive replacements mitigate feeder outages. Replacement and repairs of manhole and vault tops are determined by regular inspections. Network transformer and network protector replacements are determined through inspection and age, where assets exceeding 40 years in service are considered highest priority.

Scope

	Planned Expenditure	Units
Primary Cable	2023 (Third LTIIP)	0-2
Primary Cable	2023 (AAOP Forecast)	0-2
Primary Cable	2023 (Actual)	1
Primary Cable	2024 (Forecast)	0-2
LTN Equipment	2023 (Third LTIIP)	6-18
LTN Equipment	2023 (AAOP Forecast)	75-100
LTN Equipment	2023 (Actual)	1
LTN Equipment	2024 (Forecast)	6-18

Locations (2023 Actual)

Region	LTN Equipment	Cable
Lehigh	0	0
Northeast	1	0
Central	0	1
Susquehanna	0	0
Harrisburg	0	0
Lancaster	0	0

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Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$0.60
2023 (AAOP Forecast)	\$1.05
2023(Actual)	\$1.70
2024 (Forecast)	\$3.76

Comments:

Units placed in service in 2023 for LTN equipment were under the forecast due to a safety concern with equipment causing work to be stopped until a new material was chosen. The 2023 expenditures are driven by an accelerated primary cable job due to a partial failure with a high unit cost.

LTN Upgrades

Program Description and Purpose

The purpose of this program is to install remote monitoring and control equipment in all LTN vaults, upgrade network devices up to the latest standard, replace vault equipment near its end of useful life, and install telemetry on secondary network cable. These improvements will allow for safer operation of LTNs, reduce maintenance costs, reduce failed equipment requiring replacement, and provide better data for asset planning and investments.

Identification/Justification Process

Rollout of this program began in the Lehigh and Harrisburg regions. By the completion of this program in 2026, all LTN vaults will receive automation.

Scope

Replacements in Units	
2023 (Third LTIP)	21
2023 (AAOP Forecast)	5-10
2023 (Actual)	29
2024 (Forecast)	62

Locations (2023 Actual)

Region	Units
Lehigh	1
Northeast	0
Central	0
Susquehanna	0
Harrisburg	6
Lancaster	22

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Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$3.12
2023 (AAOP Forecast)	\$6.30
2023 (Actual)	\$9.39
2024 (Forecast)	\$10.55

Comments:

The number of LTN automation jobs constructed in 2023 is in line with the forecast provided last year but the units placed in service and spend was higher because work from previous years was placed in service.

Reliability

This category includes deployment of Smart Grid devices and distribution circuit upgrades to address reliability issues identified through inspections or various circuit or customer level performance metrics.

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$4.08
2023 (AAOP Forecast)	\$4.08
2023 (Actual)	\$8.06
2024 (Forecast)	\$32.97

Comments:

2023 spend was higher than the forecast due to 2022 jobs carrying over into early 2023.

Distribution Reliability Preservation

Program Description and Purpose

Upgrades to the distribution system as justified by regional reliability supervisors to improve reliability. Improvements are targeted towards Worst Performing Circuits (“WPCs”), circuits with a history of customer complaints, or recommendations as a result of Proactive Circuit Analysis (“PCAs”). PCAs are detailed reliability and operational analysis performed on 25% of a region’s distribution circuits per year. Additional work is scoped on the basis of Customers Experiencing Multiple Interruptions (“CEMI”), and Customers Experiencing Multiple Momentary Interruptions (“CEMMI”).

Identification/Justification Process

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Projects are identified and submitted for both small and large-scale circuit improvement projects. These projects ranked utilizing PPL Electric's investment prioritization tool to ensure funds are directed towards the most cost-effective projects. The number of projects and locations may vary depending on areas with reliability concerns. Examples include, but are not limited to, installation of fuses, fault indicators, reconductoring of vintage conductor, upgrading conductor to reduce impact of vegetation related service outages, and relocating sections of lines that may be inaccessible or prone to vegetation related service outages.

It should be noted projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects	
2023 (Third LTIIP)	10-25
2023 (AAOP Forecast)	10-25
2023 (Actual)	14
2024 (Forecast)	100-135

Locations

Locations are identified based upon reliability needs.

Comments:

The number of reliability preservation jobs placed in service were in line with forecast.

Reliability Preservation Emergent

Program Description and Purpose

Remediation of issues primarily associated with secondary voltage and emergent small-scale customer reliability needs in order to improve reliability.

Identification/Justification Process

Work is identified by line crews, as well as through customer calls, and is completed to avoid potential service outages, power quality concerns, and safety issues. Examples include, but are not limited to, modifying capacitance to address voltage concerns, installing fusing to aid in sectionalizing, and replacing transformers to resolve transformer overload. Budget recommendations are based on historical trends of hours charged.

Scope & Locations

Scope and locations are determined as emergent needs arise.

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System Reliability Improvement Projects

Program Description and Purpose

Large-scale improvements to distribution circuits with a history of poor reliability. This program addresses long-term projects, primarily aimed at WPCs. However, other proactive long-term projects with proven reliability benefit are included.

Identification/Justification Process

Each quarter, distribution planners and regional reliability supervisors meet to propose projects to improve WPCs. Projects are approved by distribution planning supervisors and vetted against other projects for scheduling based on historical reliability, potential benefit, and cost. Projects may span multiple years and are listed in the years they are planned to go in service. Scope is expected to increase in outer years as circuits and projects are identified. Examples include, but are not limited to, circuit reconfigurations with new tie lines, new lines and terminals, or the installation of substations for increased reliability.

Additionally, PPL Electric monitors large customer impact outages on a daily basis. A circuit that begins to show reliability deterioration and notable impact on reliability metrics requires a root cause analysis. Such analysis can result in the identification of a long-term project.

Note that the projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects	
2023 (Third LTIP)	6-12
2023 (AAOP Forecast)	6-12
2023 (Actual)	5
2024 (Forecast)	6-12

Locations (2023 Actual)

Region	Projects
Lehigh	4
Northeast	0
Central	1
Susquehanna	0
Harrisburg	0
Lancaster	0

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Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIIP)	\$12.77
2023 (AAOP Forecast)	\$12.77
2023 (Actual)	\$4.82
2024 (Forecast)	\$11.52

Comments:

The 2023 actual spend and planned units were lower than the forecasts, due to some projects carrying over into 2024. Also, a substation rebuild completion was delayed, which significantly contributed to the variance between the forecast and actuals.

Unreimbursed Highway Relocations

Program Description and Purpose

Unreimbursed customer requested relocations of PPL Electric distribution facilities in support of highway and bridge projects throughout service territory.

Identification/Justification Process

The customers (project sponsors) include PennDOT, the PA Turnpike Commission, and various counties and municipalities. PPL Electric and the project sponsor execute a reimbursement agreement, and PPL Electric is reimbursed for its work based on the "pole count method", as defined in PennDOT's DM-5 manual. Historically, reimbursement for distribution projects is approximately 35%.

To accommodate highway relocations and other municipal projects, approximately 70-120 projects per year are placed in service. PPL Electric typically is notified of distribution relocation work 12 months or less before the start of requested utility relocation activities.

Scope & Locations

Scope and locations are determined as requests are received.

Planned Expenditures (in millions)

PPL Electric's expenditures to complete highway relocation projects are the net of total expenditures minus the project sponsor's reimbursements.

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Planned Expenditures	\$Million
2023 (Third LTIP)	\$6.16
2023 (AAOP Forecast)	\$6.16
2023 (Actual)	\$4.81
2024 (Forecast)	\$4.50

Comments:

Timelines for several projects were shifted by PennDOT, resulting in less work being complete in 2023.

Substation

This category includes replacement of various substation assets and substation animal guarding.

Substation assets include, but are not limited to, the following:

- Structures
 - o Enclosures
 - o Fences
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - o Air Break Switches
 - o Disconnect Switches
- Protective Devices
 - o Circuit Breakers
 - o Fuses
 - o Reclosers
 - o Lightning Arresters
- Transformers
 - o Power
 - o Station Service
 - o Instrument

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Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$3.04
2023 (AAOP Forecast)	\$9.80
2023 (Actual)	\$19.32
2024 (Forecast)	\$26.94

Comments:

The 2023 actual expenditures exceeded the 2023 forecast largely due to the increased procurement costs.

Underground Getaway Cable Replacements and Life Extension

Program Description and Purpose

Programmatic replacement of aging 12 kV underground getaway cables to prevent failures that can result in long duration outages.

Identification/Justification Process

Getaways are selected for proactive replacement based on data analytics risk models that quantify cable health and risk and provide a priority ranking based on risk factors such as age, repair history, installation type, length, load transferability, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Replacements in Units	
2023 (Third LTIP)	0-4
2023 (AAOP Forecast)	5-7
2023 (Actual)	5
2024 (Forecast)	11-16

Locations (2023 Actual)

Region	Units
Lehigh	0
Northeast	1
Central	1
Susquehanna	0
Harrisburg	2
Lancaster	1

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Comments:

The number of substation getaways replaced in 2023 was in line with the forecast provided last year.

Miscellaneous Substation Equipment

Program Description and Purpose

Programmatic replacement of older substation equipment, including air breaks, potential transformers (“PTs”), capacitive-coupled voltage transformers (“CCVTs”), circuit switchers, lightning arresters, voltage regulators, and DC panels in order to prevent future maintenance concerns and to maintain reliable service.

Identification/Justification Process

Candidates for replacement are identified based on age and/or operating condition, both indicators of potential failure. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects	
2023 (Third LTIP)	0-2
2023 (AAOP Forecast)	0-2
2023 (Actual)	2
2024 (Forecast)	4-8

Locations (2023 Actual)

Region	Projects
Lehigh	1
Northeast	0
Central	0
Susquehanna	0
Harrisburg	0
Lancaster	1

Comments:

The number of miscellaneous substation equipment replaced in 2023 was in line with the third LTIP and forecast provided last year.

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Distribution Substation Circuit Breakers

Program Description and Purpose

Proactive replacement of substation circuit breakers (“CBs”) based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 12 kV circuit breakers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, mis-operation history, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high operation and maintenance (“O&M”) trails are also factored into the proactive replacement scope.

Scope

Projects	
2023 (Third LTIIP)	7-12
2023 (AAOP Forecast)	38-42
2023 (Actual)	43
2024 (Forecast)	30-50

Locations (2023 Actual)

Region	Projects
Lehigh	11
Northeast	2
Central	15
Susquehanna	2
Harrisburg	0
Lancaster	13

Comments:

The number of circuit breakers replaced in 2023 was slightly higher than the forecasted amount because a job was accelerated due to the condition of the equipment.

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69/12 kV &138/12kV Transformer Replacement

Program Description and Purpose

Proactive replacement of distribution substation transformers based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 69/12 kV and 138/12 kV transformers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, dissolved gas analysis trends/analytics, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Projects	
2023 (Third LTIP)	1-2
2023 (AAOP Forecast)	3-5
2023 (Actual)	4
2024 (Forecast)	4-8

Locations (2023 Actual)

Region	Projects
Lehigh	0
Northeast	1
Central	0
Susquehanna	1
Harrisburg	1
Lancaster	1

Comments:

The number of transformers replaced in 2023 was in line with the forecast provided last year.

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Distribution Substation DC Equipment

Program Description and Purpose

Programmatic replacement of distribution substation DC equipment based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 24 V, 48 V, and 125 V batteries, chargers, and related equipment.

Identification/Justification Process

Candidates for replacement are identified based on age, operating issues, availability of spare parts, and failure trends. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, DC assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects	
2023 (Third LTIP)	0-1
2023 (AAOP Forecast)	0-1
2023 (Actual)	3
2024 (Forecast)	2-5

Locations (2023 Actual)

Region	Projects
Lehigh	0
Northeast	0
Central	0
Susquehanna	2
Harrisburg	0
Lancaster	1

Comments:

The amount of DC equipment replaced in 2023 was slightly higher than the forecasted amount since work from the previous year extended into 2023.

Substation Animal Guarding

Program Description and Purpose

Improvements to existing distribution substation equipment via the proactive installation of animal guards to prevent animal contacts and maintain reliable service. Guarded equipment includes transformer bushings,

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circuit breakers, fuse/disconnect switches, bus supporting insulators, surge arresters, station service transformers, PTs, and cable terminations. Future investments could be made in pilot products like internal perimeter electric fences for comprehensive rodent deterrents at high animal contact risk locations.

Identification/Justification Process

Distribution substations are regionally prioritized based on historical animal-related service outages (both at the substation and within a 1-mile perimeter), number of customers served, substation load, and transferability. High priority substations are animal guarded first with the lower priority substations guarded in outer years.

Scope

Planned Installations	
2023 (Third LTIP)	0-1
2023 (AAOP Forecast)	1-3
2023 (Actual)	3
2024 (Forecast)	2-10

Locations (2023 Actual)

Region	Units
Lehigh	2
Northeast	0
Central	0
Susquehanna	0
Harrisburg	0
Lancaster	1

Comments:

The number of animal guarding jobs performed in 2023 was in line with the forecast provided last year.

12 kV Underground Bus Tie & Transfer Cable Replacement

Program Description and Purpose

Proactive replacement of distribution substation underground bus tie and transfer cables based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement all 12 kV underground cables within the perimeter of the substation yard.

Identification/Justification Process

PPL Electric Utilities Corporation

Underground bus tie and transfer cables are selected for proactive replacement based on data analytics risk models that quantify cable health and risk, and provide a priority ranking based on factors such as age, repair history, installation type, length, loading, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Projects	
2023 (Third LTIIP)	2-4
2023 (AAOP Forecast)	2-4
2023 (Actual)	4
2024 (Forecast)	5-10

Locations (2023 Actual)

Region	Projects
Lehigh	0
Northeast	1
Central	1
Susquehanna	0
Harrisburg	0
Lancaster	2

Comments:

The number of crossyard bus tie and transfer cable replacement jobs performed in 2023 was in line with the forecast provided last year.

Protection and Control

Program Description and Purpose

Proactive replacement of protection and control equipment to maintain reliable distribution service to customers. Replacement of legacy relays with modern microprocessor relays will also improve fault monitoring and diagnosis processes and will provide added insight into circuit breaker health and risk. Replacement of obsolete Supervisory Control and Data Acquisition (“SCADA”) protocols and equipment will also enable relays to perform properly.

Identification/Justification Process

Candidates for replacement are identified based on obsolescence, availability of vendor support, and age. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

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Scope

Planned Projects	
2023 (Third LTIP)	2-6
2023 (AAOP Forecast)	30-40
2023 (Actual)	19
2024 (Forecast)	79-101

Planned Expenditures (in millions)

Planned Expenditures	\$Million
2023 (Third LTIP)	\$4.70
2023 (AAOP Forecast)	\$5.70
2023 (Actual)	\$5.55
2024 (Forecast)	\$21.73

Comments:

The number of installations placed in service in 2023 were lower than the forecast due to some jobs being bundled with outer year scope for workforce efficiency. The 2023 actual spending was substantially in line with the forecast.

PPL Electric Exhibit SDS-3

Devin Ryan

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January 17, 2024

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

P-2022-3034972-jbs

**Re: Petition of PPL Electric Utilities Corporation for Approval of Major Modifications
to its Existing Long-Term Infrastructure Improvement Plan
Docket No. P-2024-**

Dear Secretary Chiavetta:

Enclosed for filing is the Petition of PPL Electric Utilities Corporation for Approval of Major Modifications to its Existing Long-Term Infrastructure Improvement Plan. Copies are being served on the statutory advocates and all parties of record to the Company's most recent base rate proceeding at Docket No. R-2015-2469275 as indicated on the Certificate of Service.

Respectfully submitted,



Devin Ryan

DR/dmc
Enclosures

cc: Certificate of Service

CERTIFICATE OF SERVICE

Docket No. P-2024-_____

I hereby certify that a true and correct copy of the filing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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Devin T. Ryan

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities Corporation :
for Approval of Major Modifications to its : Docket No. P-2024-_____
Existing Long-Term Infrastructure :
Improvement Plan :

**PETITION OF PPL ELECTRIC UTILITIES CORPORATION FOR
APPROVAL OF MAJOR MODIFICATIONS TO ITS EXISTING LONG-TERM
INFRASTRUCTURE IMPROVEMENT PLAN**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

Pursuant to 52 Pa. Code §§ 5.41 and 121.5(a), PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) hereby files this Petition requesting approval of major modifications to its existing third Long-Term Infrastructure Improvement Plan (“LTIIIP”), which covers the period January 1, 2023, through December 31, 2027. Under the third LTIIIP, the Company has continued its accelerated repair, improvement, and replacement of aging infrastructure. Since the time that the Pennsylvania Public Utility Commission (“Commission”) originally approved the third LTIIIP on December 22, 2022,¹ there have been developments affecting the design and funding of the LTIIIP, including the Distribution System Improvement Charge (“DSIC”) eligible property that the Company would like to incorporate in its LTIIIP.

Specifically, PPL Electric proposes to add a new program, *i.e.*, Predictive Failure Technology, to its LTIIIP. Moreover, PPL Electric’s updated total capital expenditure projection for the LTIIIP exceeds by more than 20% the total capital expenditure projection set forth in the current LTIIIP. These major modifications to the LTIIIP, as set forth in the redline and clean

¹ See *Petition of PPL Electric Utilities Corp. for Approval of its Third Long-Term Infrastructure Improvement Plan*, Docket No. P-2022-3034972 (Order entered Dec. 22, 2022).

versions of the revised LTIP attached hereto as **Appendix A** and **Appendix B**, respectively, are justified for the reasons set forth in the instant Petition.

As such, PPL Electric respectfully requests that the Commission approve the proposed major modifications to the Company's LTIP, as further described in this Petition.

I. INTRODUCTION

1. This Petition is filed by PPL Electric, a public utility subject to the regulatory jurisdiction of the Commission.

2. PPL Electric's address is PPL Electric Utilities Corporation, Two North Ninth Street, Allentown, Pennsylvania 18101.

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PPL Electric's attorneys are authorized to receive all notices and communications regarding this filing.

4. PPL Electric furnishes electric distribution, transmission and default supply services to approximately 1.5 million customers throughout its certificated service territory, which

includes all or portions of twenty-nine counties and encompasses approximately 10,000 square miles in eastern and central Pennsylvania.

5. PPL Electric is a “public utility,” an “electric distribution company” (“EDC”), and a “default service provider” as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 102, 2803.

6. On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 (“Act 11”), which amended Chapters 3, 13, and 33 of Title 66 of the Code to allow, among other things, EDCs, natural gas distribution companies, water utilities, wastewater utilities and city natural gas distribution operations to establish a DSIC.

7. Act 11 provides utilities with the ability to implement a DSIC to recover reasonable and prudent costs incurred to repair, improve, or replace certain eligible distribution property that is part of the utility’s distribution system. Eligible property for EDCs is defined in Section 1351 of the statute. *See* 66 Pa. C.S. § 1351. As a precondition to the implementation of a DSIC, a utility must file an LTIP with the Commission that is consistent with the provisions of Section 1352 of the statute. *See* 66 Pa. C.S. § 1352(a).

8. On August 2, 2012, the Commission issued an Implementation Order establishing procedures and guidelines necessary to implement Act 11. *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Order entered August 2, 2012) (“*Implementation Order*”). The *Implementation Order* adopted the requirements established in Section 1352, provided additional standards that each LTIP must meet, and gave guidance to utilities for meeting the Commission’s standards.

9. On January 10, 2013, the Company’s first LTIP was approved by the Commission at Docket No. P-2012-2325034. The Company’s first LTIP expired on December 31, 2017.

10. On January 15, 2013, PPL Electric filed a petition seeking approval of a DSIC. By Orders entered May 23, 2013, and April 9, 2015, the Commission approved PPL Electric's DSIC.

11. On December 21, 2017, the Company's second LTIIP was approved by the Commission at Docket No. P-2017-2622393. The Company's second LTIIP expired on December 31, 2022.

12. On December 22, 2022, the Company's third LTIIP was approved by the Commission at Docket No. P-2022-3034972. The Company's third LTIIP is set to expire on December 31, 2027.

13. Through this Petition, PPL Electric proposes certain "major" modifications to its third LTIIP, as set forth in the following section.²

II. PROPOSED MAJOR MODIFICATIONS TO THE LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN

A. ADDITION OF PREDICTIVE FAILURE TECHNOLOGY AS A NEW PROGRAM IN THE LTIIP

14. PPL Electric proposes to include Predictive Failure Technology as a new program in the Company's LTIIP.

15. In accordance with the Commission's *Implementation Order*, the LTIIP regulations and statute, PPL Electric's LTIIP is focused on distribution plant that is DSIC-eligible. *Implementation Order*, at 18; 52 Pa. Code § 121.3(b).

16. Since the time that the Commission approved the third LTIIP, PPL Electric continued to investigate the viability and benefits of deploying Predictive Failure Technology on its electric distribution system.

17. As explained in the revised LTIIP:

² PPL Electric notes that this is the first time the Company has proposed any "major" modifications to its LTIIPs since the first LTIIP was approved over 10 years ago on January 10, 2013.

The purpose of the predictive failure technology is to anticipate and proactively address potential equipment failures before they occur. This is achieved by installing new line monitoring sensors on the distribution voltage levels while leveraging new company processes/procedures, advanced analytics, machine learning, and real-time data capturing. The new line monitoring sensors can detect fault disturbances along the feeder, thereby identifying aging or damaged equipment before they fail, reducing reactive replacements of failed equipment, improving reliability for customers, reducing maintenance costs associated with necessary repairs, reducing hazards to the public and employees, and providing data insights into failure trends that can support more strategic and prudent investments across the distribution system.

(Appendix A, p. 40.)

18. To evaluate this new technology, PPL Electric began rolling out Predictive Failure Technology “on select circuits across the system” in 2023. (*Id.*)

19. PPL Electric’s initial testing of this technology consisted of 33 sensors deployed on three distribution circuits. Through that testing, PPL Electric identified 36 deteriorated assets consisting of insulator damage, transformer issues, vegetation encroachment, conductor damage, and conductor tie wires. Initial results also yielded cost savings of approximately \$33,000, assuming all 36 of the identified issues resulted in a permanent failure.

20. Based on the success of the technology on those circuits, PPL Electric plans to deploy Predictive Failure Technology across its service territory. (*Id.*)

21. In fact, at scale with this technology, PPL Electric estimates that its System Average Interruption Frequency Index (“SAIFI”) would improve by 10-15% and, over the life of the technology, reduce operations and maintenance expense by approximately \$9 million.

22. When deployment of the technology is completed in 2025, every distribution circuit will have, on average, between three to seven radial taps installed with these sensors. (*Id.*)

23. Predictive Failure Technology meets the definition of “eligible property” under Section 1351 of the Public Utility Code and, therefore, can be included in the Company’s LTIP.

See 66 Pa. C.S. § 1351 (stating that “eligible property” includes “[a]ny fixture or device related to eligible property under subparagraphs (i), (ii) and (iii)” and “other related capitalized costs”).

24. Furthermore, the Company’s revised LTIIP contains a description of the Predictive Failure Technology program and its purpose; a description of how PPL Electric identifies installation locations within the program and the appropriate course of action to deploy the technology; the scope of the program, including a reasonable estimate of the quantity of the planned installations; and the location of planned installations. (*See id.*)

25. The LTIIP also provides the total amount projected to be spent by the Company annually and over the life of the five-year plan on Predictive Failure Technology. (*See id.*)

26. Based on the foregoing, PPL Electric respectfully requests that the Commission approve this proposed major modification to the Company’s LTIIP.

B. UPDATES TO PROJECTED CAPITAL EXPENDITURES

27. The Company further proposes to update its projected capital expenditures for various programs set forth in the LTIIP, all of which amount to an increase in total LTIIP spending by more than 20%.

28. The current LTIIP provides the Company’s projected expenditures on a yearly basis for each of the individual programs for the five-year period, the total projected expenditures for each program at the conclusion of the five-year period, and the overall projected annual and total expenditures for all DSIC-eligible distribution property.

29. As explained in the Company’s Petition for approval of the third LTIIP, PPL Electric routinely reviews the effectiveness of its programs to ensure that its individual programs are cost-effective investments. PPL Electric also utilizes a project prioritization process that defines the cost-effectiveness of programs/projects to ensure effective optimization of reliability investments.

30. PPL Electric utilizes the information from its ongoing reviews of the effectiveness of its programs to determine the most cost-effective strategy for replacing its distribution infrastructure on a going forward basis. Reliability metric performance can result in the redirection of spending to help ensure the Company's ability to meet targets.

31. After the Commission approved the Company's current LTIP, PPL Electric identified the need to increase the projected spending for several programs within the LTIP.

32. Below is the table summarizing the Company's originally-projected capital expenditures for the 2023-2027 LTIP period:

	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 17.33	\$ 18.96	\$ 17.33	\$ 17.33	\$ 17.33	\$ 88.28
New Electronic Reclosers	\$ 5.07	\$ 4.69	\$ 4.13	\$ 3.63	\$ -	\$ 17.52
Distribution Animal Guarding	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 2.50
Failed Equipment	\$ 34.77	\$ 34.03	\$ 35.18	\$ 36.64	\$ 36.03	\$ 176.64
Underground Cable Replacement	\$ 0.42	\$ 1.11	\$ 1.67	\$ 1.59	\$ 1.59	\$ 6.37
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.60	\$ 1.54	\$ 0.38	\$ 2.40	\$ 2.40	\$ 7.32
Substation	\$ 3.04	\$ 7.71	\$ 14.05	\$ 13.31	\$ 13.08	\$ 51.19
LTN Upgrades	\$ 3.12	\$ 12.60	\$ 7.63	\$ 8.19	\$ -	\$ 31.54
Reliability	\$ 4.08	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 12.08
System Reliability Improvement Projects	\$ 12.77	\$ 8.11	\$ 13.79	\$ 17.80	\$ 13.29	\$ 65.76
Unreimbursed Highway Relocations	\$ 6.16	\$ 4.90	\$ 3.92	\$ 2.83	\$ 2.83	\$ 20.64
Protection and Control	\$ 4.70	\$ 6.06	\$ 7.35	\$ 6.83	\$ 6.83	\$ 31.77
Total	\$ 92.56	\$ 102.21	\$ 107.92	\$ 113.05	\$ 95.88	\$ 511.62

33. Below is the table summarizing PPL Electric's updated projection of capital expenditures for the 2023-2027 LTIP period, as set forth on page 12 of Appendix A:

	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 11.40	\$ 19.70	\$ 17.11	\$ 19.32	\$ 17.74	\$ 85.27
New Electronic Reclosers	\$ 1.03	\$ 10.10	\$ 7.55	\$ 7.28	\$ 7.00	\$ 32.96
Distribution Animal Guarding	\$ 0.20	\$ 0.34	\$ 0.32	\$ 0.31	\$ 0.32	\$ 1.49
Failed Equipment	\$ 42.85	\$ 42.44	\$ 34.12	\$ 34.68	\$ 35.69	\$ 189.78
Underground Cable Replacement	\$ 0.52	\$ 4.36	\$ 1.98	\$ 1.50	\$ 2.03	\$ 10.39
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.54	\$ 3.76	\$ 4.56	\$ 4.25	\$ 4.45	\$ 17.56
Substation	\$ 11.25	\$ 26.94	\$ 28.12	\$ 30.24	\$ 27.80	\$ 124.35
LTN Upgrades	\$ 6.87	\$ 10.55	\$ 11.56	\$ 13.94	\$ -	\$ 42.93
Reliability	\$ 9.19	\$ 32.97	\$ 7.13	\$ 5.84	\$ 6.91	\$ 62.04
System Reliability Improvement Projects	\$ 19.23	\$ 11.52	\$ 12.66	\$ 4.13	\$ 3.67	\$ 51.21
Unreimbursed Highway Relocations	\$ 8.87	\$ 4.50	\$ 4.92	\$ 4.07	\$ 3.71	\$ 26.08
Protection and Control	\$ 3.34	\$ 21.73	\$ 13.47	\$ 14.82	\$ 17.63	\$ 70.99
Predictive Failure Technology	\$ -	\$ 46.13	\$ 38.32	\$ -	\$ -	\$ 84.44
Total	\$ 115.29	\$ 235.04	\$ 181.82	\$ 140.39	\$ 126.94	\$ 799.48

34. As shown above, PPL Electric’s revised total projected capital spending for the five-year period has increased from \$511.62 million to \$799.48 million.

35. There are several reasons for the projected increase in capital spending under the LTIIP.

36. For starters, after the third LTIIP was filed, there were changes in personnel, including those that oversee the LTIIP, which spurred a comprehensive review of the Company’s capital investments, including the \$511.62 million in DSIC-eligible expenditures under the third LTIIP. When reviewing and evaluating its planned capital investments, the Company considered the Commission’s feedback on previous LTIIPs (particularly around LTIIP spend), as well as the impact of such investments on the Company’s current and future reliability performance, and determined that the level of spending in the current LTIIP was insufficient to maintain reliability when considering changes in operating conditions.

37. Specifically, through this process, PPL Electric’s personnel concluded that the Company must do more to address aging infrastructure and trends regarding more frequent and severe weather events,³ increased interconnections of distributed energy resources (“DERs”),⁴ and increased supply chain costs and constraints in order to continue providing safe, reliable, adequate, and reasonable service.

38. In particular, the total increase in spending is being driven largely by additional and necessary investments in: (1) New Electronic Reclosers; (2) Low Tension Network Primary Cable,

³ In 2023 PPL Electric experienced 45 storm events, which was the highest in the Company’s recent history. The previous high was 42 storms in 2021, followed by 36 in 2022.

⁴ The rate of DER installations continues to grow exponentially. In fact, when compared to 2020, PPL Electric has seen nearly 114% more DER installations in 2023, which equates to almost 25,000 additional interconnections.

Equipment and Structures; (3) Substations; (4) Reliability; (5) Protection and Control; and (6) Predictive Failure Technology.⁵

39. Additionally, the projected increase in spending is partly due to the potential available funding for projects under the Infrastructure Investment and Jobs Act (“IIJA”).

40. On October 19, 2023, PPL Electric announced that its Grid of the Future infrastructure project application was selected by the U.S. Department of Energy (“DOE”) to potentially receive up to \$49.5 million in federal funding through the IIJA.⁶

41. The Company did not anticipate receiving this funding when the third LTIIP was originally prepared, but now, PPL Electric proposes to update its LTIIP to reflect the additional projects that could be completed with that potential funding.

42. For these reasons, PPL Electric respectfully requests that the Commission approve this proposed major modification to the Company’s LTIIP.

III. NOTICE AND COMMENT PERIOD

43. PPL Electric is serving this Petition on the statutory advocates and all parties of record in the Company’s most recent base rate proceeding at Docket No. R-2015-2469275.

44. Under Section 121.5(a) of the Commission’s regulations, “[p]arties shall have 30 days to file comments to the petition.” 52 Pa. Code § 121.5(a).

⁵ PPL Electric notes that even without the addition of Predictive Failure Technology, the total projected capital expenditures are estimated to increase by more than 20% of the current total LTIIP expenditures.

⁶ PPL ELECTRIC UTILITIES CORP., “U.S. Department of Energy selects PPL Electric Utilities for grid modernization projects in Central and Eastern Pennsylvania” (Oct. 19, 2023), *available at* <https://news.pplweb.com/U-S-Department-of-Energy-selects-PPL-Electric-Utilities-for-grid-modernization-projects-in-Central-and-Eastern-Pennsylvania>

IV. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the proposed major modifications to the third Long-Term Infrastructure Improvement Plan for the period January 1, 2023, through December 31, 2027, as set forth in this Petition and the attachments hereto.

Respectfully submitted,



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Dated: January 17, 2024

Attorneys for PPL Electric Utilities Corporation

Appendix A

Redline Version of the Revised LTIIP

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Style Definition: Comment Text

PPL Electric Utilities Corporation

Long-Term Infrastructure Improvement Plan

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Introduction

PPL Electric Utilities Corporation (“PPL Electric” or “Company”) is submitting this Long Term Infrastructure Improvement Plan (“LTIIIP”) pursuant to the requirements of Subchapter B, Distribution Systems, of the Public Utility Code, 66 Pa.C.S. §§ 1350-1360, the Public Utility Commission’s (“PUC”) Implementation Order for Establishment of a Distribution System Improvement Charge, entered on August 2, 2012 at Docket No. M-2012-2293611 and the Commission’s regulations at 52 Pa. Code §§ 121.1 et seq. This LTIIIP addresses a broad spectrum of Distribution Asset Management initiatives that the Company will use to continue its repair, improvement and replacement of aging infrastructure under this process, and is for the five-year period beginning January 1, 2023, and ending December 31, 2027.

PPL Electric strives to operate as efficiently as possible by performing the work required to maintain system integrity and reliability. Performance indicators such as System Average Interruption Frequency Index (“SAIFI”), Customer Average Interruption Duration Index (“CAIDI”) and System Average Interruption Duration Index (“SAIDI”) show that PPL Electric has been successful in its efforts. However, a generally flat to mildly decreasing trend in equipment failures, combined with an aging infrastructure, indicate that PPL Electric needs to continue to invest in its distribution system. As equipment failures remain flat to mildly decreasing, PPL Electric has been experiencing a significant increase in maintenance spending beyond normal inflationary pressures. The driver is a combination of both increased corrective and planned maintenance. PPL Electric has initiated and enhanced maintenance practices and programs to repair, improve, or replace certain distribution facilities in order to ensure adequate, efficient, safe and reliable service.

Addressing aging infrastructure will require ongoing investment. Such investment includes not only replacing aging equipment, but also investment in advanced equipment and communication technologies that can facilitate further system reliability improvements. If continued proactive re-investment does not occur, it is expected that system reliability will degrade, while the overall cost to maintain the distribution system will continue to rise. By investing in its distribution system, PPL Electric will ensure that its system continues to be safe, reliable, and able to meet the growing needs and expectations of its customers.

PPL Electric believes that managing finite resources to produce optimal results is essential for maintaining customer satisfaction. Criteria for program inclusion into the Long-Term Infrastructure Improvement Plan is not whether any single activity produces a positive reliability result, but rather, which portfolio of activities produces the best result for a given expenditure. PPL Electric’s goal is focused on results (i.e., the reliability experienced by customers and associated rate impacts), not the rote execution of particular tasks.

Reliability Experience

The Distribution Asset Planning process employed by PPL Electric has been focused on maintaining reliability at the level that existed prior to passage of the Electricity Generation Customer Choice and Competition Act (“Customer Choice Act”). Since the 1994-1998 benchmark period, which defines PPL Electric’s reliability performance targets, PPL Electric’s service reliability has experienced annual swings, positive and negative, resulting largely from varying weather conditions. Historical benchmark performance is illustrated in Figures 1 and 2.

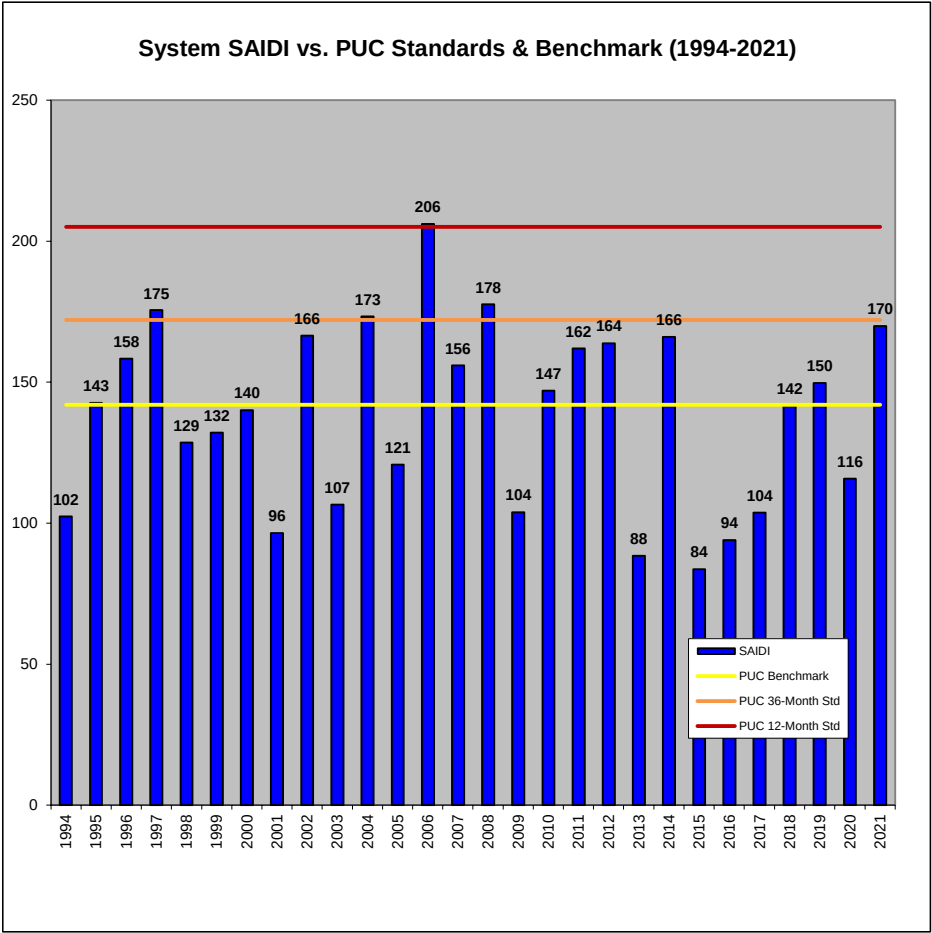


Figure 1: PPL Electric’s SAIDI Performance

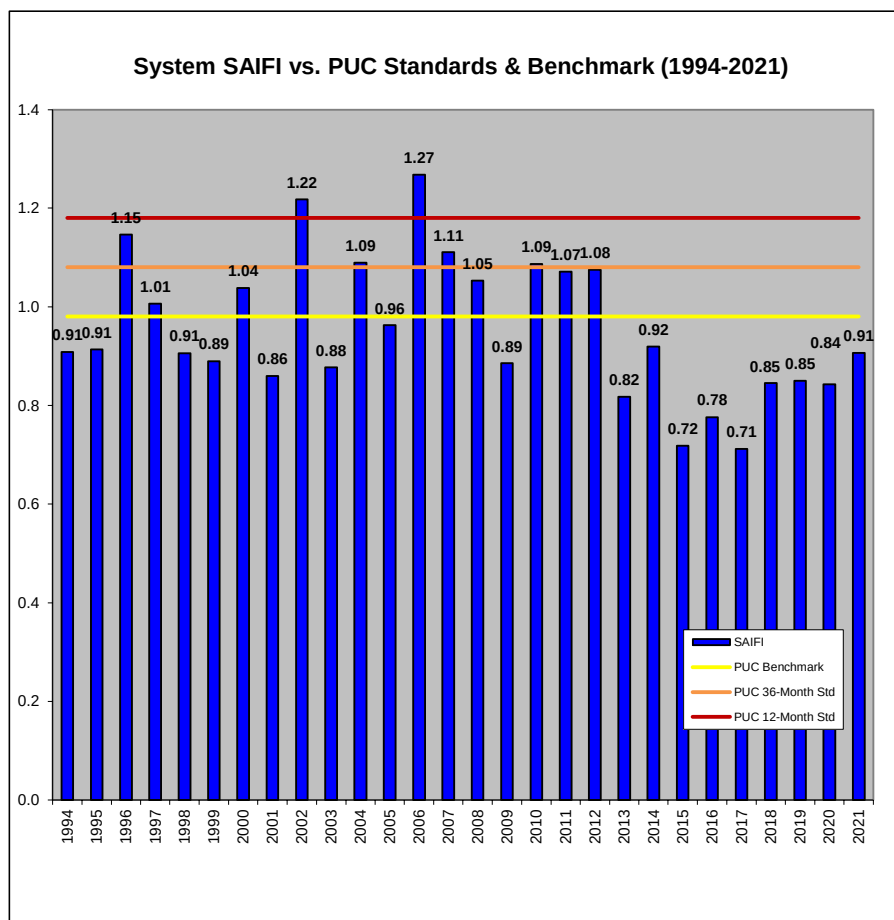


Figure 2: PPL Electric's SAIFI Performance

A significant risk to PPL Electric's ability to meet reliability benchmarks is the large portion of distribution facilities, many of which were installed in the 1960's and 1970's, that are now beyond or nearing the end of their design lifetime. See Appendix A for average age of major units of property. The resultant effect on non-storm-related equipment failures is illustrated by the chart in Figure 3 below.

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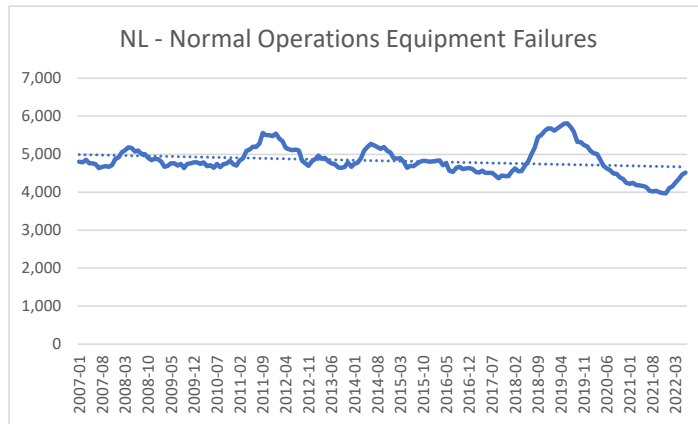


Figure 3: Equipment Failure Service Interruption Cases

The number of no-light cases due to equipment failures is trending slightly downward due to investments over the past five to ten years. The need to remediate that equipment which is at or near end-of-life remains to maintain or improve this favorable trajectory. Components contributing the most significantly to distribution equipment failures include poles/arms/attachments, overhead and underground conductors, switches, and substation equipment. See Appendix B for further details on asset contribution to reliability metrics.

Response to Aging Equipment

PPL Electric's reliability investment process is forward-looking and proactive. It consists of the following:

- Analyze and identify the drivers of historical trends of causes of service outages and other power service problems.
- Forecast future reliability metrics (SAIDI, SAIFI, and CAIDI) given existing mitigation programs' effect on the identified drivers.
- Identify new programs, policies, and activities to enhance or accelerate existing mitigation programs to avoid forecasted gaps between future reliability and benchmark targets.
- Identify, evaluate, and implement new technologies that enhance the Company's condition monitoring strategy.
- Evaluate and adjust existing programs, policies, and activities to produce the desired future results.
- Perform targeted data analytics against the Company's aging infrastructure utilizing real-time, or near real-time, operational data to further improve reliability performance.

PPL Electric Utilities Corporation

- Incorporate the resulting portfolio of existing and new programs, policies, and activities in PPL Electric's five-year business plan.

In February 2018, PPL Electric's Reliability Principles and Practices ("P&P") were revised to help reduce the overall impact to the Company's customers from outages due to various causes, including but not limited to, equipment failures. The P&P sets forth a set of Principles that PPL Electric follows to plan, protect, and operate the Electrical Distribution System ("EDS"). These Principles are implemented through a set of standard Practices that are used as guidelines in designing the EDS. These Practices are reasonable, acceptable, and consistent with leading utility practices. More specifically, to reduce the number of customers experiencing permanent outages and outage duration over the long term, the following circuit design guidelines are used wherever practical, starting with those identified as Worst Performing Circuits ("WPCs"):

- Provide three-phase line ties that will support the transfer of all but approximately 500-750 customers for 100% of the year.
- Provide sectionalizing devices to limit customer count to no more than approximately 500-750 customers between devices.
- Limit customer count to less than approximately 1,500 customers per circuit.
- Limit line length to approximately 70 circuit miles

Prioritization utilizing these design criteria is based on the greatest expected improvement in reliability for the entire system.

Several other mitigation initiatives have been undertaken to reduce the forecasted short-term equipment failure growth rate.

- **Enhanced Pole Inspection/Treatment Program:** Beginning in 2021, the Company's wood pole inspection and treatment program was enhanced from a subjective inspection process to an objective, resistance drill-based methodology. The resistance drill inspection allows a complete pole health assessment, with both interior and exterior decay accurately measured. This holistic strength assessment of the pole is the most accurate and thorough pole inspection possible. As an integral part of the twelve-year pole inspection process, PPL Electric observes, notes, and reports at-risk conditions of all pole attachments, specifically crossarms, braces, conductors, transformers, fuse cutouts, lightning arresters, reclosers, regulators, capacitors, switches, wildlife protection, vegetation encroachment, guys, anchors, ground wires, and ground rods.
- **Increased Utilization of Infrared Inspections:** PPL Electric conducted a trial of infrared inspections of multi-phase lines in 2006. The trial inspections cost \$122,500 and identified repairs costing \$100,000, saving an estimated 1,460,000-2,600,000 Customer Minutes Interrupted ("CMI"). Funding of infrared inspections and repairs was increased significantly during 2010 and has remained at a higher funding level. Infrared inspections occur on all 3-phase and 2-phase overhead lines adjacent to roadways every two years.
- **Proactive Circuit Analysis ("PCA"):** PCAs are performed on each circuit on a four-year cycle. The review analyzes and addresses both operational and reliability characteristics of each circuit. Voltage support, phase balancing, protection coordination, power factor maintenance and loading issues are

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addressed from an operational perspective. Service outage analysis, exposure analysis, and field checks address reliability and power quality.

- **Distribution Automation Strategy:** In 2010, PPL Electric launched a “smart grid” pilot project that enables the Company to react rapidly to changes on the delivery system, and to automatically re-route power around problems that occur. The project initially focused on the Harrisburg, Pa. area, but has since been expanded to cover all of the Company’s service territory. The project included the implementation of an advanced Distribution Management Systems (“DMS”), which was a breakthrough technology that enables the Company’s operators to see the status of PPL Electric’s distribution network in real-time. In 2016, PPL Electric completed a system wide rollout of Fault Isolation and Service Restoration (“FISR”) technology. FISR identifies faulted sections and quickly develops an optimized restoration plan, then automatically executes that plan. Customers typically can be restored within five minutes from the start of the outage. This milestone is an industry first and has saved over one million customer interruptions to date. Over 8,600 automated smart devices have been installed, which has allowed for remote operation and monitoring of circuit sectionalizing equipment.

Although these programs have successfully slowed failure growth rates in the short-term, PPL Electric faces a long-term issue regarding aging infrastructure. The surge in electrical construction in the 1960’s and 1970’s has resulted in a large number of assets that have reached or are nearing the end of their useful lifetime. Consequently, in 2008-2009, PPL Electric conducted a major condition assessment and maintenance study of its distribution system. The result was the implementation of the Asset Optimization Strategy (“AOS”). The study found that programmatic and accelerated replacement of infrastructure would be the most cost-effective strategy to address aging infrastructure and ensure system reliability and integrity.

Asset Optimization Strategy

The purpose of the AOS study was to develop a strategy for accelerated capital replacement improvements that would combat the anticipated effects of aging infrastructure and bolster PPL Electric’s ability to effectively maintain reliable electric service. With the Company entering a period where a significant number of assets are expected to reach the end of life, a plan was developed to intelligently replace assets prior to an unplanned failure that impacts customers. The plan includes replacements in kind, as well as upgrades to current standards.

Examples of AOS Projects include proactive replacement of substation equipment, Low Tension Network (“LTN”) equipment, and vintage underground cable based on condition-based health analysis.

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Accelerated Investment

As a result of the AOS study, PPL Electric approximately doubled its level of investment in DSIC-eligible property from 2009-2012. During this period, non-storm equipment failures fluctuated but continued to show a slight upward trend. PPL Electric continued to accelerate capital investments during the periods 2013-2017 and 2018-2022 to address an upward trend in equipment failures that peaked in 2018-2019 (see figure 3 above).

Period	Avg Annual Capital investment (in millions)
2008-2012	\$88
2013-2017	\$137
2018-2022	\$180

Figure 4: Approximate average annual capital investment in millions. Not adjusted for inflation.

As a result of these investments, PPL Electric arrested the increase in failed equipment and the current trend is flat to mildly decreasing. Even with these investments, the average age of equipment increased slightly since the 2018-2022 plan. While projected spending under this proposed LTIP is lower than the 2018-2022 period, continued capital investment is necessary to maintain or improve the recently flattened trend in equipment failure.

Implementation of Long-Term Infrastructure Improvement Plan

The Long-Term Infrastructure Improvement Plan, in addition to various other prudent capital investments, helps to ensure the safety and reliability of the distribution system. The investments since the LTIP was initially put into place have arrested and reversed the growth trend in equipment failures. Equipment failure trends and asset-specific contributions to system-level reliability metrics are analyzed on an ongoing basis to ensure funding is invested appropriately.

PPL Electric routinely reviews the effectiveness of programs to ensure cost-effective investment. Program/project impact on SAIDI and SAIFI, in addition to potential reductions in outage response costs, is compared to the overall program/project costs. PPL Electric utilizes a project prioritization process that defines the cost-effectiveness of programs/projects to ensure effective optimization of reliability investments. PPL Electric currently is improving the use of ongoing asset health indices to further refine asset replacement criteria.

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Ongoing review of the effectiveness of investments to address equipment failure trends will likely result in adjustments to the strategy over time. Future Long Term Infrastructure Improvement Plans will reflect such adjustments. Additionally, work plans may fluctuate throughout a given year due to the need to reallocate resources in response to changing business needs. Some examples include shifting resources for storm response activities, project construction delays caused by a backlog of material deliveries, and the redirection of investment to cure costly equipment failures. In addition, during the project engineering phase, issues such as right-of-way requirements and environmental considerations can result in scope changes that also can delay actual construction. During construction of larger projects, additional scope needs can be identified, creating the need to defer other projects. Finally, reliability metric performance can result in redirection of spending to help ensure the ability to meet targets.

Projected expenditures for the replacement of failed equipment are based on a review of historical trends while considering current failure rates and proactive mitigating measures. For such programs, it is difficult to project the specific scope and location. Therefore, PPL Electric has provided only planned expenditures based on historical trending information.

Utility Outreach

PPL Electric continues to remain engaged, seeking out opportunities with other utilities and government officials on the planning and execution of future construction projects. A forum exists with the Utility Highway Liaison Committee (“UHLC”), with whom PennDOT, the Turnpike Commission, other utilities, and the Energy Association of Pennsylvania meet quarterly to discuss policy issues, present and future projects, and relocation projects. The Company is a regular participant. Initiatives at these forums are focused primarily on improving state and utility interactions.

PPL Electric also participates in various Pennsylvania Coordinating Committees, including the Northeast PA (“NEPA”) Regional partnership, the Lancaster County Regional Partnership, the Lehigh Valley Regional Partnership, and the Lycoming County Area Coordinating Committee. These meetings are held monthly, bi-monthly, or quarterly to discuss and share project plans with stakeholders including utility companies, PennDOT, public works officials and planning commission members. PPL Electric currently hosts two of these meetings each calendar year.

Utilization of a Qualified Work Force

PPL Electric Workforce

As a measure to ensure the use of a qualified workforce, PPL Electric has adopted the definition of a Qualified Electrical Worker from the Occupational Safety and Health Administration (“OSHA”) Regulation 29 CFR § 1910.269 Electrical Power Generation, Transmission and Distribution, which is defined in the PPL Electric Safety Rule Book and is provided to each employee. It is also incorporated into the training and qualification process for all electrical workers.

PPL Electric administers a rigorous, formal training and evaluation process for all qualified electrical workers. Training is required before an employee may perform work independently on exposed, energized electrical equipment greater than 50 volts. Training requirements and programs are unique to the job classification and work being performed. Curriculum documents, outlining subject areas and training durations by job classification have been developed. Training may require up to 5 years to complete and incremental qualifications, following

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assessment, are identified throughout the duration of the training program. Retraining is conducted on a periodic basis as required by OSHA or more frequently when determined necessary.

PPL Electric's formal training programs are administered by the Technical Development & Improvement ("TD&I") group. The training section of the TD&I group is comprised of approximately 37 full time employees, both training professionals and craft employees. Experienced training professionals lead the design and development of the training programs with input from subject matter expertise provided by craft employees from the field. Training program (curriculum) content is approved by a curriculum committee which is comprised of business line managers. The basic job requirement for an instructor includes 5-years of experience performing the work and attainment of Journeyman level (or equivalent) qualifications. Craft instructors are then trained and mentored. Training delivery is governed by PPL Electric policies and procedures to ensure quality and consistency.

Training is delivered in phases. A phase typically consists of a grouping of training modules into one training period of several days to several weeks. Training consists of both classroom and field work to gain hands-on practical learning experience. Trainees are evaluated throughout the program. Evaluation includes written examination and/or a performance examination. Employees must successfully complete each training module before progressing to the next phase of training.

In addition, trainees in key programs must complete an additional skills assessment prior to advancement to the next step. These assessments are coordinated by the TD&I group. The employees are evaluated (graded) by a panel comprised of knowledgeable field supervisors and experienced bargaining unit craft members. This independent evaluation serves as a quality control check on the TD&I training section.

Over the next 5 years, PPL Electric will be executing a resource strategy which includes formal training classes to hire and train new employees in preparation for upcoming attrition.

Contractor Workforce

PPL Electric's Sourcing department administers a standard process for soliciting contractors to perform work identified to be completed by independent contractors. The process includes issuance of a Request for Proposal ("RFP") to various contractors. That process includes a meeting to review the technical and administrative components of the work and normally a walk-down of the project area. Responses to the RFP are evaluated based on detailed financial and technical schedules that compare respondents' capabilities. Part of the RFP evaluation process includes evaluating the qualification of contractors to perform work (both technical and financial capabilities to meet the contractual commitments, and level of qualification of employees) and may include reference checks if appropriate. Any specific required qualifications of contractors would typically be outlined in the RFP and/or contract (for example: pole installation, permit and tag authorities, line construction by specific voltage, live line work, foundations, directional bore/trenching, underground networks).

Most independent contractors employ personnel through the building trades, which includes Union apprenticeship programs to help ensure that employees are qualified to perform assigned work. (This approach is comparable to PPL Electric's Union labor qualification training program.) Employee qualification programs for non-Union independent contractors are stringently reviewed to assess the contractor's training program, such as on-the-job training and certification programs.

Prior to award, contractors are screened for their safety performance and, if applicable, environmental record. Contractors that do not have an acceptable record receive no further consideration. In the event that a contractor

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working for PPL Electric incurs safety incidents and/or does not take appropriate safety measures, the contractor is terminated and prohibited from performing work for PPL Electric in the future.

PPL Electric has instituted a contractor orientation program that provides new contractors an opportunity to understand company expectations for performing work safely, mindful of public and private landowner considerations and administrative concerns (such as billing). PPL Electric also performs weekly safety and workmanship review meetings with the Company's contractor work force to review safety issues and other relevant topics.

PPL Electric sponsors a training program that allows the contractors' employees to become qualified in PPL Electric's permit-and-tag system. Contractor employees who successfully complete the training program can be permit holders on PPL Electric's system.

PPL Electric monitors the contractors' performance through several activities that may include direct job oversight through on-site supervision, monthly scorecards that evaluate such areas as job quality, safety performance, cost, and validating billing activities that meet contractual expectations. If safety concerns are identified at a job site, any person has the ability and express duty to cease work until the concerns have been appropriately addressed, and a safety review team could be assembled to formally request a contractor to respond to safety concern. Safety violations could result in immediate contractor termination.

PPL Electric's Project Construction Supervisors continuously monitor the quality of all contractor work and adherence to PPL Electric's Construction Standards. Where the contractor installs specialized equipment on critical facilities, special Quality Assurance review are performed which may include inspection of grounding, trench, foundations, final grade, structural components, poles/towers, conduits, electrical equipment, primary conductor, wiring, designations, and final completion of the Acceptance of Facilities form). Any failures are described along with description and dates of corrections to resolve the areas of concern before final acceptance of the contractor's quality of work.

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Summary

As a result of the economic expansion and building boom of the 1960's and 1970's, much of PPL Electric's distribution system was constructed 50 or more years ago. As this equipment deteriorates due to age, environmental exposure, and added load, it becomes increasingly critical to plan for the repair, upgrade, and/or replacement of these assets through the initiatives described above. In the absence of these initiatives, the efficiency, safety, and reliability of the electric distribution system is expected to be increasingly compromised. PPL Electric believes that the expenditures for these initiatives constitute a prudent and reasonable investment for managing its distribution assets and that each of the listed programs will successfully achieve one or more of the following benefits:

- Maintaining public and employee safety
- Reducing service outage durations and number of customers affected
- Reducing service outage restoration times
- Reducing service outage locating and repair times
- Controlling service outage repair costs
- Limiting failure-related damages and related costs, and
- Improving/maintaining power quality (voltage, flicker, etc.)

To achieve these results, PPL Electric anticipates the need for the following total capital expenditures over the 2023-2027 period. Note that planned expenditures for certain initiatives can fluctuate yearly due to the various factors identified previously.

	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 17.33	\$ 18.96	\$ 17.33	\$ 17.33	\$ 17.33	\$ 88.28
New Electronic Reclosers	\$ 5.07	\$ 4.69	\$ 4.13	\$ 3.63	\$ -	\$ 17.52
Distribution Animal Guarding	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 2.50
Failed Equipment	\$ 34.77	\$ 34.03	\$ 35.18	\$ 36.64	\$ 36.03	\$ 176.64
Underground Cable Replacement	\$ 0.42	\$ 1.11	\$ 1.67	\$ 1.59	\$ 1.59	\$ 6.37
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.60	\$ 1.54	\$ 0.38	\$ 2.40	\$ 2.40	\$ 7.32
Substation	\$ 3.04	\$ 7.71	\$ 14.05	\$ 13.31	\$ 13.08	\$ 51.19
LTN Upgrades	\$ 3.12	\$ 12.60	\$ 7.63	\$ 8.19	\$ -	\$ 31.54
Reliability	\$ 4.08	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 12.08
System Reliability Improvement Projects	\$ 12.77	\$ 8.11	\$ 13.79	\$ 17.80	\$ 13.29	\$ 65.76
Unreimbursed Highway Relocations	\$ 6.16	\$ 4.90	\$ 3.92	\$ 2.83	\$ 2.83	\$ 20.64
Protection and Control	\$ 4.70	\$ 6.06	\$ 7.35	\$ 6.83	\$ 6.83	\$ 31.77
Total	\$ 92.56	\$ 102.21	\$ 107.92	\$ 113.05	\$ 95.88	\$ 511.62

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	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 11.40	\$ 19.70	\$ 17.11	\$ 19.32	\$ 17.74	\$ 85.27
New Electronic Reclosers	\$ 1.03	\$ 10.10	\$ 7.55	\$ 7.28	\$ 7.00	\$ 32.96
Distribution Animal Guarding	\$ 0.20	\$ 0.34	\$ 0.32	\$ 0.31	\$ 0.32	\$ 1.49
Failed Equipment	\$ 42.85	\$ 42.44	\$ 34.12	\$ 34.68	\$ 35.69	\$ 189.78
Underground Cable Replacement	\$ 0.52	\$ 4.36	\$ 1.98	\$ 1.50	\$ 2.03	\$ 10.39
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.54	\$ 3.76	\$ 4.56	\$ 4.25	\$ 4.45	\$ 17.56
Substation	\$ 11.25	\$ 26.94	\$ 28.12	\$ 30.24	\$ 27.80	\$ 124.35
LTN Upgrades	\$ 6.87	\$ 10.55	\$ 11.56	\$ 13.94	\$ -	\$ 42.93
Reliability	\$ 9.19	\$ 32.97	\$ 7.13	\$ 5.84	\$ 6.91	\$ 62.04
System Reliability Improvement Projects	\$ 19.23	\$ 11.52	\$ 12.66	\$ 4.13	\$ 3.67	\$ 51.21
Unreimbursed Highway Relocations	\$ 8.87	\$ 4.50	\$ 4.92	\$ 4.07	\$ 3.71	\$ 26.08
Protection and Control	\$ 3.34	\$ 21.73	\$ 13.47	\$ 14.82	\$ 17.63	\$ 70.99
Predictive Failure Technology	\$ -	\$ 46.13	\$ 38.32	\$ -	\$ -	\$ 84.44
Total	\$ 115.29	\$ 235.04	\$ 181.82	\$ 140.39	\$ 126.94	\$ 799.48

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Almost all of the aforementioned initiatives take advantage of new technologies that did not exist when the associated assets were originally placed into service, and many of these technologies are very recent innovations. These technologies are expected not only to restore the assets to their original level of performance, but, in many cases, provide performance well beyond what previously was achievable in order to ensure and maintain adequate, efficient, safe, and reliable service.

Some of the initiatives, such as animal guarding, clearly have implied endpoints, where no further opportunities for improvement remain. Others, such as distribution automation, eventually experience diminishing returns over time. Other initiatives, such as pole reinforcement and replacement, will be ongoing. Finally, some programs may become obsolete, while new programs may become desirable as a result of the evolution of new technologies. Because of these and other variables, the effectiveness of these programs is reviewed annually, and programs are added, deleted, and/or modified, as necessary, to ensure that the expenditures are providing the desired benefits to customers at a reasonable cost.

Distribution Assets

The following pages detail 5-years projections for Long-Term Infrastructure Improvements initiatives that apply to distribution line assets. These assets include, but are not limited to, the following:

- Structures
 - o Poles
 - o Crossarms
 - o Vaults
 - o Manholes
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices

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- o Air Break Switches
 - o Disconnect Switches
 - o Switching Cabinets
- Protective Devices
 - o Fuses
 - o Reclosers
 - o Network Protectors
 - o Lightning Arresters
- Transformers
 - o Overhead
 - o Pad-Mounted
 - o Submersible
 - o Low Tension Network

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Specific locations are a direct correlation to the wood pole inspection plan. Inspection locations are identified yearly primarily as a function of previous inspection dates, as well as ensuring cost-effectiveness of the program and minimizing inspection crew movements.

Pole Reinforcements

Program Description and Purpose

Reinforcement of deteriorated distribution wood poles in order to restore the pole’s original strength, ensure public safety, and maintain reliable electric service through the reduction of potential pole failures. This program contributes to storm hardening efforts by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement. When applicable, this method achieves a significant savings over pole replacement.

Scope

Planned Reinforcements in Units					
2023	2024	2025	2026	2027	Total Scope
4000-5000	4000-5000	4000-5000	4000-5000	4000-5000	20000-25000

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Locations

Locations identified for reinforcement are a direct correlation to the number of wood pole inspections.

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New Electronic Reclosers

Program Description and Purpose

Proactive installation of new electronic reclosers on both single-phase and three-phase lines, to improve reliability performance by increasing circuit sectionalizing ability. Reclosers minimize the number of customers affected by a sustained outage.

Identification/Justification Process

Locations are requested by regional reliability engineers and prioritized annually based on anticipated reliability savings. A gradual scope reduction is assumed in the outer years as a result of saturation of reclosers and other distribution automation equipment.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
210-250 130-160	170-200 120-250	110-140 120-200	50-70 120-200	0120-200	540-660 1010

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Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	90-110 100-164
Northeast	90-110 100-164
Central	90-110 100-168
Susquehanna	90-110 100-168
Harrisburg	90-110 180
Lancaster	90-110 100-166

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$5.07 1.03	\$4.69 10.10	\$4.13 7.55	\$3.63 7.28	\$07.00	\$17.52 32.96

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Distribution Animal Guarding

Program Description and Purpose

Proactive installation of animal guards on existing distribution overhead transformers and air break switches to improve circuit reliability. Animal guards help prevent animal-related contacts which cause service interruptions.

Identification/Justification Process

Transformers are identified both by opportunistic installation of guarding during other non-related work, and by on-the-spot or follow-up orders after responding to animal-caused outages.

Scope

Planned Animal Guards					
2023	2024	2025	2026	2027	Total Scope
240-360	240-360	240-360	240-360	240-360	1200-1800

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Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	200-300
Northeast	200-300
Central	200-300
Susquehanna	200-300
Harrisburg	200-300
Lancaster	200-300

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.5020	\$0.5034	\$0.5032	\$0.5031	\$0.5032	\$2.50149

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Failed Equipment

This category includes the replacement of failed or deteriorated distribution equipment, LTN equipment, underground cable, and underground getaways.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$34.7742.85	\$34.0342.44	\$35.1834.12	\$36.6434.68	\$36.0335.69	\$176.64189.78

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Distribution Failed Equipment

Program Description and Purpose

Replacement or repair of failed or deteriorated capital units of distribution equipment, excluding underground cable, in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via inspections, both planned and ad-hoc, as well as actual outages and power service problems. Budget allocations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures. Examples include, but are not limited to, failed reclosers, poles, capacitor banks, and air breaks.

Scope & Locations

Scope and locations are determined as equipment fails.

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Replace Failed Underground Cable

Program Description and Purpose

Replacement of failed underground residential primary and secondary cables in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via actual failures. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cable fails.

Replace Failed 12 kV Underground Getaway Cables

Program Description and Purpose

Replacement of failed 12 kV underground getaway cables to maintain adequate service reliability. Getaway failures can result in long duration outages. Getaway cables connect substations to outgoing feeders beyond the substation perimeter.

Identification/Justification Process

Candidates are identified via actual failures and cables with poor test results. Budget recommendations are based on historical trends in getaway failure quantities and costs, in addition to projected trends of future getaway failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as getaway cables fail while in service or fail conditionally under testing.

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Replace Deteriorated/Failed Low Tension Network Equipment and Structures

Program Description and Purpose

Replacement or repair of deteriorated and failed equipment related to Low-Tension Networks, including network transformers, network protectors, manholes, and vault tops in order to maintain adequate service reliability. Low-Tension Networks are low voltage underground distribution facilities found in urban areas.

Identification/Justification Process

Candidates are identified via actual failures, inspections, testing, or work on the system. Budget recommendations are based on historical trends of corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as assets fail.

Replace Deteriorated/Failed Area Supply Substation Equipment

Program Description and Purpose

Replacement of failed or deteriorated station facilities at area supply substations with in-kind equipment to maintain safe and reliable service. Identified facilities include, but are not limited to, circuit breakers, power transformers, tie/transfer cables, disconnect switches, DC equipment, and instrument transformers.

Identification/Justification Process

Candidates are identified via actual failures, inspections, and test results. Budget recommendations are based on historical trends in equipment failure quantities and costs, in addition to projected trends of future equipment failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as station equipment fail while in service or fail conditionally under testing.

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Underground Cable Replacement

Program Description and Purpose

Programmatic replacement of deteriorated underground cable to maintain reliable electric service.

Identification/Justification Process

Candidates are selected based on history of cable failures and failure risk scores generated by a data analytics model that uses criteria such as segment length, cable age, customer count, and number of tap fuse outages.

Regional allocation of cable remediation is based on historical regional percent contribution to system-wide cable failures.

Scope

Planned Scope in Cable Segments					
2023	2024	2025	2026	2027	Total Scope
25-100	75-150 220- 320	135-225	100-200	100-200	435-875-580- 1045

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	100-200
Northeast	45-125
Central	45-100 90-150
Susquehanna	45-100
Harrisburg	100-175 120-200
Lancaster	100-175 180-270

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0. 42 52	\$1.11 4.36	\$1.67 98	\$1.59 50	\$1.59 2.03	\$6.37 10.39

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Low Tension Network Primary Cable, Equipment and Structures

Program Description and Purpose

Programmatic replacement of deteriorated equipment related to Low Tension Networks, including primary underground cable, network transformers, network protectors, manholes, and vault tops. The purpose of this program is to ensure public safety and service reliability through the replacement of underground facilities that have reached the end of their expected life or that show signs of premature age from prolonged exposure to corrosive environments.

Identification/Justification Process

Primary underground cables for Low Tension Network feeders are reaching their end of useful life and proactive replacements mitigate feeder outages. Replacement and repairs of manhole and vault tops are determined by regular inspections. Network transformer and network protector replacements are determined through inspection and age, where assets exceeding 40 years in service are considered highest priority.

Scope

Planned Replacements in Units (in Work Orders)						
	2023	2024	2025	2026	2027	Total Scope
Primary Cable Replacements	0-2	0-2	0-2	0-3	0-3	0-12
LTN Equipment	6-18	6-18	6-18-30-75	6-18-75-125	6-18	30-90-123-254

Locations (Approximate total over 5-year plan)

Region	LTN Equipment	Cable
Lehigh	5-15-20-42	0-2
Northeast	5-15-20-42	0-2
Central	5-15-20-42	0-2
Susquehanna	5-15-21-42	0-2
Harrisburg	5-15-21-42	0-2
Lancaster	5-15-21-44	0-2

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Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.60-54	\$1.54-3.76	\$0.38-4.56	\$2.40-4.25	\$2.40-4.45	\$7.32-17.56

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Substation

This category includes replacement of various substation assets, and substation animal guarding.

Substation assets include, but are not limited to, the following:

- Structures
 - Enclosures
 - Fences
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - Air Break Switches
 - Disconnect Switches
- Protective Devices
 - Circuit Breakers
 - Fuses
 - Reclosers
 - Lightning Arresters
- Transformers
 - Power
 - Station Service
 - Instrument

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$3.0411.25	\$7.7126.94	\$14.0528.12	\$13.3130.24	\$13.0827.80	\$51.19124.35

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Underground Getaway Cable Replacements and Life Extension

Program Description and Purpose

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Proactive replacement of aging and deteriorating 12 kV underground getaway cables to prevent failures that can result in long duration outages.

Identification/Justification Process

Getaways are selected for proactive replacement based on data analytics risk models that quantify cable health and risk and provide a priority ranking based on risk factors such as age, repair history, installation type, length, load transferability, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
0-4-2-8	5-12-11-16	8-15-9-13	8-15-20-30	8-15-20-30	29-64-62-97

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Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	0-7-10-15
Northeast	12-17-20-25
Central	4-5-6-12
Susquehanna	2-7-6-13
Harrisburg	10-22-17-24
Lancaster	1-3-8

Miscellaneous Substation Equipment

Program Description and Purpose

Programmatic replacement of older substation equipment, including air break switches, potential transformers (“PTs”), capacitance-coupled voltage transformers (“CCVTs”), circuit switchers, lightning arresters, voltage regulators, and DC panels in order to prevent future maintenance concerns and to maintain reliable service.

Identification/Justification Process

Candidates for replacement are identified based on age and/or operating condition, both indicators of potential failure. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

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Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-24	4-8	5-98-12	5-918-22	5-918-22	49-3748-68

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	3-65-8
Northeast	4-79-12
Central	3-65-8
Susquehanna	3-64-7
Harrisburg	3-617-20
Lancaster	3-68-13

Distribution Substation Circuit Breakers

Program Description and Purpose

Proactive replacement of substation circuit breakers (“CBs”) based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 12 kV circuit breakers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, mis-operation history, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
7-1235-45	22-3230-50	42-6270-100	39-5850-70	39-5850-70	149-222235-335

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	40-50 74-85
Northeast	11-21 24-45
Central	17-26 35-45
Susquehanna	29-34 25-36
Harrisburg	29-57 42-65
Lancaster	23-34 35-59

69/12 kV & 138/12 kV Transformer Replacement

Program Description and Purpose

Proactive replacement of distribution substation transformers based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 69/12 kV and 138/12 kV transformers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, dissolved gas analysis trends/analytics, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
1-23 -5	2-4 -8	4-6 -10	3-56 -10	3-56 -10	13-22 25-43

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	8-94 -7
Northeast	2-36 -9

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Central	1-35-8
Susquehanna	0-14-7
Harrisburg	0-2-4
Lancaster	2-4-8

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Distribution Substation DC Equipment

Program Description and Purpose

Programmatic replacement of distribution substation DC equipment based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 24 V, 48 V, and 125 V batteries, chargers, and related equipment.

Identification/Justification Process

Candidates for replacement are identified based on age, operating issues, availability of spare parts, and failure trends. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, DC assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-14	4-62-5	6-825-30	6-825-30	6-825-30	22-3477-99

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	3-512-15
Northeast	3-512-15
Central	3-512-15
Susquehanna	4-513-19
Harrisburg	6-716-20
Lancaster	3-412-15

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Substation Animal Guarding

Program Description and Purpose

Improvements to existing distribution substation equipment via the proactive installation of animal guards to prevent animal contacts and maintain reliable service. Guarded equipment includes transformer bushings, circuit breakers, fuse/disconnect switches, bus supporting insulators, surge arresters, station service transformers, PTs, and cable terminations. Future investments could be made in pilot products like internal perimeter electric fences for comprehensive rodent deterrents at high animal contact risk locations.

Identification/Justification Process

Distribution substations are regionally prioritized based on historical animal-related service outages (both at the substation and within a 1-mile perimeter), number of customers served, substation load, and transferability. High priority substations are animal guarded first with the lower priority substations guarded in outer years.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
0-14	1-32-10	1-32-6	1-32-6	0-12-6	3-118-32

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Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	2-37
Northeast	0-1-5
Central	1-2-5
Susquehanna	0-31-5
Harrisburg	0-1-5
Lancaster	0-1-5

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12 kV Underground Bus Tie & Transfer Cable Replacement

Program Description and Purpose

Proactive replacement of distribution substation underground bus tie and transfer cables based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement all 12 kV underground cables within the perimeter of the substation yard.

Identification/Justification Process

Underground bus tie and transfer cables are selected for proactive replacement based on data analytics risk models that quantify cable health and risk, and provide a priority ranking based on factors such as age, repair history, installation type, length, loading, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
2 1-4	3 5-10	4 65-10	4 65-10	4 65-10	17 2721-44

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	1 2-5
Northeast	3 65-10
Central	7 86-10
Susquehanna	2 34
Harrisburg	1 32-5
Lancaster	3 54-10

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LTN Upgrades

Program Description and Purpose

The purpose of this program is to install remote monitoring and control equipment in all Low Tension Network (“LTN”) vaults, upgrade network devices up to the latest standard, replace vault equipment near its end of useful life, and install telemetry on secondary network cable. These improvements will allow for safer operation of LTNs, reduce maintenance costs, reduce failed equipment requiring replacement, and provide better data for asset planning and investments.

Identification/Justification Process

Rollout of this program began in the Lehigh and Harrisburg regions. By the completion of this program in 2026, all LTN vaults will receive automation.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
219	15962	102155	195262	0	477488

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Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	6263
Northeast	111112
Central	8081
Susquehanna	3334
Harrisburg	97102
Lancaster	9496

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$3,126.87	\$12,6010.55	\$7,6311.56	\$8,1913.94	\$0	\$31,5442.93

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Reliability

This category includes deployment of Smart Grid devices and distribution circuit upgrades to address reliability issues identified through inspections or various circuit or customer level performance metrics.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$4,089.19	\$2,0032.97	\$2,007.13	\$2,005.84	\$2,006.91	\$12,0862.04

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Distribution Reliability Preservation

Program Description and Purpose

Upgrades to the distribution system as justified by regional reliability supervisors to improve reliability. Improvements are targeted towards Worst Performing Circuits (“WPCs”), circuits with a history of customer complaints, or recommendations as a result of PCAs. PCAs are detailed reliability and operational analysis performed on 25% of a region’s distribution circuits per year. Additional work is scoped on the basis of Customers Experiencing Multiple Interruptions (“CEMI”), and Customers Experiencing Multiple Momentary Interruptions (“CEMMI”).

Identification/Justification Process

Projects are identified and submitted for both small and large-scale circuit improvement. These projects are ranked utilizing PPL Electric’s investment prioritization tool to ensure funds are directed towards the most cost-effective projects. The number of projects and locations may vary depending on areas with reliability concerns. Examples include, but are not limited to, installation of fuses, fault indicators, reconductoring of vintage conductor, upgrading conductor to reduce impact of vegetation related service outages, and relocating sections of lines that may be inaccessible or prone to vegetation related service outages.

It should be noted projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
10-25	40-25100-135	40-2520-35	40-2520-35	40-2520-35	50-125170-265

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Locations

Locations are identified based upon emergent reliability needs.

Reliability Preservation Emergent

Program Description and Purpose

Remediation of issues primarily associated with secondary voltage and emergent small-scale customer reliability needs in order to improve reliability.

Identification/Justification Process

Work is identified by line crews, as well as through customer calls, and is completed to avoid potential service outages, power quality concerns and safety issues. Examples include, but are not limited to, modifying capacitance to address voltage concerns, installing fusing to aid in sectionalizing, and replacing transformers to resolve transformer overload. Budget recommendations are based on historical trends of hours charged.

Scope & Locations

Scope and locations are determined as emergent needs arise.

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System Reliability Improvement Projects

Program Description and Purpose

Large-scale improvements to distribution circuits with a history of poor reliability. This program addresses long-term projects, primarily aimed at WPCs. However, other proactive long-term projects with proven reliability benefit are included.

Identification/Justification Process

Each quarter, distribution planners and regional reliability supervisors meet to propose projects to improve WPCs. Projects are approved by distribution planning supervisors and vetted against other projects for scheduling based on historical reliability, potential benefit, and cost. Projects may span multiple years and are listed in the years they are planned to go in service. Scope is expected to increase in outer years as circuits and projects are identified. Examples include, but are not limited to, circuit reconfigurations with new tie lines, new lines and terminals, or the installation of substations for increased reliability.

Additionally, PPL Electric monitors large customer impact outages on a daily basis. A circuit that begins to show reliability deterioration and notable impact on reliability metrics requires a root cause analysis. Such analysis can result in the identification of a long-term project.

Note that the projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
6-12	6-12	6-12	6-12	6-12	30-60

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	5-10
Northeast	5-10
Central	5-10
Susquehanna	5-10
Harrisburg	5-10
Lancaster	5-10

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Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$12.77	\$8.11	\$13.79	\$17.80	\$13.29	\$65.76
19.23	52	12.66	4.13	3.67	51.21

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Unreimbursed Highway Relocations

Program Description and Purpose

Unreimbursed customer requested relocations of PPL Electric distribution facilities in support of highway and bridge projects throughout service territory.

Identification/Justification Process

The customers (project sponsors) include PennDOT, the PA Turnpike Commission, and various counties and municipalities. PPL Electric and the project sponsor execute a reimbursement agreement, and PPL Electric is reimbursed for its work based on the “pole count method,” as defined in PennDOT’s DM-5 manual. Historically, reimbursement for distribution projects is approximately 35%.

To accommodate highway relocations and other municipal projects, approximately 70-120 projects per year are placed in service. PPL Electric typically is notified of distribution relocation work 12 months or less before the start of requested utility relocation activities.

Scope & Locations

Scope and locations are determined as requests are received.

Planned Expenditures (in millions)

PPL Electric’s expenditures to complete highway relocation projects are the net of total expenditures minus the project sponsor’s reimbursements.

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$6.168.87	\$4.9050	\$34.92	\$2.834.07	\$2.833.71	\$20.6426.08

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Protection and Control

Program Description and Purpose

Proactive replacement of protection and control equipment to maintain reliable distribution service to customers. Replacement of legacy relays with modern microprocessor relays will also improve fault monitoring and diagnosis processes and will provide added insight into circuit breaker health and risk. Replacement of obsolete Supervisory Control and Data Acquisition ("SCADA") protocols and equipment will also enable relays to perform properly.

Identification/Justification Process

Candidates for replacement are identified based on obsolescence, availability of vendor support, age, and automation enhancement potential. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
2-6	59-89 79-101	72-108 104-114	67-100 121-139	67-100 94-118	267-403 400-478

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Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	54-81 50-61
Northeast	42-64 75-87
Central	32-49 56-73
Susquehanna	34-51 41-49
Harrisburg	51-77 84-100
Lancaster	54-81 94-108

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total

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\$4,703.34	\$6,0621.73	\$7,3513.47	\$6,8314.82	\$6,8317.63	\$31,7770.99
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Predictive Failure Technology

Program Description and Purpose

The purpose of the predictive failure technology is to anticipate and proactively address potential equipment failures before they occur. This is achieved by installing new line monitoring sensors on the distribution voltage levels while leveraging new company processes/procedures, advanced analytics, machine learning, and real-time data capturing. The new line monitoring sensors can detect fault disturbances along the feeder, thereby identifying aging or damaged equipment before they fail, reducing reactive replacements of failed equipment, improving reliability for customers, reducing maintenance costs associated with necessary repairs, reducing hazards to the public and employees, and providing data insights into failure trends that can support more strategic and prudent investments across the distribution system.

Identification/Justification Process

Rollout of this program began on select circuits across the system to validate the effectiveness of the technology in 2023. Following the successes of the initial rollout, PPL plans to deploy this technology across its service territory. By the end of 2025, all distribution feeders on the three-phase system will have these sensors, with a goal of coverage in excess of 90%. Additionally, PPL has scoped coverage for select radial taps based on customer count, accessibility, and length or tap. On average, every distribution circuit will have between 3-7 radial taps installed with the sensors.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
0	3800-4400	4100-4500	0	0	7900-8900

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	1090-1240
Northeast	1420-1620
Central	1440-1640
Susquehanna	1410-1610
Harrisburg	1260-1460
Lancaster	1280-1330

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0	\$46.13	\$38.32	\$0	\$0	\$84.44

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Appendix A: Average Age of Major Units of Property

The below chart is a summary of key distribution assets, targeted for planned replacement and proactive installation.

Average Age of Major Units of Distribution Property		
Utility Account	Description	Avg Asset Age
362.0 - Station Equipment	DC Sytem Equipment	18
362.0 - Station Equipment	Substation Animal Guards	10
362.0 - Station Equipment	Power Circuit Breakers	33
362.0 - Station Equipment	Power Transformers	42
362.0 - Station Equipment	Protection and Control Equipment	51
364.4 - Poles and Fixtures	Distribution Wood Poles	43
365.0 - Overhead Conductors, Device	Distribution Animal Guards	7
365.0 - Overhead Conductors, Device	OH Primary Conductor	50
365.0 - Overhead Conductors, Device	Air Break Switches	13
365.0 - Overhead Conductors, Device	Automatic Switches (Primarily OCRs/VCRs)	10
365.0 - Overhead Conductors, Device	Disconnect Switches	35
367 - Underground Conductors	UG Primary Conductor (includes Getaways and Cross Yard Ties)	27
366.0 - Underground Conduit	Equipment Foundation, Man Holes, Transformer Vaults (excl Conduit)	27
368.4 - Submersible or Padmt Type	UG Transformers (include LTN Transformers and Network Protectors)	25

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Appendix B: Asset Contribution to Reliability Metrics

The below table provides a summary of customers interrupted ("CI") and Customer Minutes Interrupted ("CMI") by failed component. Note that both transmission and distribution substation outages are included in the Substation component asset type.

Outage Contribution By Component - Equipment Failure Causes - Non Major Events										
Component Asset Type	2017		2018		2019		2020		2021	
	CI	CMI	CI	CMI	CI	CMI	CI	CMI	CI	CMI
Distribution OH-Capacitor Bank	3,424	108,863	473	94,627	1,216	104,022	490	12,697	1,020	50,662
Distribution OH-Lightning Arrester	6,301	566,653	8,154	731,871	6,200	712,771	2,702	290,321	2,151	293,442
Distribution OH-Other Equipment(explain)	3,030	289,973	4,840	465,772	5,175	804,502	6,109	451,306	3,456	313,318
Distribution OH-Pole/Arms Attachments	52,713	6,524,470	48,513	4,700,495	41,599	4,070,548	35,347	3,959,531	43,737	5,505,965
Distribution OH-PRI Splices and Connectors	7,454	989,200	13,398	1,040,441	24,195	1,685,455	15,181	980,526	15,620	1,443,678
Distribution OH-Primary/Neutral	85,443	9,923,218	122,999	15,577,602	110,511	12,776,083	116,882	14,222,141	103,375	13,167,440
Distribution OH-SEC Splices and Connectors	1,813	134,821	1,497	145,830	1,392	102,066	1,710	151,429	1,690	208,053
Distribution OH-Secondaries/Services	2,610	274,850	3,592	371,244	3,735	486,804	3,283	370,513	3,369	379,299
Distribution OH-Switch/Automatic	20,631	1,619,275	24,333	2,167,680	20,436	1,663,225	15,214	1,330,628	25,270	2,014,136
Distribution OH-Switch/Manual/AB/Disc/OS/LBD	13,402	1,170,281	12,348	1,128,002	5,081	505,950	6,291	401,764	5,692	297,479
Distribution OH-Tap Fuse/Cutout	6,951	749,227	11,402	1,229,204	8,284	1,133,814	7,764	841,505	7,116	925,719
Distribution OH-Transformer	5,671	968,793	8,079	1,220,182	9,353	1,197,199	7,292	1,225,848	8,189	1,171,421
Distribution OH-Transformer Fuse/Cutout	16,744	1,778,312	25,048	2,830,029	19,132	2,096,787	20,863	2,208,699	18,545	2,025,416
Distribution UG-Elbows	84	31,649	313	58,893	199	49,054	480	274,811	937	212,896
Distribution UG-Lightning Arrester	61	14,383	97	14,711	98	23,831	120	21,331	76	12,064
Distribution UG-Load Break Junctions	183	36,227	9	1,069	31	9,845	73	16,468	164	58,516
Distribution UG-Low Tension Network							5	315		
Distribution UG-Other Equipment(explain)	17	2,086	819	95,603	154	32,535	1,444	155,257	7	795
Distribution UG-Pads/Vaults/MHs & Splice Boxes	83	18,854	44	7,021	91	19,727	102	18,971	801	150,036
Distribution UG-PRI Splices and Connectors	151	28,502	82	16,355	1,666	136,146	343	38,591	791	53,784
Distribution UG-Primary Cable/Neutral	13,539	2,118,561	21,525	2,962,012	18,980	2,779,215	15,006	2,304,340	12,565	2,377,282
Distribution UG-Riser Pole Equip & Devices	749	88,313	551	70,197	1,404	115,247	306	41,973	948	131,556
Distribution UG-SEC Splices and Connectors	40	1,200	22	2,575	40	2,814	2	324	33	1,193
Distribution UG-Secondaries/Services	292	47,087	393	85,353	260	44,414	310	50,241	377	80,910
Distribution UG-Switchgear	1,021	146,580	1,589	334,778	2,651	309,998	441	87,554	712	142,733
Distribution UG-Transformer/Transformer Fuse	1,455	254,990	2,735	578,648	1,326	358,322	1,041	232,250	2,915	336,981
Substation SUB-Circuit Breaker	10,859	1,162,641	6,129	217,364	5,658	605,760	28,289	1,766,321	9,349	202,774
Substation SUB-Control/Relay	1,950	143,054			26,241	464,478			730	9,127
Substation SUB-Insulator	84	4,990			5	3,312			3,539	31,055
Substation SUB-Lightning Arrester					583	99,422				
Substation SUB-Other Equipment(Explain)							35,104	366,321	499	14,436
Substation SUB-Power Fuse							2,823	26,593	67	355
Substation SUB-Switch/Automatic			1,340	14,843						
Substation SUB-Switch/Manual/AB/Disc/LBD	654	54,045	3,353	82,506	1	1,014	22,157	486,661	4	1,982
Substation SUB-Transformer	13	2,320	1,449	11,606	5,980	72,007	7,719	118,942		
Total	257,422	29,253,418	325,126	36,256,511	321,677	32,466,367	354,893	32,454,169	273,744	31,614,503

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Appendix B

Clean Version of the Revised LTIIP

PPL Electric Utilities Corporation

Long-Term Infrastructure Improvement Plan

PPL Electric Utilities Corporation

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PPL Electric Utilities Corporation

Introduction

PPL Electric Utilities Corporation (“PPL Electric” or “Company”) is submitting this Long Term Infrastructure Improvement Plan (“LTIIIP”) pursuant to the requirements of Subchapter B, Distribution Systems, of the Public Utility Code, 66 Pa.C.S. §§ 1350-1360, the Public Utility Commission’s (“PUC”) Implementation Order for Establishment of a Distribution System Improvement Charge, entered on August 2, 2012 at Docket No. M-2012-2293611 and the Commission’s regulations at 52 Pa. Code §§ 121.1 et seq. This LTIIIP addresses a broad spectrum of Distribution Asset Management initiatives that the Company will use to continue its repair, improvement and replacement of aging infrastructure under this process, and is for the five-year period beginning January 1, 2023, and ending December 31, 2027.

PPL Electric strives to operate as efficiently as possible by performing the work required to maintain system integrity and reliability. Performance indicators such as System Average Interruption Frequency Index (“SAIFI”), Customer Average Interruption Duration Index (“CAIDI”) and System Average Interruption Duration Index (“SAIDI”) show that PPL Electric has been successful in its efforts. However, a generally flat to mildly decreasing trend in equipment failures, combined with an aging infrastructure, indicate that PPL Electric needs to continue to invest in its distribution system. As equipment failures remain flat to mildly decreasing, PPL Electric has been experiencing a significant increase in maintenance spending beyond normal inflationary pressures. The driver is a combination of both increased corrective and planned maintenance. PPL Electric has initiated and enhanced maintenance practices and programs to repair, improve, or replace certain distribution facilities in order to ensure adequate, efficient, safe and reliable service.

Addressing aging infrastructure will require ongoing investment. Such investment includes not only replacing aging equipment, but also investment in advanced equipment and communication technologies that can facilitate further system reliability improvements. If continued proactive re-investment does not occur, it is expected that system reliability will degrade, while the overall cost to maintain the distribution system will continue to rise. By investing in its distribution system, PPL Electric will ensure that its system continues to be safe, reliable, and able to meet the growing needs and expectations of its customers.

PPL Electric believes that managing finite resources to produce optimal results is essential for maintaining customer satisfaction. Criteria for program inclusion into the Long-Term Infrastructure Improvement Plan is not whether any single activity produces a positive reliability result, but rather, which portfolio of activities produces the best result for a given expenditure. PPL Electric’s goal is focused on results (i.e., the reliability experienced by customers and associated rate impacts), not the rote execution of particular tasks.

Reliability Experience

The Distribution Asset Planning process employed by PPL Electric has been focused on maintaining reliability at the level that existed prior to passage of the Electricity Generation Customer Choice and Competition Act (“Customer Choice Act”). Since the 1994-1998 benchmark period, which defines PPL Electric’s reliability performance targets, PPL Electric’s service reliability has experienced annual swings, positive and negative, resulting largely from varying weather conditions. Historical benchmark performance is illustrated in Figures 1 and 2.

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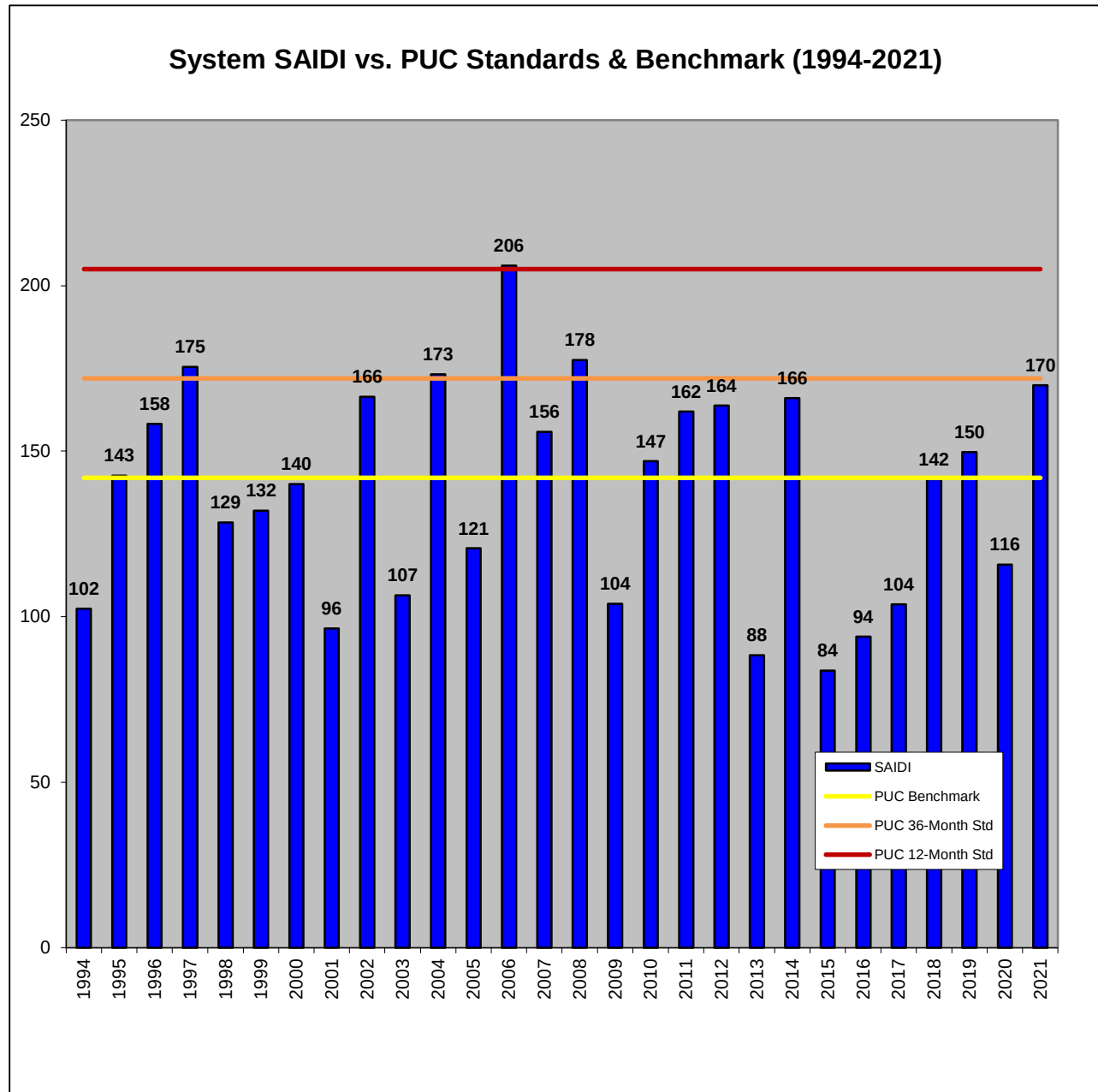


Figure 1: PPL Electric's SAIDI Performance

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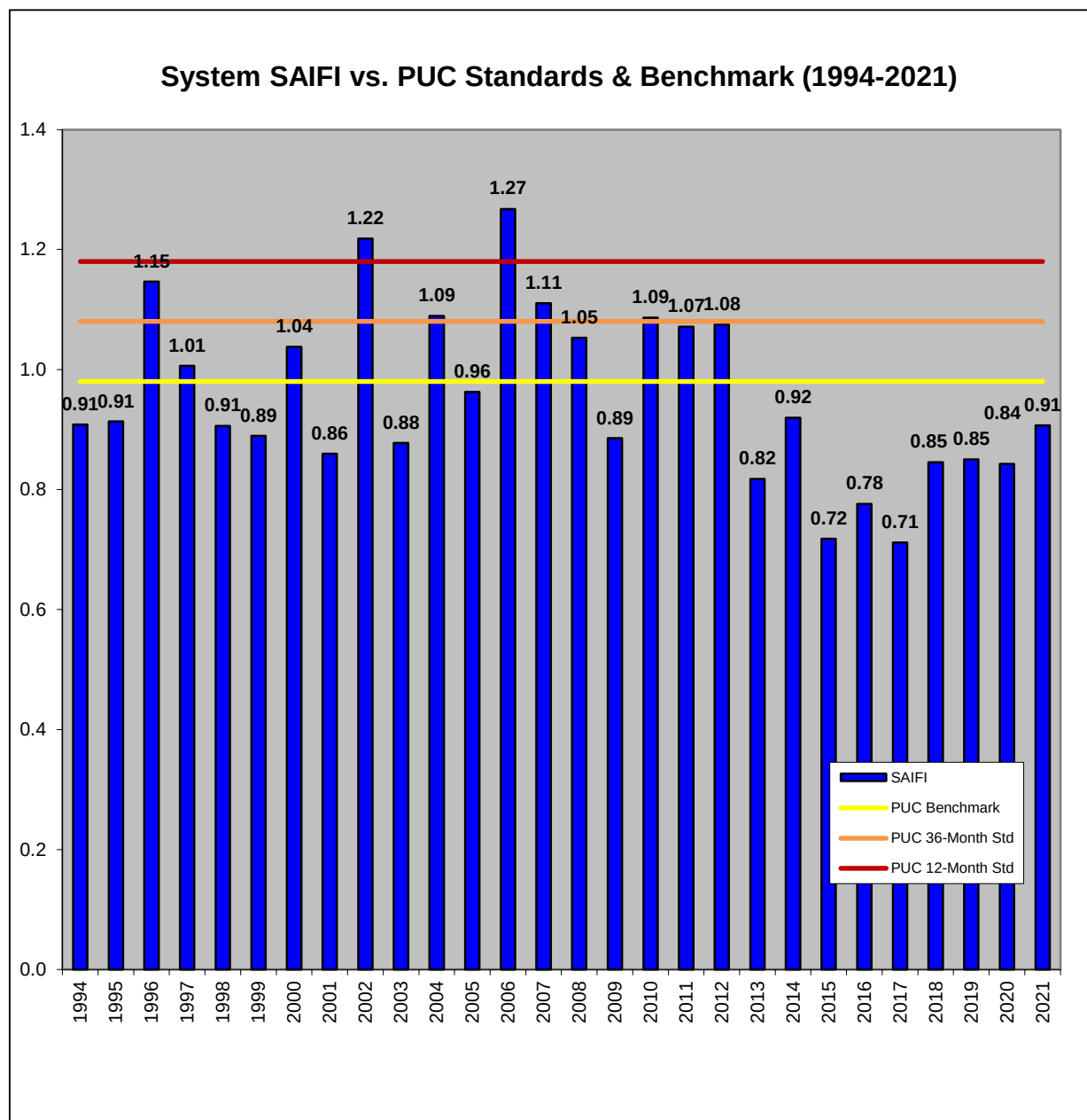


Figure 2: PPL Electric's SAIFI Performance

A significant risk to PPL Electric's ability to meet reliability benchmarks is the large portion of distribution facilities, many of which were installed in the 1960's and 1970's, that are now beyond or nearing the end of their design lifetime. See Appendix A for average age of major units of property. The resultant effect on non-storm-related equipment failures is illustrated by the chart in Figure 3 below.

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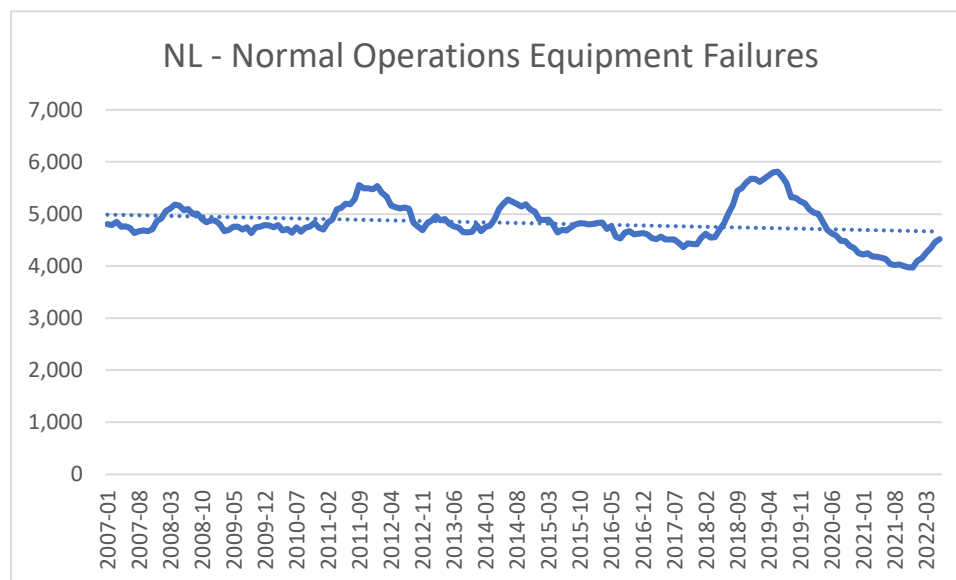


Figure 3: Equipment Failure Service Interruption Cases

The number of no-light cases due to equipment failures is trending slightly downward due to investments over the past five to ten years. The need to remediate that equipment which is at or near end-of-life remains to maintain or improve this favorable trajectory. Components contributing the most significantly to distribution equipment failures include poles/arms/attachments, overhead and underground conductors, switches, and substation equipment. See Appendix B for further details on asset contribution to reliability metrics.

Response to Aging Equipment

PPL Electric's reliability investment process is forward-looking and proactive. It consists of the following:

- Analyze and identify the drivers of historical trends of causes of service outages and other power service problems.
- Forecast future reliability metrics (SAIDI, SAIFI, and CAIDI) given existing mitigation programs' effect on the identified drivers.
- Identify new programs, policies, and activities to enhance or accelerate existing mitigation programs to avoid forecasted gaps between future reliability and benchmark targets.
- Identify, evaluate, and implement new technologies that enhance the Company's condition monitoring strategy.
- Evaluate and adjust existing programs, policies, and activities to produce the desired future results.
- Perform targeted data analytics against the Company's aging infrastructure utilizing real-time, or near real-time, operational data to further improve reliability performance.

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- Incorporate the resulting portfolio of existing and new programs, policies, and activities in PPL Electric's five-year business plan.

In February 2018, PPL Electric's Reliability Principles and Practices ("P&P") were revised to help reduce the overall impact to the Company's customers from outages due to various causes, including but not limited to, equipment failures. The P&P sets forth a set of Principles that PPL Electric follows to plan, protect, and operate the Electrical Distribution System ("EDS"). These Principles are implemented through a set of standard Practices that are used as guidelines in designing the EDS. These Practices are reasonable, acceptable, and consistent with leading utility practices. More specifically, to reduce the number of customers experiencing permanent outages and outage duration over the long term, the following circuit design guidelines are used wherever practical, starting with those identified as Worst Performing Circuits ("WPCs"):

- Provide three-phase line ties that will support the transfer of all but approximately 500-750 customers for 100% of the year.
- Provide sectionalizing devices to limit customer count to no more than approximately 500-750 customers between devices.
- Limit customer count to less than approximately 1,500 customers per circuit.
- Limit line length to approximately 70 circuit miles

Prioritization utilizing these design criteria is based on the greatest expected improvement in reliability for the entire system.

Several other mitigation initiatives have been undertaken to reduce the forecasted short-term equipment failure growth rate.

- **Enhanced Pole Inspection/Treatment Program:** Beginning in 2021, the Company's wood pole inspection and treatment program was enhanced from a subjective inspection process to an objective, resistance drill-based methodology. The resistance drill inspection allows a complete pole health assessment, with both interior and exterior decay accurately measured. This holistic strength assessment of the pole is the most accurate and thorough pole inspection possible. As an integral part of the twelve-year pole inspection process, PPL Electric observes, notes, and reports at-risk conditions of all pole attachments, specifically crossarms, braces, conductors, transformers, fuse cutouts, lightning arresters, reclosers, regulators, capacitors, switches, wildlife protection, vegetation encroachment, guys, anchors, ground wires, and ground rods.
- **Increased Utilization of Infrared Inspections:** PPL Electric conducted a trial of infrared inspections of multi-phase lines in 2006. The trial inspections cost \$122,500 and identified repairs costing \$100,000, saving an estimated 1,460,000-2,600,000 Customer Minutes Interrupted ("CMI"). Funding of infrared inspections and repairs was increased significantly during 2010 and has remained at a higher funding level. Infrared inspections occur on all 3-phase and 2-phase overhead lines adjacent to roadways every two years.
- **Proactive Circuit Analysis ("PCA"):** PCAs are performed on each circuit on a four-year cycle. The review analyzes and addresses both operational and reliability characteristics of each circuit. Voltage support, phase balancing, protection coordination, power factor maintenance and loading issues are

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addressed from an operational perspective. Service outage analysis, exposure analysis, and field checks address reliability and power quality.

- **Distribution Automation Strategy:** In 2010, PPL Electric launched a “smart grid” pilot project that enables the Company to react rapidly to changes on the delivery system, and to automatically re-route power around problems that occur. The project initially focused on the Harrisburg, Pa. area, but has since been expanded to cover all of the Company’s service territory. The project included the implementation of an advanced Distribution Management Systems (“DMS”), which was a breakthrough technology that enables the Company’s operators to see the status of PPL Electric’s distribution network in real-time. In 2016, PPL Electric completed a system wide rollout of Fault Isolation and Service Restoration (“FISR”) technology. FISR identifies faulted sections and quickly develops an optimized restoration plan, then automatically executes that plan. Customers typically can be restored within five minutes from the start of the outage. This milestone is an industry first and has saved over one million customer interruptions to date. Over 8,600 automated smart devices have been installed, which has allowed for remote operation and monitoring of circuit sectionalizing equipment.

Although these programs have successfully slowed failure growth rates in the short-term, PPL Electric faces a long-term issue regarding aging infrastructure. The surge in electrical construction in the 1960’s and 1970’s has resulted in a large number of assets that have reached or are nearing the end of their useful lifetime. Consequently, in 2008-2009, PPL Electric conducted a major condition assessment and maintenance study of its distribution system. The result was the implementation of the Asset Optimization Strategy (“AOS”). The study found that programmatic and accelerated replacement of infrastructure would be the most cost-effective strategy to address aging infrastructure and ensure system reliability and integrity.

Asset Optimization Strategy

The purpose of the AOS study was to develop a strategy for accelerated capital replacement improvements that would combat the anticipated effects of aging infrastructure and bolster PPL Electric’s ability to effectively maintain reliable electric service. With the Company entering a period where a significant number of assets are expected to reach the end of life, a plan was developed to intelligently replace assets prior to an unplanned failure that impacts customers. The plan includes replacements in kind, as well as upgrades to current standards.

Examples of AOS Projects include proactive replacement of substation equipment, Low Tension Network (“LTN”) equipment, and vintage underground cable based on condition-based health analysis.

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Accelerated Investment

As a result of the AOS study, PPL Electric approximately doubled its level of investment in DSIC-eligible property from 2009-2012. During this period, non-storm equipment failures fluctuated but continued to show a slight upward trend. PPL Electric continued to accelerate capital investments during the periods 2013-2017 and 2018-2022 to address an upward trend in equipment failures that peaked in 2018-2019 (see figure 3 above).

Period	Avg Annual Capital investment (in millions)
2008-2012	\$88
2013-2017	\$137
2018-2022	\$180

Figure 4: Approximate average annual capital investment in millions. Not adjusted for inflation.

As a result of these investments, PPL Electric arrested the increase in failed equipment and the current trend is flat to mildly decreasing. Even with these investments, the average age of equipment increased slightly since the 2018-2022 plan. While projected spending under this proposed LTIIP is lower than the 2018-2022 period, continued capital investment is necessary to maintain or improve the recently flattened trend in equipment failure.

Implementation of Long-Term Infrastructure Improvement Plan

The Long-Term Infrastructure Improvement Plan, in addition to various other prudent capital investments, helps to ensure the safety and reliability of the distribution system. The investments since the LTIIP was initially put into place have arrested and reversed the growth trend in equipment failures. Equipment failure trends and asset-specific contributions to system-level reliability metrics are analyzed on an ongoing basis to ensure funding is invested appropriately.

PPL Electric routinely reviews the effectiveness of programs to ensure cost-effective investment. Program/project impact on SAIDI and SAIFI, in addition to potential reductions in outage response costs, is compared to the overall program/project costs. PPL Electric utilizes a project prioritization process that defines the cost-effectiveness of programs/projects to ensure effective optimization of reliability investments. PPL Electric currently is improving the use of ongoing asset health indices to further refine asset replacement criteria.

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Ongoing review of the effectiveness of investments to address equipment failure trends will likely result in adjustments to the strategy over time. Future Long Term Infrastructure Improvement Plans will reflect such adjustments. Additionally, work plans may fluctuate throughout a given year due to the need to reallocate resources in response to changing business needs. Some examples include shifting resources for storm response activities, project construction delays caused by a backlog of material deliveries, and the redirection of investment to cure costly equipment failures. In addition, during the project engineering phase, issues such as right-of-way requirements and environmental considerations can result in scope changes that also can delay actual construction. During construction of larger projects, additional scope needs can be identified, creating the need to defer other projects. Finally, reliability metric performance can result in redirection of spending to help ensure the ability to meet targets.

Projected expenditures for the replacement of failed equipment are based on a review of historical trends while considering current failure rates and proactive mitigating measures. For such programs, it is difficult to project the specific scope and location. Therefore, PPL Electric has provided only planned expenditures based on historical trending information.

Utility Outreach

PPL Electric continues to remain engaged, seeking out opportunities with other utilities and government officials on the planning and execution of future construction projects. A forum exists with the Utility Highway Liaison Committee (“UHLC”), with whom PennDOT, the Turnpike Commission, other utilities, and the Energy Association of Pennsylvania meet quarterly to discuss policy issues, present and future projects, and relocation projects. The Company is a regular participant. Initiatives at these forums are focused primarily on improving state and utility interactions.

PPL Electric also participates in various Pennsylvania Coordinating Committees, including the Northeast PA (“NEPA”) Regional partnership, the Lancaster County Regional Partnership, the Lehigh Valley Regional Partnership, and the Lycoming County Area Coordinating Committee. These meetings are held monthly, bi-monthly, or quarterly to discuss and share project plans with stakeholders including utility companies, PennDOT, public works officials and planning commission members. PPL Electric currently hosts two of these meetings each calendar year.

Utilization of a Qualified Work Force

PPL Electric Workforce

As a measure to ensure the use of a qualified workforce, PPL Electric has adopted the definition of a Qualified Electrical Worker from the Occupational Safety and Health Administration (“OSHA”) Regulation 29 CFR § 1910.269 Electrical Power Generation, Transmission and Distribution, which is defined in the PPL Electric Safety Rule Book and is provided to each employee. It is also incorporated into the training and qualification process for all electrical workers.

PPL Electric administers a rigorous, formal training and evaluation process for all qualified electrical workers. Training is required before an employee may perform work independently on exposed, energized electrical equipment greater than 50 volts. Training requirements and programs are unique to the job classification and work being performed. Curriculum documents, outlining subject areas and training durations by job classification have been developed. Training may require up to 5 years to complete and incremental qualifications, following

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assessment, are identified throughout the duration of the training program. Retraining is conducted on a periodic basis as required by OSHA or more frequently when determined necessary.

PPL Electric's formal training programs are administered by the Technical Development & Improvement ("TD&I") group. The training section of the TD&I group is comprised of approximately 37 full time employees, both training professionals and craft employees. Experienced training professionals lead the design and development of the training programs with input from subject matter expertise provided by craft employees from the field. Training program (curriculum) content is approved by a curriculum committee which is comprised of business line managers. The basic job requirement for an instructor includes 5-years of experience performing the work and attainment of Journeyman level (or equivalent) qualifications. Craft instructors are then trained and mentored. Training delivery is governed by PPL Electric policies and procedures to ensure quality and consistency.

Training is delivered in phases. A phase typically consists of a grouping of training modules into one training period of several days to several weeks. Training consists of both classroom and field work to gain hands-on practical learning experience. Trainees are evaluated throughout the program. Evaluation includes written examination and/or a performance examination. Employees must successfully complete each training module before progressing to the next phase of training.

In addition, trainees in key programs must complete an additional skills assessment prior to advancement to the next step. These assessments are coordinated by the TD&I group. The employees are evaluated (graded) by a panel comprised of knowledgeable field supervisors and experienced bargaining unit craft members. This independent evaluation serves as a quality control check on the TD&I training section.

Over the next 5 years, PPL Electric will be executing a resource strategy which includes formal training classes to hire and train new employees in preparation for upcoming attrition.

Contractor Workforce

PPL Electric's Sourcing department administers a standard process for soliciting contractors to perform work identified to be completed by independent contractors. The process includes issuance of a Request for Proposal ("RFP") to various contractors. That process includes a meeting to review the technical and administrative components of the work and normally a walk-down of the project area. Responses to the RFP are evaluated based on detailed financial and technical schedules that compare respondents' capabilities. Part of the RFP evaluation process includes evaluating the qualification of contractors to perform work (both technical and financial capabilities to meet the contractual commitments, and level of qualification of employees) and may include reference checks if appropriate. Any specific required qualifications of contractors would typically be outlined in the RFP and/or contract (for example: pole installation, permit and tag authorities, line construction by specific voltage, live line work, foundations, directional bore/trenching, underground networks).

Most independent contractors employ personnel through the building trades, which includes Union apprenticeship programs to help ensure that employees are qualified to perform assigned work. (This approach is comparable to PPL Electric's Union labor qualification training program.) Employee qualification programs for non-Union independent contractors are stringently reviewed to assess the contractor's training program, such as on-the-job training and certification programs.

Prior to award, contractors are screened for their safety performance and, if applicable, environmental record. Contractors that do not have an acceptable record receive no further consideration. In the event that a contractor

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working for PPL Electric incurs safety incidents and/or does not take appropriate safety measures, the contractor is terminated and prohibited from performing work for PPL Electric in the future.

PPL Electric has instituted a contractor orientation program that provides new contractors an opportunity to understand company expectations for performing work safely, mindful of public and private landowner considerations and administrative concerns (such as billing). PPL Electric also performs weekly safety and workmanship review meetings with the Company's contractor work force to review safety issues and other relevant topics

PPL Electric sponsors a training program that allows the contractors' employees to become qualified in PPL Electric's permit-and-tag system. Contractor employees who successfully complete the training program can be permit holders on PPL Electric's system.

PPL Electric monitors the contractors' performance through several activities that may include direct job oversight through on-site supervision, monthly scorecards that evaluate such areas as job quality, safety performance, cost, and validating billing activities that meet contractual expectations. If safety concerns are identified at a job site, any person has the ability and express duty to cease work until the concerns have been appropriately addressed, and a safety review team could be assembled to formally request a contractor to respond to safety concern. Safety violations could result in immediate contractor termination.

PPL Electric's Project Construction Supervisors continuously monitor the quality of all contractor work and adherence to PPL Electric's Construction Standards. Where the contractor installs specialized equipment on critical facilities, special Quality Assurance review are performed which may include inspection of grounding, trench, foundations, final grade, structural components, poles/towers, conduits, electrical equipment, primary conductor, wiring, designations, and final completion of the Acceptance of Facilities form). Any failures are described along with description and dates of corrections to resolve the areas of concern before final acceptance of the contractor's quality of work.

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Summary

As a result of the economic expansion and building boom of the 1960's and 1970's, much of PPL Electric's distribution system was constructed 50 or more years ago. As this equipment deteriorates due to age, environmental exposure, and added load, it becomes increasingly critical to plan for the repair, upgrade, and/or replacement of these assets through the initiatives described above. In the absence of these initiatives, the efficiency, safety, and reliability of the electric distribution system is expected to be increasingly compromised. PPL Electric believes that the expenditures for these initiatives constitute a prudent and reasonable investment for managing its distribution assets and that each of the listed programs will successfully achieve one or more of the following benefits:

- Maintaining public and employee safety
- Reducing service outage durations and number of customers affected
- Reducing service outage restoration times
- Reducing service outage locating and repair times
- Controlling service outage repair costs
- Limiting failure-related damages and related costs, and
- Improving/maintaining power quality (voltage, flicker, etc.)

To achieve these results, PPL Electric anticipates the need for the following total capital expenditures over the 2023-2027 period. Note that planned expenditures for certain initiatives can fluctuate yearly due to the various factors identified previously.

	Millions of dollars invested					Total
	2023	2024	2025	2026	2027	
Poles	\$ 11.40	\$ 19.70	\$ 17.11	\$ 19.32	\$ 17.74	\$ 85.27
New Electronic Reclosers	\$ 1.03	\$ 10.10	\$ 7.55	\$ 7.28	\$ 7.00	\$ 32.96
Distribution Animal Guarding	\$ 0.20	\$ 0.34	\$ 0.32	\$ 0.31	\$ 0.32	\$ 1.49
Failed Equipment	\$ 42.85	\$ 42.44	\$ 34.12	\$ 34.68	\$ 35.69	\$ 189.78
Underground Cable Replacement	\$ 0.52	\$ 4.36	\$ 1.98	\$ 1.50	\$ 2.03	\$ 10.39
Low Tension Network Primary Cable, Equipment and Structures	\$ 0.54	\$ 3.76	\$ 4.56	\$ 4.25	\$ 4.45	\$ 17.56
Substation	\$ 11.25	\$ 26.94	\$ 28.12	\$ 30.24	\$ 27.80	\$ 124.35
LTN Upgrades	\$ 6.87	\$ 10.55	\$ 11.56	\$ 13.94	\$ -	\$ 42.93
Reliability	\$ 9.19	\$ 32.97	\$ 7.13	\$ 5.84	\$ 6.91	\$ 62.04
System Reliability Improvement Projects	\$ 19.23	\$ 11.52	\$ 12.66	\$ 4.13	\$ 3.67	\$ 51.21
Unreimbursed Highway Relocations	\$ 8.87	\$ 4.50	\$ 4.92	\$ 4.07	\$ 3.71	\$ 26.08
Protection and Control	\$ 3.34	\$ 21.73	\$ 13.47	\$ 14.82	\$ 17.63	\$ 70.99
Predictive Failure Technology	\$ -	\$ 46.13	\$ 38.32	\$ -	\$ -	\$ 84.44
Total	\$ 115.29	\$ 235.04	\$ 181.82	\$ 140.39	\$ 126.94	\$ 799.48

Almost all of the aforementioned initiatives take advantage of new technologies that did not exist when the associated assets were originally placed into service, and many of these technologies are very recent innovations. These technologies are expected not only to restore the assets to their original level of performance, but, in many cases, provide performance well beyond what previously was achievable in order to ensure and maintain adequate, efficient, safe, and reliable service.

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Some of the initiatives, such as animal guarding, clearly have implied endpoints, where no further opportunities for improvement remain. Others, such as distribution automation, eventually experience diminishing returns over time. Other initiatives, such as pole reinforcement and replacement, will be ongoing. Finally, some programs may become obsolete, while new programs may become desirable as a result of the evolution of new technologies. Because of these and other variables, the effectiveness of these programs is reviewed annually, and programs are added, deleted, and/or modified, as necessary, to ensure that the expenditures are providing the desired benefits to customers at a reasonable cost.

Distribution Assets

The following pages detail 5-years projections for Long-Term Infrastructure Improvements initiatives that apply to distribution line assets. These assets include, but are not limited to, the following:

- Structures
 - o Poles
 - o Crossarms
 - o Vaults
 - o Manholes
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - o Air Break Switches
 - o Disconnect Switches
 - o Switching Cabinets
- Protective Devices
 - o Fuses
 - o Reclosers
 - o Network Protectors
 - o Lightning Arresters
- Transformers
 - o Overhead
 - o Pad-Mounted
 - o Submersible
 - o Low Tension Network

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Poles

This category includes the replacement and reinforcement of wood poles to maintain reliability, ensure public safety, and further storm harden the system.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$11.40	\$19.70	\$17.11	\$19.32	\$17.74	\$85.27

Distribution Pole Replacements

Program Description and Purpose

Replacement of distribution wood poles identified as non-restorable (cannot be reinforced) during the annual inspect and treat program or during a spot inspection in an effort to improve public and employee safety, as well as service reliability. This program contributes to storm hardening efforts and aims to improve public and employee safety, as well as service reliability, by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement while 30% are candidates for replacement. Replacing rejected poles avoids property damage and risk of accidental injury, and it mitigates the costs associated with extended service outages. Replacement rates are expected to fall as a result of PPL Electric's pole treatment program. The average age of an in-service wooden distribution pole is 43 years.

Scope

The scope of the program is a direct correlation to the number of wood pole inspections.

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
2000-2500	2000-2500	2000-2500	2000-2500	2000-2500	10000-12500

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Locations

Specific locations are a direct correlation to the wood pole inspection plan. Inspection locations are identified yearly primarily as a function of previous inspection dates, as well as ensuring cost-effectiveness of the program and minimizing inspection crew movements.

Pole Reinforcements

Program Description and Purpose

Reinforcement of deteriorated distribution wood poles in order to restore the pole's original strength, ensure public safety, and maintain reliable electric service through the reduction of potential pole failures. This program contributes to storm hardening efforts by reducing potential pole failures.

Identification/Justification Process

PPL Electric inspects approximately 75,000 poles per year. Historical data suggests an approximate 8% rejection rate from the population of yearly inspections. Of those poles rejected, 70% are candidates for reinforcement. When applicable, this method achieves a significant savings over pole replacement.

Scope

Planned Reinforcements in Units					
2023	2024	2025	2026	2027	Total Scope
4000-5000	4000-5000	4000-5000	4000-5000	4000-5000	20000-25000

Locations

Locations identified for reinforcement are a direct correlation to the number of wood pole inspections.

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New Electronic Reclosers

Program Description and Purpose

Proactive installation of new electronic reclosers on both single-phase and three-phase lines, to improve reliability performance by increasing circuit sectionalizing ability. Reclosers minimize the number of customers affected by a sustained outage.

Identification/Justification Process

Locations are requested by regional reliability engineers and prioritized annually based on anticipated reliability savings.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
130-160	120-250	120-200	120-200	120-200	610-1010

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	100-164
Northeast	100-164
Central	100-168
Susquehanna	100-168
Harrisburg	110-180
Lancaster	100-166

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$1.03	\$10.10	\$7.55	\$7.28	\$7.00	\$32.96

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Distribution Animal Guarding

Program Description and Purpose

Proactive installation of animal guards on existing distribution overhead transformers and air break switches to improve circuit reliability. Animal guards help prevent animal-related contacts which cause service interruptions.

Identification/Justification Process

Transformers are identified both by opportunistic installation of guarding during other non-related work, and by on-the-spot or follow-up orders after responding to animal-caused outages.

Scope

Planned Animal Guards					
2023	2024	2025	2026	2027	Total Scope
240-360	240-360	240-360	240-360	240-360	1200-1800

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	200-300
Northeast	200-300
Central	200-300
Susquehanna	200-300
Harrisburg	200-300
Lancaster	200-300

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.20	\$0.34	\$0.32	\$0.31	\$0.32	\$1.49

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Failed Equipment

This category includes the replacement of failed or deteriorated distribution equipment, LTN equipment, underground cable, and underground getaways.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$42.85	\$42.44	\$34.12	\$34.68	\$35.69	\$189.78

Distribution Failed Equipment

Program Description and Purpose

Replacement or repair of failed or deteriorated capital units of distribution equipment, excluding underground cable, in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via inspections, both planned and ad-hoc, as well as actual outages and power service problems. Budget allocations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures. Examples include, but are not limited to, failed reclosers, poles, capacitor banks, and air breaks.

Scope & Locations

Scope and locations are determined as equipment fails.

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Replace Failed Underground Cable

Program Description and Purpose

Replacement of failed underground residential primary and secondary cables in order to maintain adequate service reliability.

Identification/Justification Process

Candidates are identified via actual failures. Budget recommendations are based on historical trends of hours charged to corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as cable fails.

Replace Failed 12 kV Underground Getaway Cables

Program Description and Purpose

Replacement of failed 12 kV underground getaway cables to maintain adequate service reliability. Getaway failures can result in long duration outages. Getaway cables connect substations to outgoing feeders beyond the substation perimeter.

Identification/Justification Process

Candidates are identified via actual failures and cables with poor test results. Budget recommendations are based on historical trends in getaway failure quantities and costs, in addition to projected trends of future getaway failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as getaway cables fail while in service or fail conditionally under testing.

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Replace Deteriorated/Failed Low Tension Network Equipment and Structures

Program Description and Purpose

Replacement or repair of deteriorated and failed equipment related to Low-Tension Networks, including network transformers, network protectors, manholes, and vault tops in order to maintain adequate service reliability. Low-Tension Networks are low voltage underground distribution facilities found in urban areas.

Identification/Justification Process

Candidates are identified via actual failures, inspections, testing, or work on the system. Budget recommendations are based on historical trends of corrective work, in addition to projected trends of future equipment failures.

Scope & Locations

Scope and locations are determined as assets fail.

Replace Deteriorated/Failed Area Supply Substation Equipment

Program Description and Purpose

Replacement of failed or deteriorated station facilities at area supply substations with in-kind equipment to maintain safe and reliable service. Identified facilities include, but are not limited to, circuit breakers, power transformers, tie/transfer cables, disconnect switches, DC equipment, and instrument transformers.

Identification/Justification Process

Candidates are identified via actual failures, inspections, and test results. Budget recommendations are based on historical trends in equipment failure quantities and costs, in addition to projected trends of future equipment failures based on asset health metrics.

Scope & Locations

Scope and locations are determined as station equipment fail while in service or fail conditionally under testing.

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Underground Cable Replacement

Program Description and Purpose

Programmatic replacement of deteriorated underground cable to maintain reliable electric service.

Identification/Justification Process

Candidates are selected based on history of cable failures and failure risk scores generated by a data analytics model that uses criteria such as segment length, cable age, customer count, and number of tap fuse outages.

Regional allocation of cable remediation is based on historical regional percent contribution to system-wide cable failures.

Scope

Planned Scope in Cable Segments					
2023	2024	2025	2026	2027	Total Scope
25-100	220-320	135-225	100-200	100-200	580-1045

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	100-200
Northeast	45-125
Central	90-150
Susquehanna	45-100
Harrisburg	120-200
Lancaster	180-270

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.52	\$4.36	\$1.98	\$1.50	\$2.03	\$10.39

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Low Tension Network Primary Cable, Equipment and Structures

Program Description and Purpose

Programmatic replacement of deteriorated equipment related to Low Tension Networks, including primary underground cable, network transformers, network protectors, manholes, and vault tops. The purpose of this program is to ensure public safety and service reliability through the replacement of underground facilities that have reached the end of their expected life or that show signs of premature age from prolonged exposure to corrosive environments.

Identification/Justification Process

Primary underground cables for Low Tension Network feeders are reaching their end of useful life and proactive replacements mitigate feeder outages. Replacement and repairs of manhole and vault tops are determined by regular inspections. Network transformer and network protector replacements are determined through inspection and age, where assets exceeding 40 years in service are considered highest priority.

Scope

Planned Replacements in Units (in Work Orders)						
	2023	2024	2025	2026	2027	Total Scope
Primary Cable Replacements	0-2	0-2	0-2	0-3	0-3	0-12
LTN Equipment	6-18	6-18	30-75	75-125	6-18	123-254

Locations (Approximate total over 5-year plan)

Region	LTN Equipment	Cable
Lehigh	20-42	0-2
Northeast	20-42	0-2
Central	20-42	0-2
Susquehanna	21-42	0-2
Harrisburg	21-42	0-2
Lancaster	21-44	0-2

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Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0.54	\$3.76	\$4.56	\$4.25	\$4.45	\$17.56

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Substation

This category includes replacement of various substation assets, and substation animal guarding.

Substation assets include, but are not limited to, the following:

- Structures
 - Enclosures
 - Fences
- Overhead Conductors and Hardware
- Underground Cables and Hardware
- Switching Devices
 - Air Break Switches
 - Disconnect Switches
- Protective Devices
 - Circuit Breakers
 - Fuses
 - Reclosers
 - Lightning Arresters
- Transformers
 - Power
 - Station Service
 - Instrument

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$11.25	\$26.94	\$28.12	\$30.24	\$27.80	\$124.35

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Underground Getaway Cable Replacements and Life Extension

Program Description and Purpose

Proactive replacement of aging and deteriorating 12 kV underground getaway cables to prevent failures that can result in long duration outages.

Identification/Justification Process

Getaways are selected for proactive replacement based on data analytics risk models that quantify cable health and risk and provide a priority ranking based on risk factors such as age, repair history, installation type, length, load transferability, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
2-8	11-16	9-13	20-30	20-30	62-97

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	10-15
Northeast	20-25
Central	6-12
Susquehanna	6-13
Harrisburg	17-24
Lancaster	3-8

Miscellaneous Substation Equipment

Program Description and Purpose

Programmatic replacement of older substation equipment, including air break switches, potential transformers (“PTs”), capacitance-coupled voltage transformers (“CCVTs”), circuit switchers, lightning arresters, voltage regulators, and DC panels in order to prevent future maintenance concerns and to maintain reliable service.

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Identification/Justification Process

Candidates for replacement are identified based on age and/or operating condition, both indicators of potential failure. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-4	4-8	8-12	18-22	18-22	48-68

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	5-8
Northeast	9-12
Central	5-8
Susquehanna	4-7
Harrisburg	17-20
Lancaster	8-13

Distribution Substation Circuit Breakers

Program Description and Purpose

Proactive replacement of substation circuit breakers (“CBs”) based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 12 kV circuit breakers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, mis-operation history, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
35-45	30-50	70-100	50-70	50-70	235-335

PPL Electric Utilities Corporation

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	74-85
Northeast	24-45
Central	35-45
Susquehanna	25-36
Harrisburg	42-65
Lancaster	35-59

69/12 kV & 138/12 kV Transformer Replacement

Program Description and Purpose

Proactive replacement of distribution substation transformers based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 69/12 kV and 138/12 kV transformers.

Identification/Justification Process

Candidates for replacement are identified based on data analytics risk models that consider age, dissolved gas analysis trends/analytics, repair history, obsolescence, and load transferability. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
3-5	4-8	6-10	6-10	6-10	25-43

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	4-7
Northeast	6-9
Central	5-8
Susquehanna	4-7
Harrisburg	2-4
Lancaster	4-8

PPL Electric Utilities Corporation

Distribution Substation DC Equipment

Program Description and Purpose

Programmatic replacement of distribution substation DC equipment based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement of 24 V, 48 V, and 125 V batteries, chargers, and related equipment.

Identification/Justification Process

Candidates for replacement are identified based on age, operating issues, availability of spare parts, and failure trends. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window. Furthermore, DC assets with chronic issues and high O&M trails are also factored into the proactive replacement scope.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
0-4	2-5	25-30	25-30	25-30	77-99

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	12-15
Northeast	12-15
Central	12-15
Susquehanna	13-19
Harrisburg	16-20
Lancaster	12-15

PPL Electric Utilities Corporation

Substation Animal Guarding

Program Description and Purpose

Improvements to existing distribution substation equipment via the proactive installation of animal guards to prevent animal contacts and maintain reliable service. Guarded equipment includes transformer bushings, circuit breakers, fuse/disconnect switches, bus supporting insulators, surge arresters, station service transformers, PTs, and cable terminations. Future investments could be made in pilot products like internal perimeter electric fences for comprehensive rodent deterrents at high animal contact risk locations.

Identification/Justification Process

Distribution substations are regionally prioritized based on historical animal-related service outages (both at the substation and within a 1-mile perimeter), number of customers served, substation load, and transferability. High priority substations are animal guarded first with the lower priority substations guarded in outer years.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
0-4	2-10	2-6	2-6	2-6	8-32

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	2-7
Northeast	1-5
Central	2-5
Susquehanna	1-5
Harrisburg	1-5
Lancaster	1-5

PPL Electric Utilities Corporation

12 kV Underground Bus Tie & Transfer Cable Replacement

Program Description and Purpose

Proactive replacement of distribution substation underground bus tie and transfer cables based on asset health and risk factors produced by data analytics models to maintain reliable service. This program includes the replacement all 12 kV underground cables within the perimeter of the substation yard.

Identification/Justification Process

Underground bus tie and transfer cables are selected for proactive replacement based on data analytics risk models that quantify cable health and risk, and provide a priority ranking based on factors such as age, repair history, installation type, length, loading, etc. Scope is additionally identified through inspection feedback and other work.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
1-4	5-10	5-10	5-10	5-10	21-44

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	2-5
Northeast	5-10
Central	6-10
Susquehanna	2-4
Harrisburg	2-5
Lancaster	4-10

PPL Electric Utilities Corporation

LTN Upgrades

Program Description and Purpose

The purpose of this program is to install remote monitoring and control equipment in all Low Tension Network (“LTN”) vaults, upgrade network devices up to the latest standard, replace vault equipment near its end of useful life, and install telemetry on secondary network cable. These improvements will allow for safer operation of LTNs, reduce maintenance costs, reduce failed equipment requiring replacement, and provide better data for asset planning and investments.

Identification/Justification Process

Rollout of this program began in the Lehigh and Harrisburg regions. By the completion of this program in 2026, all LTN vaults will receive automation.

Scope

Planned Replacements in Units					
2023	2024	2025	2026	2027	Total Scope
9	62	155	262	0	488

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	63
Northeast	112
Central	81
Susquehanna	34
Harrisburg	102
Lancaster	96

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$6.87	\$10.55	\$11.56	\$13.94	\$0	\$42.93

PPL Electric Utilities Corporation

Reliability

This category includes deployment of Smart Grid devices and distribution circuit upgrades to address reliability issues identified through inspections or various circuit or customer level performance metrics.

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$9.19	\$32.97	\$7.13	\$5.84	\$6.91	\$62.04

Distribution Reliability Preservation

Program Description and Purpose

Upgrades to the distribution system as justified by regional reliability supervisors to improve reliability. Improvements are targeted towards Worst Performing Circuits (“WPCs”), circuits with a history of customer complaints, or recommendations as a result of PCAs. PCAs are detailed reliability and operational analysis performed on 25% of a region’s distribution circuits per year. Additional work is scoped on the basis of Customers Experiencing Multiple Interruptions (“CEMI”), and Customers Experiencing Multiple Momentary Interruptions (“CEMMI”).

Identification/Justification Process

Projects are identified and submitted for both small and large-scale circuit improvement. These projects are ranked utilizing PPL Electric’s investment prioritization tool to ensure funds are directed towards the most cost-effective projects. The number of projects and locations may vary depending on areas with reliability concerns. Examples include, but are not limited to, installation of fuses, fault indicators, reconductoring of vintage conductor, upgrading conductor to reduce impact of vegetation related service outages, and relocating sections of lines that may be inaccessible or prone to vegetation related service outages.

It should be noted projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
10-25	100-135	20-35	20-35	20-35	170-265

PPL Electric Utilities Corporation

Locations

Locations are identified based upon emergent reliability needs.

Reliability Preservation Emergent

Program Description and Purpose

Remediation of issues primarily associated with secondary voltage and emergent small-scale customer reliability needs in order to improve reliability.

Identification/Justification Process

Work is identified by line crews, as well as through customer calls, and is completed to avoid potential service outages, power quality concerns and safety issues. Examples include, but are not limited to, modifying capacitance to address voltage concerns, installing fusing to aid in sectionalizing, and replacing transformers to resolve transformer overload. Budget recommendations are based on historical trends of hours charged.

Scope & Locations

Scope and locations are determined as emergent needs arise.

PPL Electric Utilities Corporation

System Reliability Improvement Projects

Program Description and Purpose

Large-scale improvements to distribution circuits with a history of poor reliability. This program addresses long-term projects, primarily aimed at WPCs. However, other proactive long-term projects with proven reliability benefit are included.

Identification/Justification Process

Each quarter, distribution planners and regional reliability supervisors meet to propose projects to improve WPCs. Projects are approved by distribution planning supervisors and vetted against other projects for scheduling based on historical reliability, potential benefit, and cost. Projects may span multiple years and are listed in the years they are planned to go in service. Scope is expected to increase in outer years as circuits and projects are identified. Examples include, but are not limited to, circuit reconfigurations with new tie lines, new lines and terminals, or the installation of substations for increased reliability.

Additionally, PPL Electric monitors large customer impact outages on a daily basis. A circuit that begins to show reliability deterioration and notable impact on reliability metrics requires a root cause analysis. Such analysis can result in the identification of a long-term project.

Note that the projects vary significantly in size, which can result in material swings in the number of planned projects.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
6-12	6-12	6-12	6-12	6-12	30-60

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	5-10
Northeast	5-10
Central	5-10
Susquehanna	5-10
Harrisburg	5-10
Lancaster	5-10

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Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$19.23	\$11.52	\$12.66	\$4.13	\$3.67	\$51.21

PPL Electric Utilities Corporation

Unreimbursed Highway Relocations

Program Description and Purpose

Unreimbursed customer requested relocations of PPL Electric distribution facilities in support of highway and bridge projects throughout service territory.

Identification/Justification Process

The customers (project sponsors) include PennDOT, the PA Turnpike Commission, and various counties and municipalities. PPL Electric and the project sponsor execute a reimbursement agreement, and PPL Electric is reimbursed for its work based on the “pole count method,” as defined in PennDOT’s DM-5 manual. Historically, reimbursement for distribution projects is approximately 35%.

To accommodate highway relocations and other municipal projects, approximately 70-120 projects per year are placed in service. PPL Electric typically is notified of distribution relocation work 12 months or less before the start of requested utility relocation activities.

Scope & Locations

Scope and locations are determined as requests are received.

Planned Expenditures (in millions)

PPL Electric’s expenditures to complete highway relocation projects are the net of total expenditures minus the project sponsor’s reimbursements.

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$8.87	\$4.50	\$4.92	\$4.07	\$3.71	\$26.08

PPL Electric Utilities Corporation

Protection and Control

Program Description and Purpose

Proactive replacement of protection and control equipment to maintain reliable distribution service to customers. Replacement of legacy relays with modern microprocessor relays will also improve fault monitoring and diagnosis processes and will provide added insight into circuit breaker health and risk. Replacement of obsolete Supervisory Control and Data Acquisition (“SCADA”) protocols and equipment will also enable relays to perform properly.

Identification/Justification Process

Candidates for replacement are identified based on obsolescence, availability of vendor support, age, and automation enhancement potential. Once identified, replacement of these facilities is coordinated and aligned with the replacement of other assets at the same substation within the five-year planning window.

Scope

Planned Projects					
2023	2024	2025	2026	2027	Total Scope
2-6	79-101	104-114	121-139	94-118	400-478

Locations (Approximate total over 5-year plan)

Region	Projects
Lehigh	50-61
Northeast	75-87
Central	56-73
Susquehanna	41-49
Harrisburg	84-100
Lancaster	94-108

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$3.34	\$21.73	\$13.47	\$14.82	\$17.63	\$70.99

PPL Electric Utilities Corporation

Predictive Failure Technology

Program Description and Purpose

The purpose of the predictive failure technology is to anticipate and proactively address potential equipment failures before they occur. This is achieved by installing new line monitoring sensors on the distribution voltage levels while leveraging new company processes/procedures, advanced analytics, machine learning, and real-time data capturing. The new line monitoring sensors can detect fault disturbances along the feeder, thereby identifying aging or damaged equipment before they fail, reducing reactive replacements of failed equipment, improving reliability for customers, reducing maintenance costs associated with necessary repairs, reducing hazards to the public and employees, and providing data insights into failure trends that can support more strategic and prudent investments across the distribution system.

Identification/Justification Process

Rollout of this program began on select circuits across the system to validate the effectiveness of the technology in 2023. Following the successes of the initial rollout, PPL plans to deploy this technology across its service territory. By the end of 2025, all distribution feeders on the three-phase system will have these sensors, with a goal of coverage in excess of 90%. Additionally, PPL has scoped coverage for select radial taps based on customer count, accessibility, and length or tap. On average, every distribution circuit will have between 3-7 radial taps installed with the sensors.

Scope

Planned Installations in Units					
2023	2024	2025	2026	2027	Total Scope
0	3800-4400	4100-4500	0	0	7900-8900

Locations (Approximate total over 5-year plan)

Region	Units
Lehigh	1090-1240
Northeast	1420-1620
Central	1440-1640
Susquehanna	1410-1610
Harrisburg	1260-1460
Lancaster	1280-1330

PPL Electric Utilities Corporation

Planned Expenditures (in millions)

Planned Expenditures					
2023	2024	2025	2026	2027	Total
\$0	\$46.13	\$38.32	\$0	\$0	\$84.44

PPL Electric Utilities Corporation

Appendix A: Average Age of Major Units of Property

The below chart is a summary of key distribution assets, targeted for planned replacement and proactive installation.

Average Age of Major Units of Distribution Property		
Utility Account	Description	Avg Asset Age
362.0 - Station Equipment	DC Sytem Equipment	18
362.0 - Station Equipment	Substation Animal Guards	10
362.0 - Station Equipment	Power Circuit Breakers	33
362.0 - Station Equipment	Power Transformers	42
362.0 - Station Equipment	Protection and Control Equipment	51
364.4 - Poles and Fixtures	Distribution Wood Poles	43
365.0 - Overhead Conductors, Device	Distribution Animal Guards	7
365.0 - Overhead Conductors, Device	OH Primary Conductor	50
365.0 - Overhead Conductors, Device	Air Break Switches	13
365.0 - Overhead Conductors, Device	Automatic Switches (Primarily OCRs/VCRs)	10
365.0 - Overhead Conductors, Device	Disconnect Switches	35
367 - Underground Conductors	UG Primary Conductor (includes Getaways and Cross Yard Ties)	27
366.0 - Underground Conduit	Equipment Foundation, Man Holes, Transformer Vaults (excl Conduit)	27
368.4 - Submersible or Padmt Type	UG Transformers (include LTN Transformers and Network Protectors)	25

PPL Electric Utilities Corporation

Appendix B: Asset Contribution to Reliability Metrics

The below table provides a summary of customers interrupted (“CI”) and Customer Minutes Interrupted (“CMI”) by failed component. Note that both transmission and distribution substation outages are included in the Substation component asset type.

Outage Contribution By Component - Equipment Failure Causes - Non Major Events											
Component Asset Type	Component Desc	2017		2018		2019		2020		2021	
		CI	CMI	CI	CMI	CI	CMI	CI	CMI	CI	CMI
Distribution	OH-Capacitor Bank	3,424	108,863	473	94,627	1,216	104,022	490	12,697	1,020	50,662
Distribution	OH-Lightning Arrester	6,301	566,653	8,154	731,871	6,200	712,771	2,702	290,321	2,151	293,442
Distribution	OH-Other Equipment(explain)	3,030	289,973	4,840	465,772	5,175	804,502	6,109	451,306	3,456	313,318
Distribution	OH-Pole/Arms Attachments	52,713	6,524,470	48,513	4,700,495	41,599	4,070,548	35,347	3,959,531	43,737	5,505,965
Distribution	OH-PRI Splices and Connectors	7,454	989,200	13,398	1,040,441	24,195	1,685,455	15,181	980,526	15,620	1,443,678
Distribution	OH-Primary/Neutral	85,443	9,923,218	122,999	15,577,602	110,511	12,776,083	116,882	14,222,141	103,375	13,167,440
Distribution	OH-SEC Splices and Connectors	1,813	134,821	1,497	145,830	1,392	102,066	1,710	151,429	1,690	208,053
Distribution	OH-Secondaries/Services	2,610	274,850	3,592	371,244	3,735	486,804	3,283	370,513	3,369	379,299
Distribution	OH-Switch/Automatic	20,631	1,619,275	24,333	2,167,680	20,436	1,663,225	15,214	1,330,628	25,270	2,014,136
Distribution	OH-Switch/Manual/AB/Disc/OS/LBD	13,402	1,170,281	12,348	1,128,002	5,081	505,950	6,291	401,764	5,692	297,479
Distribution	OH-Tap Fuse/Cutout	6,951	749,227	11,402	1,229,204	8,284	1,133,814	7,764	841,505	7,116	925,719
Distribution	OH-Transformer	5,671	968,793	8,079	1,220,182	9,353	1,197,199	7,292	1,225,848	8,189	1,171,421
Distribution	OH-Transformer Fuse/Cutout	16,744	1,778,312	25,048	2,830,029	19,132	2,096,787	20,863	2,208,699	18,545	2,025,416
Distribution	UG-Elbows	84	31,649	313	58,893	199	49,054	480	274,811	937	212,896
Distribution	UG-Lightning Arrester	61	14,383	97	14,711	98	23,831	120	21,331	76	12,064
Distribution	UG-Load Break Junctions	183	36,227	9	1,069	31	9,845	73	16,468	164	58,516
Distribution	UG-Low Tension Network							5	315		
Distribution	UG-Other Equipment(explain)	17	2,086	819	95,603	154	32,535	1,444	155,257	7	795
Distribution	UG-Pads/Vaults/MHs & Splice Boxes	83	18,854	44	7,021	91	19,727	102	18,971	801	150,036
Distribution	UG-PRI Splices and Connectors	151	28,502	82	16,355	1,666	136,146	343	38,591	791	53,784
Distribution	UG-Primary Cable/Neutral	13,539	2,118,561	21,525	2,962,012	18,980	2,779,215	15,006	2,304,340	12,565	2,377,282
Distribution	UG-Riser Pole Equip & Devices	749	88,313	551	70,197	1,404	115,247	306	41,973	948	131,556
Distribution	UG-SEC Splices and Connectors	40	1,200	22	2,575	40	2,814	2	324	33	1,193
Distribution	UG-Secondaries/Services	292	47,087	393	85,353	260	44,414	310	50,241	377	80,910
Distribution	UG-Switchgear	1,021	146,580	1,589	334,778	2,651	309,998	441	87,554	712	142,733
Distribution	UG-Transformer/Transformer Fuse	1,455	254,990	2,735	578,648	1,326	358,322	1,041	232,250	2,915	336,981
Substation	SUB-Circuit Breaker	10,859	1,162,641	6,129	217,364	5,658	605,760	28,289	1,766,321	9,349	202,774
Substation	SUB-Control/Relay	1,950	143,054			26,241	464,478			730	9,127
Substation	SUB-Insulator	84	4,990			5	3,312			3,539	31,055
Substation	SUB-Lightning Arrester					583	99,422				
Substation	SUB-Other Equipment(Explain)							35,104	366,321	499	14,436
Substation	SUB-Power Fuse							2,823	26,593	67	355
Substation	SUB-Switch/Automatic			1,340	14,843						
Substation	SUB-Switch/Manual/AB/Disc/LBD	654	54,045	3,353	82,506	1	1,014	22,157	486,661	4	1,982
Substation	SUB-Transformer	13	2,320	1,449	11,606	5,980	72,007	7,719	118,942		
Total		257,422	29,253,418	325,126	36,256,511	321,677	32,466,367	354,893	32,454,169	273,744	31,614,503

VERIFICATION

I, STEVEN D. SELKREGG, being the Director - Operations at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 01/16/2024


Steven Selkregg (Jan 16, 2024 15:53 EST)

Steven D. Selkregg

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-_____

PPL Electric Utilities Corporation

Statement No. 2

Direct Testimony of Bethany L. Johnson

Dated: April 26, 2024

Direct Testimony of Bethany L. Johnson

I. INTRODUCTION

Q. Please state your full name and business address.

A. Bethany L. Johnson, 827 Hausman Road, Allentown, Pennsylvania, 18104.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Services Corporation as the Senior Director of Regulatory.

Q. What are your duties as Senior Director of Regulatory?

A. I am responsible for PPL Electric Utilities Corporation's ("PPL Electric") and Rhode Island Energy's development of load and revenue forecasting and analysis, procurement of wholesale generation supply, distribution rate design and administration, cost of service implementation, as well as transmission Federal Energy Regulatory Commission ("FERC") Formula Rates, development of rate case strategies and processes, and compliance with the regulatory requirements of the Pennsylvania Public Utility Commission ("Commission"), the FERC and other regulatory agencies, as necessary. Additionally, I oversee energy and utility policy and company strategy for PPL Electric. As part of this function, I am responsible for the preparation, review, and technical oversight and guidance of the development, content, and structure of cost allocation and revenue requirement studies. In addition, I am responsible for all aspects of Rhode Island Energy's and PPL Electric's rates and riders/factors and scheduling and settlement activities with PJM Interconnection, LLC ("PJM") and

1 ISO New England, Inc. I also prepare and present expert testimony regarding
2 these and other cost-of-service and ratemaking-related issues.

3
4 **Q. What is your educational background?**

5 A. I graduated from King's College in 1999 with a Bachelor of Science Degree in
6 Finance, and from Moravian College in 2003 with a Master of Business
7 Administration.

8
9 **Q. Please describe your professional experience.**

10 A. In 2000, I was employed by PPL Global Operations, Inc. ("PPL Global
11 Operations"), where I supported the accounting and financial reporting activities
12 for PPL Global Operations' domestic operations. In 2001, as a result of
13 corporate realignment, I joined PPL Generation, LLC. In this position, my
14 responsibilities included cost control, budgeting, reporting, and management of
15 the forecasting process for large construction projects, as well as the
16 administration of construction and financing contracts. In 2004, I rejoined PPL
17 Global Operations as a Senior Business Analyst with responsibility for
18 maintaining, analyzing, consolidating, and presenting business plans and
19 operational performance results for PPL Global Operations' international
20 affiliates. In 2007, I joined PPL Energy Services Group, LLC as a Business
21 Analyst providing financial modeling and analytical support for evaluations of
22 acquisition, development, and divestiture opportunities. In 2009, I joined PPL
23 Electric as a Project Controls Specialist providing advanced cost analysis for
24 distribution and transmission projects. Later in 2009, I became the Financial

1 Business Planning Specialist in the Regulatory Compliance Department. In
2 August 2012, I was named Manager - Regulatory Compliance for PPL Electric,
3 and in October 2015, I was named Manager - Regulatory Operations, which
4 included overseeing scheduling and settlement functions with PJM. During my
5 time in this role, I also took responsibility for load and revenue forecasting and
6 reporting as well as energy and utility policy, and company strategy. In
7 September 2020, I was named Director - Regulatory Affairs. In December 2021,
8 my role was transferred to PPL Services Corporation. In June 2023, I was
9 promoted to Senior Director — Regulatory for PPL Services Corporation.

10
11 **Q. Have you previously testified as a witness in other Commission**
12 **proceedings or any other jurisdiction's proceedings?**

13 A. Yes, I have testified before this Commission in several proceedings. A list of
14 the matters in which I have testified is attached as Attachment A.

15
16 **Q. Please briefly describe the subject matter of your direct testimony in this**
17 **proceeding.**

18 A. My testimony will provide an overview of the Company's Distribution System
19 Improvement Charge ("DSIC"), explain the Company's proposal to increase the
20 DSIC from 5% to 9%, and provide details about the rate and bill impacts
21 associated with the Company's proposal.

22
23 **Q. Are you sponsoring any exhibits in this proceeding?**

24 A. Yes. I am sponsoring PPL Electric Exhibits BLJ-1 through BLJ-2.

1

2 **II. Overview of the Company's DSIC**3 **Q. Briefly describe the Company's DSIC.**

4 A. The purpose of the DSIC is to recover the reasonable and prudent capital costs
5 incurred to repair, improve, or replace eligible property which is completed and
6 placed in service between base rate cases. The DSIC provides public utilities,
7 such as PPL Electric, with the resources to accelerate the replacement of aging
8 infrastructure, to comply with evolving regulatory requirements, and to develop
9 and implement solutions to regional supply problems.

10

11 **Q. Is there a statutory limitation on the amount that may be recovered**
12 **through the DSIC?**

13 A. Yes. Pursuant to 66 Pa. C.S. § 1358(a)(1), the DSIC may not exceed 5% of
14 billed distribution revenues and is reset to zero upon the effective date of new
15 base rates that reflect the investment in DSIC-eligible property or if the
16 Company over-earns in any quarter. However, the Commission may grant a
17 waiver of the 5% DSIC cap in order to "ensure and maintain adequate, efficient,
18 safe, reliable and reasonable service." 66 Pa. C.S. § 1358(a)(1).

19

20 **Q. When was the Company's DSIC approved by the Commission?**

21 A. On January 15, 2013, PPL Electric filed a Petition seeking approval of a DSIC.
22 By its Orders entered May 23, 2013, and April 9, 2015, the Commission

approved PPL Electric's DSIC.¹

Q. Is the 5% DSIC cap reflected in the Company's current tariff?

A. Yes. PPL Electric's Commission-approved DSIC tariff includes, among other things, a 5% cap on the total amount of revenue that can be collected through PPL Electric's DSIC as determined on an annualized basis. The current DSIC tariff is attached to the Petition as Appendix A and is attached to my testimony as PPL Electric Exhibit BLJ-1.

III. Proposal to Increase the DSIC Cap from 5% to 9%

Q. Is the Company proposing any tariff changes to the DSIC?

A. Yes. Through its Petition filed in this proceeding, PPL Electric is requesting Commission approval of; (1) a waiver of the DSIC cap of 5% of billed revenues; and (ii) an increase in the maximum allowable DSIC from 5% to 9% for service rendered on or after January 1, 2025. The *pro forma* tariff supplement setting forth the tariff changes to increase the DSIC cap from 5% to 9% of billed revenues is attached to the Petition as Appendix B and is attached to my testimony as PPL Electric Exhibit BLJ-2.

Q. Is the calculation of PPL Electric's DSIC rate at the current cap of 5%?

A. Yes. PPL Electric's calculation of its DSIC has been at the cap of 5% since April

¹ See *Petition of PPL Electric Utilities Corporation for Approval of a Distribution System Improvement Charge*, Docket Nos. P-2012-2325034, *et al.* (Order entered May 23, 2023); *Petition of PPL Electric Utilities Corporation for Approval of a Distribution System Improvement Charge*, Docket Nos. P-2012-2325034, *et al.* (Order entered Apr. 9, 2015).

2021. The Company projects that the DSIC will, absent the requested waiver and increase to 9%, remain at the cap of 5% until rates established in the Company's next base rate case become effective.

Q. Can you describe the impacts that increasing the DSIC cap from 5% to 9% will have on customers?

A. Yes. When compared to the benefits of increasing the DSIC cap from 5% to 9% (see PPL Electric Statement No. 1), the incremental cost to customers is small. The current monthly cost of the DSIC at the maximum surcharge rate of 5% for a residential customer using 1,000 kWh per month is approximately \$2.96 per month. Increasing the maximum DISC rate to 9% is expected to result in an estimated increased customer cost of approximately \$2.37 per month at the cap, representing a 1.4% increase in the overall residential customer bill. Essentially, for every 1% increase in the DSIC cap, residential customers would see a \$0.59 increase in their monthly bill. However, because the DSIC rate fluctuates based on plant-in-service and revenue projected, changes to the price are likely to be more gradual than an immediate increase to 9%.

Q. Why did the Company choose 9% as its proposed DSIC cap?

A. PPL Electric determined that a DSIC cap of 9% appropriately balances the Company's need for relief and the impact on customers' bills. To reach that determination, the Company analyzed what the rate would be if there were no cap. Under the current LTIP, the DSIC rate would be beyond 5% for every remaining quarter of the 2023-2027 LTIP and could reach as high as 11.84%

1 in 2027. Similarly, if the modified LTIP were approved, the DSIC rate would
2 generally be at least 6% in 2024 and range between 8.35% and 11.73% in 2025,
3 9.67% and 13.25% in 2026, and 10.78% and 14.53% in 2027. Thus, the
4 Company's proposed cap of 9% is a reasonable way to accelerate infrastructure
5 repairs and replacements to improve reliability as explained in Mr. Selkregg's
6 direct testimony (PPL Electric Statement No. 1), while balancing affordability for
7 customers.

8
9 **Q. Does the proposed increase in the cap impact consumer protections?**

10 A. No. The DSIC tariff continues to provide sufficient customer safeguards in its
11 structure. In addition to still having a ceiling on recovery of capital, which must
12 be approved as just and reasonable by the Commission as part of this Petition,
13 the tariff also continues to include the following safeguards: (1) annual
14 reconciliations performed by the Company and reviewed by the Commission,
15 (2) audits conducted by the Commission, (3) customer notice of any changes in
16 the DSIC, and (4) a reset of the DSIC to zero if Company's return in any quarter
17 exceeds the return used to calculate the DSIC. The DSIC continues to balance
18 consumer protections with the need to ensure that those same consumers
19 receive safe and reliable service.

20
21 **Q. Does this conclude your direct testimony?**

22 A. Yes, it does.

PPL Electric Exhibit BLJ-1

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)

In addition to the net charges provided for in this Tariff, a charge of 5.00% will apply consistent with the Commission Order dated May 23, 2013, at Docket No. P-2012-2325034, approving the DSIC. This charge will be effective during the period April 1, 2024 through June 30, 2024. (C)

GENERAL DESCRIPTION

A. Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide PPL Electric with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional supply problems.

The costs of extending facilities to serve new customers are not recoverable through the DSIC.

B. Eligible Property: The DSIC-eligible property will consist of the following:

- Poles and towers (Account 364);
- Overhead conductors (Account 365) and underground conduit and conductors (Accounts 366 and 367);
- Line transformers (account 368) and substation equipment (Account 362);
- Any fixture or device related to eligible property listed above, including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers;
- Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities; and
- Other related capitalized costs.

C. Effective Date: The DSIC will become effective for bills rendered on and after July 1, 2013.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC

A. Calculation: The initial DSIC, effective July 1, 2013, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base and will have been placed in service between March 1 through May 31, 2013. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the three-month periods ending one month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

(C)

<u>Effective Date of Change</u>	<u>Date to which DSIC-Eligible Plant Additions Reflected</u>
April 1st	December 1st – February 28th
July 1st	March 1st – May 31st
October 1st	June 1st – August 31st
January 1st	September 1st – November 30th

B. Determination of Fixed Costs: The fixed costs of eligible distribution system improvements projects will consist of depreciation and pre-tax return, calculated as follows:

1. Depreciation: The depreciation expense shall be calculated by applying the annual accrual rates employed in PPL Electric's most recent base rate case for the plant accounts in which each retirement unit of DSIC-eligible property is recorded to the original cost of DSIC-eligible property.

2. Pre-tax return: The pre-tax return shall be calculated using the statutory state and federal income tax rates, PPL Electric's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day for the three-month period ending one month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in PPL Electric's last fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission in the most recent Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

C. Application of DSIC: The DSIC will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer for distribution service under PPL Electric's otherwise applicable rates and charges, excluding amounts billed for the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by PPL Electric's projected revenue for distribution service (including all applicable clauses and riders) for the quarterly period during which the charge will be collected, exclusive of the STAS.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC (Continued)

D. Formula: The formula for calculation of the DSIC is as follows: **(C)**

$$\text{DSIC} = \frac{((\text{DSI} \times \text{PTRR}) + \text{STFT} + \text{Dep} + e) \times \frac{1}{(1-T)}}{\text{PQR}}$$

Where:

- DSI = Original cost of eligible distribution system improvement projects net of accrued depreciation and associated accumulated deferred income taxes pertaining to property-related book/tax depreciation timing differences resulting from the use of accelerated depreciation per Internal Revenue Code, 26 U.S. Code § 168.
- PTRR = Pre-tax return rate applicable to DSIC-eligible property.
- STFT = (State Tax Flow Through) Pre-tax flow through calculated on book-tax timing differences between accelerated tax depreciation and book depreciation net of federal tax.
- Dep = Depreciation expense related to DSIC-eligible property.
- e = Amount calculated (+/-) under the annual reconciliation feature or Commission audit, as described below.
- PQR = Projected quarterly revenues for distribution service (including all applicable clauses and riders) from applicable customers. The quarterly revenues will be determined on the basis of the summation of projected revenues for the applicable three-month period.
- T = Pennsylvania gross receipts tax rate in effect during the billing month, expressed in decimal form.

Minimum bills shall not be reduced by reason of the DSIC, nor shall charges hereunder be a part of the monthly rate schedule minimum. The DSIC shall not be subject to any credits or discounts. The State Tax Adjustment Surcharge (STAS) included in this Tariff is applied to charges under the DSIC.

QUARTERLY UPDATES

Supporting data for each quarterly update will be filed with the Commission and served upon the Commission's Bureau of Investigation and Enforcement, the Bureau of Audits, the Office of Consumer Advocate, and the Office of Small Business Advocate at least ten (10) days prior to the effective date of the update.

(Continued)

(I) Indicates Increase (D) Indicates Decrease (C) Indicates Change

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS

A. Cap: The DSIC is capped at 5.0% of the amount billed to customers for distribution service (including all applicable clauses and riders) as determined on an annualized basis.

B. Audit/Reconciliation: The DSIC is subject to audit at intervals determined by the Commission. Any cost determined by the Commission not to comply with any provision of 66 Pa C.S. §§ 1350, *et seq.*, shall be credited to customer accounts. The DSIC is subject to annual reconciliation based on a reconciliation period consisting of the twelve months ending December 31 of each year or PPL Electric may elect to subject the DSIC to quarterly reconciliation but only upon request and approval by the Commission. The revenue received under the DSIC for the reconciliation period will be compared to PPL Electric's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with Section 1307(e), over a one-year period commencing on April 1 of each year, or in the next quarter if permitted by the Commission. If DSIC revenues exceed DSIC-eligible costs, such over-collections will be refunded with interest. Interest on over-collections and credits will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P.S. §§ 101, *et seq.*) and will be refunded in the same manner as an over-collection. PPL Electric is not permitted to accrue interest on under collections. (C)

C. New Base Rates: The DSIC will be reset at zero upon application of new base rates to customer billings that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base will be reflected in the quarterly updates of the DSIC.

D. Customer Notice: Customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert also shall be included with the first billing.

E. Customer classes: Effective July 1, 2013, the DSIC shall be applied equally to all customer classes except Rate Schedule LP-5, consistent with the Commission Order entered April 9, 2015 at Docket No. P-2012-2325034. Effective January 1, 2016, the DSIC shall be applied equally to all customer classes except Rate Schedules LP-5 and LPEP.

F. Earning Reports: The DSIC also will be reset at zero if, in any quarter, data filed with the Commission in PPL Electric's then most recent Annual or Quarterly Earnings reports (Schedule D-2) show that PPL Electric would earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the pre-tax return section. PPL Electric shall file a tariff supplement implementing the reset to zero due to overearning on one-days' notice and such supplement shall be filed simultaneously with the filing of the most recent Annual or Quarterly Earnings reports indicating that PPL Electric has earned a rate of return that would exceed the allowable rate of return used to calculate its fixed costs. (C)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS (Continued)

G. Residual E-Factor Recovery Upon Reset to Zero: PPL Electric shall file with the Commission interim rate revisions to resolve the residual over/under collection or E-factor amount after the DSIC rate has been reset to zero. PPL Electric can recoup or refund the residual over/under collection balance when the DSIC rate is reset to zero. PPL Electric shall refund any overcollection to customers and is entitled to recover any undercollections as set forth in Customer Safeguard Section B. The tariff supplement shall be submitted in accordance with the Quarterly Updates section of this tariff. (C)

PPL Electric Exhibit BLJ-2



PPL Electric Utilities Corporation

GENERAL TARIFF

RULES AND RATE SCHEDULES FOR ELECTRIC SERVICE

In the territory listed on pages 4, 4A, and 4B
and in the adjacent territory served.

ISSUED: TBD

EFFECTIVE: January 1, 2025

CHRISTINE M. MARTIN, PRESIDENT

Two North Ninth Street
Allentown, PA 18101-1179

NOTICE

THIS TARIFF MAKES CHANGES **(C)** IN EXISTING RATES. SEE PAGE TWO.

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)

In addition to the net charges provided for in this Tariff, a charge of ~~X.XX%~~**5.00%** will apply **(C)** consistent with the Commission Order dated May 23, 2013, at Docket No. P-2012-2325034, approving the DSIC. This charge will be effective during the period ~~January 1, 2025~~**April 1, 2024** through ~~March 31, 2025~~**June 30, 2024**.

GENERAL DESCRIPTION

A. Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide PPL Electric with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional supply problems.

The costs of extending facilities to serve new customers are not recoverable through the DSIC.

B. Eligible Property: The DSIC-eligible property will consist of the following:

- Poles and towers (Account 364);
- Overhead conductors (Account 365) and underground conduit and conductors (Accounts 366 and 367);
- Line transformers (account 368) and substation equipment (Account 362);
- Any fixture or device related to eligible property listed above, including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers;
- Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities; and
- Other related capitalized costs.

C. Effective Date: The DSIC will become effective for bills rendered on and after July 1, 2013.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)**COMPUTATION OF THE DSIC**

A. Calculation: The initial DSIC, effective July 1, 2013, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base and will have been placed in service between March 1 through May 31, 2013. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the three-month periods ending one month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

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2. Pre-tax return: The pre-tax return shall be calculated using the statutory state and federal income tax rates, PPL Electric's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day for the three-month period ending one month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in PPL Electric's last fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission in the most recent Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

C. Application of DSIC: The DSIC will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer for distribution service under PPL Electric's otherwise applicable rates and charges, excluding amounts billed for the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by PPL Electric's projected revenue for distribution service (including all applicable clauses and riders) for the quarterly period during which the charge will be collected, exclusive of the STAS.

(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

COMPUTATION OF THE DSIC (Continued)

D. Formula: The formula for calculation of the DSIC is as follows: **(C)**

$$\text{DSIC} = \frac{((\text{DSI} \times \text{PTRR}) + \text{STFT} + \text{Dep} + e) \times \frac{1}{(1-T)}}{\text{PQR}}$$

Where:

- DSI = Original cost of eligible distribution system improvement projects net of accrued depreciation and associated accumulated deferred income taxes pertaining to property-related book/tax depreciation timing differences resulting from the use of accelerated depreciation per Internal Revenue Code, 26 U.S. Code § 168.
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- Dep = Depreciation expense related to DSIC-eligible property.
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Supporting data for each quarterly update will be filed with the Commission and served upon the Commission's Bureau of Investigation and Enforcement, the Bureau of Audits, the Office of Consumer Advocate, and the Office of Small Business Advocate at least ten (10) days prior to the effective date of the update.

(Continued)

(I) Indicates Increase (D) Indicates Decrease (C) Indicates Change

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS

A. Cap: The DSIC is capped at ~~9.0%~~~~5.0%~~ of the amount billed to customers for distribution service (including all applicable clauses and riders) as determined on an annualized basis.

B. Audit/Reconciliation: The DSIC is subject to audit at intervals determined by the Commission. Any cost determined by the Commission not to comply with any provision of 66 Pa C.S. §§ 1350, *et seq.*, shall be credited to customer accounts. The DSIC is subject to annual reconciliation based on a reconciliation period consisting of the twelve months ending December 31 of each year or PPL Electric may elect to subject the DSIC to quarterly reconciliation but only upon request and approval by the Commission. The revenue received under the DSIC for the reconciliation period will be compared to PPL Electric's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with Section 1307(e), over a one-year period commencing on April 1 of each year, or in the next quarter if permitted by the Commission. If DSIC revenues exceed DSIC-eligible costs, such over-collections will be refunded with interest. Interest on over-collections and credits will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P.S. §§ 101, *et seq.*) and will be refunded in the same manner as an over-collection. PPL Electric is not permitted to accrue interest on under collections.

C. New Base Rates: The DSIC will be reset at zero upon application of new base rates to customer billings that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions that have not previously been reflected in PPL Electric's rates or rate base will be reflected in the quarterly updates of the DSIC.

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F. Earning Reports: The DSIC also will be reset at zero if, in any quarter, data filed with the Commission in PPL Electric's then most recent Annual or Quarterly Earnings reports (Schedule D-2) show that PPL Electric would earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the pre-tax return section. PPL Electric shall file a tariff supplement implementing the reset to zero due to overearning on one-days' notice and such supplement shall be filed simultaneously with the filing of the most recent Annual or Quarterly Earnings reports indicating that PPL Electric has earned a rate of return that would exceed the allowable rate of return used to calculate its fixed costs.

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC) (Continued)

CUSTOMER SAFEGUARDS (Continued)

G. Residual E-Factor Recovery Upon Reset to Zero: PPL Electric shall file with the Commission interim rate revisions to resolve the residual over/under collection or E-factor amount after the DSIC rate has been reset to zero. PPL Electric can recoup or refund the residual over/under collection balance when the DSIC rate is reset to zero. PPL Electric shall refund any overcollection to customers and is entitled to recover any undercollections as set forth in Customer Safeguard Section B. The tariff supplement shall be submitted in accordance with the Quarterly Updates section of this tariff.

VERIFICATION

I, STEVEN D. SELKREGG, being the Director - Operations at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 04/26/2024


Steven Selkregg (Apr 26, 2024 13:45 EDT)

Steven D. Selkregg

VERIFICATION

I, BETHANY L. JOHNSON, being the Sr. Director - Regulatory at PPL Services Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 04/26/2024

Bethany Johnson
Bethany Johnson (Apr 26, 2024 09:33 EDT)

Bethany L. Johnson

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-3048732

PPL Electric Utilities Corporation

Statement No. 1-R

Rebuttal Testimony of Steven D. Selkregg

Dated: August 13, 2024

Rebuttal Testimony of Steven D. Selkregg

I. INTRODUCTION

Q. Please state your full name and business address.

A. My name is Steven David Selkregg. My business address is 7231 Windsor Drive, Allentown, PA 18106.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric" or the "Company") as Director of T&D Operations.

Q. Did you previously submit testimony on behalf of PPL Electric in this proceeding?

A. Yes. I submitted direct testimony on behalf of the Company (PPL Electric Statement No. 1).

Q. Please briefly describe the subject matter of your rebuttal testimony in this proceeding.

A. My testimony will respond to portions of the direct testimony submitted by Joseph Kubas on behalf of the Pennsylvania Public Utility Commission's ("Commission") Bureau of Investigation and Enforcement ("I&E") (I&E Statement No. 1), the direct testimony submitted by Jerome D. Mierzwa on behalf of the Office of Consumer Advocate ("OCA") (OCA Statement No. 1), and the direct testimony submitted by Mark D. Ewen on behalf of the Office of Small Business Advocate ("OSBA") (OSBA Statement No. 1). In particular, I will rebut

1 their claims that the Company's proposed waiver of the Distribution System
2 Improvement Charge ("DSIC") cap and increase of the DSIC rate from 5% to
3 9% is not necessary to ensure and maintain adequate, efficient, safe, reliable,
4 and reasonable service.

5
6 **Q. Are you sponsoring any exhibits with your rebuttal testimony?**

7 A. Yes. I am sponsoring PPL Electric Exhibits SDS-1R through SDS-3R.

8
9 **III. Support for Increasing the DSIC Cap from 5% to 9%**

10 **Q. I&E witness Kubas, OCA witness Mierzwa, and OSBA witness Ewen all**
11 **generally argue that the Company has not demonstrated that the**
12 **proposed waiver of the DSIC cap is necessary to ensure and maintain**
13 **adequate, efficient, safe, reliable, and reasonable service. (I&E St. No. 1,**
14 **p. 8; OCA St. No. 1, pp. 7-8; OSBA St. No. 1, pp. 4, 7.) Do you agree with**
15 **their overall positions?**

16 A. Absolutely not. As explained in my direct testimony, PPL Electric is facing
17 significant reliability challenges on its system and needs the DSIC cap waiver
18 to address those issues in an efficient and timely manner. Notably, none of the
19 other parties truly dispute the Company's claims about its recent and projected
20 performance in Customer Average Interruption Duration Index ("CAIDI"),
21 System Average Interruption Duration Index ("SAIDI"), or System Average
22 Interruption Frequency Index ("SAIFI"). In fact, OSBA witness Ewen does not
23 directly respond to the Company's data about CAIDI, SAIDI, or SAIFI at all.
24 Meanwhile, I&E witness Kubas and OCA witness Mierzwa selectively point to

1 stale statements and data about PPL Electric's reliability performance as
2 alleged support for countering the Company's arguments.

3 Specifically, I&E witness Kubas relies on the Commission's statement in
4 its Long-Term Infrastructure Improvement Plan ("LTIIIP") Review Order issued
5 on December 22, 2022, that the Company's reliability performance has
6 improved and that the changes to the LTIIIP were necessary to continue to
7 maintain and improve reliability. (I&E St. No. 1, p. 8.) Solely based on that
8 statement, Mr. Kubas concludes that "[t]here is no indication that the Company
9 will not be able to continue to provide safe, reliable, and reasonable service to
10 customers if the requested DSIC increase is not approved." (I&E St. No. 1, p.
11 8.) However, the Commission's LTIIIP Review Order was issued more than a
12 year and a half ago. Therefore, the Commission's statement from December
13 2022 does not reflect the Company's recent and projected reliability
14 performance data.

15 Similarly, OCA witness Mierzwa highlights the Company's statement in
16 its most recent Annual Asset Optimization Plan ("AAOP") filed in February 2024
17 that the Company has been a first quartile SAIFI performer for the last several
18 years. (OCA St. No. 1, p. 7.) Mr. Mierzwa disregards, however, my direct
19 testimony about how the Company's SAIFI performance has deteriorated
20 significantly this year. Moreover, since I submitted my direct testimony, the
21 Company has continued to see even more substantial challenges in its reliability
22 performance.

23

1 **Q. Are there any other reasons why I&E witness Kubas's and OCA witness**
2 **Mierzwa's claims about the Company's reliability of service should be**
3 **rejected?**

4 A. Yes. In discovery, I&E witness Kubas admitted that he "does not have specific
5 education/experience concerning electric service reliability" or "electric service
6 safety." (PPL Electric Exhibit SDS-1R [Answers to PPL to I&E-I-1 and 2].) He
7 also stated that he "did not evaluate PPL's electric service reliability claims," nor
8 the Company's "electric safety claims in this proceeding." (PPL Electric Exhibit
9 SDS-1R [Answers to PPL to I&E-I-1 and 2].) Likewise, OCA witness Mierzwa
10 conceded that he "has had no formal education concerning electric service
11 reliability" or "electric service safety" and that he "has never worked for an
12 electric utility and, therefore, has no direct experience concerning electric
13 service reliability" or "electric service safety." (PPL Electric Exhibit SDS-2R
14 [Answers to PPL to OCA-I-1 and 2].)

15 By comparison, I have extensive experience concerning electric service
16 reliability and safety. Since 2013, I have worked in the Transmission and
17 Distribution organizations within PPL Electric to help ensure the safe and
18 reliable operation of the grid. My experience includes leading initiatives in
19 Transmission Engineering as well as facilitating and designing reliability
20 improvement projects as part of the Regional Engineering team. Since 2018, I
21 have held leadership positions as Manager of Distribution Design Manager,
22 Manager of Distribution Planning & Asset Management, Director of Asset
23 Management and Planning, and Director of T&D Operations. I have led teams
24 that were directly involved in industry leading organizations, such as the Electric

Power Research Institute (“EPRI”), the National Electric Energy Testing, Research & Applications Center (“NEETRAC”), and the Institute of Electrical and Electronics Engineers (“IEEE”) as well as numerous benchmarking sessions with other utilities. Thus, when evaluating the parties’ competing claims about the Company’s electric service reliability and the need for the DSIC cap waiver to address those reliability challenges, I believe my testimony is more credible and should be given more weight.

Q. Do you have any updates regarding the Company’s recent and projected reliability performance?

A. Yes. In my direct testimony, I presented the following table summarizing the Company’s actual and projected overall reliability performance:

	PUC 2023 YE	PUC 2024 Q1	PUC 2024 EOY Projected
SAIFI (Benchmark = 0.98, Standard = 1.18)	0.78	0.36	0.982
CAIDI (Benchmark = 145, Standard = 172)	189	137	265
SAIDI (Benchmark=142, Standard = 205)	147	380	260
CEMI 4	3.4%	5.8%	4.0%
	IEEE 2023 YE	IEEE 2024 Q1	IEEE EOY Projected
IEEE SAIFI (1st Quartile = 0.82)	0.64	0.14	0.650
IEEE CAIDI (1st Quartile = 101)	142	131	115
IEEE SAIDI (1st Quartile = 85)	91	18.3	74.6

Since that time, PPL Electric has received more updated data on its actual performance so far in 2024 and has updated the table as follows:

	PUC 2023 YE	PUC through 8/7/24	PUC 2024 EOY Projected
SAIFI (Benchmark = 0.98, Standard = 1.18)	0.78	0.84	1.23
CAIDI (Benchmark = 145, Standard = 172)	189	360	301
SAIDI (Benchmark=142, Standard = 205)	147	302	370
CEMI 4	3.4%	8.0%	8.0%
	IEEE 2023 YE	IEEE through 8/7/2024	IEEE EOY Projected
IEEE SAIFI (1st Quartile = 0.82)	0.64	0.4	0.670
IEEE CAIDI (1st Quartile = 101)	142	138	137
IEEE SAIDI (1st Quartile = 85)	91	55	92.0

1 **Q. What conclusions do you draw from this updated data on the Company's**
2 **reliability performance?**

3 A. PPL Electric's reliability performance continues to trend downward, driven
4 primarily by storm related impacts. As shown in the table above, PPL Electric's
5 original projection for its Commission SAIFI performance in 2024 was 0.982,
6 just above the Commission's benchmark of 0.98. Now, based on more actual
7 performance data, the Company is on track for a Commission SAIFI
8 performance in 2024 of 1.23, well above the 0.98 benchmark and even the
9 standard of 1.18. The Company's CAIDI and SAIDI performance also
10 deteriorated further, with the end of year projections in those metrics increasing
11 from 265 and 260, respectively, to 301 and 370, respectively. Both of those
12 metrics would be in excess of the Commission's benchmarks for CAIDI and
13 SAIDI of 145 and 142, respectively. Further, the Company's projection for end
14 of year CEMI performance doubled from 4% to 8%. Thus, the updated
15 performance data strongly affirms the need for the DSIC cap waiver to address
16 the reliability challenges on PPL Electric's distribution system.

17
18 **Q. Does the improved performance in the IEEE SAIFI metric undercut the**
19 **Company's position?**

20 A. No. IEEE SAIFI, SAIDI, and CAIDI are weather-normalized metrics. Their
21 purpose is "to allow major events to be studied separately from daily operation,
22 and in the process, to better reveal trends in daily operation that would be

1 hidden by the large statistical effect of major events.”¹ Additionally, IEEE metrics
2 allow for consistent comparisons across utilities regardless of their size and are
3 “self-adjusting” in that Major Event Day thresholds are recalculated annually
4 based on the prior 5 years of performance. For these reasons, IEEE metrics
5 form a solid basis for review of operational effectiveness for many aspects of
6 decision making and for benchmarking versus other utilities.

7 However, because IEEE metrics remove large storm events, at times
8 they can diverge significantly from the customer experience. This can be
9 observed during periods of severe weather, such as the one PPL Electric is
10 currently experiencing, which have adverse impacts on electric service
11 reliability. Therefore, although the Company’s performance in the IEEE SAIFI
12 performance improved slightly, PPL Electric must still take steps to improve
13 service reliability and, by extension, customer experience.

14
15 **Q. After you submitted your direct testimony, were there any other relevant**
16 **developments concerning the Company’s reliability performance?**

17 A. Yes. On July 11, 2024, the Commission released the results of its Management
18 and Operations Audit of PPL Electric at Docket No. D-2023-3039488, which
19 included 19 recommendations for improving the Company’s operations. Two of
20 those recommendations concerned improvements to the Company’s reliability
21 performance. Specifically, as shown in Section VII of the audit report, a copy of
22 which is attached to my rebuttal testimony as PPL Electric Exhibit SDS-3R, the

¹ IEEE Std 1366-2012 Section 3.5.

Commission recommended that PPL Electric: (1) “[i]mprove SAIDI and CAIDI performance to consistently achieve the minimum thresholds set by the Commission benchmarks and standards on reliability”; and (2) “[m]odify or expand existing reliability programs to eliminate CEMI10+ and set goals for reducing CEMI4.” (PPL Electric Exhibit SDS-3R, p. 11.)

In the Company’s Implementation Plan, which was also released on July 11, 2024, PPL Electric accepted those recommendations and set forth its plan for addressing them. For the first recommendation, PPL Electric stated the following:

PPL Electric agrees with the need to improve its CAIDI and SAIDI performance to consistently achieve the minimum thresholds set by the Commission. PPL Electric has and will continue to evaluate opportunities for new storm hardening programs or acceleration of existing mitigation programs and/or projects for reliability to minimize outages associated with increased storm activity. The Company also has and will continue to evaluate options for accelerated investments to minimize impact of storms to our customers which have the biggest impact to SAIDI and CAIDI.

As for the second recommendation, the Company explained:

PPL Electric agrees to modify or expand its existing reliability programs to eliminate CEMI10+ and set specific and measurable goals for reducing CEMI4. PPL Electric has and will continue to evaluate opportunities for additional reliability programs or acceleration of existing mitigation programs and/or projects for reliability or other investments to minimize outages associated with increased storm activity.

Therefore, as recommended and accepted as part of the Commission’s Management and Operations Audit, PPL Electric will be expanding and increasing programs to address and eliminate CEMI10+. Additionally, the Company will accelerate circuit hardening projects, some of which include: an

1 approximately 1.5 mile reconductor from a section running through the woods to
2 Hendrix cable along the road, additional 3-phase ties built on radial sections,
3 reconductoring and installation of stronger poles in areas that see high
4 quantities of vegetation related outages, and installation and upgrading of
5 sectionalizing devices to allow for additional remote restoration capabilities have
6 been added to the Company's business plan. The DSIC cap waiver will help
7 facilitate the acceleration of these circuit hardening projects and put the
8 Company in a much better position to implement the recommendations from the
9 Commission's Management and Operations Audit.

10
11 **Q. OCA witness Mierzwa and OSBA witness Ewen also reference the**
12 **Company's vegetation management expenditures and assert that a base**
13 **rate case, where those expenditures can be analyzed, is the better way to**
14 **address the Company's reliability performance. (OCA St. No. 1, p. 11;**
15 **OSBA St. No. 1, pp. 5-6.) Please respond.**

16 A. PPL Electric agrees that vegetation management is important to reducing
17 vegetation-caused outages. However, vegetation management should be
18 supplemented with storm-hardening investments on the distribution system.
19 Storm-hardening investments are long-term and can help insulate the grid from
20 outages caused by vegetation that cannot be addressed through traditional
21 vegetation management, such as off-right-of-way trees.

22 In addition, the DSIC cap waiver would free up funding for the Company
23 to pursue projects that are not included in the Company's LTIP, including
24 vegetation management, installation of grid modernization devices, new

1 substations, batteries, and 3-phase tie lines. If the DSIC cap waiver is granted,
2 it would allow the Company to fund the vegetation management program at
3 approximately \$30-40 million in 2025 (up from an original 2023 budget of
4 approximately \$22 million), allowing for better management of the vegetation
5 risk on the system and improved reliability for customers. Therefore, the parties
6 should not view the Company's proposal to increase the DSIC cap as
7 supplanting investments in vegetation management. To the contrary, the
8 Company's proposal will better facilitate both capital and Operating and
9 Maintenance solutions for improving reliability of service.

10
11 **Q. Has the Commission's finding that Predictive Failure Technology ("PFT")**
12 **is not DSIC-eligible obviated the need for the Company's DSIC cap waiver**
13 **and increase?**

14 A. No. Despite PFT's exclusion from the LTIP, the DSIC cap waiver and increase
15 are still necessary to ensure and maintain adequate, efficient, safe, reliable, and
16 reasonable service. In particular, the Company's proposal is needed to address
17 the reliability challenges on PPL Electric's distribution system, largely caused
18 by the increasing weather events in the service territory. An increase in the
19 DSIC cap will enable PPL Electric to accelerate investments in LTIP projects
20 and increase investments in non-LTIP projects, such as vegetation
21 management, by freeing up additional funding. By accelerating and increasing
22 investments in these projects, the Company can improve reliability and
23 customers' experience in a timely, efficient, and effective manner.

24

1 **Q. Do you still believe that the proposed increase in the DSIC cap is**
2 **reasonable and in public interest?**

3 A. Yes. As explained in my direct testimony and in this rebuttal testimony, the
4 Company's proposal to increase the DSIC cap from 5% to 9% is necessary to
5 ensure and maintain adequate, efficient, safe, reliable, and reasonable service
6 and, therefore, should be approved by the Commission.

7

8 **Q. Does this conclude your rebuttal testimony?**

9 A. Yes, it does.

PPL Electric Exhibit SDS-1R

**Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution
System Improvement Charge Cap of 5% of Billed Revenues
Docket No. P-2024-3048732**

**Responses of the Bureau of Investigation and Enforcement to the
Interrogatories of PPL Electric Utilities Corporation – Set I
Witness: Joseph Kubas**

PPL-I&E-I-1 Re: I&E St. No. 1, Appendix A. Please explain in detail Mr. Kubas's education and experience concerning electric service reliability.

Response Mr. Kubas does not have specific education/experience concerning electric service reliability; however, as shown in Appendix A, Mr. Kubas has over 30 years presenting expert testimony in rate-related proceedings. Mr. Kubas addressed the ratemaking concerns related to PPL's request to increase the DSIC cap but did not evaluate PPL's electric service reliability claims in this proceeding.

**Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution
System Improvement Charge Cap of 5% of Billed Revenues
Docket No. P-2024-3048732**

**Responses of the Bureau of Investigation and Enforcement to the
Interrogatories of PPL Electric Utilities Corporation – Set I
Witness: Joseph Kubas**

PPL-I&E-I-2 Re: I&E St. No. 1, Appendix A. Please explain in detail Mr.
Kubas's education and experience concerning electric service safety.

**Response Mr. Kubas does not have specific education/experience related to
electric service safety; however, as shown in Appendix A, Mr.
Kubas has over 30 years presenting expert testimony in rate-
related proceedings. Mr. Kubas addressed the ratemaking
concerns related to PPL's request to increase the DSIC cap but
did not evaluate PPL's electric service safety claims in this
proceeding.**

PPL Electric Exhibit SDS-2R

**Pennsylvania Office of Consumer Advocate's Responses to
PPL Electric Utilities Corporation's
Interrogatories and Requests for Production of Documents
Set I to OCA**

Docket No. P-2024-3048732

PPL to OCA-I-1. Re: OCA St. No. 1, pp. 1-2. Please explain in detail Mr. Mierzwa's education and experience concerning electric service reliability.

RESPONSE

Mr. Mierzwa has had no formal education concerning electric service reliability and has never worked for an electric utility and, therefore, has no direct experience concerning electric service reliability. Mr. Mierzwa is familiar with the SAIDI, CAIDI, SAIFI, and CEMI benchmarks used to measure electric system reliability.

**Pennsylvania Office of Consumer Advocate's Responses to
PPL Electric Utilities Corporation's
Interrogatories and Requests for Production of Documents, Set I**

PPL to OCA-I-2. Re: OCA St. No. 1, pp. 1-2. Please explain in detail Mr. Mierzwa's education and experience concerning electric service safety.

RESPONSE

Mr. Mierzwa has had no formal education concerning electric service safety and has never worked for an electric utility and, therefore, has no direct experience concerning electric service safety.

PPL Electric Exhibit SDS-3R

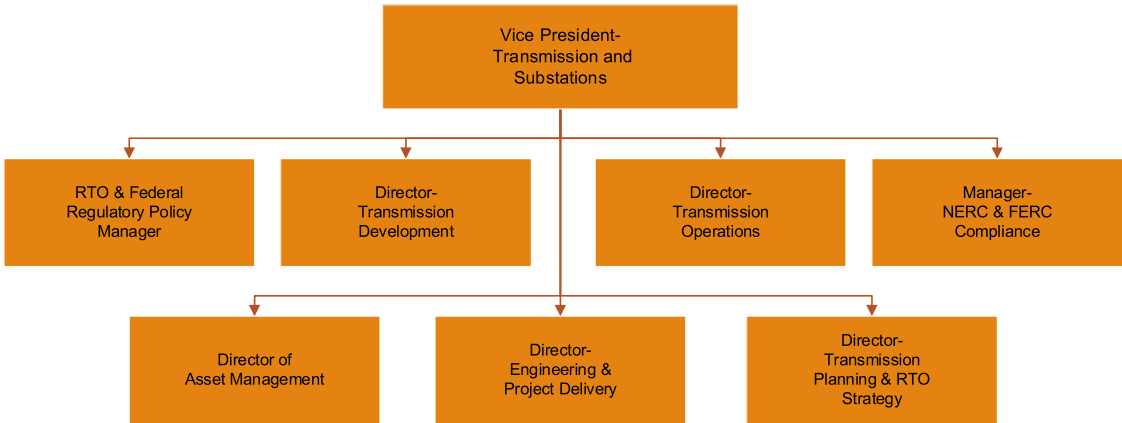
VII. ELECTRIC OPERATIONS

Background

PPL Electric Utilities Corporation (PPL Electric or company) provides electric distribution service to over 1.5 million customers across 29 counties²⁴ in Pennsylvania. Approximately 90% of PPL Electric’s customers are residential, with the remaining 10% composed of commercial and industrial customers. To serve these customers, the company operates approximately 50,600 miles of aerial and underground distribution lines and transmission lines. PPL Electric’s transmission system is part of the PJM Interconnection, LLC, a Regional Transmission Organization.

PPL Electric’s Transmission and Substations function is overseen by the Vice President of Transmission and Substations (VP T&S). As shown in Exhibit VII-1, seven Directors and Managers report to the VP T&S, each in charge of regulatory policy, transmission development, transmission operations, NERC (North American Electric Reliability Corporation) & FERC (Federal Energy Regulatory Commission) compliance, asset management, engineering & product delivery, and transmission planning & RTO (regional transmission organization) strategy.

Exhibit VII-1
PPL Electric Utilities Corporation
Electric Transmission and Substations Department Organization Chart
As of January 10, 2024



Source: Data Request EM-24

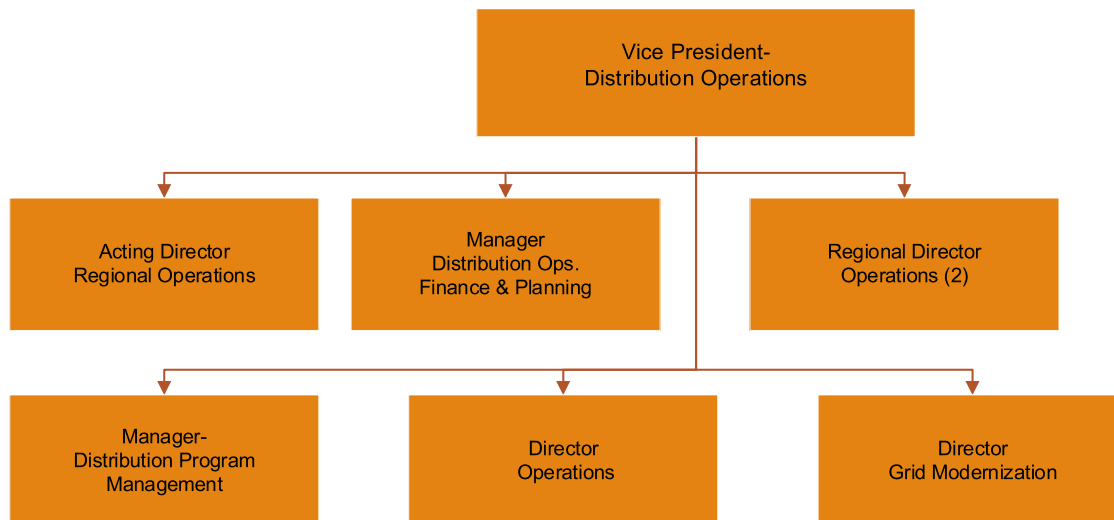
Major projects in Transmission & Substations include the improvement of data analytics by implementing several monitoring programs; the replacement of certain weathering steel transmission towers (which are approaching end of life); and the

²⁴ PPL also serves a limited number of customers in 4 additional counties.

replacement of equipment using SF₆ gas²⁵ with vacuum technology and alternative gas-based equipment. Transmission and Substations' stated strategy for the next five years is to focus on replacing transmission assets that are approaching end of life and installing smart technology on the transmission system to reduce operations and maintenance costs.

Electric Distribution is overseen by PPL Electric's Vice President of Distribution Operations (VP DO). As shown in Exhibit VII-2, reporting to the VP DO are the Director of Operations, three Directors of Regional Operations, the Director of Grid Modernization, the Manager of Distribution Program Management, and the Manager of Distribution Operations Finance and Planning.

Exhibit VII-2
PPL Electric Utilities Corporation
Electric Distribution Operations Department Organization Chart
As of January 10, 2024



Source: Data Request EM-24

PPL Electric's Distribution Operations separates its territory into six regions: Lehigh, Northeast, Central, Susquehanna, Harrisburg, and Lancaster. Reporting to the Vice President of Distribution Operations, three Regional Directors (currently two Regional Directors and one Acting Regional Director) are responsible for two of these territories each. One oversees Lancaster and Harrisburg, one for the Central and Susquehanna regions, and one for Lehigh and the Northeast regions. These directors

²⁵ SF₆ Gas, or Sulfur Hexafluoride, is a synthetic, odorless gas that is used in the electricity industry because it is highly stable, non-toxic, non-flammable, and electronegative, which means that it will not form other compounds that will alter its state and effectiveness. It is also the most potent greenhouse known to exist, being 23,500 times more effective at trapping infrared radiation than an equivalent amount of CO₂, and lasting for 3,200 years in the atmosphere.

oversee field operations in their respective territories. There is also a Director of Operations, in charge of night shift employees, metering, and operations centers. Also reporting to the Vice President of Distribution Operations is a Director of Engineering, a Director of Grid Modernization, and a Manager of Vegetation Management.

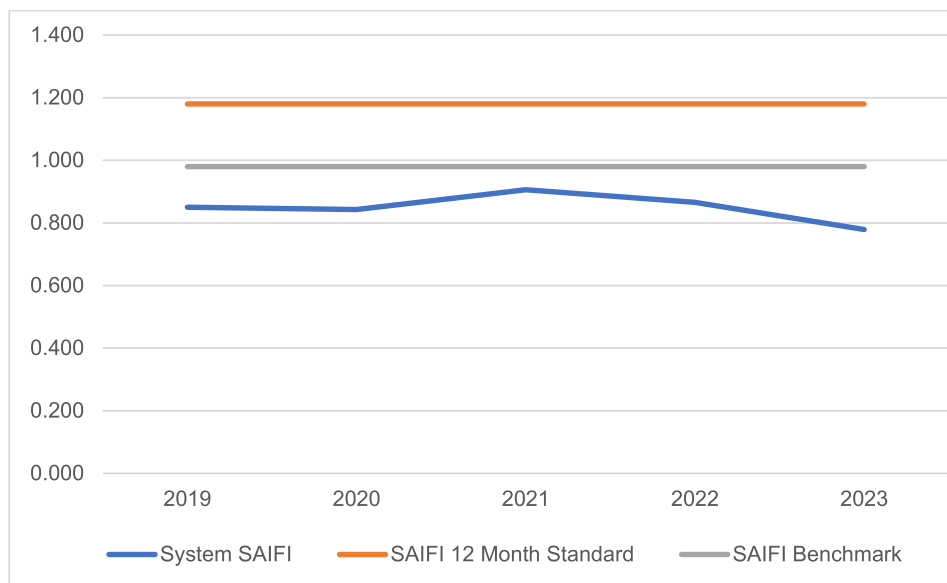
The strategic focus of Distribution Operations is to leverage automation and technology and improve reliability. For example, PPL Electric has deployed smart technologies that proactively identify power outages, power quality problems, etc. on the distribution system (sensing imminent failures). Other projects include DER (Distributed Energy Resource) Management; enhancement of PPL Electric's automation on single phase devices; and increased use of satellite imagery and LIDAR²⁶ to identify where vegetation management is needed. The company is also looking at moving storm prone infrastructure from arial to underground. Although this is a costly endeavor, it can also drastically improve the reliability of a segment.

In addition to these initiatives, PPL Electric has been increasing automation. In 2010, PPL Electric launched a "smart grid" pilot project that enables the company to react rapidly to changes on the delivery system, and to automatically re-route power around problems. The project included the implementation of an advanced Distribution Management System ("DMS") that enabled company operators to see the status of its distribution network in real-time. In 2016, PPL Electric completed a system wide rollout of FISR (Fault Isolation and Service Restoration) technology. FISR identifies faulted sections and quickly develops an optimized restoration plan, then automatically executes that plan. When FISR can handle the outage, customer's typically can be restored in under five minutes from the start of the outage. This technology allows for remote operation and monitoring of circuit sectionalizing equipment, and advanced fault location technology. The goals of FISR are to reduce the number of upstream customers affected by a service outage, reduce time necessary to restore customers by isolating faults, facilitate fault location, and reduce the necessary time for repair and restoration.

These efforts have already resulted in some reliability improvements. In the following charts, lower values indicate better performance. Exhibit VII-3 shows the system SAIFI from 2019 through 2023. System SAIFI (System Average Interruption Frequency Index) is the average number of interruptions that a customer will experience. SAIFI is calculated by dividing the number of customers with sustained interruptions) by the number of customers.

²⁶ Light Detection and Ranging – like radar using lasers instead of radio waves.

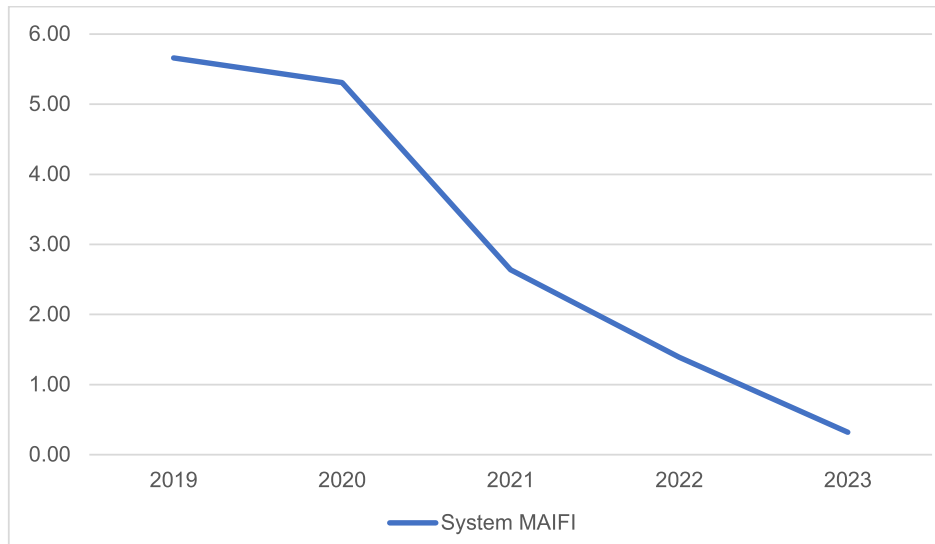
**Exhibit VII-3
PPL Electric Utilities Corporation
Total System SAIFI
2019-2023**



Source: Data Requests EO-15 and EO-43.

As seen in Exhibit VII-3, system SAIFI was consistently below both the 12-month standard (1.18) and the Commission benchmark (0.98). The system SAIFI decreased slightly from 0.85 in 2019 to 0.78 in 2023. Exhibit VII-4 shows the system MAIFI from 2019 through 2023. System MAIFI (Momentary Average Interruption Frequency Index) is the average number of momentary interruptions that a customer will experience during a typical year. MAIFI is calculated by dividing the total number of customer interruptions lasting less than five minutes in duration by the total number of customers served.

**Exhibit VII-4
PPL Electric Utilities Corporation
Total System MAIFI
2019-2023**



Source: Data Requests EO-15 and EO-43

MAIFI decreased throughout the audit period, a result of a large reduction in momentary outages caused by increased system automation and redundancies.

Findings and Conclusions

Our examination of the Electric Operations function included a review of PPL Electric's vegetation management, electric reliability, maintenance policies and procedures, staffing levels, etc. Based on our review, PPL Electric should devote additional effort to improving the effectiveness of its Electric Operations by addressing the following:

1. PPL Electric's overall system SAIDI and CAIDI are not meeting Commission reliability standards and benchmarks.

On December 16, 1999, the Commission entered a Final Order at Docket No. M-00991220, establishing reliability benchmarks and standards for Pennsylvania EDCs. These PUC-established benchmarks for SAIFI, SAIDI, and CAIDI were based on the average performance of each EDC during 1994-1998. In 2004, the Commission modified the benchmarks, standards, and the reporting requirements of the EDCs. Large EDCs, such as PPL Electric Utilities, are required to maintain standards for a rolling 3-year period within 10% of their PUC-established benchmark and for a rolling 12-month period within 20% of the benchmark. The intent of the two-tiered approach to

standard setting is to allow for variability in performance over short time period while reaching for near benchmark performance over the long term.

The following reliability factors are system-wide and are compared to the 12 Month Standard and Benchmark established by the PA Public Utility Commission for PPL Electric. Exhibit VII-5 shows the 12-Month Standard and Benchmark for the reliability factors.

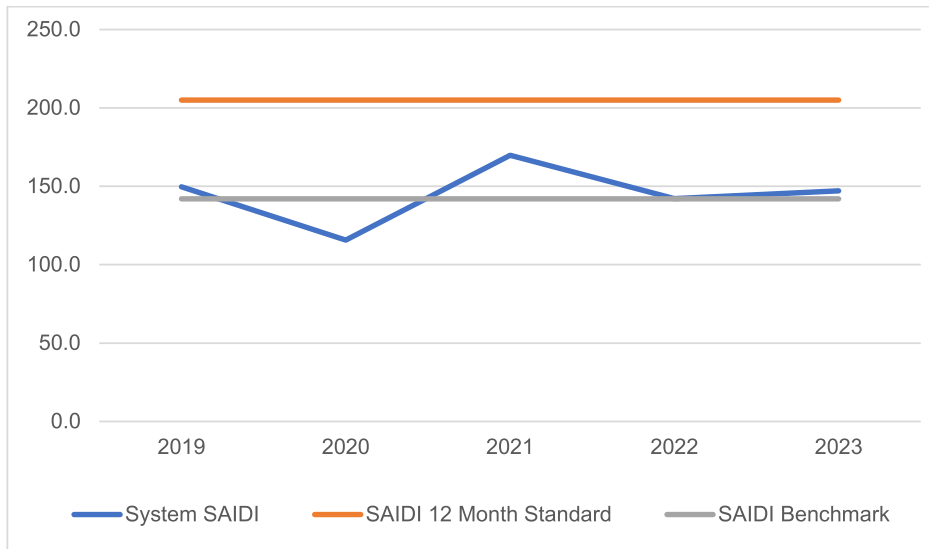
Exhibit VII-5
PPL Electric Utilities Corporation
PPL Electric's Quarterly Reliability Report to the PUC
PUC Systemwide 12-Month Standards and Benchmark Values for PPL Electric
2023

SAIFI Benchmark	SAIFI 12 Month Standard	SAIDI Benchmark	SAIDI 12 Month Standard	CAIDI Benchmark	CAIDI 12 Month Standard
0.98	1.18	142	205	145	174

Source: Q1 2023 PPL Quarterly Reliability Report

Exhibit VII-6 shows the system SAIDI (System Average Interruption Duration Index). This metric is the average duration in minutes for each customer served, calculated by dividing the sum of all customer interruption durations by the total number of customers served.

**Exhibit VII-6
PPL Electric Utilities Corporation
Total System SAIDI
2019-2023**

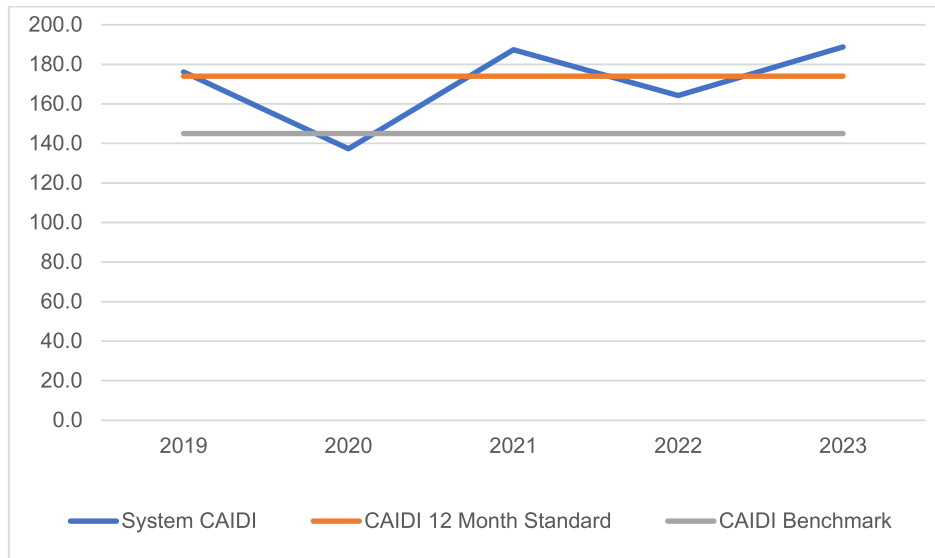


Source: Data Requests EO-15 and EO-43

As shown in Exhibit VII-6, the system SAIDI decreased slightly from 149.7 in 2019 to 147.1 in 2023 or a 1.7% change. PPL Electric's SAIDI is below the 12 Month Standard (205) every year but is above the PUC Benchmark (142) in 2019, 2021, and 2023. This means that in three of the last five years, the outage duration per customer over the entire system was above the PUC's Benchmark.

Exhibit VII-7 shows the system CAIDI (Custom Average Interruption Duration Index). This is the average duration that any given customer would experience, in minutes. Where SAIDI is the total interruption time per customer, CAIDI is the average length of outage for those actually experiencing it. This is also known as the average restoration time. This is calculated by dividing SAIDI by SAIFI, or the sum of all customer interruption durations divided by the total number of customer interruptions.

**Exhibit VII-7
PPL Electric Utilities Corporation
Total System CAIDI
2019-2023**



Source: Data Requests EO-15 and EO-43

The CAIDI increased from 176.1 in 2019 to 188.8 in 2023 or 7.2% over that time period. PPL's CAIDI is above the 12-Month Standard (174) and the Commission Benchmark (145) in 2019, 2021, and 2023, and below both in 2020. As shown in Exhibit VII-7, CAIDI was above the Commission's Benchmark, but below the 12-Month Standard during 2022. From the minor reduction in SAIFI in Exhibit VII-3, we can see that the frequency of outages has decreased. However, an improving SAIFI coupled with company performance on SAIDI and CAIDI indicates that when a customer is affected by an outage, they are experiencing longer outages. Here, the durations increased by about 12.7 minutes per customer affected.

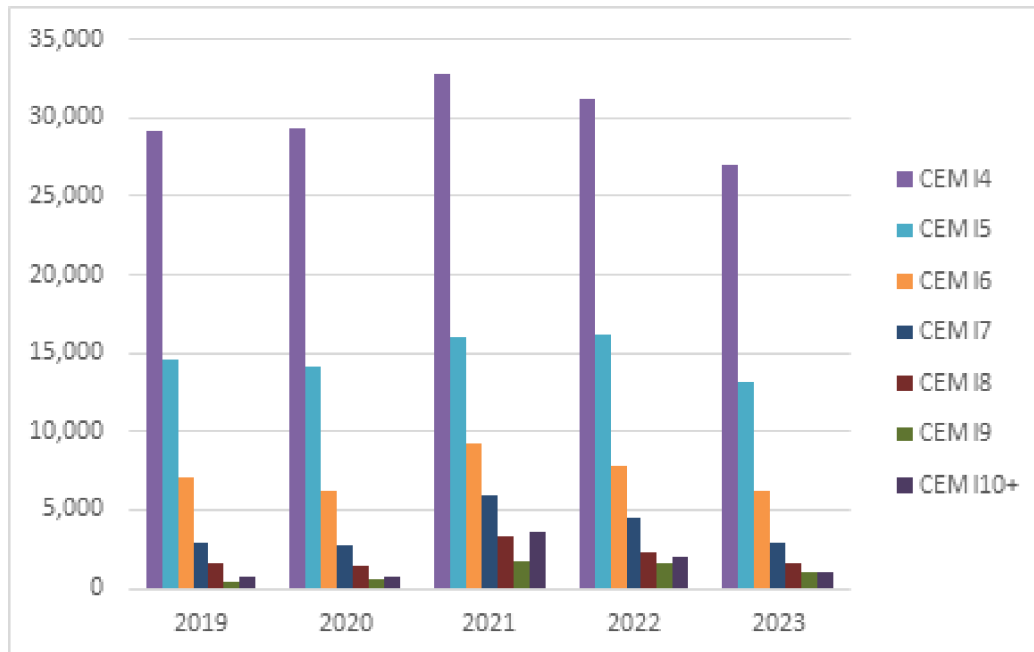
Management indicated that their primary focus is on improving SAIFI to reduce customer outages outright, which should also incidentally improve SAIDI. Most of PPL Electric's reliability programs do not focus on improving SAIDI and CAIDI. The company indicated that it is planning to increase the number of reliability-driven projects using SAIDI and CAIDI as metrics. However, due to higher storm counts, with a record number of storms in 2023, these SAIDI/CAIDI projects have been delayed. Nonetheless, the company plans to deploy these programs over the next few years. Still, the lack of focus and the damages sustained from increased storm activity means that PPL Electric has not reliably met the Commission's reliability standards for SAIDI and CAIDI. With predicted storm activity and severity increasing due to climate change²⁷, PPL Electric must focus on SAIDI and CAIDI to drive its reliability performance and meet customer expectations.

²⁷ See the Fifth National Climate Assessment at <https://nca2023.globalchange.gov/>.

2. PPL Electric's Customers Experiencing Multiple Interruptions (CEMI) is high.

Customers Experiencing Multiple Interruptions (CEMI) is a reliability metric that highlights individual customers experiencing multiple outages per year. This metric is expressed as CEMI#, where the # is the number of outages per year. For instance, CEMI4 means customers would have experienced exactly 4 outages per year. Meanwhile, CEMI10+ means customers experienced 10 or more outages for that year. These numbers exclude planned outages, outages related to major storm events, or momentary outages lasting less than five minutes. Exhibit VII-8²⁸ illustrates PPL Electric's CEMI results from 2019 through 2023.

Exhibit VII-8
PPL Electric Utilities Corporation
Total System CEMI
2019 - 2023



Source: Data Requests EO-15 and EO-43

As shown in Exhibit VII-8, the CEMI4+ is between 52,643 and 72,802 each year, while CEMI10+ is between 683 and 3,642 each year. Out of PPL Electric's 1.5 million total customers, this represents about 4% in the CEMI4+ range. PPL Electric tracks

²⁸ Since the last major storm was in 2018, before the start of the audit period, no major storms were excluded from this dataset.

several key performance indicators (KPIs) but does not have any goals for CEMI. Therefore, neither the company nor the Commission have any goals associated with CEMI4+ or CEMI10+ for PPL Electric.

PPL Electric's reliability program has several programs that incorporate CEMI as a factor but are not focused on CEMI as a goal or primary indicator. For example, PPL Electric is scoring, identifying, and tracking its worst performing circuits, and is taking remedial actions for each. Since 2018, it is also using an asset optimization strategy based on several data-driven failure probability models to ensure that aging infrastructure continues to be appropriately addressed. At this time, legacy CEMI programs and MAIFI²⁹ programs were combined with the reliability preservation program, which began in 2019. All projects are vetted against a common prioritization methodology to ensure consistency and that systematic benefits are quantified across the company for any reliability program.

66 Pa.C.S. § 1501 states that, "Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service ... Such service also shall be reasonably continuous and without unreasonable interruptions or delay." Although the Commission has not defined adequate service based upon the number of interruptions, the PUC auditors contend that any value for CEMI10+ indicates poor performance. Therefore, the goal for CEMI10+ should be set at zero and the company should establish realistic goals for CEMI4+. While PPL Electric has several reliability programs and made infrastructure investments, CEMI metrics have not been improving. At some point, high CEMI results could, at a minimum, lead to customer dissatisfaction or regulatory action or enforcement. Therefore, PPL Electric should reevaluate its reliability program to drive improvement in its CEMI performance, specifically striving to eliminate any CEMI10+.

3. Tracking of investigations for suspected theft is inconsistent and does not track completion accurately.

At PPL Electric, theft of service investigations are triggered by the AMI (Advanced Metering Structure) if data is suspect or from reports of theft discovered in the field. Once identified, PPL Electric maintains a well-defined investigation process, which details how a technician should investigate and who to report the findings to. However, data is tracked informally within a tracking document. Of the 409 investigations included within the audit staff's analysis, only 75 had documented results or additional details related to the investigation. Upon further inquiry, the PUC auditors found that the theft of service tracking document was not consistently updated by the Meter Technicians following completion of an investigation. Therefore, the unaddressed investigations listed on the tracking sheet were misleading. At the close of fieldwork, Metering Operations was still using a manual process to track theft of service investigations through a weekly email.

²⁹ Momentary Average Interruption Frequency Index, the average number of momentary interruptions that a customer would experience during a given period (typically a year).

PPL Electric's Metering Operations indicated that it is planning to refine the tracking process to improve the reporting format, the consistency of reporting, and to align the reporting methodology and tracking process across all regional metering groups. Moreover, PPL Services Corporation plans to implement this tracking mechanism across all metering departments. In addition to the process upgrade, PPL Electric plans to track theft of service investigations through a KPI. It is a best practice to investigate, document, and mitigate theft of service as soon as practicable. Until the updated process is deployed, PPL Electric is at an increased risk of missing investigations of suspected theft of service, duplication of work, decreased efficiency etc. Therefore, PPL Electric should expedite its tracking mechanism and corresponding KPI.

Recommendations

- 1. Improve SAIDI and CAIDI performance to consistently achieve the minimum thresholds set by the Commission benchmarks and standards on reliability.**
- 2. Modify or expand existing reliability programs to eliminate CEMI10+ and set goals for reducing CEMI4.**
- 3. Complete and properly record the results of theft-of-service investigations for all accounts where theft or damage to meters is suspected.**

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-3048732

PPL Electric Utilities Corporation

Statement No. 2-R

Rebuttal Testimony of Bethany L. Johnson

Dated: August 13, 2024

Rebuttal Testimony of Bethany L. Johnson

I. INTRODUCTION

Q. Please state your full name and business address.

A. Bethany L. Johnson, 827 Hausman Road, Allentown, Pennsylvania, 18104.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Services Corporation as the Senior Director of Regulatory.

Q. Did you previously submit testimony on behalf of PPL Electric in this proceeding?

A. Yes. I submitted direct testimony on behalf of the Company (PPL Electric Statement No. 1).

Q. Please briefly describe the subject matter of your rebuttal testimony in this proceeding.

A. My testimony will respond to portions of the direct testimony submitted by Joseph Kubas on behalf of the Pennsylvania Public Utility Commission's ("Commission") Bureau of Investigation and Enforcement ("I&E") (I&E Statement No. 1), the direct testimony submitted by Jerome D. Mierzwa on behalf of the Office of Consumer Advocate ("OCA") (OCA Statement No. 1), and the direct testimony submitted by Mark D. Ewen on behalf of the Office of Small Business Advocate ("OSBA") (OSBA Statement No. 1). Specifically, I will rebut their claims that the Company's request for a waiver of the Distribution System

1 Improvement Charge (“DSIC”) cap of 5% and increase of the cap to 9% is not
2 appropriate under the circumstances, including their assertions about how PPL
3 Electric should file a base rate case instead of seeking a DSIC cap waiver and
4 increase. I also will clarify the length of the requested waiver and provide
5 updated calculations of the average bill impacts for customers. Lastly, although
6 I maintain that the Company’s DSIC cap waiver and increase should be
7 approved as originally requested, I recognize the Commission’s discretion in
8 approving an increase in the cap to a level less than 9% if the Commission gives
9 any credence to the other parties’ arguments.

10
11 **Q. Are you sponsoring any exhibits in this proceeding?**

12 A. Yes. I am sponsoring PPL Electric Exhibits BLJ-1R and BLJ-2R.

13
14 **II. A Waiver of the DSIC Cap Is Expressly Built into the DSIC Statute**

15 **Q. Before addressing the other parties’ arguments in detail, do you have any**
16 **overall observations?**

17 A. Yes. The DSIC Cap Waiver requested has been expressly considered and
18 authorized under Act 11 of 2012. See 66 Pa. C.S. § 1358(a)(1). Further, in
19 Section 1358(c) of the Public Utility Code, the statute notes that unless
20 expressly provided, nothing shall be construed as limiting the existing
21 ratemaking authority of the Commission. See *id.* § 1358(c). These points are
22 important because the other parties appear to consider the 5% cap as
23 essentially immovable. Indeed, OSBA witness Ewen asserts that “[f]rom a
24 commonsense standpoint,” the “legislature used its judgement in establishing

1 the 5% cap as to what it constituted an acceptable rate increase without a full
2 base rates review” and that the Company is arguing that its judgment substitute
3 that of the legislature. (OSBA St. No. 1, p. 5.) The Company has made no such
4 arguments and is instead recognizing the authority granted to the Commission
5 by the General Assembly. Instead, I surmise that it seems only “commonsense”
6 that a utility would exercise all tools available to it under the Pennsylvania Public
7 Utility Code to ensure that it provides adequate, efficient, safe, reliable, and
8 reasonable service.

9 Also, parties have attempted to attach additional conditions and
10 measurements to the Commission’s authority to grant a waiver, which I will
11 discuss further in my testimony. No such conditions or measurements exist in
12 the statute but for the utility to demonstrate that the DSIC cap waiver is
13 necessary to ensure and maintain adequate, efficient, safe, reliable and
14 reasonable service. The Long-Term Infrastructure Improvement Plan (“LTIIP”)
15 and DSIC mechanisms exist to protect customers from a lack of this service.
16 Therefore, it is this standard, and only this standard, for which the Commission
17 should consider when evaluating the Company’s proposal.

18
19 **III. Length of the Requested Waiver of the DSIC Cap**

20 **Q. I&E witness Kubas and OCA witness Mierzwa assert that the length of the**
21 **Company’s requested waiver of the DSIC cap is unclear. (I&E St. No. 1,**
22 **pp. 8-9; OCA St. No. 1, p. 12.) Relatedly, OSBA witness Ewen states that**
23 **“[a]t a minimum, the Commission should not approve any waiver that**
24 **does not include an explicit alternative deadline to the next base rate case**

(e.g., the end of the Company's LTIP)." (OSBA St. No. 1, p. 7.) Please respond.

A. Both I&E and OCA have asserted a lack of clarity regarding the length of PPL Electric's requested waiver, however, neither party sought clarity through discovery propounded to date. The Company recognizes that in other matters in which the Commission has approved a DSIC cap waiver, there was a specified duration. PPL Electric would be amenable to a specified period of either the duration of the Company's Third LTIP (applicable through December 31, 2027, and included for cost recovery in the DSIC mechanism for the rates effective April 1, 2028, which include plant-in-service for December 2027, January 2028 and February 2028) or the effective date of new distribution rates resulting from a distribution base rate case, whichever were to occur first.

IV. Base Rate Case Versus DSIC Cap Waiver

Q. I&E witness Kubas and OCA witness Mierzwa argue that the Company's request for a Distribution System Improvement Charge ("DSIC") cap waiver and increase from 5% to 9% should be denied because the Company has not filed a base rate case since 2015. (I&E St. No. 1, pp. 14-17; OCA St. No. 1, pp. 9-10.) Do you agree?

A. No. Both witnesses have decidedly attempted to make their cases based on the timing since PPL Electric's last base distribution rate case. However, nowhere in the statute is there a requirement that a rate case be filed for a waiver to be granted. This is one of the new and unwritten conditions that both I&E and OCA seek to impose on PPL Electric. It is within the Commission's

1 authority and discretion to grant PPL Electric a waiver of the 5% limit “in order
2 to ensure and maintain adequate, efficient, safe, reliable and reasonable
3 service.” 66 Pa. C.S. § 1358(a)(1) (emphasis added). That is exactly why PPL
4 Electric has petitioned for a waiver in this instance, as discussed further in Mr.
5 Selkregg’s direct and rebuttal testimony. (See PPL Electric St. Nos. 1 and 1-
6 R.)

7 In fact, I&E witness Kubas and OCA witness Mierzwa seem to object to
8 the Company’s proposal as it relates to rate case timing as a matter of principle.
9 Neither has debated the Company’s declining reliability metrics or increased
10 storm experience. Neither has noted that customers would be more impacted
11 by a base distribution rate case because the Company would seek to recover
12 all costs and not just those related to the LTIIP. Waiver of the DSIC cap
13 supports the theory of gradualism in that customers may see an increase up to
14 9% over time. Also, even with an increase in the DSIC cap, customers will
15 benefit from the declining net plant balances from previously installed
16 equipment and completed projects.

17 Lastly, when the Company does file a distribution base rate case, PPL
18 Electric will still seek recovery of these costs. The parties’ consternation about
19 timing of a base rate case seems to be more about the line item on the customer
20 bill in which the costs are recovered (DSIC or base rate case), rather than the
21 amount to be recovered or the need to maintain safe and reliable service, which
22 is the basis of the DSIC Cap waiver.
23

1 **Q. Are you aware of any requirement that a public utility must file a base rate**
2 **case within a certain number of years before obtaining a waiver of the**
3 **DSIC cap (see OCA St. No. 1, p. 10)?**

4 A. No. Although the statute requires a public utility to file a base rate case within
5 the past five years before petitioning to establish a DSIC, I am unaware of any
6 requirement that a public utility must file a base rate case within a certain
7 number of years before receiving a waiver of the DSIC cap. It is clear from the
8 statute that the legislature considered if and when rate cases should be filed
9 and if and under what conditions there should be opportunity for a waiver. I
10 believe this is clear because of the rate case requirements linked to an initial
11 DSIC petition and because of the language surrounding the 5% waiver. The
12 statute details several requirements to be included when a utility files an LTIIP
13 and DSIC. It also identifies specifics for a DSIC mechanism, review of LTIIP
14 and DSIC mechanisms, and customer protections, which are included in the
15 Company's customer-facing tariff. Comprehensively, these requirements were
16 established not to circumvent or replace a distribution base rate case, as parties
17 claim that the Company is trying to do. Rather, these requirements provide
18 transparency, opportunity, and accountability for customers, stakeholders, and
19 the Company while providing timely recovery for the reasonable and prudent
20 investments made in a previously approved LTIIP. I will note that both
21 stakeholders and the Commission have opportunities to review the Company's
22 LTIIP filings, its Annual Asset Optimization Plans ("AAOPs"), and its DSIC rate
23 filings, in addition to the LTIIP periodic review at least once every five years of
24 LTIIP. The Company has not received intervention or complaints from

1 stakeholders regarding any of the AAOPs or DSIC rate filings. Further, PPL
2 Electric received only limited discovery and comments in its Third LTIIP
3 proceeding. The point is that there are ample opportunities for parties to
4 investigate both the LTIIP and the DSIC cost recovery with or without a DSIC
5 cap waiver in lieu of a full distribution base rate case proceeding and as such,
6 one is not required for the Commission to approve a waiver.

7
8 **Q. OCA witness Mierzwa relies on the Commission's decision involving**
9 **Newtown Artesian Water Company's ("NAWC") DSIC cap waiver as**
10 **support for his argument that PPL Electric's proposal should be denied**
11 **because the Company has not filed a base rate case since 2015. (OCA St.**
12 **No. 1, p. 10.) Is his reliance on that decision misplaced?**

13 A. Yes. Each DSIC cap waiver petition should be evaluated on its merits. In that
14 case, NAWC tried to justify its proposed waiver of the DSIC cap based on: (1)
15 its annual revenue shortfall if the DSIC rate were not increased; and (2) three
16 other water utilities were granted DSIC cap waivers. *Pa. PUC v. Newtown*
17 *Artesian Water Co.*, Docket Nos. R-2017-2624240, *et al.*, pp. 10-11 (Order entered
18 Order entered July 12, 2018) ("NAWC"). The Commission was "not persuaded
19 that NAWC is entitled to a DSIC cap increase simply because it will encounter
20 a shortfall if the cap is not increased." *Id.*, p. 20. The Commission also found
21 that the three water utilities who were granted increases in their DSIC rates to
22 7.5% "were meeting their LTIIP projections and accelerating them," unlike
23 NAWC. *Id.*, p. 21.

24 In addition, at that time, NAWC had only exceeded the DSIC cap in two

1 consecutive quarters. See *id.*, p. 13. Also, NAWC had base rates that were
2 designed based on a Future Test Year (“FTY”),¹ not a Fully Projected Future
3 Test Year (“FPFTY”). *Id.*, p. 22. The Commission determined that “if NAWC
4 filed a base rate case utilizing the FPFTY, NAWC could be permitted to recover
5 a larger portion of LTIP expenses and reduce its reliance on DSIC recovery.”
6 *Id.* Thus, the Commission did not base its decision solely on the fact that NAWC
7 had not filed a base rate case in the last 6 years, which is the only fact that Mr.
8 Mierzwa highlights in his direct testimony.

9 Here, PPL Electric’s situation is readily distinguishable from NAWC’s
10 proposal. PPL Electric is not simply proposing to increase the DSIC cap to
11 make up for any annual revenue shortfall. As explained in the Company’s direct
12 testimony and in Mr. Selkegg’s rebuttal (PPL Electric St. No. 1-R), the
13 requested waiver is necessary to ensure and maintain adequate, efficient, safe,
14 reliable, and reasonable service, particularly to address the significant reliability
15 challenges on the Company’s distribution system. Further, unlike NAWC, PPL
16 Electric has been meeting its overall LTIP project completions and accelerating
17 them, has exceeded the DSIC cap in 14 quarters (not the two consecutive
18 quarters experienced by NAWC), and has base rates that are designed based
19 on a FPFTY. Thus, although the Commission did call attention to the length of
20 time since NAWC last filed a base rate case, these other critical facts distinguish
21 the NAWC decision from PPL Electric’s proposal.

¹ See *Pa. PUC v. Newtown Artesian Water Co.*, Docket Nos. R-2011-2230259, *et al.*, 2011 Pa. PUC LEXIS 7, at *1 (Recommended Decision dated Sept. 12, 2011), *adopted*, Docket Nos. R-2011-2230259 (Order entered Oct. 14, 2011).

1
2 **Q. Is the Company using its Petition for a waiver of the DSIC cap as a**
3 **“substitute for a base rate proceeding,” as alleged by I&E witness Kubas**
4 **(I&E St. No. 1, p. 15)?**

5 A. No, PPL Electric is not petitioning for a DSIC waiver to substitute for a base rate
6 proceeding. The Company is seeking to supplement its revenue to re-invest in
7 LTIIP work and non-LTIIP work that it believes will measurably increase
8 reliability. Mr. Kubas has provided a hypothetical of the additional revenue that
9 may be recovered from customers should the Company file a base rate case.
10 (See I&E St. No. 1, p. 16.) His example attempts to demonstrate how a base
11 rate increase would provide even more revenue for the Company than a DSIC
12 waiver. (See *id.*) However, Mr. Kubas does not provide estimated bill impacts
13 to customers under his hypothetical. He also fails to acknowledge that by the
14 Company requesting a DSIC cap waiver, PPL Electric is balancing continued
15 investment in reliability with customer bill impacts. Even under his example, the
16 Company’s DSIC cap waiver without a base rate increase would amount to a
17 request for less revenue with a commitment to complete at least the same
18 amount of work.

19 In addition, I note that the DSIC cap increase from 5% to 9% as
20 requested by the Company is estimated to recover approximately \$45 million
21 per year. This is a far cry from the base rate increases requested by PPL
22 Electric peer utilities in 2024, which range from approximately \$133 million to
23 \$502 million. Further, approval of a DSIC waiver also “caps” the return on equity
24 that PPL Electric can earn at the level stated in the Commission’s quarterly

1 financial report.

2
3 **Q. OCA witness Mierzwa argues that the Company can issue debt financing**
4 **to increase its cash flow or file a distribution base rate case, as opposed**
5 **to increasing the DSIC cap, if it needs to increase capital. (OCA St. No. 1,**
6 **p. 8.) Please respond.**

7 A. Mr. Mierzwa has not provided any support that indicates assumptions or
8 calculations, such as the cost of debt, amount of debt issues, or term of debt,
9 he may have used to establish that issuing debt is a better or less expensive
10 alternative to the Company's proposal. He seems to be implying that the
11 Company could issue debt instead of seeking recovery from customers;
12 however, he fails to point out customers also pay for any costs of debt because
13 the DSIC rate uses the Company's actual debt cost.

14
15 **Q. OSBA witness Ewen asserts that the Company's own bill impacts analysis**
16 **shows that the Company may be filing a base rate case soon. (OSBA St.**
17 **No. 1, pp. 6-7.) Please respond.**

18 A. The Company has stated in both response to discovery as well as on its
19 earnings call that it does not anticipate a distribution base rate case before 2026.
20 However, PPL Electric continually evaluates and considers many factors when
21 determining the appropriate timing of a distribution base rate case, just as it
22 considered several factors when it decided to petition for the DSIC cap waiver.
23 One of these considerations is balancing the need to make investments now to
24 improve reliability and resiliency due to increasing storm activity in both

frequency and severity with the cost to customer. By requesting an increase in the DSIC cap, the Company is acknowledging its need to invest more in reliability work now to improve its customers' reliability experience as well as the challenges associated with rate shock and increasing customers' bills. By requesting the DSIC cap waiver, all of the customer protections in place at 5% will remain in place at 9%, including a limit to what the Company can recover, albeit a higher limit, and the Company can realize greater reliability improvements sooner, rather than waiting until its next base rate case.

Q. I&E witness Kubas and OSBA witness Ewen argue that the length of time since the Company's last base rate case warrants denial of the Company's Petition, because a DSIC cap increase would exacerbate any class cost of service changes that occurred since 2015. (I&E St. No. 1, p. 15; OSBA St. No. 1, pp. 5-6.) Do you agree with their arguments?

A. No. Both I&E and OSBA briefly note this issue, with OSBA declaring that the DSIC mechanism "freezes the relative cost responsibility." (OSBA St. No. 1, p. 5.) This is simply not true. It is the base rate case process that establishes cost responsibility, and that cost responsibility remains in place until a new rate case is filed. Neither the DSIC mechanism nor any other surcharge mechanism "freezes" anything. This is because there are not any Section 1307 automatic adjustment clauses that require an updated class cost of service study. If I&E's and OSBA's witnesses were correct, then all Section 1307 mechanisms, including the DSIC, would have been rejected.

Moreover, there is no evidence that the Company's current class cost of

1 service is unreasonable. I have been advised by counsel that existing rates,
2 including the underlying cost and revenue allocation and rate design, are
3 presumed to be just and reasonable and that parties have a “very heavy burden”
4 to prove that existing rates are unjust and unreasonable. *Cup v. Pa. PUC*, 556
5 A.2d 470, 472 (Pa. Cmwlth. 1989); *Brockway Glass Co. v. Pa. PUC*, 437 A.2d
6 1067, 1070 (Pa. Cmwlth. 1981); *Shenango Twp. Bd. of Supervisors v. Pa. PUC*,
7 686 A.2d 910, 914 (Pa. Cmwlth. 1996) (citations omitted). The length of time
8 between base rate cases does not suddenly transform existing rates from being
9 presumed just and reasonable to being presumed unjust and unreasonable.

10 Further, this is another new and unwritten condition that the parties are
11 seeking to impose on the decision to approve PPL Electric’s DSIC Cap Waiver
12 Petition. The requirement for a class cost of service study is not included in the
13 statute and has not been contemplated by the Commission in any of the
14 proceedings or Orders issued implementing a DSIC mechanism or approving a
15 waiver. There were no limits or requirements put in place that a distribution
16 base rate case much be filed every X years in order for a utility to continue to
17 use a DSIC mechanism or any other Section 1307 automatic adjustment clause.

18 Also, the DSIC mechanism was designed to be less burdensome than a
19 rate case. The Commission states in the *Final Implementation Order* “that the
20 DSIC is intended to be a straightforward mechanism which is easy to calculate,
21 easy to audit and which does not require a full rate case analysis.”² Even the
22 House Legislative Journal on the debate regarding House Bill 1294, which

² *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611, p. 38 (Order entered Aug. 2, 2012).

ultimately became Act 11, considered that “by avoiding full-blown, expensive, lengthy rate review cases, we are actually going to be helping our customers with marginal adjustments and improvements in the infrastructure. Particularly at a time when so many utilities have been damaged by recent storms, we need to think first and foremost about rebuilding our infrastructure...”

Q. I&E witness Kubas and OCA witness Mierzwa observe how the Company projected in 2015 that it would be filing its next base rate case in two years, as apparent support for their position that the Company should file a base rate case instead of pursuing a waiver of the DSIC cap. (I&E St. No. 1, pp. 14-17; OCA St. No. 1, p. 9.) Please respond.

A. First, I will note again that neither I&E nor OCA seems to be arguing about the need regarding safe and reliable service, nor have they taken significant issue regarding the impact on customers. They appear to stand on a fictitious principle that a distribution base rate case is a requirement for a DSIC cap waiver.

In addition, when PPL Electric had filed its distribution base rate case in 2015, the Company had previously filed rate cases in 2012 and 2010. The trend at the time certainly indicated a 2-3 year rhythm. However, PPL Electric had not yet completed its first LTIIP and only submitted a rate case using the Fully Projected Future Test Year (“FPFTY”) for the first time. Ultimately, PPL Electric’s 2015 distribution base rate case resulted in a full, unanimous settlement, which included I&E and OCA.

The Company, as it had outlined in its first LTIIP, was in a significant distribution system investment phase at that time. Because of the level of

1 investment, PPL Electric realized the potential impacts on customer bills and
2 made a commitment to focus on data analytics, innovation, and technology –
3 making sure the Company was making the right capital investments, notably,
4 those that could increase reliability and create Operating and Maintenance cost
5 efficiencies. The Company's Petition should not be dismissed based on its
6 pursuit of investing responsibly and prudently. PPL Electric continues that
7 strategy, as had been noted in its Petition for Approval of Major Modifications to
8 its Existing Long-Term Infrastructure Improvement Plan (Docket No. P-2022-
9 3034972).

10
11 **Q. I&E witness Kubas does not support lengthy rate case intervals because**
12 **they can impact safety due to funds availability. (I&E St. No. 1, p. 15.)**
13 **Please respond.**

14 A. Distribution rate case intervals are not set by statute or regulation in the
15 Commonwealth of Pennsylvania. If Mr. Kubas is concerned about safety due
16 to funds availability, he should actually support PPL Electric's request for a
17 waiver of the DSIC Cap. Indeed, it is ultimately the additional funding (whether
18 through a distribution base rate case or through a DSIC cap waiver) that
19 supports safety and reliability, not the particular line item on the customer bill
20 from which the funding is derived.

1 **Q. OCA witness Mierzwa contends that base rate cases are important for**
2 **prudency review reasons and that the Company is not entitled to a DSIC**
3 **cap increase simply to avoid regulatory lag. (OCA St. No. 1, p. 10.) Please**
4 **respond.**

5 A. PPL Electric agrees with the need for prudency review and believes there is a
6 comprehensive process that allows for this review in the context of DSIC eligible
7 work. If prudency were only determined through a base rate case proceeding,
8 then the very permission of Section 1307 automatic adjustment clauses would
9 be under attack. As stated elsewhere in my rebuttal testimony, Act 11 outlines
10 specific requirements for petitioning for an LTIP, petitioning for a DSIC
11 mechanism, calculating the DSIC mechanism, instituting customer protections,
12 reviewing the LTIP, and reporting through the AAOP process. Additionally, the
13 Commission's Bureau of Audits periodically audits DSIC cost recovery
14 mechanisms to ensure compliance. The parties have ample opportunity to
15 investigate the Company's LTIP, evaluate the Company's AAOP filings, review
16 the Commission's mid-term audit report, and evaluate the quarterly DSIC rate
17 filings. In fact, as Mr. Mierzwa highlights, the Commission approved in part and
18 denied in part PPL Electric's Petition for major modifications to the Company's
19 Third LTIP. The review that took place was in the context and confines of Act
20 11 and the Commission's resulting regulations, thereby enforcing that the
21 established comprehensive process is sufficient.

1 **Q. Would the Company's request for a DSIC cap waiver eliminate regulatory**
2 **lag on PPL Electric's planning investments to support reliability of**
3 **service?**

4 A. No. Mr. Mierzwa starts with thinking the Company needs to provide evidence
5 that a base rate case is unreasonable to collect costs beyond the 5% cap but
6 that is not a requirement of statute or regulation. He notes that Act 11 does not
7 mandate that the Commission guarantee a utility full cost recovery through the
8 DSIC rate and the Company's agrees with this, otherwise it would be requesting
9 a waiver beyond 9%. The Company will still experience regulatory lag to the
10 extent its calculated DSIC rate is above the requested 9% cap.

11
12 **Q. OCA witness Mierzwa presents a hypothetical for recovery of rate case**
13 **expense as an example of how the Company's existing base rates, which**
14 **were established pursuant to a "black box" settlement in its 2015 base**
15 **rate case, have enabled PPL Electric to earn a sufficient return. (OCA St.**
16 **No. 1, p. 14.) Are there significant flaws with his hypothetical?**

17 A. Yes. First, this theory seems to imply that the Commission has erred in its
18 judgement of the fair and reasonable return established in its Quarterly Earnings
19 Report. PPL Electric is and has been below the Commission's declared return
20 on equity for 9 quarters. Being below this threshold means that PPL Electric
21 can recover from customers at the DSIC rate of 5%. A basic understanding of
22 these customer protections demonstrates the flaw in Mr. Mierzwa's theory. How
23 can PPL Electric's rate of return be below what the Commission has declared
24 to be a fair and reasonable rate of return, but still be earning a sufficient return?

1 Even as the Company recovers at the current DSIC cap of 5%, it continues to
2 be under the Commission's established return on equity.

3 Second, the theory ignores that: (1) the current base rates were
4 established pursuant to a settlement agreement to which the OCA agreed; and
5 (2) the settlement was a "black-box" settlement, so approval of the Company's
6 rate case expense was not explicit. In fact, as Mr. Mierzwa conceded in
7 discovery, "[t]he exact amount" of the rate case expense "in base rates is not
8 known" due to the "black-box" nature of the settlement. (PPL Electric Exhibit
9 BLJ-1R [Answer to PPL to OCA-I-10].) Yet, his example assumes that the "full
10 rate case expense claim is included in base rates." (PPL Electric Exhibit BLJ-
11 1R [Answer to PPL to OCA-I-10].)

12 Third, Mr. Mierzwa has selected one of the few items, rate case expense,
13 which a utility must normalize, meaning it is a one-time expense incurred by the
14 Company that must be spread over a longer time period so as not to over-
15 recover the cost incurred. PPL Electric normalized its rate case expense over
16 a two-year period because that had been the general cadence of the Company's
17 rate case at the time (distribution base rate cases were filed in 2010, 2012, and
18 2015). Mr. Mierzwa posits that because PPL Electric has not filed for a rate
19 case in 9 years instead of in 2 years matching the period of normalization, the
20 additional \$7 million of revenue the Company has recovered has provided it with
21 sufficient return. Aside from the significant capital investment the Company has
22 *not* recovered from customers, \$7 million of revenue over 9 years does not make
23 for a return sufficient enough to reject the Company's waiver request.

24

1 **Q. Please respond to OCA witness Mierzwa's claim that it is unreasonable to**
2 **increase the DSIC cap at the risk of further delaying base rate case review,**
3 **as "by the conclusion of 2027, the Company projects that it will have made**
4 **eligible DSIC investments of roughly \$1.4 billion which are not currently**
5 **reflected in base rates." (OCA St. No. 1, p. 15.)**

6 A. Again, a distribution base case is not a requirement for approval of a DSIC cap
7 waiver, nor does the statute or regulation consider a limit on DSIC investment.
8 And while Mr. Mierzwa notes DSIC investments of roughly \$1.4 billion, it should
9 be noted that PPL Electric's most recently Commission-approved DSIC rate
10 filing for prices effective July 1, 2024, reflects a rate base net of accumulated
11 depreciation, retirements and ADIT of \$726 million, or approximately half of Mr.
12 Mierzwa's figure. (See PPL Electric Exhibit BLJ-2R, Schedule A, p. 1 [June 20,
13 2024 DSIC Rate Filing].) The level of investment has been transparent since
14 2016 through PPL Electric's LTIP filings, AAOP filings, and DSIC rate filings.
15 At the conclusion of PPL Electric Second LTIP, the Bureau of Technical Utility
16 Services admonished PPL Electric for not spending enough to measurably
17 improve its declining reliability. When the Company filed its Third LTIP, it
18 received no indication from any stakeholders that it should spend less on
19 keeping customers' lights on. It is inherently backwards and contrary to the
20 Company's duty to provide safe and reliable service if it must let its reliability
21 deteriorate significantly before taking action to invest in its system. That is why
22 the DSIC exists in the first place – to provide utilities with an incentive to
23 accelerate investments that are designed to ensure and maintain adequate,
24 efficient, safe, reliable, and reasonable service by providing for timely recovery

1 of those investments' costs.

2 Furthermore, Mr. Mierzwa fails to recognize the approximately \$3.7
3 billion of non-DSIC distribution capital investment the Company is not
4 recovering since its base rates took effect January 1, 2016. PPL Electric has
5 been able to do this by balancing its capital investment and Operation and
6 Maintenance spend and holding distribution base rates steady for customers for
7 9 years – proof that the Company holds dear consideration for how its spending
8 impacts customers' bills.

9
10 **V. DSIC Calculations**

11 **Q. OCA witness Mierzwa claims that the Company's projected DSIC rates are**
12 **overstated because the Company based its calculation on spending that**
13 **included the \$84.4 million for Predictive Failure Technology ("PFT").**
14 **(OCA St. No. 1, p. 12.) Please respond.**

15 **A.** While the Company's projections put forward in its Petition did include the
16 approximately \$84.4 million for PFT, the projections are not misrepresented, nor
17 does the declaration that PFT work is not DSIC-eligible undermine the
18 Company's requested waiver. In fact, the denial of PFT's inclusion in the Third
19 LTIIP underscores that: (1) the comprehensive review process described earlier
20 in my testimony enables stakeholders to challenge the LTIIP, including the
21 major modifications; and (2) all the customer protections in place under the
22 DSIC still exist.

23 Also, when approving in part and denying in part the Company's Petition
24 for major modifications to the Third LTIIP, the Commission approved over

1 approximately \$200 million of additional work, bringing the total LTIP value to
 2 approximately \$715 million. Given that the Company has been above the 5%
 3 cap for 14 quarters, the additional spending will continue to increase the
 4 calculated price well above the current 5% cap. Additionally, as the Company
 5 has previously stated, increasing the cap will help finance non-DSIC eligible
 6 work that will benefit reliability and quality of service, such as PFT, which the
 7 Commission stated "may be positive from a cost-benefit perspective."³

8 Finally, the Company provided estimates that using its original LTIP, the
 9 calculated DSIC price could be as high as 11.84%, still well above the cap
 10 without any modification. Estimates using the Commission approved modified
 11 LTIP show that the calculated DSIC price could still be as high as 13.63% in
 12 2027. Thus, excluding PFT work from the DSIC eligible investment does not
 13 change the Company's need for a waiver of the 5% cap.

14
 15 **Q. I&E witness Ewen presents calculations of the projected impact of the**
 16 **proposed waiver on large usage customers' bills, noting how the**
 17 **Company only presented the impact on residential customers' bills. (I&E**
 18 **St. No. 1, pp. 21-22.) Please respond.**

19 **A.** I&E did not make efforts to ascertain the impact on large usage customer bills
 20 though the Company will provide that a Rate LP-4 customer using 200,000 kWh,
 21 1,000 kW, and ICAP demand of 1,000 kW may see a distribution bill increase

³ *Petition of PPL Elec. Utils. Corp. for Approval of Major Modifications to its Existing Long-Term Infrastructure Improvement Plan*, Docket No. P-2022-3034972, p. 9 (Order entered July 11, 2024).

of 3.8% (LP-4 customers are on real-time pricing for generation and transmission rates, so a total bill estimate has not been calculated). Additionally, a Rate GS-1 customer using 1,500 kWh would see a \$1.14/month increase or a total bill increase 0.6%, and a Rate GS-3 customer using 10,000 kWh and 40 kW would see a \$9.51/month increase or a total bill increase of 0.7%.

VI. Other Considerations for Waiver of and Increase in the DSIC Cap

Q. Does the Company still believe that its proposed waiver of and increase in the DSIC cap from 5% to 9% is still justified?

A. Absolutely. However, if the Commission were to give any credence to the other parties' arguments, PPL Electric believes that the Commission should, at the very least, increase the DSIC cap substantially above the current 5% cap until the effective date of rates established in the Company's next base rate case or the end of the Company's 2023-2027 LTIP, whichever occurs first. Although a DSIC cap less than the Company's original request would not permit PPL Electric to address the reliability challenges on its distribution system as efficiently and effectively as a 9% DSIC cap, the Commission has demonstrated its willingness to grant an increase in the DSIC cap to as high as 7.5% in both settled and litigated DSIC cap waiver petitions when it has determined that such an increase would still help the utilities meaningfully respond to safety and reliability challenges.⁴ Using PPL Electric's recently approved modified Third

⁴ See *Pa. PUC v. Aqua Pennsylvania, Inc.*, Docket Nos. R-2008-2079310, *et al.*, 2009 Pa. PUC LEXIS 263 (Order entered July 23, 2009); *Petition of Pennsylvania-*

1 LTIP, for every 0.5% of an increase in the DSIC cap, residential customers
 2 would see an approximately \$0.30 increase in their monthly bill (i.e., 0.17%),
 3 with Rate GS-1, GS-3, and LP-4 customers seeing monthly bill increases of
 4 approximately \$0.14 (i.e., 0.07%), \$1.19 (i.e., 0.09%), and \$13.32 (i.e., 0.48%),
 5 respectively. Meanwhile, for every 0.5% increase in the DSIC cap, the
 6 Company would receive on average approximately \$5 million in incremental
 7 annual revenue to address the reliability challenges on its distribution system,
 8 assuming the Company's return on equity ("ROE") is below the Commission's
 9 allowed DSIC ROE.

10
 11 **Q. Does this conclude your rebuttal testimony?**

12 A. Yes, it does.

American Water Co. for Approval to Implement a Tariff Supplement to Tariff Water-PA P.U.C. No. 4 Revising the Distribution System Improvement Charge, Docket Nos. P-00062241, et al., 2007 Pa. PUC LEXIS 42 (Order entered Aug. 14, 2007); Petition of Pennsylvania Power Co. for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Distribution Rate Revenue and Approval to Increase the Maximum Allowable Distribution System Improvement Charge Cap to 11.81%, Docket No. P-2019-3012628 (Recommended Decision dated Feb. 5, 2020), adopted without modification, Docket No. P-2019-3012628 (Order entered Mar. 12, 2020); Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges, Docket Nos. P-2015-2501500, et al. (Order entered Jan. 28, 2016), reconsideration granted, Docket Nos. P-2015-2501500, et al. (Order entered July 6, 2016); Petition of UGI Central Penn Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues, Docket No. P-2016-2537609 (Order entered May 10, 2017), reconsideration denied, Docket No. P-2016-2537609 (Order entered Sept. 21, 2017); Petition of UGI Penn Natural Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues, Docket No. P-2016-2537594 (Order entered May 10, 2017).

PPL Electric Exhibit BLJ-1R

**Pennsylvania Office of Consumer Advocate's Responses to
PPL Electric Utilities Corporation's
Interrogatories and Requests for Production of Documents, Set I**

PPL to OCA-I-10. Re: OCA St. No. 1, p. 14. Does Mr. Mierzwa agree that it is impossible to determine to the exact amount of the Company's rate case expense claim, if any, that is included in base rates due to PPL Electric's 2015 base rate case settlement being a "black box" settlement? If the answer is anything but an unqualified "Yes," please explain.

RESPONSE

Mr. Mierzwa's testimony referenced PPL's 2015 rate case, specifying that it was settled "black box." Having no more recent example of a PPL base rate case filing, he discussed that PPL's current base rates were set so long ago, they no longer reasonably represent the Company's actual investment, expenses and revenues. The exact amount included in base rates is not known, however, using PPL's 2015 rate case as an example, if PPL's full rate case expense claim is included in base rates, it would mean that PPL has recovered almost \$9 million by the end of 2024 while its actual rate case expense was \$2 million.

PPL Electric Exhibit BLJ-2R

Kimberly A. Klock
Assistant General Counsel

PPL
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Allentown, PA 18101
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KKlock@pplweb.com



E-File

June 20, 2024

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

**Re: PPL Electric Utilities Corporation
Calculation and Supplement No. 377 to Tariff Electric PA. P.U.C.
No. 201 for the Distribution System Improvement Charge
Docket No.**

Dear Ms. Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation ("PPL Electric") is the Calculation and Supplement No. 377 to PPL Electric's Tariff – Electric Pa. P.U.C. No. 201 for the Distribution System Improvement Charge ("DSIC"). This calculation of the DSIC for the period July 1, 2024 through September 30, 2024 is being filed pursuant to the procedures set forth in PPL Electric's Tariff – Electric Pa. P.U.C. No. 201.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on June 20, 2024, which is the date it was submitted electronically via the Commission's E-Filing system.

If you have any questions regarding the enclosed filing, please call me or Stephanie Briggs, PPL Electric's Director-Rates and Revenue Requirements, at (407) 799-7682.

Respectfully submitted,

A handwritten signature in blue ink that reads "Kimberly A. Klock". The signature is fluid and cursive, with the first name being the most prominent.

Kimberly A. Klock

Enclosures

cc via email: Patrick Cicero, Esquire
Allison Kaster
NazAarah Sabree
Lori Burger

PPL ELECTRIC UTILITIES CORPORATION

CALCULATION OF

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE

For the Application Period
July 1, 2024 through September 30, 2024

Docket No.

June 20, 2024

PPL ELECTRIC UTILITIES CORPORATION
SCHEDULE A - COMPUTATION OF CUMULATIVE PROPOSED DSIC
APPLICATION PERIOD: JULY 1, 2024 THROUGH SEPTEMBER 30, 2024

Line No.		Total
	Distribution System Improvement Charge	
1	Applicable Plant (Schedule B, Line 2, Column G)	\$ 847,189,913
	Less:	
2	Accumulated Depreciation (Schedule B, Line 3, Column G)	72,519,002
3	Retirements (Schedule B, Line 4, Column G)	(1,236,120)
4	Distribution System Improvement Projects net of accumulated depreciation and retirements (Line 1 - Line 2 + Line 3)	773,434,791
5	Accumulated Deferred Income Taxes	(47,856,024)
6	DSI = Distribution System Improvement Projects net of accumulated depreciation, retirements and ADIT (Line 4 + Line 5)	725,578,767
7	Pre-tax return rate applicable to DSIC-eligible property (Schedule C, Line 4)	2.43% 17,631,564
8	State Tax Flow-Through	(506,515)
9	Dep = Depreciation Expense (Schedule B, Line 6, Column D through F)	4,366,954
10	E=Experienced Net Over/(Under) Collections (A)	-
11	Net Amount to be Recovered/(Refunded) (includes Over/(Under) Collection) (w/o GRT) (Line 7 + Line 8 + Line 9 - Line 10)	<u>21,492,003</u>
12	Net Amount to be Recovered/(Refunded) (includes Over/(Under) Collection) (w/ GRT) (Line 11 x Note 1)	<u>22,839,530</u>
13	PQR = Projected Quarterly Distribution Revenue	<u>283,936,046</u>
14	DSIC = Distribution System Improvement Rider	
	Rate % of Billed Revenues (w/ GRT) (Line 12 / Line 13) (B) (C)	5.00%

Note 1:

$$\frac{1}{(1 - T)} = (T = 5.9\% \text{ Gross Receipts Tax}) \quad 1.062699$$

(A) 100% of the Over/(Under) Collection shown on Schedule 1 (Line 9) of the revised Distribution System Improvement Charge ("DSIC") reconciliation report, dated April 5, 2024 at Docket No. M-2024-3045874 was included in the DSIC rate beginning April 1, 2024 and ending on June 30, 2024.

(B) Line 14 Calculation provides a DSIC rate of 8.04%.

(C) Per Commission's Order, P-2012-2325034, the DSIC rate is capped at 5.00%.

PPL ELECTRIC UTILITIES CORPORATION
SCHEDULE B - COMPUTATION OF CUMULATIVE PROPOSED DSIC by MONTH
APPLICATION PERIOD: JULY 1, 2024 THROUGH SEPTEMBER 30, 2024

Line No.		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		2023 Balance	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Total
1	Incremental Plant Additions	802,927,021	2,146,632	17,821,196	13,458,594	4,284,151	6,552,320	\$ 847,189,913
2	Cumulative Plant (Sum of Line 1) Less:	802,927,021	805,073,653	822,894,849	836,353,443	840,637,593	847,189,913	847,189,913
3	Accumulated Depreciation	\$65,504,713	66,887,735	68,320,705	69,764,441	71,005,827	72,519,002	72,519,002
4	Retirements	(1,065,414)	(17,961)	15,912	-	(216,503)	47,846	(1,236,120)
5	Distribution System Improvement Projects net of accumulated depreciation and retirements (Line 2 - Line 3 + sum(Line 4))	736,356,894	738,167,957	754,590,056	766,589,001	769,415,264	774,718,756	773,434,791
6	Dep = Depreciation Expense		1,401,011	1,417,059	1,443,736	1,457,888	1,465,329	
7	Projected Distribution Revenues		\$ 113,411,768	\$ 113,050,992	\$ 103,470,463	\$ 91,892,846	\$ 82,148,769	

PPL ELECTRIC UTILITIES CORPORATION
SCHEDULE C - COMPUTATION OF CUMULATIVE PROPOSED DSIC PRE-TAX RATE OF RETURN
APPLICATION PERIOD: JULY 1, 2024 THROUGH SEPTEMBER 30, 2024

Line No.	(A) Description	(B) Capitalization Ratio	(C) Embedded Cost	(D) Rate of Return	(E) Tax Multiplier (1)	(F) Pre-Tax Rate of Return (PTRR)
1	Long-Term Debt	43.88%	4.79%	2.10%	-	2.10%
2	Common Equity	56.12%	9.80%	5.50%	1.383261703	7.61%
3	Total	<u>100.00%</u>		<u>7.60%</u>		<u>9.71%</u>

4 9.71% Annual PTRR / 4 quarters = 2.43% Quarterly PTRR

(1) The tax multiplier is calculated as follows: $1/[(1 - \text{Pa. Tax Rate}) \times (1 - \text{Fed. Tax Rate})]$ where the Pa. tax rate is 8.49% and Fed. tax rate is 21%.

$$1/[(1-8.49\%)(1-21\%)] = 1.383261703$$

Line 2, Column C, from the PUC's Quarterly Financial Report page 18, line 7, dated May 9, 2024 at Docket No. M-2024-3048688.

PPL Electric Utilities
Distribution System Improvement Charge
Rate Base and Depreciation Expense

From Date:	3/1/2024
To Date	3/31/2024
Gross Plant Total	\$ 835,285,979.89
Gross Reserve Total	\$ 69,764,441.47
Rate Base	\$ 765,521,538.42

Total Depreciation	
Expense MTD	\$ 1,443,736.16
Total Depreciation	
Expense YTD	N/A

Plant Activity

Depreciation Group	Beginning Plant Balance	Additions	Retirements	Transfers To	Transfers From	Adjustments	End Plant Balance
360.2 - Land	\$ 1,176,110.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,176,110.23
360.4 - Land Rights	\$ 593,600.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 593,600.91
361.0 - Structures and Improvements	\$ 8,521,765.22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,521,765.22
362.0 - Station Equipment	\$ 145,867,433.01	\$ 1,337,896.43	\$ -	\$ -	\$ -	\$ -	\$ 147,205,329.44
364.2 - Towers and Fixtures	\$ 2,443,086.03	\$ 10,850.52	\$ -	\$ -	\$ -	\$ -	\$ 2,453,936.55
364.4 - Poles and Fixtures	\$ 165,080,966.80	\$ 1,774,835.31	\$ -	\$ -	\$ -	\$ -	\$ 166,855,802.11
364.8 - Clearing Land and Rights	\$ 265,134.41	\$ 15.21	\$ -	\$ -	\$ -	\$ -	\$ 265,149.62
365.0 - Overhead Conductors, Device	\$ 260,814,743.03	\$ 5,204,854.50	\$ -	\$ -	\$ -	\$ -	\$ 266,019,597.53
366.0 - Underground Conduit	\$ 36,166,522.69	\$ 556,365.21	\$ -	\$ -	\$ -	\$ -	\$ 36,722,887.90
367.0 - Undergrnd Conductors,Device	\$ 123,490,870.54	\$ 3,558,074.30	\$ -	\$ -	\$ -	\$ -	\$ 127,048,944.84
368.2 - Overhead Type Transformers	\$ 28,875,958.35	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,875,958.35
368.4 - Submersible or Padmt Type	\$ 7,608,939.69	\$ (64.51)	\$ -	\$ -	\$ -	\$ -	\$ 7,608,875.18
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
369.0 - Services	\$ 19,845,202.63	\$ 395,998.38	\$ -	\$ -	\$ -	\$ -	\$ 20,241,201.01
371.4 - Area Lighting Fixtures	\$ 365,104.31	\$ 1,464.40	\$ -	\$ -	\$ -	\$ -	\$ 366,568.71
373.2 - Street Lighting & Sig Sys	\$ 20,641,510.63	\$ 618,304.16	\$ -	\$ -	\$ -	\$ -	\$ 21,259,814.79
391.6 - Comp Equip	\$ 70,437.50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,437.50
Total Assets	\$ 821,827,385.98	\$ 13,458,593.91	\$ -	\$ -	\$ -	\$ -	\$ 835,285,979.89

Reserve Activity

Depreciation Group	Beginning Reserve Balance	Depreciation Expense	Retirements	Adjustments	End Reserve Balance
360.2 - Land	\$ (587.27)	\$ -	\$ -	\$ -	\$ (587.27)
360.4 - Land Rights	\$ 49,700.08	\$ 795.09	\$ -	\$ -	\$ 50,495.17
361.0 - Structures and Improvements	\$ 611,078.50	\$ 11,944.33	\$ -	\$ -	\$ 623,022.83
362.0 - Station Equipment	\$ 11,520,930.49	\$ 265,941.19	\$ -	\$ -	\$ 11,786,871.68
364.2 - Towers and Fixtures	\$ 178,202.18	\$ 3,839.16	\$ -	\$ -	\$ 182,041.34
364.4 - Poles and Fixtures	\$ 13,745,050.79	\$ 279,674.41	\$ -	\$ -	\$ 14,024,725.20
364.8 - Clearing Land and Rights	\$ 34,734.95	\$ 434.42	\$ -	\$ -	\$ 35,169.37
365.0 - Overhead Conductors, Device	\$ 21,171,283.03	\$ 428,402.98	\$ -	\$ -	\$ 21,599,686.01
366.0 - Underground Conduit	\$ 2,136,344.95	\$ 53,314.17	\$ -	\$ -	\$ 2,189,659.12
367.0 - Undergrnd Conductors,Device	\$ 9,130,163.98	\$ 221,519.33	\$ -	\$ -	\$ 9,351,683.31
368.2 - Overhead Type Transformers	\$ 4,827,720.43	\$ 70,774.40	\$ -	\$ -	\$ 4,898,494.83
368.4 - Submersible or Padmt Type	\$ 666,406.21	\$ 13,209.91	\$ -	\$ -	\$ 679,616.12
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -
369.0 - Services	\$ 2,308,683.70	\$ 32,050.75	\$ -	\$ -	\$ 2,340,734.45
371.4 - Area Lighting Fixtures	\$ 89,906.86	\$ 1,266.95	\$ -	\$ -	\$ 91,173.81
373.2 - Street Lighting & Sig Sys	\$ 1,829,092.30	\$ 59,395.11	\$ -	\$ -	\$ 1,888,487.41
391.6 - Comp Equip	\$ 21,994.13	\$ 1,173.96	\$ -	\$ -	\$ 23,168.09
Total Reserve	\$ 68,320,705.31	\$ 1,443,736.16	\$ -	\$ -	\$ 69,764,441.47

PPL Electric Utilities
Distribution System Improvement Charge
Rate Base and Depreciation Expense

From Date: 4/1/2024
To Date: 4/30/2024

Gross Plant Total \$ 839,353,628.05
Gross Reserve Total \$ 71,005,827.16
Rate Base **\$ 768,347,800.89**

Total Depreciation
Expense MTD **\$ 1,457,888.22**
Total Depreciation
Expense YTD **N/A**

Plant Activity

Depreciation Group	Beginning Plant					Transfers From	Adjustments	End Plant Balance
	Balance	Additions	Retirements	Transfers To				
360.2 - Land	\$ 1,176,110.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,176,110.23
360.4 - Land Rights	\$ 593,600.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 593,600.91
361.0 - Structures and Improvements	\$ 8,521,765.22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,521,765.22
362.0 - Station Equipment	\$ 147,205,329.44	\$ 29,329.97	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 147,234,659.41
364.2 - Towers and Fixtures	\$ 2,453,936.55	\$ 7.42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,453,943.97
364.4 - Poles and Fixtures	\$ 166,855,802.11	\$ 1,120,749.64	\$ (26,680.13)	\$ -	\$ -	\$ -	\$ -	\$ 167,949,871.62
364.8 - Clearing Land and Rights	\$ 265,149.62	\$ 12.20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 265,161.82
365.0 - Overhead Conductors, Device	\$ 266,019,597.53	\$ 1,734,391.33	\$ (176,725.69)	\$ -	\$ -	\$ -	\$ -	\$ 267,577,263.17
366.0 - Underground Conduit	\$ 36,722,887.90	\$ 159,068.39	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 36,881,956.29
367.0 - Undergrnd Conductors,Device	\$ 127,048,944.84	\$ 780,332.87	\$ (13,096.71)	\$ -	\$ -	\$ -	\$ -	\$ 127,816,181.00
368.2 - Overhead Type Transformers	\$ 28,875,958.35	\$ (885.01)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,875,073.34
368.4 - Submersible or Padmt Type	\$ 7,608,875.18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,608,875.18
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
369.0 - Services	\$ 20,241,201.01	\$ 237,439.59	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,478,640.60
371.4 - Area Lighting Fixtures	\$ 366,568.71	\$ 294.52	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 366,863.23
373.2 - Street Lighting & Sig Sys	\$ 21,259,814.79	\$ 223,409.77	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,483,224.56
391.6 - Comp Equip	\$ 70,437.50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,437.50
Total Assets	\$ 835,285,979.89	\$ 4,284,150.69	\$ (216,502.53)	\$ -	\$ -	\$ -	\$ -	\$ 839,353,628.05

Reserve Activity

Depreciation Group	Beginning Reserve		Depreciation		Adjustments	End Reserve	
	Balance	Expense	Retirements			Balance	
360.2 - Land	\$ (587.27)	\$ -	\$ -	\$ -	\$ -	\$ (587.27)	
360.4 - Land Rights	\$ 50,495.17	\$ 793.93	\$ -	\$ -	\$ -	\$ 51,289.10	
361.0 - Structures and Improvements	\$ 623,022.83	\$ 11,926.30	\$ -	\$ -	\$ -	\$ 634,949.13	
362.0 - Station Equipment	\$ 11,786,871.68	\$ 266,763.88	\$ -	\$ -	\$ -	\$ 12,053,635.56	
364.2 - Towers and Fixtures	\$ 182,041.34	\$ 3,841.85	\$ -	\$ -	\$ -	\$ 185,883.19	
364.4 - Poles and Fixtures	\$ 14,024,725.20	\$ 281,820.55	\$ (26,680.13)	\$ -	\$ -	\$ 14,279,865.62	
364.8 - Clearing Land and Rights	\$ 35,169.37	\$ 433.62	\$ -	\$ -	\$ -	\$ 35,602.99	
365.0 - Overhead Conductors, Device	\$ 21,599,686.01	\$ 433,781.26	\$ (176,725.69)	\$ -	\$ -	\$ 21,856,741.58	
366.0 - Underground Conduit	\$ 2,189,659.12	\$ 53,787.20	\$ -	\$ -	\$ -	\$ 2,243,446.32	
367.0 - Undergrnd Conductors,Device	\$ 9,351,683.31	\$ 225,234.22	\$ (13,096.71)	\$ -	\$ -	\$ 9,563,820.82	
368.2 - Overhead Type Transformers	\$ 4,898,494.83	\$ 70,773.31	\$ -	\$ -	\$ -	\$ 4,969,268.14	
368.4 - Submersible or Padmt Type	\$ 679,616.12	\$ 13,209.85	\$ -	\$ -	\$ -	\$ 692,825.97	
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
369.0 - Services	\$ 2,340,734.45	\$ 32,565.25	\$ -	\$ -	\$ -	\$ 2,373,299.70	
371.4 - Area Lighting Fixtures	\$ 91,173.81	\$ 1,265.17	\$ -	\$ -	\$ -	\$ 92,438.98	
373.2 - Street Lighting & Sig Sys	\$ 1,888,487.41	\$ 60,517.87	\$ -	\$ -	\$ -	\$ 1,949,005.28	
391.6 - Comp Equip	\$ 23,168.09	\$ 1,173.96	\$ -	\$ -	\$ -	\$ 24,342.05	
Total Reserve	\$ 69,764,441.47	\$ 1,457,888.22	\$ (216,502.53)	\$ -	\$ -	\$ 71,005,827.16	

PPL Electric Utilities
Distribution System Improvement Charge
Rate Base and Depreciation Expense

From Date: 5/1/2024
To Date 5/31/2024

Gross Plant Total \$ 845,953,793.31
Gross Reserve Total \$ 72,519,002.13
Rate Base **\$ 773,434,791.18**

Total Depreciation
Expense MTD **\$ 1,465,329.41**
Total Depreciation
Expense YTD **N/A**

Plant Activity

Depreciation Group	Beginning Plant					Adjustments	End Plant Balance
	Balance	Additions	Retirements	Transfers To	Transfers From		
360.2 - Land	\$ 1,176,110.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,176,110.23
360.4 - Land Rights	\$ 593,600.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 593,600.91
361.0 - Structures and Improvements	\$ 8,521,765.22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,521,765.22
362.0 - Station Equipment	\$ 147,234,659.41	\$ 2,859,980.02	\$ -	\$ -	\$ -	\$ -	\$ 150,094,639.43
364.2 - Towers and Fixtures	\$ 2,453,943.97	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,453,943.97
364.4 - Poles and Fixtures	\$ 167,949,871.62	\$ 1,239,030.23	\$ 5,624.00	\$ -	\$ -	\$ -	\$ 169,194,525.85
364.8 - Clearing Land and Rights	\$ 265,161.82	\$ 19.49	\$ -	\$ -	\$ -	\$ -	\$ 265,181.31
365.0 - Overhead Conductors, Device	\$ 267,577,263.17	\$ 1,731,586.78	\$ 42,249.73	\$ -	\$ -	\$ -	\$ 269,351,099.68
366.0 - Underground Conduit	\$ 36,881,956.29	\$ 3,618,025.23	\$ (28.17)	\$ -	\$ -	\$ -	\$ 40,499,953.35
367.0 - Undergrnd Conductors,Device	\$ 127,816,181.00	\$ (4,217,685.33)	\$ -	\$ -	\$ -	\$ -	\$ 123,598,495.67
368.2 - Overhead Type Transformers	\$ 28,875,073.34	\$ 38.04	\$ -	\$ -	\$ -	\$ -	\$ 28,875,111.38
368.4 - Submersible or Padmt Type	\$ 7,608,875.18	\$ 205,420.72	\$ -	\$ -	\$ -	\$ -	\$ 7,814,295.90
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
369.0 - Services	\$ 20,478,640.60	\$ 252,790.50	\$ -	\$ -	\$ -	\$ -	\$ 20,731,431.10
371.4 - Area Lighting Fixtures	\$ 366,863.23	\$ 895.59	\$ -	\$ -	\$ -	\$ -	\$ 367,758.82
373.2 - Street Lighting & Sig Sys	\$ 21,483,224.56	\$ 862,218.43	\$ -	\$ -	\$ -	\$ -	\$ 22,345,442.99
391.6 - Comp Equip	\$ 70,437.50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,437.50
Total Assets	\$ 839,353,628.05	\$ 6,552,319.70	\$ 47,845.56	\$ -	\$ -	\$ -	\$ 845,953,793.31

Reserve Activity

Depreciation Group	Beginning Reserve		Depreciation		Adjustments	End Reserve Balance
	Balance	Expense	Retirements			
360.2 - Land	\$ (587.27)	\$ -	\$ -	\$ -	\$ -	\$ (587.27)
360.4 - Land Rights	\$ 51,289.10	\$ 792.77	\$ -	\$ -	\$ -	\$ 52,081.87
361.0 - Structures and Improvements	\$ 634,949.13	\$ 11,908.29	\$ -	\$ -	\$ -	\$ 646,857.42
362.0 - Station Equipment	\$ 12,053,635.56	\$ 269,083.98	\$ -	\$ -	\$ -	\$ 12,322,719.54
364.2 - Towers and Fixtures	\$ 185,883.19	\$ 3,835.36	\$ -	\$ -	\$ -	\$ 189,718.55
364.4 - Poles and Fixtures	\$ 14,279,865.62	\$ 283,470.54	\$ 5,624.00	\$ -	\$ -	\$ 14,568,960.16
364.8 - Clearing Land and Rights	\$ 35,602.99	\$ 432.84	\$ -	\$ -	\$ -	\$ 36,035.83
365.0 - Overhead Conductors, Device	\$ 21,856,741.58	\$ 436,078.86	\$ 42,249.73	\$ -	\$ -	\$ 22,335,070.17
366.0 - Underground Conduit	\$ 2,243,446.32	\$ 56,638.37	\$ (28.17)	\$ -	\$ -	\$ 2,300,056.52
367.0 - Undergrnd Conductors,Device	\$ 9,563,820.82	\$ 221,526.53	\$ -	\$ -	\$ -	\$ 9,785,347.35
368.2 - Overhead Type Transformers	\$ 4,969,268.14	\$ 70,772.27	\$ -	\$ -	\$ -	\$ 5,040,040.41
368.4 - Submersible or Padmt Type	\$ 692,825.97	\$ 13,388.17	\$ -	\$ -	\$ -	\$ 706,214.14
368.6 - Non-Network Housing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
369.0 - Services	\$ 2,373,299.70	\$ 32,949.41	\$ -	\$ -	\$ -	\$ 2,406,249.11
371.4 - Area Lighting Fixtures	\$ 92,438.98	\$ 1,262.09	\$ -	\$ -	\$ -	\$ 93,701.07
373.2 - Street Lighting & Sig Sys	\$ 1,949,005.28	\$ 62,015.97	\$ -	\$ -	\$ -	\$ 2,011,021.25
391.6 - Comp Equip	\$ 24,342.05	\$ 1,173.96	\$ -	\$ -	\$ -	\$ 25,516.01
Total Reserve	\$ 71,005,827.16	\$ 1,465,329.41	\$ 47,845.56	\$ -	\$ -	\$ 72,519,002.13

VERIFICATION

COMMONWEALTH OF PENNSYLVANIA)
 : SS
COUNTY OF LEHIGH)

I, Joseph Lookup, hereby state that the personnel performing DSIC-eligible work are qualified and that any DSIC-eligible work that is performed by independent contractors is properly inspected by utility employees, in compliance with 66 Pa.C.S. Section 1359. The facts set forth above are true and correct (or 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 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Joseph B. Lookup

Date: 6/19/2024



PPL Electric Utilities Corporation

GENERAL TARIFF

RULES AND RATE SCHEDULES FOR ELECTRIC SERVICE

In the territory listed on pages 4, 4A, and 4B
and in the adjacent territory served.

ISSUED: June 20, 2024

EFFECTIVE: July 1, 2024

CHRISTINE M. MARTIN, PRESIDENT

Two North Ninth Street
Allentown, PA 18101-1179

NOTICE

THIS TARIFF MAKES CHANGES **(C)** IN EXISTING RATES. SEE PAGE TWO.

LIST OF CHANGES MADE BY THIS SUPPLEMENT

CHANGES:

Distribution System Improvement Charge
(DSIC)

Page No. 19Z.16

The DSIC charge of 5.00% will remain 5.00% for
the period July 1, 2024 through September 30,
2024.

PPL Electric Utilities Corporation

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(Continued)

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)

In addition to the net charges provided for in this Tariff, a charge of 5.00% will apply consistent with the Commission Order dated May 23, 2013, at Docket No. P-2012-2325034, approving the DSIC. This charge will be effective during the period July 1, 2024 through September 30, 2024. (C)

GENERAL DESCRIPTION

A. Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide PPL Electric with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional supply problems.

The costs of extending facilities to serve new customers are not recoverable through the DSIC.

B. Eligible Property: The DSIC-eligible property will consist of the following:

- Poles and towers (Account 364);
- Overhead conductors (Account 365) and underground conduit and conductors (Accounts 366 and 367);
- Line transformers (account 368) and substation equipment (Account 362);
- Any fixture or device related to eligible property listed above, including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers;
- Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities; and
- Other related capitalized costs.

C. Effective Date: The DSIC will become effective for bills rendered on and after July 1, 2013.

(Continued)

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-3048732

PPL Electric Utilities Corporation

Statement No. 1-RJ

Rejoinder Testimony of Steven D. Selkregg

Dated: August 30, 2024

Rejoinder Testimony of Steven D. Selkregg

I. INTRODUCTION

Q. Please state your full name and business address.

A. My name is Steven David Selkregg. My business address is 7231 Windsor Drive, Allentown, PA 18106.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) as Director of T&D Operations.

Q. Did you previously submit testimony on behalf of PPL Electric in this proceeding?

A. Yes. I submitted direct testimony and rebuttal testimony on behalf of the Company (PPL Electric Statement Nos. 1 and 1-R, respectively).

Q. Please briefly describe the subject matter of your rejoinder testimony in this proceeding.

A. My testimony will respond to portions of the surrebuttal testimony submitted by Joseph Kubas on behalf of the Pennsylvania Public Utility Commission’s (“Commission”) Bureau of Investigation and Enforcement (“I&E”) (I&E Statement No. 1). In particular, I will respond to his allegations about the Company’s reduced Operation and Maintenance (“O&M”) expenditures and reduced pole inspection hours set forth in an August 2024 investor presentation by PPL Corporation.

1

2 **Q. Are you sponsoring any exhibits with your rejoinder testimony?**

3 A. No.

4

5 **III. Support for Increasing the DSIC Cap from 5% to 9%**

6 **Q. I&E witness Kubas points an August 2024 investor meeting presentation**
7 **by PPL Corporation as support for his opposition to the Company's**
8 **proposal, noting in particular a decrease in O&M expenditures from 2015**
9 **to 2023 and a reduction in pole inspection hours per year. (I&E St. No. 1-**
10 **SR, p. 29.) Do you agree his position?**

11 A. No. As outlined in my direct and rebuttal testimony, the Company's proposal
12 will enable PPL Electric to accelerate and pursue Long-Term Infrastructure
13 Improvement Plan ("LTIIIP") and non-LTIIP projects focused on improving
14 reliability of service. The Company should not be foreclosed from a DSIC cap
15 waiver simply because it has been efficient and targeted with its O&M
16 expenditures.

17 Moreover, Mr. Kubas fails to recognize the reason for the reduction in
18 pole inspection hours per year. Under PPL Electric's old pole inspection and
19 excavation process, the Company required contractors to have four to five-
20 person crews visit each pole location to complete the following three steps: (1)
21 dig around the pole and chip away at subsurface decay; (2) inspect the pole and
22 manually enter the pole's information in the data acquisition system; and (3)
23 treat the pole, fill holes, and clean the site. The costs associated with the work
24 were expensed. However, under PPL Electric's current universal resistance

1 drill method, the Company only requires a one to two-person crew to inspect
2 the pole and then treat the pole, fill holes, and clean the site. By moving to this
3 more advanced and less time and crew-intensive process, PPL Electric has
4 saved over 150,000 hours across the system during an inspection cycle (*i.e.*,
5 (approximately 900,000 poles x 10 minutes saved per site) / 60 minutes =
6 150,000 hours saved).

7 Therefore, Mr. Kubas's claim that the reduction in pole inspection hours
8 "seems contrary to [the Company's] expressed concerns regarding safety
9 performance" is unfounded. (I&E St. No. 1-SR, p. 29.) PPL Electric prioritizes
10 safety in its operations, and the Company's change in pole inspection processes
11 to use more advanced technology reflects that priority, while having the added
12 benefit of reducing O&M expenditures.

13
14 **Q. Does this conclude your rejoinder testimony?**

15 **A.** Yes, it does.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. P-2024-3048732

PPL Electric Utilities Corporation

Statement No. 2-RJ

Rejoinder Testimony of Bethany L. Johnson

Dated: August 30, 2024

Rejoinder Testimony of Bethany L. Johnson

I. INTRODUCTION

Q. Please state your full name and business address.

A. Bethany L. Johnson, 827 Hausman Road, Allentown, Pennsylvania, 18104.

Q. By whom are you employed and in what capacity?

A. I am employed by PPL Services Corporation as the Senior Director of Regulatory.

Q. Did you previously submit testimony on behalf of PPL Electric in this proceeding?

A. Yes. I submitted direct testimony and rebuttal testimony on behalf of the Company (PPL Electric Statement Nos. 1 and 1-R, respectively).

Q. Please briefly describe the subject matter of your rejoinder testimony in this proceeding.

A. My testimony will respond to portions of the direct testimony submitted by Joseph Kubas on behalf of the Pennsylvania Public Utility Commission's ("Commission") Bureau of Investigation and Enforcement ("I&E") (I&E Statement No. 1) and the direct testimony submitted by Jerome D. Mierzwa on behalf of the Office of Consumer Advocate ("OCA") (OCA Statement No. 1). I will rebut their claims that the Company's request for a waiver of the Distribution System Improvement Charge ("DSIC") cap of 5% and increase of the cap to 9% should not be granted because the Company can file a base rate case. In

particular, I will address the points about the Company's existing surcharge mechanisms and the Company's revenue and earnings under existing base rates and the DSIC cap of 5%.

Q. Are you sponsoring any exhibits with your rejoinder testimony?

A. No.

III. Base Rate Case Versus DSIC Cap Waiver

Q. I&E witness Kubas argues that his recommendation to deny the Company's DSIC cap waiver and increase from 5% to 9% is "based upon the fact that the Company's revenues since 2015 have apparently been adequate to provide safe [and] reliable service over the past nine years." (I&E St. No. 1-SR, pp. 22-23.) Similarly, OCA witness Mierzwa claims that the Company has "healthy earnings quarter in and quarter out even when they are below the DSIC-earnings cap" and that "[t]here is no indication here that PPL cannot fund its LTIP commitments based on its current revenue, it would appear simply that it wants to push these costs onto ratepayers through a DSIC increase rather than funding them from base rate revenue that would erode their earnings." (OCA St. No. 1-SR, p. 9.) Would you please respond?

A. Both Mr. Kubas and Mr. Mierzwa are missing the point. No one in this proceeding disputes PPL Electric's evidence that the Company has reliability challenges that PPL Electric wants to and should address on its distribution system. Yet, they oppose the most efficient, targeted, and effective way for the

1 Company to address those issues. Instead, Mr. Kubas and Mr. Mierzwa aver
2 that the Company should file a base rate case instead, which I explained will
3 involve the recovery of all costs incurred by the Company as part of its
4 distribution operations, not only to help fund these targeted investments in
5 reliability improvements. Further, Mr. Mierzwa appears to want to have it both
6 ways. On the one hand, Mr. Mierzwa asserts that if the Company “actually
7 needs additional revenue to fund its system improvements, there is no bar to
8 PPL filing a base rate case now.” (OCA St. No. 1-SR, p. 11.) However, at the
9 same time, “neither the OCA or [he] wish for rate payers to experience an
10 increased rate in the current economy.” (OCA St. No. 1-SR, p. 11.) This seems
11 counter-intuitive and fails to credit the Company for being efficient in its
12 operations and spending. Also, the Company considered the bill impact on
13 customers in deciding to pursue the DSIC cap waiver and increase, and its
14 proposed level of 9% appropriately reflects that consideration.

15 In addition, Mr. Mierzwa’s testimony on the Company’s quarterly
16 earnings report data should be rejected. Although Mr. Mierzwa is correct that
17 “PPL’s reported earnings made it ineligible to charge a DSIC for 7 of those 14
18 quarters,” Mr. Mierzwa wholly fails to account for when those 7 quarters
19 occurred. All of them occurred before January 1, 2023, with the most recent of
20 those 7 quarters being the Fourth Quarter of 2022. (See OCA Exhibit JDM-5,
21 p. 2.) From the First Quarter of 2023 to present, the Company has reached its
22 DSIC cap (which means that PPL Electric has already experienced earnings
23 erosion). Critically, the Company is not asking for a DSIC cap waiver and
24 increase two years ago. PPL Electric is seeking one today, when the Company

1 has reached the DSIC cap of 5% for 7 straight quarters.

2
3 **Q. OCA witness Mierzwa also asserts that although the Company “has held**
4 **its distribution rates steady for 9 years,” PPL Electric “ignores the other**
5 **Section 1307 mechanisms that the Company utilizes, increasing**
6 **customers’ bills,” which include the Act 129 Compliance Rider (“ACR”),**
7 **Smart Meter Rider (“SMR”), Storm Damage Expense Rider (“SDER”), and**
8 **Competitive Enhancement Rider (“CER”). (OCA St. No. 1-SR, pp. 16-17.)**
9 **Please respond.**

10 A. Mr. Mierzwa’s argument should be rejected, as it fails to account for why these
11 surcharge mechanisms exist. Mr. Mierzwa implies that the Company increased
12 customer bills by creating these surcharge mechanisms. That is not true. The
13 ACR and SMR are surcharge mechanisms were authorized by statute and
14 simply pass through the costs associated with the Company’s Energy Efficiency
15 and Conservation (“EE&C”) Plan and Smart Meter Plan, respectively. See 66
16 Pa. C.S. §§ 2806.1(k)(1), 2807(f)(7). In fact, I am advised by counsel that Act
17 129 of 2008 requires the Company to recover the costs associated with its
18 EE&C Plan through the ACR. See *id.* § 2806.1(k)(1). Moreover, the EE&C Plan
19 provides measures and incentives to customers that help them reduce their
20 electric consumption and peak demand and, by extension, their electric bills. It
21 seems backwards for Mr. Mierzwa to cite that surcharge mechanism as a way
22 in which the Company has increased customers’ bills, when, to my knowledge,
23 the Company’s EE&C Plans have been cost-effective on a Total Resource Cost
24 Test basis.

1 Additionally, the CER provides for the recovery of the annual costs
2 associated with the Company's eligible customer list. The Company is required
3 by law to provide an opportunity for customers to opt-out of having their
4 information shared with energy suppliers for marketing purposes. See 52 Pa.
5 Code § 54.8. It is important to note that both the EE&C and CER-related costs
6 stem from public policy initiatives established by the state legislature.

7 Lastly, the SDER was created as part of the Commission-approved
8 settlement in the Company's 2015 base rate case and is designed to recover
9 the costs associated with PUC-Reportable storm events. As explained in Mr.
10 Selkregg's testimony, if the Company were granted its DSIC cap waiver and
11 increase, PPL Electric could pursue storm hardening and other reliability
12 projects that could help mitigate the total costs associated with storm events.

13 For these reasons, I do not believe any of these riders provide support
14 for Mr. Mierzwa's opposition to the Company's proposal.

15
16 **Q. Does this conclude your rejoinder testimony?**

17 **A. Yes, it does.**

Devin Ryan

dryan@postschell.com
717-612-6052 Direct
717-731-1985 Direct Fax
File #: 207003

September 3, 2024

VIA ELECTRONIC FILING

Rosemary Chiavetta
Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution
System Improvement Charge Cap of 5% of Billed Revenues
Docket No. P-2024-3048732**

**John Gadomski v. PPL Electric Utilities Corporation
Docket No. C-2024-3050661**

Dear Secretary Chiavetta:

Attached for filing, please find the Answer of PPL Electric Utilities Corporation to the Complaint of John Gadomski in the above-referenced proceeding. Copies will be provided as indicated on the Certificate of Service.

Respectfully submitted,



Devin Ryan

DR/skr
Attachments

cc: Certificate of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of this filing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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John Gadomski
446 Bidwell Hill Road
Lake Ariel, PA 18436

Date: September 3, 2024

John Theisen
14 Scenic Mountain Road
New Ringgold, PA 17960

Sharon M. Frankenfield
PO Box 265
Martins Creek, PA 18063



Devin T. Ryan

**It BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No. P-2024-3048732
Distribution System Improvement Charge	:	
Cap of 5% of Billed Revenues	:	

John Gadomski	:	
	:	
v.	:	Docket No. C-2024-3050661
	:	
PPL Electric Utilities Corporation	:	

**ANSWER OF PPL ELECTRIC UTILITIES CORPORATION TO
THE COMPLAINT OF JOHN GADOMSKI**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) files this Answer to the Complaint of John Gadomski (“Complainant”) pursuant to Section 5.61 of the Pennsylvania Public Utility Commission’s (“Commission”) regulations, 52 Pa. Code § 5.61, and responds to each of the separately-numbered paragraphs as follows:

ANSWER

1. Admitted.
2. Denied as stated. The Company’s name is PPL Electric Utilities Corporation.
3. Admitted.
4. Admitted in part and denied in part. Specifically, it is admitted that PPL Electric has proposed a waiver of the 5% cap of billed revenues for the Distribution System Improvement Charge (“DSIC”) and to increase that cap to 9% in this proceeding. Furthermore, the proposed increase in the DSIC cap would have a minimal impact on customers’ bills, as it would increase

the DSIC for a residential customer using 1,000 kilowatt hours per month by only \$2.37.¹ As such, it is denied that the proposed increase is unreasonable. Through the instant proceeding, the Company is seeking to raise the cap for that percentage from 5% to 9%, for bills rendered on or after January 1, 2025, because a higher DSIC cap is necessary to ensure and maintain adequate, efficient, safe, reliable, and reasonable service for the benefit of PPL Electric's customers and as required by Section 1501 of the Public Utility Code, 66 Pa. C.S. § 1501. It is admitted that the Complainant has experienced electric service outages in June 2024. The times and dates of those events are denied. Based on the outage history for this account, the Complainant lost power on June 22-23, 2024 for 1,308 minutes, on June 24, 2024 for 182 minutes, and on June 26-27, 2024 for 711 minutes. It is denied that the Company has provided unreliable service to the Complainant or has failed to maintain the vegetation on the lines that supply electric service to the Complainant. By way of further response, PPL Electric has proposed the DSIC cap waiver and increase so that the Company can more efficiently and effectively address the reliability challenges on its distribution system. The Company also is without sufficient knowledge or information as to the Complainant's finances and, therefore, denies the same.

5. Denied. The averments contained in Paragraph 5 of the Complaint are requests for relief to which no responsive pleading is required. To the extent a response is deemed necessary, PPL Electric denies that the Complainant is entitled to the relief requested.

By way of further response, PPL Electric incorporates Paragraph 4, *supra*, as if fully set forth herein.

6. Paragraph 6 of the Complaint pertains to protection from abuse orders, to which no responsive pleading is required.

¹ Essentially, for every 1% increase in the DSIC cap, residential customers would see a \$0.59 increase in their monthly bill. However, because the DSIC rate fluctuates based on plant-in-service and revenue projected, changes to the price are likely to be more gradual than an immediate increase to 9%.

7. Admitted in part and denied in part. It is admitted that the Complaint is not an appeal of a decision by the Commission's Bureau of Consumer Services. It is admitted that the Complainant has not spoken with the Company about the issues raised in this Complaint. It is denied that when customers call the Company's customer service line, they "only get a computer" or "individuals out of the country," such as the "Philippines even when there is a power outage."

8. Paragraph 8 sets forth the instructions for filing the Complaint, to which no responsive pleading is required.

9. Paragraph 9 sets forth the instructions for receiving service in the proceeding, to which no responsive pleading is required.

10. Paragraph 10 of the Complaint pertains to the Complainant's legal representation, to which no responsive pleading is required.

11. Paragraph 11 sets forth the verification and signature, to which no responsive pleading is required.

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Complaint of John Gadomski be denied in its entirety and with prejudice as against PPL Electric Utilities Corporation.

Respectfully submitted,



Kimberly A. Klock (ID # 89716)
Michael J. Shafer (ID # 205681)
PPL Services Corporation
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E-mail: dryan@postschell.com

Date: September 3, 2024

Attorneys for PPL Electric Utilities Corporation

VERIFICATION

I, BETHANY L. JOHNSON, being the Sr. Director - Regulatory at PPL Services Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: September 3, 2024


Bethany L. Johnson

I&E Statement No. 1
Witness: Joseph Kubas

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

PPL ELECTRIC UTILITIES CORPORATION

Docket No. P-2024-3048732

Direct Testimony

of

Joseph Kubas

Bureau of Investigation and Enforcement

Concerning:
Petition to Waive DSIC Cap

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Joseph Kubas. My business address is Pennsylvania Public Utility
4 Commission, 400 North Street, Harrisburg, PA 17120.

5
6 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

7 A. I am employed by the Pennsylvania Public Utility Commission in the Bureau of
8 Investigation and Enforcement (“I&E”) as a Rate Case Review Specialist in an
9 annuitant capacity. I was previously employed as the Fixed Utility Valuation
10 Engineer Supervisor.

11
12 **Q. WHAT IS YOUR EDUCATION AND EMPLOYMENT BACKGROUND?**

13 A. An outline of my education and employment is attached as Appendix A.
14

15 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

16 A. I&E is responsible for protecting the public interest in proceedings before the
17 Commission. The I&E analysis in this proceeding is based on its responsibility to
18 represent the public interest. This responsibility requires balancing the interests of
19 ratepayers, the regulated utility, and the regulated community as a whole.
20

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

22 A. The purpose of my direct testimony is to address the petition of PPL Electric

1 Utilities Corporation (“PPL” or “Company”) for a waiver of a provision of Act 11
2 to increase the Distribution System Improvement Charge (“DSIC”) surcharge cap
3 from 5% to 9% of billed distribution revenues (“PPL DSIC Petition”).
4

5 **INFRASTRUCTURE INVESTMENT HISTORY**

6 **Q. HOW HAVE UTILITIES IN PENNSYLVANIA TRADITIONALLY** 7 **RECOVERED THE COST OF INFRASTRUCTURE IMPROVEMENTS?**

8 A. Traditionally, utilities in Pennsylvania have recovered the cost of infrastructure
9 improvements through base rate cases, in which all of the utilities’ investments,
10 expenses, and revenues are examined at the same point in time. However, in 1996
11 the General Assembly, under the provisions of Section 1307 of the Public Utility
12 Code (66 Pa. C.S.A. §1307), created an exception to this process for water utilities
13 at a time when water companies contended that they were subject to substantial
14 new infrastructure requirements. This amendment provided for the allowance of
15 an automatic adjustment charge, or DSIC, which permitted water utilities to apply
16 a surcharge between base rate cases to cover the costs of new distribution system
17 improvements. This model was used as the basis when the DSIC was extended to
18 other utility providers.
19

20 **Q. HOW HAS THE PUBLIC UTILITY CODE BEEN AMENDED TO ALLOW** 21 **OTHER UTILITY PROVIDERS TO QUALIFY FOR DSIC RECOVERY?**

22 A. On February 14, 2012, Act 11 of 2012 was signed into law, which amended

1 Chapters 3, 13, and 33 of the Public Utility Code. In particular, Chapter 13 of the
2 Code was amended to allow jurisdictional electric distribution companies, natural
3 gas distribution companies, wastewater utilities, and city natural gas operations, in
4 addition to water utilities, to petition the Commission for approval to implement a
5 DSIC to recover the reasonable and prudently incurred costs related to the repair,
6 improvement, and replacement of the eligible property of a utility's distribution
7 infrastructure.

8
9 **Q. WHAT IS A DSIC?**

10 A. The DSIC is a mechanism that blends the concepts of a surcharge and an
11 automatic adjustment charge. A surcharge establishes a mechanism for cost
12 recovery outside of the utility's revenue requirement. In other words, a surcharge
13 allows recovery of a cost that was not previously included in the utility's rates.
14 The DSIC is a surcharge that allows the recovery of costs related specifically to
15 distribution system improvement projects.

16 An automatic adjustment charge enables a utility to recover changes in
17 costs that impact revenues between rate cases, such as fuel adjustment
18 mechanisms and weather normalization mechanisms. The DSIC expands this
19 concept to include costs incurred due to infrastructure replacement projects that
20 utilities would otherwise be unable to earn a return of or on until the next base rate
21 case. Allowing prospective recovery of the costs associated with distribution
22 system infrastructure improvements both mitigates the impact of regulatory lag

1 and allows utilities continued recovery of the cost associated with infrastructure
2 improvements necessary to provide safe and reliable service between base rate
3 cases.

4
5 **Q. DID THE DSIC STATUTE ESTABLISH ANY SAFEGUARDS TO**
6 **PROTECT RATEPAYERS?**

7 A. Yes. The consumer protections are contained in Section 1358 of the Public Utility
8 Code as follows:

- 9 1) A 5% cap on the DSIC surcharge. The DSIC may not exceed 5% of the
10 amount billed to customers under the applicable distribution rates, which is
11 the provision that the Company seeks to waive in this proceeding. Waiver
12 of the 5% cap is permitted but only if necessary, for the utility to maintain
13 adequate, safe and reliable service (66 Pa. C.S. §1358(a)(1);
- 14 2) The DSIC shall be applied equally to all customer classes (66 Pa. C.S.
15 §1358(d)(1);
- 16 3) The DSIC petition must include certification that a base rate case has been
17 filed within five years prior to the date of filing the DSIC petition (66 Pa.
18 C.S. §1353(b)(4);
- 19 4) Annual reconciliations are performed by the utility (66 Pa. C.S.
20 §§1358(e)(1)(ii) and 1358(e)(2);
- 21 5) Audits are conducted by the Commission (66 Pa. C.S. §1358(e)(1)(i);
- 22 6) Customer notice of any changes in the DSIC (66 Pa. C.S. §1354);

- 1 7) The DSIC is reset to zero as of the effective date of new base rates that
2 include the DSIC-eligible plant (66 Pa. C.S. §1358(b)(1); and
3 8) Provisions for the change to be set at zero if, in any quarter, the utility’s
4 most recent earnings report shows that it is earning a rate of return that
5 exceeds the allowable rate of return used to calculate its fixed costs under
6 the DSIC (66 Pa. C.S. §1358(b)(3).

7 Additionally, a utility cannot implement a DSIC mechanism until it files a
8 long-term infrastructure improvement plan (“LTIIIP”) with the Commission, and
9 the LTIIIP is approved. The LTIIIP is a necessary component of a DSIC petition
10 (66 Pa. C.S. §§1352(a), 1353(b)(3)). The purpose of an LTIIIP filing is to require
11 the public utility to present the manner in which the utility will accelerate the
12 replacement of its aging infrastructure to ensure that the utility is planning and
13 executing capital expenditures that will maintain and improve the efficiency,
14 safety, adequacy and reliability of existing distribution infrastructure.

15 The LTIIIP is mandated to be a five- to ten-year plan describing projects
16 eligible for inclusion in the DSIC, also known as “DSIC-eligible plant.” Section
17 1359 of the Public Utility Code requires the Commission to set standards to ensure
18 that this DSIC-eligible work is performed and inspected by qualified personnel.
19 Therefore, the Commission determined that a workforce management and training
20 plan designed to ensure that a utility will have access to a qualified workforce to
21 perform work in a cost-effective, safe, and reliable manner should be a necessary
22 element of an LTIIIP.

1 Further, to avoid any potential violation of the “used and useful” rule, each
2 surcharge period is limited to reflect only those costs of eligible plant additions
3 that are actually placed in service during the three-month period ending one month
4 prior to the effective date of the DSIC (66 Pa. C.S. §1357(a)(1)).
5

6 **COMPANY PROPOSAL**

7 **Q. SUMMARIZE PPL’S PROPOSAL IN THIS PROCEEDING.**

8 A. PPL has requested a waiver of the DSIC cap of 5% of billed distribution revenues
9 and approval to increase the maximum allowable DSIC to 9%. The Company’s
10 current 5% cap was reached in April 2021 (PPL Electric Statement No. 2, pp. 5-6).
11 The Company claims that, absent an increase in the DSIC rate, its ability to timely
12 recover the investments described in its LTIP and make various safety and
13 reliability improvements will be compromised. In addition, the Company will free
14 up capital to use on other projects. The Company states that its proposal to
15 increase the DSIC cap is consistent with what the Commission has approved for
16 other utilities. Finally, the Company also states that its proposal will have
17 minimal impact on customers’ bills (PPL DSIC Petition pp. 15-21).
18

19 **I&E RECOMMENDATION**

20 **Q. SUMMARIZE YOUR OVERALL RECOMMENDATION REGARDING** 21 **THE COMPANY’S REQUESTED WAIVER OF THE DSIC CAP.**

22 A. I recommend that the Commission deny the Company’s request for a waiver and

1 maintain the legislatively approved 5% cap. PPL's request for a waiver of the 5%
2 cap to 9% should be denied for the following reasons:

3 1) PPL has not shown that a waiver of the DSIC cap of 5% is necessary for it
4 to ensure and maintain adequate, efficient, safe, reliable, and reasonable
5 service.

6 2) Clarification of the temporary or permanent nature of the requested waiver
7 is needed.

8 3) The scrutiny of a DSIC filing is less comprehensive than a base rate case.
9 The DSIC requires customers to pay a surcharge so that the Company can
10 quickly recover the cost plant additions. This simplified surcharge is
11 applied without the benefit of two key components that are part of a normal
12 base rate proceeding.

13 a) The ability to evaluate whether other cost decreases and input
14 changes should be reflected and netted against the requested
15 increase; and

16 b) The review of costs by rate class.

17 4) The Company is beyond its projected base rate filing date.

18 5) The DSIC cap waiver approvals to other regulated utilities are either not
19 applicable or were approved under different circumstances.

20 6) Increasing the DSIC cap to 9% has a significant customer impact,
21 especially on larger use customers.

1 **SAFE AND RELIABLE SERVICE**

2 **Q. IS PPL’S REQUESTED WAIVER OF THE DSIC CAP OF 5% TO 9%**
3 **NECESSARY IN ORDER TO CONTINUE TO PROVIDE SAFE AND**
4 **RELIABLE SERVICE?**

5 A. No. In the third LTIP Review Order issued December 22, 2022, the Commission
6 determined that the Company’s reliability performance has improved and that the
7 changes to the LTIP were necessary to continue to maintain and improve
8 reliability (Periodic Review of PPL’s Long-Term Infrastructure Improvement Plan
9 (“LTIP Review Order”) at Docket No. P-2022-3034972, Order entered December
10 22, 2022). There is no indication that the Company will not be able to continue to
11 provide safe, reliable, and reasonable service to customers if the requested DSIC
12 increase is not approved. There is no indication that LTIP investments will not be
13 made if the waiver is not granted. In conclusion, I believe the Company will
14 continue providing safe and reliable service if the DSIC remains at the current 5%
15 cap.

16
17 **CLARIFICATION OF THE PROPOSED 9% MAXIMUM DSIC RATE**

18 **Q. DOES THE PETITION CLEARLY STATE WHETHER THE PROPOSED**
19 **9% MAXIMUM DSIC RATE IS TEMPORARY OR PERMANENT?**

20 A. No. The Petition does not clearly state whether the proposed 9% maximum DSIC
21 rate is only a temporary request until either the LTIP is complete in 2027 or until

1 the Company files its next base rate case, and it does not state whether the intent is
2 that the proposed 9% maximum DSIC rate will remain in perpetuity.

3
4 **Q. IF THE PROPOSED MAXIMUM DSIC RATE IS A PERMANENT**
5 **REQUEST, SHOULD THE COMPANY BE REQUIRED TO EXPLAIN IN**
6 **DETAIL WHY THAT SHOULD BE ALLOWED?**

7 A. Yes. If the request is permanent, the Company should explain why it believes it
8 should be permanent.

9
10 **Q. ALTHOUGH YOU DO NOT AGREE WITH RAISING THE DSIC CAP,**
11 **WHAT IS YOUR SPECIFIC CONCERN ABOUT WHETHER IT IS**
12 **TEMPORARY OR PERMANENT?**

13 A. Since the proposed 9% maximum DSIC rate is based upon plant additions in the
14 LTIP that is projected to end in 2027, increasing the DSIC should only apply until
15 the current LTIP is completed or until its next base rate case is filed, whichever
16 occurs first. However, the lack of clarity in the petition makes it appear that the
17 Company's request to increase the maximum DSIC rate to 9% would exist in
18 perpetuity. If the Company's Petition is requesting that the 9% maximum DSIC
19 rate would continue in perpetuity, similar to the lack of support for a temporary
20 increase, the Company has not provided any support for why the 9% maximum
21 DSIC rate should continue after the Company files a base rate case that would
22 capture all future LTIP plant additions.

1 **RECOVERY THROUGH A BASE RATE CASE**

2 **Q. IS A WAIVER OF THE 5% CAP NECESSARY FOR THE COMPANY TO**
3 **RECOVER THE COSTS OF ITS INVESTMENTS?**

4 A. No. A review of the petition and testimony leaves the impression that if the DSIC
5 cap is not increased to 9%, the Company will have difficulty recovering the cost of
6 system improvements. However, this is not the case. The Company has the
7 ability to file a base rate case to request recovery of LTIP costs if the DSIC cap
8 remains at 5%. The DSIC is intended to provide recovery of allowable system
9 improvements between base rate filings; however, it is not intended to replace a
10 base rate proceeding.

11
12 **Q. WAS THE IMPORTANCE OF BASE RATE FILINGS ADDRESSED BY**
13 **THE COMMISSION IN THE INITIAL DECISION APPROVING THE 5%**
14 **MAXIMUM DSIC IN 1996?**

15 A. Yes. In 1996, the Commission established the DSIC and imposed strict
16 guidelines, which included setting the maximum rate of 5% to protect customers
17 and prevent long term evasion of base rate cases. The Commission determined
18 that the DSIC was not a substitute for base rate filings as follows,

19 [T]he provision of a 5% of billed revenues cap on the
20 maximum amount of any DSIC insures that the surcharges
21 mechanism will not evade the Section 1308 base rate process
22 and its intensive top-to-bottom review of all company revenue,
23 expense, rate base and return claims. See Attachment A, p. 4.
24 In other words, the 5% cap will insure that the surcharge will

1 not allow the company to avoid a base rate review of eligible
2 property in perpetuity.¹

3 The Commission reiterated the importance of base rate filings in the DSIC

4 Tentative Implementation Order:

5 The DSIC filing must also include certification that a Section
6 1308(d) base rate case has been filed within the past 5 years.
7 See 66 Pa. C.S. § 1353(b)(4). This ensures that a full
8 presentation of the utility's current revenues, expenses, rate
9 base, and rate of return has been provided to the Commission
10 and the public for review, potential challenge, and settlement
11 or adjudication. If no rate base case has been filed within five
12 years prior to the date the DSIC petition is filed, the utility must
13 file a Section 1308(d) base rate case to become DSIC eligible.
14 See 66 Pa. C.S. § 1353(b)(5). These provisions ensure that the
15 DSIC process is not used to avoid the comprehensive financial
16 review that takes place in the context of a base rate case.²
17

18 **Q. WHY SHOULD THE DSIC NOT BE A SUBSTITUTE FOR BASE RATE**
19 **CASES?**

20 A. In a base rate case, all the components of a utility's operation that comprise the
21 revenue requirement are examined, and the Commission grants a company the
22 opportunity to receive this revenue through rates. The DSIC does not afford
23 parties the opportunity for this extensive review as it is designed to identify and
24 recover the distribution system improvement costs incurred between rate cases,
25 which are a narrow subset of the Company's total cost of service. The
26 Commission's review of a DSIC filing does not include a prudence review, which

¹ *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, Docket No. P-00961031, p. 15 (Order entered August 26, 1996).

² *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611, Tentative Implementation Order, p. 12 (Order entered May 11, 2012).

1 would occur in a base rate proceeding. For example, in base rate cases a detailed
2 depreciation analysis is provided; however, in a DSIC filing, the last depreciation
3 rates and/or composite rates are used. In a base rate case, projected increases in
4 revenue are reflected while in a DSIC filing, past revenue which may be lower, is
5 used. Similarly, in a base rate case, the cost of debt and equity are reviewed,
6 whereas in a DSIC filing, the Company simply uses what it identifies as its cost of
7 debt and uses either a past return on equity or the Commission's most recent DSIC
8 rate for return on equity, neither of which may be reflective of the current cost of
9 equity as analyzed in a base rate proceeding. In summary, the data in a base rate
10 case receives much more scrutiny and the results are targeted by class, which is
11 why DSIC recovery should be capped at a relatively low level to prevent any long-
12 term avoidance of base rate review of these and all other plant costs.

13
14 **Q. WHAT CAN OCCUR AFTER BASE RATES ARE ESTABLISHED USING**
15 **DATA PRESENTED IN A BASE RATE FILING?**

16 A. After a base rate proceeding concludes, if a utility has a net gain in the number of
17 customers, that additional revenue is not reflected in base rates until the next base
18 rate case is filed. Similarly, if a utility reduces operating expenses or borrowing
19 costs, these lower costs are not reflected in base rates until the Company files
20 another base rate case. An increase to the maximum DSIC level will tend to
21 increase the time interval between rate case filings which could allow the

1 Company to benefit from additional revenue and cost savings for a longer period
2 of time.

3
4 **Q. IS THE DSIC BASED UPON ANY CLASS COST OF SERVICE STUDY?**

5 A. No. The DSIC is based on a percentage of revenue, not the cost of providing
6 service to a particular class. In a base rate case, rates for each class are generally
7 adjusted so that the revenue received is closer to or equal to the cost of providing
8 service to that class. However, the DSIC charge is simply a percentage of the
9 customer base rates. Therefore, any subsidy that exists under base rates is not
10 adjusted with the DSIC.

11
12 **Q. HOW CAN THIS HARM CUSTOMERS?**

13 A. In base rate cases, if the revenue received from a class is more than the cost of
14 providing service, that class generally receives a smaller percentage increase or no
15 increase at all. However, since the DSIC is based on present revenue, this subsidy
16 is not addressed, and that class continues to be harmed because the revenue
17 received from that class is more than the cost of providing service to that class.
18 Conversely, in a base rate filing, if the revenue received from a class is less than
19 the cost of providing service, that class generally receives a larger percentage
20 increase. However, since the DSIC is based on present revenue, this subsidy is
21 also not addressed, and that class continues to benefit because the revenue
22 received from that class is less than the cost of providing service to that class.

1 **TIMING OF BASE RATE CASES**

2 **Q. WHEN DID PPL FILE ITS MOST RECENT BASE RATE CASE?**

3 A. PPL's most recent base rate case was filed on March 31, 2015, at Docket No.
4 R-2015-2469275. The Company requested an increase of approximately \$167.5
5 million, 18.5%, in distribution rates.

6
7 **Q. IN THAT PROCEEDING, DID THE COMPANY PROJECT WHEN IT**
8 **WOULD FILE ITS NEXT BASE RATE CASE?**

9 A. Yes. The Company's total claimed rate case cost for its 2015 base rate proceeding
10 was \$1,856,000 (Company Exhibit Fully Projected Future 1, Sch. D-6) and it
11 claimed a normalization period of two years, which resulted in annual rate case
12 expense of \$928,000 ($\$1,856,000 \div 2$ years). Based on PPL's claimed two year
13 normalization period, it is reasonable to expect PPL to file a subsequent base rate
14 case on or soon after March 2017.

15
16 **Q. HOW LONG HAS IT BEEN SINCE PPL FILED A BASE RATE CASE?**

17 A. Over nine years have passed since PPL has filed its last base rate case.
18

19 **Q. WHAT DOES THE COMPANY'S DECISION TO NOT FILE A BASE**
20 **RATE CASE INDICATE?**

21 A. This indicates that the revenue received from base rates (plus current DSIC
22 revenues) is covering expenses, providing a return on its investments, and

1 producing a reasonable rate of return for Company shareholders. Also, since the
2 Company has already reached the point where it could file a base rate case
3 utilizing an FPFTY ending March 2026 and it has not done so, it is reasonable to
4 conclude that the Company's revenue projections for 2024 and 2025, regardless of
5 this DSIC petition outcome, produce a reasonable rate of return, which negates the
6 need for additional DSIC revenue in 2025.

7
8 **Q. WHAT ELSE SHOULD BE NOTED CONCERNING THE 9% MAXIMUM**
9 **DSIC REQUEST AND THE GAP IN RATE CASES?**

10 A. As described above, the Company has the discretion to file a base rate case to
11 capture infrastructure investments made between rate cases, and the Company
12 should not utilize a DSIC waiver petition to substitute for a base rate proceeding
13 when the last rate case was filed over nine years ago. I&E does not support
14 lengthy rate case intervals as too much time between rate cases can impact
15 reasonable rates as class cost of service changes with time and can impact safety
16 as LTIIP improvements could be impacted by funds availability, exactly as the
17 Company has anticipated occurring with this filing.

18
19 **Q. HOW DOES FILING A BASE RATE CASE INSTEAD OF INCREASING**
20 **THE MAXIMUM DSIC RATE IMPACT THE DSIC?**

21 A. Filing a base rate case impacts the DSIC in two ways. First, at the conclusion of a
22 base rate proceeding, the DSIC is reset to zero since all allowable plant is

1 recovered in base rates. This allows the DSIC to be increased up to 5% again once
2 test year plant included in the base rate case claims has been realized. PPL's most
3 recent base rate case was filed nine years ago on March 31, 2015 and it did not
4 reach the 5% cap until April 2021. PPL had the option to file a subsequent base
5 rate case to reset the DSIC when it was approaching the 5% cap as the timing of a
6 rate filing is within the control of the Company. The fact that it reached the 5%
7 cap does not demonstrate an issue with the current cap; rather, it is due to the long
8 stretch between rate filings and the Company's decision to not file a rate case and
9 reset the DSIC to 0%.

10 Second, when base rate revenues are increased, it increases the maximum
11 DSIC revenue a utility can receive. For example, PPL's current annual
12 distribution revenue is approximately \$1.136 billion and a 5% maximum DSIC
13 rate allows the Company to collect approximately \$56.8 million in DSIC revenue.
14 However, if the Company was hypothetically granted a base rate increase of 20%,
15 the current \$1.136 billion base rate revenue would increase to approximately
16 \$1.363 billion ($\$1.36 \text{ billion} \times 1.20$). Applying the maximum DSIC rate of 5% to
17 the \$1.363 billion would generate \$68.16 million in DSIC revenue, an increase of
18 \$11.36 million in the annual maximum DSIC revenue. In this example, it would
19 be equivalent to increasing the maximum DSIC rate 20% to 6.0% ($5\% \times 1.20$)
20 without a request to increase the maximum DSIC rate.

1 **Q. WHAT WILL BE THE EFFECTIVE DSIC RATE IF THE MAXIMUM**
2 **RATE IS INCREASED TO 9% AND THE COMPANY RECEIVES A**
3 **HYPOTHETICAL 20% INCREASE IN BASE RATES IN THE NEXT**
4 **BASE RATE PROCEEDING?**

5 A. In this example, the effective DSIC rate would increase 20% to 10.8% ($9\% \times 1.20$)
6 without a request to increase the maximum DSIC rate.

7
8 **OTHER ALLOWED DSIC INCREASES**

9 **Q. WHAT DOES THE COMPANY CLAIM CONCERNING OTHER**
10 **UTILITIES THAT RECEIVED AN INCREASE IN THE DSIC RATE?**

11 A. The Company asserts that since the Commission previously approved DSIC
12 increases for Philadelphia Gas Works (“PGW”), Pennsylvania Power Company
13 (“Penn Power”), and UGI Central Penn Gas, Inc. (“UGI-CPG”) the Commission
14 should also approve PPL’s request for a 9% DSIC cap (PPL Petition, pp. 4-5).

15
16 **Q. IS PGW’S DSIC DIFFERENT FROM THE DSIC OF AN INVESTOR-**
17 **OWNED UTILITY?**

18 A. Yes. PGW is a municipal gas utility regulated by the Commission under a cash
19 flow formula. Therefore, PGW’s DSIC does not calculate rate of return or
20 depreciation expense. The PGW DSIC is better described as a “Pay-As-You-Go”
21 charge. In other words, PGW’s DSIC recovers the actual cost of investments, and
22 since PGW has no investors, there is no profit on the DSIC. Therefore, PPL’s

1 comparison of its DSIC, which does include a profit component, to PGW's DSIC
2 is not valid. Additionally, I&E supported PGW's DISC to 7.5% to increase its
3 pipeline replacement efforts.³ Prior to seeking approval to increase its DSIC, the
4 Commission issued a Staff Report⁴ that encouraged PGW to seek a DSIC increase
5 above 5% as a way to accelerate its main replacement program because a
6 significant percentage of PGW's distribution system was comprised of at-risk
7 main and PGW's hazardous leak rates that were more than double of any other
8 regulated natural gas distribution company.⁵ Even with substantial evidence of
9 infrastructure concerns, the Commission only allowed PGW to increase its DSIC
10 cap to 7.5%, not 9% requested in this Petition.

11
12 **Q. HOW WAS THE PENN POWER DSIC INCREASE DIFFERENT?**

13 A. Similarly, I&E entered into a settlement with Pennsylvania Power Company
14 ("Penn Power") to increase its DISC cap above 5% because in the Commission's
15 Periodic Review of Penn Power's LTIP, the Commission determined that changes
16 to its LTIP were necessary to maintain and improve reliability give the
17 deterioration in reliability performance from 2016 through the second quarter

³ *Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket No. P-2015-2501500 (Order entered January 28, 2016).

⁴ Pennsylvania Public Utility Commission Staff Report: Inquiry into Philadelphia Gas Works' Pipeline Replacement Program (April 31, 2015).

⁵ *Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket No. P-2015-2501500, p. 13 (Order entered January 28, 2016).

1 2018.⁶ Again, the Commission permitted Penn Power to increase the maximum
2 allowable cap to 7.5%, not 9%⁷

3
4 **Q. HOW WAS THE UGI-CPG INCREASE ALSO DIFFERENT?**

5 A. In UGI-CPG, I&E agreed that waiver of the DSIC cap was warranted because the
6 company's existing infrastructure posed safety concern; therefore, I&E recognized
7 that the Company demonstrated in its modified LTIIP that the additional DSIC
8 funding would address the safety concerns identified by I&E's Gas Safety
9 Division.⁸ The Commission agreed and determined that the safety and reliability
10 concerns the UGI-CPG case was similar to the safety and reliability concerns
11 raised in the PGW proceeding.⁹ Additionally, consistent with the previous
12 waivers, the Commission permitted an increase to 7.5%, not 10% as requested by
13 UGI-CPG or 9% requested by PPL in this proceeding.

⁶ *Petition of Pennsylvania Power Company for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Distribution Rate Revenue and Approval to Increase the Maximum Allowable Distribution System Improvement Charge Cap to 11.81%*, Docket No. P-2019-3012628, p. 11 (Recommended Decision dated February 5, 2020).

⁷ *Petition of Pennsylvania Power Company for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Distribution Rate Revenue and Approval to Increase the Maximum Allowable Distribution System Improvement Charge Cap to 11.81%*, Docket No. P-2019-3012628 (Order entered March 12, 2020).

⁸ *Petition of UGI Central Penn Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues* at Docket No. P-2016-2537609, p. 16 (Order entered May 10, 2017).

⁹ *Petition of UGI Central Penn Gas, Inc. for a Waiver of the Distribution System Improvement Charge (DSIC) Cap of 5% of Billed Distribution Revenues and Approval to Increase the Maximum Allowable DSIC to 10% of Billed Distribution Revenues* at Docket No. P-2016-2537609, p. 16 (Order entered May 10, 2017).

1 **Q. ARE BOTH PENN POWER AND UGI-CPG PART OF LARGER**
2 **OPERATIONS?**

3 A. Yes. Penn Power is part of the larger FirstEnergy Corporation while UGI-CPG is
4 part of the larger UGI Corporation. In each case, the increase in the DSIC was not
5 applicable to the remaining distribution companies. Since UGI and FirstEnergy
6 have recently filed base rate cases for all distribution operations in a single case,
7 the DSIC approvals facilitated the parent in keeping the distribution operations on
8 a common base rate filing schedule. PPL is a single electric distribution company
9 in Pennsylvania, so a DSIC increase here simply provides additional revenue and
10 delays the filing of a base rate case that, in my opinion, is overdue. I believe the
11 rate making components have changed in the nine years since PPL filed its last
12 base rate case, and increasing the Company's DSIC revenues without the benefit
13 of analyzing the components and overall costs and cost allocations would
14 constitute single-issue ratemaking in this circumstance.

15
16 **CUSTOMER IMPACT**

17 **Q. DOES THE COMPANY DESCRIBE THE IMPACT OF A 9% DSIC CAP**
18 **ON THE AVERAGE RESIDENTIAL CUSTOMER IN THE PETITION?**

19 A. Yes. The Company states that if the maximum DSIC rate is increased to 9%, the
20 average residential customer's bill would increase by \$2.37 per month or \$28.44
21 per year (PPL Petition, p. 11). This indicated bill impact for the average
22 residential customer assumes an average usage of approximately 1,000 kWh per

1 month. PPL Electric believes this is a moderated amount and states that the
2 proposed 9% cap was selected to have a “minimal impact” on customers.¹⁰
3

4 **Q. DO YOU AGREE THAT THIS POTENTIAL INCREASE FOR**
5 **RESIDENTIAL CUSTOMERS IS MINIMAL?**

6 A. No. The statutory requirement that rates must be just and reasonable also applies
7 to the DSIC rate.¹¹ Increasing residential rates approximately \$28.44 annually
8 without undergoing full base rate scrutiny is not just and reasonable.
9

10 **Q. DOES THE PETITION ADDRESS THE IMPACT ON LARGE USAGE**
11 **CUSTOMERS?**

12 A. No. There is no mention in the filing of the impact of increasing the maximum
13 DSIC rate to 9% on large usage customers. Based on the settlement in the last
14 base rate case, the LP-4 class revenue of \$38.928 million was collected from 1,145
15 LP-4 customers, resulting in an average annual LP-4 distribution bill of
16 approximately \$33,998 (\$38,928,000 / 1,145). Under the current maximum DSIC
17 rate of 5%, the average LP-4 customer would pay \$1,699.91 (\$33,998 x 0.05) per
18 year. Under the requested maximum DSIC rate of 9%, the average LP-4 customer
19 would pay \$3,059.84 (\$33,998 x 0.09), which is an additional \$1,359.92 per year.

¹⁰ PPL Electric Petition para. 84.

¹¹ 66 Pa. C.S. § 1301.

1 **Q. DOES THIS COMPARISON SHOW THAT INCREASING THE**
2 **MAXIMUM DSIC RATE FROM 5% TO 9% CAN BE SIGNIFICANT?**

3 A. Yes. Increasing the DSIC to 9% would significantly impact larger usage
4 customers. Depending on a customer's usage, increasing the maximum DSIC rate
5 from 5% to 9% would result in a large increase for larger usage customers in any
6 rate class. Regardless of the rate class, larger usage customers would be required
7 to accept a significant bill impact without the benefit of a cost of service study that
8 could mitigate present rates. For example, if any rate class is currently paying
9 more in base rates than the cost to provide service to that rate class, an increase to
10 the flat percentage charge would allow this to continue.

11
12 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION CONCERNING**
13 **PPL'S PROPOSAL TO INCREASE THE MAXIMUM DSIC RATE TO 9%.**

14 A. I recommend that the DSIC cap remain at 5% of billed distribution revenues. PPL
15 should not be permitted to circumvent the base rate process and receive additional
16 revenue through a higher DSIC charge when the Company has already
17 substantially exceeded its projected rate case interval.

18
19 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

20 A. Yes.

JOSEPH KUBAS

***PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET
HARRISBURG, PA 17120***

Education: Bachelor of Science in Civil Engineering Technology, 1985, University of Pittsburgh at Johnstown, Johnstown, PA.

Continuing

Education: Legal Principles and Practices of Surveying at the University of Maryland. Economics, Accounting, 33 Credit hours of accounting at the Howard County Community College and the University of Pittsburgh at Johnstown. Managing Multiple Priorities at the Pennsylvania State University. Various PA-PUC and Utility Company Seminars.

Professional: Engineer In Training, 1985,

Exams: Uniform Certified Public Accounting Exam, 1993.

Rate School: Cost of Service - Rate Structure & Rate Design instructor at Commission's Rate School - September 2010, 2012, 2014, 2016 and 2022.

Title: **RATE CASE REVIEW SPECIALIST - ANNUITANT**

July 2023 – Present
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Duties: Provide consultation and assist the Bureau of I&E in the areas of Engineering, Revenue and Rate Structure for all fixed utility types. This includes measure of value claims, rate structure and rates, revenue annualizations, depreciation claims, fuel purchasing practices and economic analyses. The types of dockets reviewed by the Bureau of I&E included applications, formal complaints, investigations, applications, petitions and rate investigations. The review includes analyzing all pertinent supporting information such as cost of service studies, bill frequency analyses, proofs of revenue schedules, depreciation studies, water quality test results and formal complaints.

Title: FIXED UTILITY VALUATION ENGINEER SUPERVISOR

December 2011 – June 2023
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Duties: Duties included the areas of Engineering, Revenue and Rate Structure for all fixed utility types. During the course of formal and informal investigations personnel under my direction were responsible for reviewing and presenting recommendations regarding tariff rate schedules, tariff rules and regulations, measures of value claims, revenue annualizations, depreciation claims, fuel purchasing practices and economic analyses. The types of dockets reviewed by the Bureau of I&E included: applications, formal complaints, investigations, petitions and rate investigations. The Engineering Section was also responsible for reviewing all pertinent supporting information such as cost of service studies, bill frequency analyses, proofs of revenue, depreciation studies, water quality test results and formal complaints. Duties also included reviewing default service petitions by electric distribution companies and Act 129 Filings by the seven major electric Utilities, including energy efficiency and conservation plans and Smart Meter Plans.

Title: RATE CASE REVIEW SPECIALIST

December 2009 - December 2011
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement and Office of Trial Staff

Duties: These duties included the determination of the reasonableness of claims and proposals in the areas of plant in service, rate base, depreciation expense, cost of service, quality of service, revenues, acquisitions, purchase gas expense, rate structure, and tariff proposal submitted by Water, Sewer, Telephone, Gas and Steam Heat utilities to justify utility service rates, or alternative forms of regulation. Research, analyze, and review rate case filings, tariff filings, acquisitions and investigations. Participate in on-site inspections of utility properties to determine the used and usefulness of the plant-in service and make recommendations. Prepare interrogatories in the areas of rate base, depreciation expense, purchase gas expense, amortizations, rate structure, revenue and quality of service in order to obtain additional information regarding a utility's filing. Analyze present revenue, proposed revenue, rate structure and tariff issues. Recommend adjustments to rate base, depreciation expense, revenue, rate structure and other issues concerning fixed utilities. Prepare testimony and exhibits for the purpose of

establishing the I&E position in formal and informal proceedings before the Commission. Provide assistance and input to I&E employees concerning engineering and rate structure issues including input for briefs and exceptions. Participate in Commission consultative report proceedings and collaboratives undertaken by the Commission.

Title: FIXED UTILITY VALUATION ENGINEER III

December 1999 - December 2009
Pennsylvania Public Utility Commission
Office of Trial Staff

Duties: These duties included the determination of the reasonableness of claims and proposals in the areas of plant in service, rate base, depreciation expense, cost of service, quality of service, revenues, acquisitions, purchase gas expense, rate structure, and tariff proposal submitted by Water, Sewer, Telephone, Gas and Steam Heat utilities to justify utility service rates, or alternative forms of regulation. Research, analyze, and review rate case filings, tariff filings, acquisitions and investigations. Participate in on-site inspections of utility properties to determine the used and usefulness of the plant-in service and make recommendations. Prepare interrogatories in the areas of rate base, depreciation expense, purchase gas expense, amortizations, rate structure, revenue and quality of service in order to obtain additional information regarding a utility's filing. Analyze present revenue, proposed revenue, rate structure and tariff issues. Recommend adjustments to rate base, depreciation expense, revenue, rate structure and other issues concerning fixed utilities. Prepare testimony and exhibits for the purpose of establishing the OTS position in formal and informal proceedings before the Commission. Provide assistance and input to OTS employees concerning engineering and rate structure issues including input for briefs and exceptions. Participate in Commission consultative report proceedings and collaboratives undertaken by the Commission.

Title: FIXED UTILITY VALUATION ENGINEER II

April 1996 - December 1999
Pennsylvania Public Utility Commission
Office of Trial Staff and Bureau of Fixed Utility Services

Duties: Perform the duties of a Fixed Utility Valuation Engineer II in the Office of Trail Staff (OTS) and Bureau of Fixed Utility Services.

Title: FIXED UTILITY VALUATION ENGINEER TRAINEE, I & II

May 1993 - March 1996
Pennsylvania Public Utility Commission
Office of Trial Staff
Telecommunications and Water Division

Duties: Perform the duties of a Fixed Utility Valuation Engineer II in the Rate Structure/Engineering Section of the Telecommunications and Water Division of the Office of Trial Staff (OTS).

Title: CIVIL ENGINEER

May 1985 - January 1991
Clark Finefrock & Sackett Inc.
7135 Minstrel Way
Columbia, MD 21045

Duties: Engineering, Surveying, Computer, and Field Inspection work related to land development projects in Maryland.

Testimony Before the Pennsylvania Public Utility Commission

- | | | |
|-----|--|----------------|
| 1. | National Utilities Inc. (Water) | R-00953416 |
| 2. | Consumer Pennsylvania Water Company - Roaring Creek Division | R-00973869 |
| 3. | Philadelphia Suburban Water Company | R-00973952 |
| 4. | Bell Atlantic - Pennsylvania Inc. | P-00971307 |
| 5. | City of Bethlehem- Bureau of Water | R-00984375 |
| 6. | Pennsylvania Telephone Association - Chapter 30 Plan | P-00981425 |
| 7. | GTE North Inc. Telephone Chapter 30 Plan | P-00981449 |
| 8. | Pennsylvania American Water Co. | R-00994638 |
| 9. | Philadelphia Suburban Water Co. | R-00994868 |
| 10. | PG Energy (Gas) | R-00005119 |
| 11. | Pennsylvania-American Water - Coatesville Acquisition | A-212285-F0071 |
| 12. | T. W Phillips Gas and Oil Company | R-00005459 |
| 13. | Verizon North - Chapter 30 Plan | P-00001854 |
| 14. | Philadelphia Gas Works | R-00006042 |
| 15. | PFG Gas Inc. & Penn Fuels Gas Co. | R-00013679 |

16.	Pennsylvania-American Water Co.	R-00016339
17.	Philadelphia Suburban Water Co.	R-00016750
18.	Philadelphia Gas Works	R-00017034
19.	PFG Gas Inc. & Penn Fuels Gas Co	R-00027389
20.	Verizon - Pennsylvania, Inc.	P-00021973
21.	Verizon - Pennsylvania, Inc.	P-00937105-F0002
22.	Pennsylvania American Water Co.	R-00027982
23.	Dominion Peoples 1307(f)	R-00038170
24.	Verizon PA / Verizon North	C-20027195
25.	National Fuel Gas Distribution, Inc.	R-00038168
26.	Aqua Pennsylvania, Inc.	R-00038805
27.	Dominion Peoples 1307(f)	R-00049153
28.	PPL Electric Utilities	R-00049255
29.	National Fuel Gas Distribution, Inc.	R-00049656
30.	City of Lancaster - Sewer	R-00049862
31.	Dominion Peoples 1307(f)	R-00050267
32.	Verizon PA / Verizon North	C-20027195
33.	PPL Gas Utilities Inc. 1307(f)	R-00050540
34.	United Telephone	A-313200-F0007
35.	Aqua Pennsylvania, Inc.	R-00051030
36.	T.W. Phillips 1307(f)	R-00051134
37.	City of Dubois	R-00050671
38.	T.W. Phillips	R-00051178
39.	Peoples Natural Gas Co. 1307(f)	R-00061301
40.	Met-Ed/Penelec	R-00061366 and R-00061367
41.	The York Water Company	R-00061322
42.	PPL Gas Utilities Corporation	R-00061398
43.	National Fuel Gas Distribution, Inc.	R-00061493
44.	Pennsylvania-American Water Co.	P-00062241
45.	Philadelphia Gas Works	R-00061931
46.	PPL Electric	R-00072155
47.	Pennsylvania-American Water Co.	R-00072229
48.	Valley Energy	R-00072349
49.	City of Bethlehem	R-00072492
50.	Aqua Pennsylvania, Inc.	R-00072711
51.	T.W. Phillips 1307(f)	R-2008-2013026
52.	Columbia Gas of Pennsylvania, Inc.	R-2008-2011621
53.	Peoples Natural Gas Co. 1307(f)	R-2008-2022206
54.	PECO Energy	P-2008-2032333
55.	NRG Energy Center Harrisburg	R-2008-2028395
56.	PAWC - Coatesville Wastewater	R-2008-2032689
57.	The York Water Company	R-2008-2023067
58.	Pike County Power and Light (Gas)	R-2008-2046520

59.	Columbia Water	R-2008-2045157
60.	T. W. Phillips Gas (1307-f)	R-2008-2075250
61.	Peoples Natural Gas Co. (1307-f)	R-2009-2088069
62.	UGI Utilities Inc. (1307-f)	R-2009-2105911
63.	Pennsylvania-American Water	R-2009-2097323
64.	UGI Utilities Inc.	R-2009-2105911
65.	Penn Estates Water	R-2009-2117532
66.	Penn Estates Sewer	R-2009-2117740
67.	AT&T Communications	C-2009-2098380
68.	Aqua Pennsylvania, Inc.	R-2009-2132019
69.	T.W. Phillips Gas (1307-f)	R-2009-2145441
70.	PGW Gas	R-2009-2139884
71.	City of Bethlehem - Remand	R-00072492
72.	Dominion Peoples (1307-f)	R-2010-2155608
73.	PECO Energy - Gas Division	R-2010-2161592
74.	UGI Penn National Gas	R-2010-2172928
75.	PAWC Coatesville Operations	R-2010-2166212
76.	PAWC Northeast Operations	R-2010-2166214
77.	Duquesne Light Company	R-2010-2179522
78.	Peoples Natural Gas Company	R-2010-2201702
79.	T.W. Phillips - Steel River Application	A-2010-2210326
80.	Peoples Natural Gas 1307(f)	R-2011-2228694
81.	UGI Penn Natural Gas 1307(f)	R-2011-2238943
82.	Pennsylvania-American Water	R-2011-2232243
83.	Aqua Pennsylvania, Inc.	R-2011-2267958
84.	Borough of Quakertown	R-2011-2251181
85.	Peoples Natural Gas Company	R-2012-2285985
86.	Columbia Gas of Pennsylvania, Inc.	R-2012-2321748
87.	UGI Utilities Inc.	R-2015-2518438
88.	Aqua Wastewater	A-2017-2605434
89.	Pennsylvania-American Water	R-2017-2595853
90.	UGI Electric	R-2017-2640058
91.	PECO Electric	R-2018-3000164
92.	The York Water Company	R-2018-3000019
93.	Pennsylvania Power Company	P-2019-3012628
94.	Aqua PA -New Garden Twp.	A-2019-2580061
95.	UGI Gas	R-2019-3015162
96.	Pittsburgh Water and Sewer Auth.	P-2020-3019019
97.	PAWC Wastewater	R-2020-3019371
98.	Aqua PA Wastewater	R-2021-3027386
99.	PECO Electric	R-2021-3024601
100.	Borough of Ambler	R-2022-3031704
101.	PAWC – Borough of Brentwood	A-2022-3024058

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|------|---------------------------------------|----------------|
| 102. | PAWC – Wastewater | R-2023-3043190 |
| 103. | FirstEnergy Pennsylvania Electric Co. | R-2024-3047068 |

**I&E Statement No. 1-SR
Witness: Joseph Kubas**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

PPL ELECTRIC UTILITIES CORPORATION

Docket No. P-2024-3048732

Surrebuttal Testimony

of

Joseph Kubas

Bureau of Investigation and Enforcement

**Concerning:
Petition to Waive DSIC Cap**

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Joseph Kubas. My business address is Pennsylvania Public Utility
4 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg,
5 PA 17120.

6
7 **Q. ARE YOU THE SAME JOSEPH KUBAS WHO SUBMITTED DIRECT**
8 **TESTIMONY IN THIS PROCEEDING?**

9 A. Yes. I have submitted I&E Statement No. 1.

10

11 **Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN**
12 **ACCOMPANYING EXHIBIT?**

13 A. No.

14

15 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

16 A. The purpose of my surrebuttal testimony is to address the rebuttal testimony of
17 PPL Electric Utilities Corporation (“PPL” or “Company”) witness Steven D.
18 Selkregg (PPL St. No. 1-R), and Bethany L. Johnson (PPL St. No. 2-R)
19 concerning PPL’s request to increase the maximum Distribution System
20 Improvement Charge (“DSIC”) from 5.0% to 9.0% of billed distribution revenues.

1 **COMPANY PROPOSAL**

2 **Q. PLEASE SUMMARIZE PPL’S PROPOSAL IN THIS PROCEEDING.**

3 A. PPL has requested a waiver of the DSIC cap of 5% of billed distribution revenues
4 and approval to increase the maximum allowable DSIC cap to 9%. The
5 Company’s current 5% cap was reached in April 2021 (PPL Electric Statement
6 No. 2, pp. 5-6). The Company claims that, absent an increase in the DSIC rate, its
7 ability to timely recover the investments described in its Long-Term Infrastructure
8 Improvement Plan (“LTIIP”) and make various safety and reliability
9 improvements will be compromised. In addition, the Company will free up capital
10 to use on other projects. The Company states that its proposal to increase the
11 DSIC cap is consistent with what the Commission has approved for other utilities.
12 Finally, the Company also states that its proposal will have minimal impact on
13 customers’ bills (PPL DSIC Petition, pp. 15-21).

15 **I&E RECOMMENDATION AND COMPANY REBUTTAL**

16 **Q. SUMMARIZE YOUR OVERALL RECOMMENDATION REGARDING**
17 **THE COMPANY’S REQUESTED WAIVER OF THE DSIC CAP.**

18 A. I recommended that the Commission deny the Company’s request for a waiver and
19 maintain the legislatively approved 5% cap. I stated that PPL’s request for a
20 waiver of the 5% cap to 9% should be denied for the following reasons:

- 1 (1) PPL has not shown that a waiver of the DSIC cap of 5% is necessary for it
2 to ensure and maintain adequate, efficient, safe, reliable, and reasonable
3 service.
- 4 (2) Clarification of the temporary or permanent nature of the requested waiver
5 would be needed.
- 6 (3) The scrutiny of a DSIC filing is less comprehensive than a base rate case.
7 The DSIC requires customers to pay a surcharge so that the Company can
8 quickly begin to recover the cost of plant additions. This simplified
9 surcharge is applied without the benefit of the following two key
10 components that are part of a normal base rate proceeding:
- 11 (a) The ability to evaluate whether other cost decreases and input
12 changes should be reflected and netted against the requested
13 increase; and
- 14 (b) The review of costs by rate class.
- 15 (4) The Company is beyond its projected base rate filing date.
- 16 (5) The DSIC cap waiver approvals to other regulated utilities are either not
17 applicable or were approved under different circumstances.
- 18 (6) Increasing the DSIC cap to 9% has a significant customer impact,
19 especially on larger use customers (I&E St. No. 1, pp. 7-8).

1 **Q. DID THE COMPANY’S REBUTTAL TESTIMONY ADDRESS YOUR**
2 **RECOMMENDATION TO DENY THE PETITION TO INCREASE THE**
3 **MAXIMUM DSIC RATE TO 9.0%?**

4 A. Yes. The Company continues to assert that this Application should be approved
5 so that it can continue to provide safe and reliable service. The Company
6 discusses whether the requested increase in the maximum DSIC rate is temporary
7 or permanent. The Company also believes that the requirements imposed by I&E
8 and the other parties are not supported by the DSIC statute, the fact that nine years
9 have passed since its last base rate case is not relevant, and there is no evidence
10 that applying a flat surcharge to those rates is unreasonable. Finally, the Company
11 addresses the average bill issue (PPL St. No. 1, pp. 2-11, and PPL St. No. 2, pp. 2-
12 22).

13
14 **Q. DID YOU DESCRIBE HOW THE DSIC BEGAN AND LIST THE**
15 **SAFEGUARDS ESTABLISHED TO PROTECT CUSTOMERS IN YOUR**
16 **DIRECT TESTIMONY?**

17 A. Yes. I described the history of the DSIC and the consumer safeguards in I&E St.
18 No. 1, pp. 2-6. In summary, there is a 5.0% cap applicable to all classes equally,
19 unless a utility can show the need for a higher maximum cap. Audits are
20 conducted by the Commission, and the DSIC is reset to zero after a base rate case,
21 or if a utility’s rate of return exceeds the allowable rate of return used to calculate

1 its fixed costs under the DSIC. There is also a requirement that the utility file an
2 LTIP with the Commission.

3
4 **Q. HOW DID THE COMPANY’S REBUTTAL TESTIMONY ADDRESS THE**
5 **SAFEGUARDS OF THE DSIC ESTABLISHED TO PROTECT**
6 **CUSTOMERS?**

7 A. Company witness Johnson states that the DSIC cap waiver was expressly
8 authorized under Chapter 11 in 2012. Ms. Johnson opines the OCA and I&E
9 consider the 5% cap “immovable.” Ms. Johnson asserts the other parties have
10 attached conditions to the DSIC cap (PPL St. No. 2-R, p. 3). Finally, PPL claims
11 that it is seeking only to apply all the tools available to provide safe reliable
12 service (PPL St. No. 2-R, pp. 2-3).

13
14 **Q. DID YOU INDICATE IN YOUR DIRECT TESTIMONY THAT THE DSIC**
15 **CAP IS IMMOVABLE?**

16 A. No. Ms. Johnson’s claim that I&E believes the DSIC waiver is “immovable” is
17 inaccurate. As specifically noted in my direct testimony, a DSIC waiver is
18 permissible under certain circumstances (I&E St. No. 1, p. 4). This is evidenced
19 by the fact that I&E has agreed to the waiver for PGW, Penn Power and UGI
20 Central Penn Gas, Inc. (I&E St. No. 1, pp. 17-20). However, the fact that waiver
21 was appropriate in those cases does not mean that waiver is similarly appropriate
22 for PPL.

1 **Q. WHAT OTHER OPTION IS AVAILABLE TO THE COMPANY TO**
2 **RECOVER THE COST OF SYSTEM IMPROVEMENTS?**

3 A. As described in my direct testimony and below, the Company could file a base
4 rate case to recover the cost of planned system additions and improvements (I&E
5 St. No. 1, pp. 10-13).

6
7 **Q. WHAT “CONDITIONS” DOES THE COMPANY ASSERT YOU**
8 **ATTACHED TO THE PPL DSIC PETITION?**

9 A. Company witness Johnson asserts I placed three conditions on the approval of the
10 Petition. First, the Ms. Johnson states I recommended that it clarify if the DSIC
11 increase will be temporary or permanent (PPL St. No. 2-R. p. 4). Second, she
12 notes that my concern about the timing of base rate case filings has no statutory
13 basis with respect to the DSIC (PPL St. No. 2-R. p. 2-7). Third, she opines that I
14 placed a Cost of Service Study (“COSS”) requirement on approval of the DSIC
15 Petition (PPL St. No. 2-R, pp. 11-12). I will address these arguments below.

16
17 **CLARIFICATION OF THE PROPOSED 9.0% MAXIMUM DSIC**

18 **Q. SUMMARIZE YOUR DIRECT TESTIMONY ADDRESSING THE**
19 **PETITION’S LACK OF CLARITY CONCERNING WHETHER THE**
20 **PROPOSED 9.0% MAXIMUM DSIC IS TEMPORARY OR PERMANENT.**

21 A. In my direct testimony, I described how the Petition does not clearly state whether
22 the proposed 9.0% maximum DSIC is only a temporary request or if the intent is

1 that the proposed 9.0% maximum DSIC cap will remain in perpetuity. I
2 recommended if the request is permanent, that the Commission require the
3 Company to explain why it should be permanent for the reasons stated in my
4 direct testimony (I&E St. No. 1, pp. 8-9).

5
6 **Q. DID THE COMPANY RESPOND CONCERNING THE LENGTH OF**
7 **TIME THE DSIC WAIVER WOULD APPLY?**

8 A. Yes. Ms. Johnson states that the Company would be amenable to a specified
9 period of either the duration of the Company's third LTIIP (applicable through
10 December 31, 2027) or the effective date of new distribution rates resulting from a
11 distribution base rate case, whichever were to occur first (PPL St. No. 2-R, p. 4).

12
13 **Q. WHAT IS YOUR RESPONSE TO THE COMPANY'S PROPOSAL?**

14 A. I continue to recommend that the Petition should be denied; however, if the
15 Commission approves waiver of the statutory 5% cap, such waiver should be
16 temporary under the parameters described above.

17
18 **TIMING OF BASE RATE CASES**

19 **Q. DID YOUR DIRECT TESTIMONY ADDRESS THE TIMING OF PPL'S**
20 **MOST RECENT BASE RATE CASE?**

21 A. Yes. I indicated that PPL's most recent base rate case was filed on March 31,
22 2015, at Docket No. R-2015-2469275. Based on PPL's claimed two-year

1 normalization period in that rate proceeding, it was reasonable to expect PPL to
2 file a subsequent base rate case by March 2017 (I&E St. No. 1, p. 14).

3
4 **Q. HOW LONG HAS IT BEEN SINCE PPL FILED A BASE RATE CASE?**

5 A. Over nine years have passed since PPL has filed its last base rate case.

6
7 **Q. WHAT DID YOU CONCLUDE CONCERNING THE COMPANY'S**
8 **DECISION NOT TO FILE A BASE RATE CASE IN THIS NINE YEAR**
9 **PERIOD?**

10 A. I determined that the revenue received from base rates (plus current DSIC
11 revenues) is covering current and projected expenses, providing a return on its
12 investments, and producing a reasonable rate of return for Company shareholders.
13 I also described how and why I&E does not support lengthy rate case intervals
14 (I&E St. No. 1, pp. 14-17).

15
16 **Q. WHAT WAS THE COMPANY'S RESPONSE CONCERNING THE**
17 **FILING OF A BASE RATE CASE AND HOW IT RELATES TO**
18 **INCREASING THE DSIC?**

19 A. Company witness Johnson indicated she is unaware of any requirement that a
20 public utility must file a base rate case within a certain number of years before
21 receiving a waiver on the DSIC cap. She opines that this is clear because of the
22 requirements linked to an initial DSIC petition and because of the language

1 surrounding the 5.0% waiver, and how the statute details several requirements to
2 be included when a utility files an LTIP and DSIC, which provide customer
3 protections. She also states that these requirements provide transparency,
4 opportunity, and accountability for customers and stakeholders, while providing
5 timely recovery for the Company of reasonable and prudent investments as
6 approved in an approved LTIP. Further, the Company believes that a lack of
7 intervention and complaints in its LTIP filings, Annual Asset Optimization Plans
8 (“AAOPs”), and DSIC demonstrate that there are ample opportunities for parties
9 to investigate both the LTIP and the DSIC cost recovery in lieu of a full base rate
10 case proceeding and, as such, one is not required for the Commission to approve
11 the requested waiver (PPL St. No. 2-R, pp. 6-7).

12
13 **Q. DID YOU INDICATE THAT THERE IS ANY LEGAL REQUIREMENT**
14 **FOR THE TIMING OF A BASE RATE CASE RELATIVE TO THE**
15 **COMPANY’S DSIC CAP PETITION?**

16 A. No. My position regarding the timing of a base rate case was not due to any
17 statutory requirement, and I am advised by counsel that the legal requirements and
18 implications of increasing the DSIC cap to 9.0% will be addressed in briefs.
19 However, the Company’s statements concerning transparency, opportunity, and
20 accountability for customers, stakeholders, and allowing the Company timely
21 recovery for the reasonable and prudent investments through a higher DSIC are
22 misplaced. After nine years, transparency and accountability are better achieved

1 by the Company filing a base rate case so that all aspects of its operations are
2 reviewed before revenue is increased, as opposed to simply granting a rider rate
3 increase. Finally, the claim that there was limited or no intervention in some of
4 the Company's filings illustrate that these filings do not immediately impact rates
5 and do not receive the same scrutiny as a base rate case, which typically have
6 participation from statutory advocates, low income advocates, other interested
7 parties, and customers through Public Input Hearings.

8
9 **COST OF SERVICE ISSUES**

10 **Q. WHAT DID YOU STATE CONCERNING COST OF SERVICE ISSUES?**

11 A. I described that, since the DSIC is a separate surcharge, increasing the statutory
12 cap does not address the potential disparity in the revenue that each class should
13 contribute to overall revenue. For example, in a base rate proceeding, classes who
14 are paying below their cost of service typically receive a higher percentage
15 increase than other classes (I&E St. No. 1, p. 13). This disparity can be remedied
16 in a base rate proceeding but cannot be addressed through the Company's
17 requested DSIC waiver.

18
19 **Q. DID THE COMPANY RESPOND TO YOUR CONCERN ABOUT COST**
20 **OF SERVICE ISSUES RELATED TO FROZEN RATES, OTHER 1307**
21 **MECHANISMS, AND INFRASTRUCTURE INVESTMENTS?**

22 A. Yes. First, Company witness Johnson opines that both I&E and the Office of

1 Small Business Advocate (“OSBA”) are incorrect on the cost of service issue
2 since the class cost responsibility remains in place until a new rate case is filed and
3 that neither a DSIC mechanism nor any other surcharge mechanism “freezes”
4 anything. To support this, the Company states that no part of Section 1307
5 automatic adjustment clauses requires an updated class cost of service study.
6 Second, the Company states that if I&E and the OSBA are correct, all Section
7 1307 mechanisms, including the DSIC, would have been rejected. Finally, the
8 Company cites to the House Legislative Journal dating to the introduction of Act
9 11 wherein it was stated that utilities have been damaged by recent storms, and the
10 foremost consideration should be about rebuilding infrastructure, presumably to
11 indicate that the Legislature felt the infrastructure recovery was more important
12 than any other cost concerns when the DSIC was established (PPL St. No. 2-R, pp.
13 11-13).

14
15 **Q. PLEASE ADDRESS PPL’S REBUTTAL TESTIMONY CONCERNING**
16 **THESE COST OF SERVICE ISSUES.**

17 A. First, the Company missed the point concerning both I&E’s and the OSBA’s
18 position. The Company failed to address the fact that revenue, expenses, taxes, and
19 rate base for each class are just projections in a base rate case and change over
20 time. For example, operating expenses fluctuate, customers come and go, usage
21 levels change, and plant is added and is retired. These changes occur over time
22 and are not necessarily proportional by class to what was reflected in base rates

1 nine years ago. However, while base rates are “frozen,” the disparity that existed
2 when rates were established could change over nine years, such that applying a
3 surcharge percentage to existing revenues could aggravate a scenario where
4 subsequent changes were causing a particular class to now be substantially
5 exceeding its cost of service. Therefore, both I&E and OSBA correctly assert that
6 an extended period between base rate cases could result in a class bearing a
7 disproportionate and unreasonable share of DSIC charges.

8 Second, while I agree that no Section 1307 automatic adjustment clause requires
9 an updated COSS, I believe the 5.0% DSIC rate cap aids in preventing cost of
10 service disparity issues from becoming worse over time as reaching the cap is part
11 of the utility’s evaluation to file a base rate case where class cost of service issues
12 can be evaluated. Finally, as the cited journal comment predates current storm
13 conditions and was made prior to the implementation of a storm recovery
14 surcharge at PPL, this rebuttal comment provides no support for the Company’s
15 request for an increased DSIC cap in this proceeding.

16
17 **Q. WHAT OTHER ARGUMENTS DID THE COMPANY RAISE TO**
18 **ADDRESS YOUR COST OF SERVICE CONCERNS?**

19 A. Yes. First, the Company states that I&E provided no evidence that the revenue
20 received from the current classes is unreasonable. Second, PPL reaches various
21 legal conclusions regarding existing rates and revenue. Third, the Company
22 opines that the length of time between base rate cases does not suddenly transform

1 existing rates from being presumed just and reasonable to being presumed unjust
2 and unreasonable. Fourth, the Company reaches a legal conclusion regarding
3 what the Commission contemplated and opines that this is another new and
4 unwritten condition that the parties are seeking to impose on the approval of the
5 proposed DSIC cap waiver. Fifth, the Company supports its request by claiming a
6 DSIC mechanism was designed to be less burdensome than a rate case by citing a
7 Commission Order and House Legislative Journal debate (PPL St. No. 2-R, pp.
8 11-13).

9
10 **Q. WHAT IS YOUR RESPONSE?**

11 A. Based upon my experience, nine-year-old cost data is outdated and should be
12 updated to ensure that each class of service is recovering the cost of providing
13 service to that class under current revenues and costs so that applying a surcharge
14 does not make any disparity worse. Second, I am advised by counsel that neither
15 I&E nor the OSBA are required to prove the Company's base rates established
16 nine years ago are unreasonable. While the existing rates may have been
17 determined to be just and reasonable nine years ago, it is not reasonable to
18 increase the DSIC now given the period of time since all ratemaking components
19 were examined in a rate proceeding. Third, the legal conclusion PPL reaches
20 regarding existing rates and revenue and the length of time between rate cases will
21 be addressed in briefs. Fourth, I am advised by counsel that PPL's legal
22 conclusion regarding what the Commission contemplated and the Company's

1 opinion that this is another new and unwritten condition that the parties are
2 seeking to impose on the decision to approve the requested DSIC cap waiver will
3 be addressed in briefs. Fifth, the Company's assertion that a DSIC mechanism is
4 less burdensome than a rate case by citing a Commission Order and House
5 Legislative Journal debate will be addressed in briefs. I agree that a DSIC filing is
6 generally less burdensome than a base rate case; however, given the period of time
7 since PPL filed a base rate case, it would be in the public interest for PPL to file a
8 base rate case so the parties and the Commission can review all of PPL's
9 ratemaking components.

10
11 **SAFE AND RELIABLE SERVICE**

12 **Q. DID YOU ADDRESS THE COMPANY'S REQUESTED WAIVER OF THE**
13 **DSIC CAP AS REQUIRED IN ORDER TO CONTINUE TO PROVIDE**
14 **SAFE AND RELIABLE SERVICE?**

15 A. Yes. My direct testimony describes how in the third LTIIIP Review Order entered
16 December 22, 2022, the Commission determined that the Company's reliability
17 performance has improved and that the changes to the LTIIIP were necessary to
18 continue to maintain and improve reliability (Periodic Review of PPL's Long-
19 Term Infrastructure Improvement Plan ("LTIIIP Review Order") at Docket No. P-
20 2022-3034972, Order entered December 22, 2022). There is no indication that the
21 Company will not be able to continue to provide safe, reliable, and reasonable
22 service to customers if the requested DSIC increase is not approved. There is no

1 indication that LTIP investments will not be made if the waiver is not granted. In
2 conclusion, I believe the Company will continue providing safe and reliable
3 service if the DSIC remains at the current 5.0% cap of billed distribution revenues
4 (I&E St. No. 1, p. 9).

5
6 **Q. DID THE COMPANY ADDRESS YOUR TESTIMONY CONCERNING**
7 **THE PROVISION OF SAFE AND RELIABLE SERVICE?**

8 A. Yes. Mr. Selkregg asserts that this DSIC waiver request should be approved
9 because the Company is facing significant safety and reliability issues. The
10 Company claims that no party disputed the safety and reliability issues it is facing,
11 and that Mr. Mierzwa with the OCA and I are not safety reliability experts. The
12 Company also opines that the recent Commission Management and Operations
13 Audit results (2024 Audit) support the Company's Petition (PPL St. No. 1, pp. 4-
14 9).

15
16 **Q. WHAT IS YOUR RESPONSE TO PPL'S REBUTTAL TESTIMONY**
17 **CONCERNING YOUR LACK OF ELECTRIC RELIABILITY SAFETY**
18 **EXPERIENCE?**

19 A. I have over 30 years of experience is in the area of rate base, rates, and revenue
20 analysis. As stated in my direct testimony, it is my position that an increased
21 DSIC cap is not necessary for these investments to occur. To the contrary, if the

1 Company believes it needs additional revenue for the continued provision of safe
2 and reliable service it should file a base rate case.

3
4 **Q. DOES THE ASSERTION THAT NO PARTY DISPUTED THE**
5 **COMPANY'S SAFETY AND RELIABILITY ISSUES SUPPORT PPL'S**
6 **REQUESTED INCREASE TO THE DSIC CAP?**

7 A. No. The Company's rebuttal testimony does not dispute that PPL could satisfy
8 these safety and reliability concerns by filing a base rate case. In fact, my direct
9 testimony describes the overall benefits of PPL filing a base rate case compared to
10 increasing the DSIC to 9.0% (I&E St. No. 1, pp. 9-13).

11
12 **Q. DOES THE COMMISSION-ISSUED 2024 AUDIT SUPPORT PPL'S**
13 **REQUESTED INCREASE TO THE DSIC CAP?**

14 A. No. Similar to existing reliability and safety concerns, PPL does not explain in
15 rebuttal testimony how it could not satisfy the Commission's concerns described
16 in the 2024 Audit by filing a base rate case.

17
18 **RECOVERY THROUGH A BASE RATE CASE**

19 **Q. DID YOUR DIRECT TESTIMONY DESCRIBE WHY A WAIVER OF THE**
20 **5.0% CAP IS NOT NECESSARY FOR THE COMPANY TO RECOVER**
21 **THE COST OF ITS INVESTMENTS?**

22 A. Yes. My direct testimony described how the Company has the ability to file a

1 base rate case to request recovery of LTIP costs if the DSIC cap remains at 5.0%
2 of billed distribution revenues. I described how the DSIC is intended to provide
3 recovery of allowable system improvements between base rate filings. I continued
4 by describing the various provisions to protect customers when the DSIC was
5 implemented. I also described how and why the DSIC is not a substitute for a
6 base rate case. Finally, I described how requesting an increase through a base rate
7 filing increases the revenue received from the DSIC, while the DSIC remains at
8 5.0% (I&E St. No. 1, pp. 10-17).

9
10 **Q. DID THE COMPANY ADDRESS YOUR CONCERNS ABOUT THE**
11 **RECOVERY OF COSTS THROUGH A BASE RATE CASE VERSUS**
12 **INCREASING THE DSIC RATE?**

13 A. Yes. The Company claims that both I&E and the OCA have attempted to make
14 their cases based on the time that has elapsed since the last PPL base rate case and
15 describes this as a new unwritten “condition” that I&E and OCA created. The
16 Company restates its declining reliability metrics and/or increased storm
17 experience as justification for the Petition. The Company also alleges that
18 customers would pay more if PPL filed a base rate case, and that waiver of the
19 DSIC cap supports the theory of gradualism in that customers may only see an
20 increase up to 9.0% over time. The Company also claims that with an increase in
21 the DSIC cap, customers will benefit from the declining net plant balances from
22 previously installed equipment and completed projects. Lastly, the Company

1 opines that I&E's and OCA's concern about the timing of a base rate case seems
2 to be more about the line item on the customer bill in which the costs are
3 recovered (DSIC or a base rate case), rather than the amount to be recovered or the
4 need to maintain safe and reliable service, which PPL asserts is the basis of the
5 DSIC cap waiver request (PPL St. No. 2-R, pp. 4-5, 8, and 13).

6
7 **Q. PLEASE ADDRESS PPL'S REBUTTAL TESTIMONY CONCERNING**
8 **THE RECOVERY OF SYSTEM COSTS THROUGH A BASE RATE CASE**
9 **RATHER THAN INCREASING THE MAXIMUM DSIC RATE TO 9.0%**
10 **OF BILLED DISTRIBUTION REVENUES.**

11 A. First, while I agree that I&E and the OCA describe PPL's ability to file a base rate
12 case at any time, it should not be described as a "condition" for approving this
13 request. However, PPL conveniently ignores that base rate cases and DSIC
14 recovery are intertwined given that it is where the DSIC is reset to zero. The
15 solution to reaching the statutory 5% cap is to file a rate case, not increase the cap
16 as PPL is requesting. Second, with respect to the gradualism argument, any
17 increase no matter how small must be just and reasonable. Furthermore, the
18 Company has the ability to get on a rate case filing cycle that also increases rates
19 gradually. Third, it is not clear how customers will benefit from an increase in the
20 DSIC cap over time as plant balances decline. When plant such as one pole is
21 installed, the net value of that plant declines over time regardless of whether the
22 Company is recovering the original cost (less accrued) of that plant or not. Fourth,

1 reviewing the recovery of projects, plant, related expense, debt costs, and return on
2 equity in totality and by class through a base rate case is a better opportunity for
3 all variables (e.g., revenues, expenses, rate base, etc.) to be analyzed and to ensure
4 costs are correctly assigned to classes and rates are just and reasonable, not a
5 detriment. Fifth, the Company is correct that I&E believes that it is unreasonable
6 to simply add an additional 4% surcharge on a customer's bill without the full
7 review of a base rate case.

8
9 **Q. DID THE COMPANY ADDRESS YOUR ASSERTION THAT THIS**
10 **PETITION SHOULD NOT BE APPROVED BECAUSE INCREASING THE**
11 **DSIC SHOULD NOT BE A SUBSTITUTE FOR A BASE RATE CASE?**

12 A. Yes. First, PPL claims that it is not petitioning for a DSIC waiver to substitute for
13 a base rate proceeding. The Company claims it is merely seeking to supplement
14 its revenue to re-invest in LTIIP work and non-LTIIP work that will measurably
15 increase reliability. Second, when addressing my direct testimony concerning how
16 the DSIC will effectively increase after a base rate case, the Company claims that I
17 failed to provide bill comparisons that show the impacts to customers. Third, the
18 Company claims that I failed to acknowledge that by requesting a DSIC cap
19 waiver, PPL is balancing continued investment in reliability with customer bill
20 impacts. Fourth, the Company also alleges that even under my example, the DSIC
21 cap waiver without a base rate increase would amount to a request for less revenue
22 with a commitment to complete at least the same amount of work. Fifth, the

1 Company claims that the DSIC cap increase from 5.0% to 9.0% as requested is
2 estimated to recover approximately \$45 million per year, which it claims is less
3 than the approximately \$133 million to \$502 million increase requested by other
4 electric utilities in 2024. Finally, the Company claims that approval of a DSIC
5 waiver also “caps” the return on equity that PPL can earn at the level stated in the
6 Commission’s quarterly financial report (PPL St. No. 2-R, pp. 9-10).

7
8 **Q. PLEASE ADDRESS PPL’S RESPONSE CONCERNING THE RECOVERY**
9 **OF SYSTEM COSTS THROUGH A BASE RATE CASE RATHER THAN**
10 **INCREASING THE MAXIMUM DSIC TO 9.0%.**

11 A. First, I disagree with the Company’s contention that the proposed DSIC cap
12 waiver is not a substitute for a base rate case. This requested waiver and a base
13 rate case both provide additional revenue for PPL. Therefore, from that
14 standpoint, one is a substitute for the other. The Company’s claim of
15 “supplementing revenue” to spend on other plant contradicts the claim that the
16 DSIC is not a substitute for a base rate case. Second, my description of additional
17 DSIC revenue is not hypothetical, it is simple math. As described in my direct
18 testimony, whatever percentage increase the Company receives in base rates,
19 would cause the same percentage increase in the effective DSIC revenues (I&E St.
20 No. 1, p. 16). This applies to any percentage increase the Company receives.
21 There was no reason to provide bill comparisons to show each bill at the various
22 usage levels increasing by the same percentage after a base rate increase when the

1 DSIC rate is reset to zero. Third, the Company's assertion that I&E failed to
2 consider the bill impact is misplaced. To the contrary, the Company failed to
3 acknowledge that a DSIC filing is not a full review of a company's operations that
4 would occur in a base rate case. While a DSIC surcharge would be simpler for
5 PPL to recover new plant additions, a base rate case would evaluate all ratemaking
6 components and establish just and reasonable rates by class. A DSIC mechanism
7 allows a simple surcharge without the full review of a base rate case and rates for
8 each class. Fourth, the Company's commitment to complete "at least the same
9 amount of work" for less revenue only appears to apply to some DSIC eligible
10 plant and fails to consider the remaining rate case items that should be reflected in
11 a base rate case such as revenue, debt costs, and expenses. Fifth, the Company's
12 comparison of \$45 million in additional DSIC revenue it would receive to the
13 \$133 million increase filed by Duquesne Light Company at Docket No. R-2024-
14 3046523 and the \$502 million increase filed by FirstEnergy Pennsylvania Electric
15 Company at No. Docket R-2024-3047068 is also misplaced. These increases are a
16 function of present rate revenue, plant balances, recent plant additions, projected
17 plant additions, expenses, and both present and proposed returns on equity.
18 Unlike a maximum DSIC rate, these increases are likely to be reduced through
19 settlement or litigation. Also, unlike a DSIC surcharge, each ratemaking
20 component in these cases will be evaluated by the Commission. With respect to
21 Ms. Johnson's contention that the DSIC caps the return on equity that PPL can
22 earn, this is simply untrue. The only cap that the DSIC return on equity provides

1 is that the Company would be ineligible to utilize the DSIC if its return on equity
2 was higher than the DSIC rate established in the Commission's quarterly earnings
3 report. There is nothing that limits what return on equity a company can earn
4 through its operations.

5
6 **Q. DID THE COMPANY ADDRESS THE FILING OF A BASE RATE CASE**
7 **AS IT RELATES TO INCREASING THE DSIC?**

8 A. Yes. First, Company witness Johnson speculates that my recommendation is
9 based upon the Company's stated intention to file a base rate case two years after
10 the base rate case in 2015. Ms. Johnson further states that at that time, it had not
11 yet filed its first LTIP. She also opines that it is important to note that its 2015
12 base rate case resulted in a full unanimous settlement with I&E and the OCA.
13 Second, Ms. Johnson describes how it realized the significant investments in its
14 first LTIP could have on rates and made efforts to reduce costs while making the
15 right investments and improve efficiencies. Third, she asserts that its request
16 should not be dismissed based on its pursuit of investing responsibly and prudently
17 and allowing PPL to continue this strategy (PPL St. No. 2-R, pp. 13-14).

18
19 **Q. PLEASE ADDRESS MS. JOHNSON'S FIRST POINT ABOUT ITS 2015**
20 **BASE RATE CASE.**

21 A. My recommendation is not based upon the Company's decision in the 2015 base
22 rate case to project a two-year rate case interval. My recommendation is based

1 upon the fact that the Company's revenues since 2015 have apparently been
2 adequate to provide safe reliable service over the past nine years. The fact that it
3 filed rate cases in 2010 and 2012 and had yet to file an LTIP are not relevant
4 either. My recommendation would be the same if the Company had never filed a
5 base rate case or an LTIP (which is required for DSIC eligibility). The claim that
6 the 2015 case settled is also not relevant since my recommendation would be the
7 same if that base rate case had litigated.

8
9 **Q. PLEASE ADDRESS MS. JOHNSON'S SECOND AND THIRD POINTS**
10 **CONCERNING SIGNIFICANT INVESTMENTS AND PRUDENT**
11 **OPERATIONS.**

12 A. My recommendation is not based upon the Company's significant investment or
13 lack of investment, it is about determining the appropriate DSIC cap. While I
14 understand the Company believes that it has made prudent investments, those
15 prudent investments are better addressed in a base rate proceeding where PPL's
16 safety record, overall operations, and shareholder earnings can be reviewed.

17
18 **Q. WHAT DID YOU STATE CONCERNING SAFETY AS IT RELATES TO**
19 **THE FILING OF A BASE RATE CASE?**

20 A. I stated that I&E does not support lengthy rate case filing intervals as too much
21 time between rate cases can impact proper class revenue responsibility as class
22 cost of service changes with time and can impact safety as LTIP and other

1 improvements could be impacted by funds availability, exactly as the Company
2 has anticipated occurring with this filing (I&E St. No. 1, p. 15).

3
4 **Q. DID THE COMPANY RESPOND TO YOUR CONCERN ABOUT THE**
5 **LENGTHY TIME BETWEEN RATE CASE FILINGS?**

6 A. Yes. Company witness Johnson restates that distribution rate case filing intervals
7 are not set by statute or regulation. She opines that if I&E is concerned about
8 safety due to funds availability, I&E should support the proposed DSIC cap
9 waiver. She admits that it is ultimately the additional funding (whether through a
10 distribution base rate case or through a DSIC cap waiver) that supports safety and
11 reliability, not the particular line item on the customer bill from which the funding
12 is derived (PPL St. No. 2-R, p. 14).

13
14 **Q. PLEASE ADDRESS THIS SECTION OF REBUTTAL TESTIMONY**
15 **CONCERNING RATE CASE INTERVALS, ADDITIONAL REVENUE,**
16 **AND COMPARING THE DSIC TO BASE RATE CASES.**

17 A. First, I agree that rate case intervals are not set by statute or regulations, but the
18 Company failed to refute my point that funding and recovery of safety
19 improvements would be more appropriately achieved through the filing of a base
20 rate case. This is because these and other costs will be recovered from the proper
21 rate classes based upon the COSS filed in that case. Second, the Company's claim
22 concerning additional funding contradicts its claim that this requested waiver is

1 not a substitute for a base rate filing. As described above, it would be more
2 reasonable to review all the components that impact base rates before simply
3 adding a 4% surcharge to a customer's bill. While increasing the surcharge as a
4 line item on a bill is easier for PPL, the fact remains that it would be more
5 appropriate for PPL to file a base rate case if necessary improvements and
6 operations cannot be funded through existing revenues.

7
8 **OTHER UTILITIES' APPROVED DSIC CAP WAIVERS**

9 **Q. WHAT DID THE COMPANY CLAIM CONCERNING OTHER UTILITIES**
10 **THAT RECEIVED APPROVALS FOR DSIC CAP INCREASES?**

11 A. The Company points to the Commission's previously approved DSIC cap
12 increases to 7.5% for Philadelphia Gas Works ("PGW"), Pennsylvania Power
13 Company ("Penn Power"), and UGI-CPG in support of its requested waiver (PPL
14 Petition, pp. 4-5).

15
16 **Q. DID YOU ADDRESS THE PENN POWER AND UGI-CPG DSIC CAP**
17 **INCREASES?**

18 A. Yes. In my direct testimony, I described how I&E entered into a settlement with
19 Penn Power to increase its DISC cap above 5% with restrictions and for specific
20 reasons. I also described how in UGI-CPG DSIC proceeding, I&E agreed that a
21 waiver of the DSIC cap was warranted for specific reasons (I&E St. No. 1, pp. 18-
22 19).

1 **Q. WHAT WAS THE COMPANY'S RESPONSE TO CONCERNING THE**
2 **PENN POWER AND UGI-CPG DSIC CAP INCREASES?**

3 A. In support of its waiver request, Company witness Johnson states that the
4 Commission showed its willingness to increase the DSIC for these two companies
5 to 7.5% on a temporary basis (PPL St. No. 2-R, p. 21).

6
7 **Q. WHAT IS YOUR RESPONSE TO MS. JOHNSON'S ASSERTION?**

8 A. PPL's rebuttal testimony failed to address the special circumstances surrounding
9 the Penn Power and UGI-CPG DSIC increases that I described in my direct
10 testimony (I&E St, No. 1, pp. 17-20). Therefore, I believe the details surrounding
11 these DSIC increases do not support the DSIC cap increase requested by PPL.

12
13 **CUSTOMER IMPACT**

14 **Q. DID YOU ADDRESS THE COMPANY'S ASSERTION THAT THE**
15 **INCREASE TO RESIDENTIAL CUSTOMERS WILL BE MINIMAL?**

16 A. Yes. I described the statutory requirement that rates must be just and reasonable,
17 which also applies to the DSIC rate.¹ Increasing average residential bills
18 approximately \$28.44 annually without undergoing full base rate scrutiny is not
19 just and reasonable (I&E St No. 1, p. 20-21).

¹ 66 Pa. C.S § 1301.

1 **Q. DID THE COMPANY ADDRESS YOUR TESTIMONY CONCERNING**
2 **THE AVERAGE INCREASE IN THE BILL OF AN AVERAGE**
3 **RESIDENTIAL CUSTOMER?**

4 A. Not directly. The Company attempts to justify the request by stating that every
5 0.5% increase in the DSIC results in a \$0.30 per month increase in a residential
6 customer's bill but will provide approximately \$5 million in annual revenue to
7 address reliability concerns (PPL St. No. 2-R, pp. 21-22).

8
9 **Q. DOES THIS ALLEVIATE YOUR CONCERN ABOUT JUST AND**
10 **REASONABLE RATES?**

11 A. No. Attempting to minimize the bill impact does not mean that the resulting rate
12 is just and reasonable. Regardless of whether the proposed monthly increase is
13 \$0.30 or \$30.00, PPL should not be permitted to use the DSIC to increase
14 customer rates.

15
16 **Q. DID YOU ALSO ADDRESS THE IMPACT ON LARGE USAGE**
17 **CUSTOMERS IN YOUR DIRECT TESTIMONY?**

18 A. Yes. In my direct testimony, I described how there is no mention in the filing of
19 the impact of increasing the maximum DSIC rate to 9.0% on large usage
20 customers, which would be significant. That is, under the requested maximum
21 DSIC rate of 9.0%, the average LP-4 customer would pay \$3,059.84 (\$33,998 x
22 0.09), which is an additional \$1,359.92 per year (I&E St. No. 1, pp. 21-22).

1 **Q. DID THE COMPANY RESPOND TO YOUR POINT ABOUT THE**
2 **IMPACT TO LARGE CUSTOMERS?**

3 A. Yes. The Company opines the Commission should disregard this comparison and
4 focus on the large customer total bill impact for the GS-1, GS-3 and LP-4 class
5 customers (PPL St. No. 2-R, pp. 20-21).
6

7 **Q. WHAT IS YOUR RESPONSE CONCERNING THE IMPACT TO LARGE**
8 **CUSTOMERS?**

9 A. First, I didn't address the impacts to GS-1 or GS-3 customers because the
10 distribution revenue per customer to these classes is relatively small. Second, I
11 believe it is appropriate to consider the approximately \$1,360 per year increase in
12 the average LP-4 customer's bill. While I understand LP-4 customers pay large
13 demand and usage charges, these charges vary with usage and generation rates,
14 which are not established by the Commission. Therefore, it is appropriate to
15 consider the increase to base rates separately.
16

17 **SUMMARY**

18 **Q. HAS THE COMPANY PROVIDED VALID REASONS TO INCREASE**
19 **THE DSIC RATE CAP TO 9.0% OF BILLED DISTRIBUTION**
20 **REVENUES IN ITS REBUTTAL TESTIMONY?**

21 A. No. Therefore, I continue to recommend that the DSIC cap remain at 5.0% of
22 billed distribution revenues. PPL should not be permitted to circumvent the base

1 rate process and receive additional revenue through a higher DSIC charge when
2 the Company has not filed a base rate case in nine years.

3
4 **Q. HAVE YOU LOCATED ANY ADDITIONAL INFORMATION THAT**
5 **SUPPORTS YOUR POSITION THAT A BASE RATE CASE WOULD BE**
6 **WARRANTED AS OPPOSED TO THE REQUESTED DSIC RATE CAP**
7 **WAIVER?**

8 A. Yes. I recently reviewed the presentation that PPL Corporation provided at its
9 August 2024 investor meeting (<https://investors.pplweb.com/events>), and this
10 presentation provided additional details that support my position that operations
11 have changed substantially since PPL filed its last rate case in 2015. For example,
12 on page 32 of this presentation, which addresses PPL's Pennsylvania operating
13 segment, a graph was provided where it was shown that the Company has
14 decreased the ratio of O&M costs to revenue steadily from a 29% level in 2015 to
15 a level of 20% in 2023. At this level of declining O&M share, there would
16 certainly be changes to the cost of service by class that cannot be evaluated with
17 this DSIC cap waiver request. Furthermore, on the same page, the Company
18 projects reducing pole inspection hours by up to 12,500 hours per year, which
19 seems contrary to its expressed concerns regarding safety performance. Therefore,
20 I reiterate my position that the nine years that have elapsed since the last base rate
21 case have seen substantial changes in operations at PPL such that it cannot be

1 affirmatively stated that the impact of the waiver request would be just and
2 reasonable across rate classes.

3

4 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

5 A. Yes.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	
Distribution System Improvement Charge	:	Docket No. P-2024-3048732
(DSIC) Cap of 5% of Billed Revenues	:	

DIRECT TESTIMONY

OF

JEROME D. MIERZWA

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

July 18, 2024

EXETER
ASSOCIATES, INC.

10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

DIRECT TESTIMONY OF JEROME D. MIERZWA

1 Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS
2 ADDRESS?

3 A. My name is Jerome D. Mierzwa. I am a principal with and the President of Exeter
4 Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway,
5 Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-
6 related consulting services.

7 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
8 EXPERIENCE.

9 A. I graduated from Canisius College in Buffalo, New York, in 1981 with a Bachelor of
10 Science Degree in Marketing. In 1985, I received a Master's Degree in Business
11 Administration with a concentration in finance, also from Canisius College. In July
12 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a Management
13 Trainee in the Research and Statistical Services Department ("RSS"). I was promoted
14 to Supervisor RSS in January 1987. While employed with NFGD, I conducted various
15 financial and statistical analyses related to the Company's market research activity and
16 state regulatory affairs. In April 1987, as part of a corporate reorganization, I was
17 transferred to National Fuel Gas Supply Corporation's ("NFG Supply") rate
18 department where my responsibilities included utility cost of service and rate design
19 analysis, expense and revenue requirement forecasting and activities related to federal
20 regulation. I was also responsible for preparing NFG Supply's Purchased Gas
21 Adjustment ("PGA") filings and developing interstate pipeline and spot market supply
22 gas price projections. These forecasts were utilized for internal planning purposes as
23 well as in NFGD's Section 1307(f) proceedings.

1 In April 1990, I accepted a position as a Utility Analyst with Exeter. In
2 December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1, 1996,
3 I became a Principal of Exeter. Since joining Exeter, I have specialized in revenue
4 requirement analysis, evaluating the gas purchasing practices and policies of natural
5 gas utilities, utility class cost of service and rate design analysis, sales and rate
6 forecasting, performance-based incentive regulation, the unbundling of utility services,
7 and the evaluation of customer choice natural gas transportation programs.

8 Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY
9 PROCEEDINGS ON UTILITY RATES?

10 A. Yes. I have provided testimony on more than 450 occasions in proceedings before the
11 Federal Energy Regulatory Commission (“FERC”), and state utility regulatory
12 Commission’s in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine,
13 Massachusetts, Montana, Nevada, New Hampshire, New Jersey, Ohio, Rhode Island,
14 Texas, Utah, and Virginia, as well as before the Pennsylvania Public Utility
15 Commission (“Commission”).

16 Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

17 A. I am appearing on behalf of the Pennsylvania Office of Consumer Advocate (“OCA”).

18 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

19 A. On April 26, 2024, PPL Electric Utilities Corporation (“PPL” or “Company”) filed a
20 Petition requesting that the Commission waive the Company’s current Distribution
21 System Improvement Charge (“DSIC”) cap of 5% of billed distribution revenue and
22 increase the maximum allowable DSIC charge to 9.0% of billed distribution revenue
23 for an indefinite period (“DSIC Petition”). Exeter was retained by the OCA to assist in
24 evaluating the reasonableness of PPL’s DSIC Petition. In my testimony, I explain why
25 PPL’s waiver should be denied and the existing cap of 5% should be retained.

1 Q. PLEASE PROVIDE A BRIEF HISTORY OF DSICs IN PENNSYLVANIA.

2 A. Act 11 of 2012 (“Act 11”) provided jurisdictional electric distribution companies, water
3 and wastewater utilities, natural gas distribution companies, and city natural gas
4 distribution operations with the ability to implement a DSIC to recover reasonable and
5 prudent costs incurred to repair, improve, or replace certain eligible distribution
6 property that is part of the utility’s distribution system. Under Act 11, a utility’s DSIC
7 is reset to zero when the utility adopts new base rates as a result of a base rate
8 proceeding. An electric utility’s DSIC is capped at 5% of distribution rates unless the
9 Commission grants a waiver of the 5% cap.

10 To be eligible to implement a DSIC, a utility must have filed a base rate case
11 within five years prior to the date of filing a petition for implementation of a DSIC. As
12 an additional precondition to the implementation of a DSIC, Act 11 requires that a
13 utility must file a Long-Term Infrastructure Improvement Plan (“LTIIP”).¹ Chapter 121
14 of the Commission’s regulations require a utility to revise, update, or resubmit an
15 LTIIP as appropriate.² Both Act 11 and the LTIIP regulations require that a DSIC shall
16 be terminated if the Commission determines that the utility is not in compliance with
17 the approved LTIIP.

18 Q. DOES PPL CURRENTLY HAVE A DSIC AND LTIIP? IF SO, PLEASE
19 DESCRIBE THEM.

20 A. Yes. PPL’s DSIC was approved by Commission Order on May 23, 2013, and included
21 a 5% cap on billed distribution revenues consistent with the statutory cap set out in Act

¹ The Commission entered Orders on August 2, 2012 (Final Implementation Order) and September 21, 2016 (Supplemental Implementation Order) in *Implementation of Act 11 of 2012*, Docket Number M-2012-2293611, which established procedures and guidelines to implement Act 11 and included a Model Tariff for DSIC filings. The Commission also entered an Order on May 23, 2014 (Final Rulemaking Order) in *Review of Long-Term Infrastructure Improvement Plan*, Docket No. L-2012-2317274, which established procedures and criteria for the filing and subsequent periodic review of LTIIPs.

² 52 Pa. Code §§ 121.4, 6, 7.

1 11. PPL’s initial LTIIP (“LTIIP I”) was approved on January 10, 2013 for the period
2 2013-2017.³ PPL’s second LTIIP (“LTIIP II”) was approved on December 21, 2017
3 for the period 2018-2022.⁴ PPL’s third LTIIP (“LTIIP III”), was approved on
4 December 22, 2022, with projected spending of \$511.62 million for the period 2023-
5 2027.⁵ Table 1 on page 6 of the Commission’s Order showed PPL’s DSIC planned and
6 actual LTIIP expenditures (in millions) for all three of its LTIIPs:

Period		Total Spending 5-year period	Avg Annual Spending as Projected by PPL’s LTIIPs	Avg Annual Spending as Reported in PPL’s AAOPs
Base Line	2008-2012	\$440	\$88	\$88
First LTIIP	2013-2017	\$691 actual	\$138	\$141 actual
Second LTIIP	2018-2022	\$732 actual & expected	\$180	\$146 actual & expected
Third LTIIP	2023-2027	\$512 proposed	\$102	\$102 proposed

7 PPL filed a Petition for Approval of Major Modifications to LTIIP III on January 17,
8 2024 (Docket No. P-2022-3034972) (“Modified LTIIP”) with projected spending of
9 \$799.48 million for the period 2023-2027. On July 11, 2024, the Commission approved
10 Modified LTIIP III with the removal of PPL’s proposed inclusion of a new program
11 for Predictive Failure Technology (“PFT”), which it found to be not eligible for DSIC
12 recovery or inclusion in the LTIIP.⁶ Projected PFT spending in Modified LTIIP III was
13 \$84.44 million. When that \$84.44 million is removed, projected spending for the period

³ *Petition of PPL Electric Utilities Corp. for Approval of a Long-Term Infrastructure Improvement Plan*, P-2012-2325034 (Jan. 10, 2013).

⁴ *Petition of PPL Electric Utilities Corp. for Approval of its Second Long-Term Infrastructure Improvement Plan*, P-2017-2622393, (Dec. 21, 2017).

⁵ *Petition of PPL Electric Utilities Corporation for Approval of its Third Long-Term Infrastructure Improvement Plan*, P-2022-3034972 (Dec. 22, 2022).

⁶ *Petition of PPL Electric Utilities Corporation for Approval of Major Modifications to its Existing Long-Term Infrastructure Improvement Plan*, P-2022-3034972 (July 11, 2024), Modified LTIIP III Order pp. 8-9.

1 2023-2027 is \$715.04 million, which is less than actual and expected spending in PPL's
2 LTIIIP II.

3 Q. WHY IS PPL REQUESTING TO NEARLY DOUBLE ITS CURRENT DSIC
4 CAP OF 5% TO 9%?

5 A. According to PPL witness Steven D. Selkregg, increasing the DSIC cap will enable the
6 Company to increase and accelerate infrastructure investments. On pages 10 to 13 of
7 PPL Statement 1, Mr. Selkregg claims that PPL's planned investment under its current
8 LTIIIP and proposed Modified LTIIIP, is intended to reduce the number and frequency
9 of customer interruptions and overall distribution system reliability and,
10 correspondingly will improve the Company's SAIFI, SAIDI, CAIDI and CEMI
11 performance.⁷ Mr. Selkregg identifies on page 7 that PPL has missed the SAIDI
12 benchmark in nine quarters since 2021, the CAIDI benchmark in every quarter since
13 2020 and is projected to miss its SAIFI target for 2024 by 0.002.

14 Mr. Selkregg attributes PPL's reliability performance to a variety of factors
15 including increased costs from more frequent and severe weather events in its service
16 territory, inflation, and supply chain constraints, which PPL is "forced" to absorb within
17 its existing budgets for projects that are designed to improve service reliability. He claims
18 that these increased costs, in conjunction with the Company's ongoing investment in
19 reliability-focused projects, mean that the DSIC cap is "inhibiting the accelerated repair
20 and replacement of aging infrastructure that PPL Electric could undertake to improve

⁷ The Commission has established performance standards for electric service reliability including the System Average Interruption Duration Index ("SAIDI"), Customer Average Interruption Duration Index ("CAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customers Experiencing Multiple Interruptions ("CEMI"). SAIFI measures the average frequency of interruptions per total number of customers. It is the number of interruptions divided by the total number of customers served. CAIDI measures the average time required to restore service. It is calculated as total minutes of customer interruption divided by the total number of interruptions. SAIDI measures the average duration of service interruptions per total number of customers. It is the minutes interrupted divided by total number of customers served. CEMI indicates the ratio of individual customers experiencing one or more sustained interruptions to the total number of customers served.

1 and maintain service reliability.” PPL Statement 1, pp. 9-10. PPL witness Bethany L.
2 Johnson states that PPL’s calculation of its DSIC has been at the cap of 5% since April
3 2021, and under the current LTIIIP will be beyond 5% for every remaining quarter of
4 the 2023-2027 LTIIIP. If the Modified LTIIIP is approved, Ms. Johnson claims the DSIC
5 would be at least 6% in 2024, and higher in subsequent years. These projections assume
6 that no base rate case is filed.

7 Mr. Selkregg contends that the proposed DSIC cap increase will allow PPL to
8 recover investments in projects that will support and improve reliability of service that
9 are outlined in its LTIIIP III and its Petition for Approval of Major Modifications to
10 LTIIIP III and additional projects that can improve service reliability that are not set
11 forth in the current or modified LTIIIP III.

12 Q. ARE THERE ANY UPDATES SINCE PPL MADE ITS FILING IN THIS
13 CASE?

14 A. Yes. As noted above, on July 11, 2024, the Commission approved PPL’s Modified
15 LTIIIP III with modifications. The Commission stated that the plan, as modified, is
16 designed to maintain safe, adequate and reliable service and directed PPL to comply
17 with the approved LTIIIP.⁸ Notably, the Commission rejected the portion of the LTIIIP
18 related to PPL’s PFT program and the associated \$84.44 million investment. The
19 Commission stated on page 9 of the Order:

20 [W]e find that the PFT program should not be permitted to be part of
21 PPL’s LTIIIP and is not eligible for recovery under the DSIC. . . . PPL
22 may seek recovery on its investment in the PFT program through a base
23 rate proceeding where the program can be subject to a prudency review
24 by all interested parties.

⁸ Modified LTIIIP III Order, pp. 8-9.

1 The \$84.44 million was 30% of the Company's projected increase in spending during
2 the LTIP period,⁹ and reduces the projected spending included in the Modified LTIP
3 to \$715.04 million.

4 Q. HAS PPL CLAIMED TO HAVE EVALUATED THE IMPACT OF ITS
5 PROPOSAL TO INCREASE THE DSIC CAP ON CUSTOMERS' BILLS?

6 A. Yes. PPL claims it has analyzed and selected a DSIC cap percentage that will
7 facilitate the necessary investments in its distribution system and have a minimal
8 impact on customers' bills. PPL Statement 2, pp. 6-7. Ms. Johnson claims that although
9 a DSIC higher than 9% could be justified, the Company decided to propose a DSIC cap
10 of 9% because it would increase the DSIC for a residential customer, using 1,000 kWh
11 per month by \$2.37.

12 Q. HAS THE COMPANY SHOWN THAT A HIGHER DSIC RATE IS
13 NECESSARY TO RECOVER ITS PLANNED INFRASTRUCTURE
14 INVESTMENT OR TO CONTINUE TO PROVIDE SAFE, RELIABLE, AND
15 REASONABLE SERVICE?

16 A. No. PPL has had a 5% DSIC cap in place since July 2013.¹⁰ In its most recent Annual
17 Asset Optimization Plan filed in February 2024, PPL noted with regard to its reliability
18 performance that it has been "nationally ranked as a 1st quartile SAIFI performer over
19 the past 9 consecutive years by [Institute of Electrical and Electronics Engineers] and
20 over the past 10 consecutive years by [Edison Electric Institute] as a result of a decade
21 of reducing permanent customer outages."¹¹

⁹ PPL projected a \$287.86 million increase, from \$511.62 million (existing LTIP 2023-2027) to \$799.48 million (modified LTIP 2023-2027). Modified LTIP III Order, Table 3. $\$84.44 \text{ million} / \$287.86 \text{ million} = 0.2933 \times 100 = 29.33\%$.

¹⁰ *Petition of PPL Electric Utilities Corporation for Approval of a DSIC*, P-2012-2325034 (May 23, 2013), Order p. 4.

¹¹ Available at <https://www.puc.pa.gov/pcdocs/1818981.pdf>.

1 PPL states its “current ability to optimize the potential of the DSIC is limited
2 by the 5% cap.” Petition p. 11. However, in response to discovery, PPL stated that it
3 will move forward with its infrastructure replacement schedule and Modified LTIIIP III
4 plan “with or without the DSIC cap waiver.”¹²

5 Q. DOES THE COMPANY HAVE OPTIONS TO INCREASE CAPITAL
6 OTHER THAN THROUGH DSIC?

7 A. Yes. The Company could issue debt financing to increase its cash flow. Also, if the
8 Company has concerns about recovering the costs associated with its Modified LTIIIP,
9 PPL could choose to file a distribution base rate case and reset the DSIC rate to zero.¹³
10 Notably, the Company has not filed a distribution base rate case since 2015, a period
11 of more than 9 years.

12 Q. DID THE COMPANY INDICATE WHY IT IS REQUESTING AN
13 INCREASE IN THE DSIC CAP TO 9.0% RATHER THAN USING THE
14 BASE RATE PROCESS TO COLLECT THE COSTS ASSOCIATED WITH
15 ITS LTIIIP III INVESTMENTS?

16 A. No. In response to discovery, PPL stated that “[c]urrently, PPL Electric does not expect
17 to file a distribution base rate case before 2026 either with or without approval of a
18 DSIC cap increase.”¹⁴ Also, when asked about the impact of increasing the DSIC cap
19 to 9.0% on the frequency of future rate case filings, the Company stated that it
20 “considers various factors when evaluating timing and decision to file. While the
21 request to increase the DSIC cap to 9.0%, if approved, would factor into that evaluation,

¹² See PPL response to OCA-I-9, attached as Exhibit JDM-1.

¹³ 66 Pa. C.S. § 1358(b)(1).

¹⁴ See PPL response to OCA-I-4, attached as Exhibit JDM-2.

1 the Company cannot say with certainty the exact anticipated impact the PUC's approval
2 would have on the frequency of future rate case filings.”¹⁵

3 Q. WHAT DID PPL CLAIM WITH RESPECT TO THE RATE CASE EXPENSE
4 AND THE FREQUENCY OF FILING BASE RATE PROCEEDINGS IN ITS
5 LAST BASE RATE CASE?

6 A. PPL last filed for a base rate increase in Docket No. R-2015-2469275 in March 2015
7 for new base rates effective in January 2016. Its projected rate case expense was
8 \$1,856,000, and the Company proposed to normalize the expense over a two-year
9 period. The two-year normalization period reflected the interval that the Company
10 anticipated between the filing of its base rate case on March 31, 2015 and next
11 subsequent base rate case filing. According to PPL, its actual rate case expense was
12 approximately \$2 million.¹⁶

13 Q. HAS PPL DEMONSTRATED THAT RELYING ON THE TRADITIONAL
14 BASE RATE SETTING PROCESS TO COLLECT THE COSTS
15 ASSOCIATED WITH LTIIIP III THAT EXCEED THE CURRENT 5% DSIC
16 CAP IS UNREASONABLE?

17 A. No. The Company is proposing to recover all of its eligible infrastructure investments
18 through the DSIC (an estimated \$715.04 million), and is projecting that it may not file
19 a base rate case to increase rates during the term of Modified LTIIIP III. Therefore, if
20 the proposed waiver is approved, it may be at least 11 years between base rate case
21 filings. Act 11 does not mandate that the Commission guarantee that a utility be able
22 to recover all of its eligible infrastructure investments through a quarterly DSIC
23 surcharge. The function of the DSIC is not to replace, but to supplement, a utility's

¹⁵ See PPL response to OCA-I-3, attached as Exhibit JDM-3.

¹⁶ See PPL response to OCA-I-7, attached as Exhibit JDM-4.

1 base rate case recovery of capital investments. It is important to note that there is no
2 overall prudence or efficiency review in DSIC recovery, unlike general distribution
3 rate cases. In denying the PFT program recovery in PPL's recent LTIP modification
4 request, the Commission recognized the importance of a prudence review by all
5 interested parties. The same is true for recovery of capital investment overall. PPL is
6 not entitled to a DSIC cap increase simply because it may encounter some regulatory
7 lag if the cap is not increased.

8 Q. HAS THE COMMISSION PREVIOUSLY CONSIDERED HOW
9 RECENTLY A UTILITY FILED A BASE RATE CASE IN DECIDING
10 WHETHER TO APPROVE A REQUEST TO WAIVE THE DSIC CAP?

11 A. Yes. In its review of prior requests to increase water utility's DSIC caps, the
12 Commission has considered whether an increase to the DSIC cap could result in a
13 utility avoiding a rate case for an extended period. The Commission repeatedly found
14 this balance where the approval of the DSIC cap increase would encourage reasonably
15 frequent base rate cases of approximately two to three years.¹⁷ The Commission
16 rejected a request by Newtown Artesian Water Company where, at the time of its
17 request, that utility had not filed a base rate case for 6 years.¹⁸ PPL has not filed a rate
18 case in more than 9 years and states that it does not plan to file before 2026 – even if
19 its DSIC cap remains at 5%.

¹⁷ *Pa. PUC v. Aqua Pennsylvania, Inc. (Aqua)*, 2009 PaPUC LEXIS 263 (July 23, 2009), Order pp. *27-28; *Petition of Pennsylvania-American Water Co. for Approval to Revise its DSIC*, 2007 Pa. PUC LEXIS 42 (July 11, 2007), Order p. *32; *Petition of United Water Pennsylvania, Inc. for Approval of a Tariff Supplement to Revise its Maximum DSIC to 7.5% of Billed Revenues*, P-2013-2389331 (Dec. 19, 2013), Order p. 6.

¹⁸ *Pa. PUC v. Newtown Artesian Water Co.*, R-2017-2624240, C-2017-2626954 (July 12, 2018), Order on Remand p. 20.

1 Q. ARE THERE OTHER REASONS SUPPORTING THE FILING OF A BASE
2 RATE CASE VERSUS INCREASING THE DSIC CAP?

3 A. Yes. In its Order addressing the Modified LTIP III, the Commission determined that
4 the PFT program is not DSIC-eligible, so if the Company wants to seek recovery of
5 those costs it can only do so by filing a base rate proceeding.¹⁹ On page 21 of the same
6 Order, the Commission emphasized that the DSIC should not be used to “displace or
7 impact” a utility’s baseline budgets for O&M and capital improvements and directed
8 for its Order to be served on the statutory advocates and the Commission’s Bureau of
9 Investigation & Enforcement for their consideration, stating:

10 The Commission notes that the DSIC is not intended to displace or
11 impact a company’s baseline (meaning pre-DSIC and pre-LTIP)
12 budgets for O&M and capital improvements. In fact, the DSIC and
13 LTIP are to reflect an acceleration of infrastructure replacement
14 over the utility’s historic level of capital improvement, or to
15 maintain an already accelerated rate of infrastructure replacement.
16 The issue of PPL’s apparent decreasing O&M expenditures,
17 including vegetation management expenditures, are beyond the
18 scope of this Petition and Order, but we highlight these issues here
19 for such consideration as may be warranted by parties to PPL’s next
20 base rate case.

21 Q. IS PPL’S REQUEST TO INCREASE ITS DSIC CAP TO 9%
22 SUBSTANTIALLY HIGHER AND MARKEDLY DIFFERENT FROM
23 PREVIOUS DSIC WAIVERS GRANTED BY THE COMMISSION?

24 A. Yes. Since the inception of the DSIC in 2012, the Commission approved only one
25 request by an electric utility for waiver of the DSIC cap: Pennsylvania Power Company
26 (“Penn Power”), in a settled case.²⁰ The DSIC rates for electric utilities, like natural

¹⁹ Modified LTIP III Order, p. 9.

²⁰ *Petition of Penn Power Company for a Waiver of the Distribution System Improvement Charge Cap*, P-2019-3012628 (Mar. 12, 2020), Order pp. 1-2. The Commission made the waiver temporary, until the conclusion of Penn Power’s 2020-2024 LTIP or on the effective date of new base rates, whichever occurs first.

1 gas utilities, are a percentage of distribution rates only. Here, PPL has requested a 9%
2 DSIC cap, nearly twice the statutory cap. The Commission has never approved a DSIC
3 cap waiver to a level of more than 7.5% for an investor-owned utility.²¹ By statute,
4 water utility DSIC rates are capped at 7.5%.²² Further, in every case where the
5 Commission has granted a DSIC cap waiver to an investor-owned utility (UGI Central
6 Penn Gas (“UGI CPG”), UGI Penn Natural Gas (“UGI PNG”) and Penn Power), it has
7 made the waiver temporary.²³ PPL has provided no reason why it warrants an increase
8 of nearly twice that permitted by statute and on an indefinite basis.

9 Q. ARE PPL’S PROJECTED DSIC RATES OVERSTATED?

10 A. Yes. As previously indicated, PPL anticipates that its DSIC would exceed 5% in every
11 quarter for the remainder of its 2023-2027 LTIP III period, potentially reaching as high
12 as 11.84% under the current LTIP III and 14.53% under the modified LTIP. (Petition
13 pp. 5, 21). These projections are overstated, as reaching an 11.84% or 14.53% DSIC
14 rate at the end of 2027 assumes that PPL will not establish new base rates during the
15 LTIP period. If so, that means the Company avoided base rate review for 11 years or
16 more. This would be unreasonable. The projected DSIC rates are further overstated
17 because PPL based its calculation on spending that included \$84.44 million for its PFT
18 program.

²¹ The Commission has granted a temporary waiver up to 8.84% for a city-owned utility, Philadelphia Gas Works. See *Petition of Philadelphia Gas Works for a Waiver of the DSIC Cap*, P-2015-2501500 (July 6, 2016), Order on Reconsideration pp. 26-28.

²² 66 Pa. C.S. § 1358(b)(2).

²³ *Petition of UGI Central Penn Gas, Inc. for a Waiver of the DSIC Cap*, P-2016-2537609 (May 10, 2017), Order pp. 65-66; *Petition of UGI Penn Natural Gas, Inc. for a Waiver of the DSIC Cap*, P-2016-2537594 (May 10, 2017), Order pp. 60-61; *Petition of Penn Power Company for a Waiver of the Distribution System Improvement Charge Cap*, P-2019-3012628 (Mar. 12, 2020), Order p. 2.

1 Q. ARE THERE PENNSYLVANIA UTILITIES WHOSE CALCULATED
2 DSICS CURRENTLY EXCEED THE 5% STATUTORY CAP, WHICH
3 HAVE NOT REQUESTED A DSIC CAP INCREASE?

4 A. Yes. As of July 1, 2024, for natural gas distribution companies, the calculated DSIC
5 of UGI Utilities Inc. – Gas Division is 6.47%, for Pike County Light & Power (Gas)
6 the calculated DSIC is 6.59%, and for Peoples Natural Gas the calculated DSIC is
7 28.51%.²⁴ Those utilities have not requested a DSIC cap increase in response to their
8 calculated DSIC rate exceeding 5%.²⁵

9 Q. IF PPL’S DSIC REMAINS CAPPED AT 5% DOES THAT MEAN IT WILL
10 NOT RECOVER ITS MODIFIED LTIP III INVESTMENT?

11 A. No. The only potential loss to the Company is the incremental amount of depreciation
12 and return above the 5% cap, and that is only until the Company establishes new rates
13 in its next base rate case. Moreover, the investments currently reflected in PPL’s base
14 rates have been depreciating since the time those rates went into effect; however, the
15 Company is continuing to earn a return on those investments as if the investment had
16 experienced no additional depreciation. That is, like all utilities, between base rate cases
17 the Company is earning a return beyond that which would be authorized in a base rate
18 case on certain investments. This return beyond that which would be authorized in a
19 base rate case offsets a portion of the potential losses to the Company on its LTIP III
20 investment.

²⁴ Peoples Natural Gas has reported a calculated DSIC above 5% in each quarter since July 2023 (17.63%, 20.27%, 24.20%, 25.95%, 28.51%).

²⁵ UGI Gas was denied a cap waiver in 2017. UGI Gas filed its Petition for Cap waiver concurrently with its Petition to implement an initial DSIC. The Commission denied the waiver because UGI had no actual experience utilizing the DSIC and did not show waiver was necessary. *Petition of UGI Utilities, Inc. – Gas Division for a Waiver of the DSIC Cap*, P-2016-2537586 (Aug. 31, 2017), Order p. 7.

1 Additionally, even where the depreciation and return are not recovered through
2 the DSIC, PPL's existing base rates may already be providing a sufficient return on its
3 total investment (DSIC-eligible and non DSIC-eligible). As shown in PPL's response
4 to OCA-I-14, since April 2017, PPL was not eligible to charge a DSIC in 18 quarters
5 because its quarterly earnings reports showed PPL would earn a rate of return in excess
6 of the DSIC earnings cap.²⁶ 66 Pa. C.S. § 1358(b)(3).

7 Maintaining the existing 5% DSIC cap allows PPL access to a source of revenue
8 to fund its infrastructure investment, and, in PPL's next base rate case, the depreciated
9 original cost of all plant investment will be included in rate base, if otherwise prudent,
10 and the Company will realize the return of and the return on its investment. 66 Pa. C.S.
11 § 1358(b). Although the Company may prefer to increase its DSIC cap to 9%, the
12 Company has made no claim or showing that the DSIC cap must be increased to
13 continue to provide safe, reliable, and reasonable service.

14 Q. DO PPL'S CURRENT BASE RATES REASONABLY REPRESENT THE
15 COMPANY'S ACTUAL INVESTMENT, EXPENSES, AND REVENUES?

16 A. PPL's current base rates were set so long ago, they no longer reasonably represent the
17 Company's actual investment, expenses and revenues. As one example, PPL's 2015
18 rate case was settled "black box," but if PPL's full rate case expense claim is included
19 in base rates, it would mean that PPL has recovered almost \$9 million by the end of
20 2024 while its actual rate case expense was \$2 million.²⁷ In response to discovery, PPL
21 estimated that DSIC-eligible investments under its LTIP III "would avoid \$7 million
22 per year in operating and maintenance expenses".²⁸ Those savings, and any savings
23 from its LTIP III will not be reflected in base rates until PPL makes a filing.

²⁶ See PPL response to OCA-I-14, attached as Exhibit JDM-5.

²⁷ See PPL response to OCA-I-7, attached as Exhibit JDM-4.

²⁸ See PPL response to OCA-I-8, attached as Exhibit JDM-6.

1 Q. IS A 9.0% DSIC CAP REASONABLE?

2 A. No. As discussed above, the purpose of the DSIC is not to eliminate all regulatory lag.
3 Further, it would not be reasonable for PPL to delay filing a base rate case until its
4 DSIC rate reaches 9.0%. As shown in Table 1 of the Commission's Order approving
5 the Modified LTIP III, under the existing 5% cap, the Company had made eligible
6 DSIC investments of more than \$700 million during the 2018-2022 term of its LTIP
7 II. The Company plans to make an additional \$700 million in DSIC-eligible investment
8 under the Modified LTIP III as recently approved by the Commission. Therefore, by
9 the conclusion of 2027, the Company projects that it will have made eligible DSIC
10 investments of roughly \$1.4 billion which are not currently reflected in base rates. That
11 is a significant level of investment to recover without any base rate review. PPL says
12 that the level of its DSIC cap is a factor in when it files its next base rate case. As PPL
13 has currently delayed a base rate case for 9 years with a 5% DSIC cap, it would not be
14 reasonable to increase the DSIC cap at the risk of further delaying base rate review.

15 Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

16 A. Yes, it does. I reserve the right to incorporate new information that may subsequently
17 become available through discovery or otherwise.

WITNESS: Steve Selkregg

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

Q. OCA-I-9

Reference the Company's January 17, 2024, proposed modifications to its third LTIP ("LTIP III") for the period January 1, 2023 - December 31, 2027. Please explain whether the Company will move forward with its infrastructure replacement schedule and modified LTIP III plan if the DSIC cap is not increased to 9.0%.

A. OCA-I-9

Yes. If approved by the PUC, the Company will comply with its Modified Third LTIP with or without the DSIC cap waiver.

WITNESS: Beth Johnson/ Kelly Gower

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

Q. OCA-I-4

Please provide an estimate of the date of PPL's next base rate filing with and without approval of increasing the DSIC cap to 9.0%. Explain the basis for the estimates.

A. OCA-I-4

Currently, PPL Electric does not expect to file a distribution base rate case before 2026 either with or without approval of a DSIC cap increase. As explained in OCA-I-1, the Company considers various factors when evaluating future base rate case timing and the decision to file. A DSIC cap increase would be part of that consideration. Further, while the request to increase the DSIC cap to 9.0%, if approved in whole or in part or denied, would factor into that evaluation, the Company cannot say with certainty the exact anticipated impact the PUC's ruling would have on the frequency of future rate case filings.

WITNESS: Beth Johnson / Kelly Gower

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

Q. OCA-I-3

If PPL's request to increase the DSIC cap to 9.0% is approved, please identify the anticipated impact it will have on the frequency of base rate filings.

A. OCA-I-3

See the response to OCA-I-1. As explained in that response, PPL Electric considers various factors when evaluating timing and decision to file. While the request to increase the DSIC cap to 9.0%, if approved, would factor into that evaluation, the Company cannot say with certainty the exact anticipated impact the PUC's approval would have on the frequency of future rate case filings.

WITNESS: Beth Johnson

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

Q. Please identify the dates of PPL's last five base rate case filings, the applicable
OCA- docket number, the amount of the requested revenue increase, and the actual
I-7 increase authorized by the Commission. Also please indicate whether each case
was fully litigated or settled in full or in part and identify the rate case expenses
incurred by PPL in each case.

A. *All values are approximate*

Filed	For Rates Effective	Docket	Amount Requested	Amount Authorized	Fully Litigated, Full Settlement, Partial Settlement	Rate Case Expense
Mar. 31, 2015	Jan. 1, 2016	R-2015-2469275	\$167.5M	\$124M	Full Settlement	\$2.0M
Mar. 30, 2012	Jan. 1, 2013	R-2012-2290597	\$104.6M	\$63.83M	Fully Litigated	\$1.8M
Mar. 31, 2010	Jan. 1, 2011	R-2010-2161694	\$114.7M	\$77.5M	Partial Settlement	\$1.7M
Mar. 29, 2007	Jan. 1, 2008	R-00072155	\$83.6M; Revised to \$76.9M (distribution only)	~\$54.6M	Full Settlement	\$2.5M*
Mar. 29, 2004	Jan. 1, 2005	R-00049255	\$164.4M; Revised to \$159.4M (distribution only)	~\$137.1M	Fully Litigated	\$2.0M*

* Reflects rate case expense claim.

WITNESS: Beth Johnson

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

Q. OCA-I-14

For each quarter beginning July 1, 2013, provide a chart showing the (1) DSIC rate in effect, (2) if different, the DSIC rate calculated, and (3) the rate of return shown in PPL's most recent annual or quarterly earnings report filed with the Commission.

- a. Reference 66 Pa. C.S. § 1358(b)(1). In the chart, please identify each quarter where the DSIC was reset at zero as of the effective date of new base rates.
- b. Reference 66 Pa. C.S. § 1358(b)(3). In the chart, please identify each quarter where the DSIC was reset at zero because data filed with the Commission in PPL's most recent annual or quarterly earnings report showed that PPL would earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the distribution system improvement charge.
- c. For any quarter where the effective and calculated DSIC rates differ for a reason other than a reset under 66 Pa. C.S. § 1358(b)(1) or (b)(3), please explain why they differ.

A. OCA-I-14

See OCA-I-14 Attachment 1.

				PPL Electric Utilities
				Docket No. P-2024-3048732
				OCA-I-14 Attachment 1
DSIC Effective Date	DSIC Rate in Effect	DSIC Calculated Rate	Rate of Return	Note
7/1/2013	0.43%	0.43%	6.24%	
10/1/2013	1.06%	1.06%	7.37%	
1/1/2014	1.58%	1.58%	8.38%	
4/1/2014	2.35%	2.35%	9.79%	
7/1/2014	2.79%	2.79%	10.04%	
10/1/2014	3.39%	3.39%	10.09%	
1/1/2015	3.15%	3.15%	9.99%	
4/1/2015	4.22%	4.22%	Rate Case	
7/1/2015	4.51%	4.51%	Rate Case	
10/1/2015	5.00%	5.30%	Rate Case	(14c) DSIC 5% cap reached
1/1/2016	0.00%	0.00%	Rate Case	(14a) DSIC was reset to zero as of the effective date of new base rates.
4/1/2016	0.00%	0.00%	8.48%	
7/1/2016	0.00%	0.00%	6.94%	
10/1/2016	0.00%	0.00%	8.51%	
1/1/2017	0.00%	0.00%	9.59%	
4/1/2017	-0.47%	0.00%	10.29%	(14b) DSIC set at 0%, E-Factor only
7/1/2017	0.21%	0.21%	8.49%	(14b) DSIC set to 0% 9/1/17
10/1/2017	0.00%	0.66%	9.70%	
1/1/2018	0.91%	0.91%	9.30%	
4/1/2018	-0.02%	1.53%	10.63%	(14b) DSIC set to 0% , E-Factor only
7/1/2018	0.00%	1.81%	11.36%	(14b) DSIC set to 0%
10/1/2018	1.95%	1.95%	9.49%	(14b) DSIC set to 0% 12/1/18
1/1/2019	0.00%	2.13%	9.83%	(14b) DSIC set to 0%
4/1/2019	-0.01%	3.09%	10.15%	(14b) DSIC set to 0%, E-Factor only
7/1/2019	3.00%	3.00%	8.96%	
10/1/2019	3.70%	3.70%	8.95%	
1/1/2020	3.25%	3.25%	8.99%	
4/1/2020	-0.03%	4.43%	10.40%	(14b) DSIC set to 0%; E-Factor only
7/1/2020	0.00%	4.48%	11.20%	(14b) DSIC set to 0%
10/1/2020	0.00%	4.97%	10.81%	(14b) DSIC set to 0%
1/1/2021	0.00%	4.28%	11.20%	(14b) DSIC set to 0%
4/1/2021	0.20%	5.92%	11.48%	(14b) DSIC set to 0%; E-Factor only
7/1/2021	0.00%	5.45%	11.76%	(14b) DSIC set to 0%
10/1/2021	0.00%	5.85%	11.73%	(14b) DSIC set to 0%
1/1/2022	0.00%	5.36%	10.65%	(14b) DSIC set to 0%
4/1/2022	-0.01%	7.09%	10.57%	(14b) DSIC set to 0%; E-Factor only
7/1/2022	0.00%	6.83%	9.49%	(14b) DSIC set to 0%
10/1/2022	0.00%	7.41%	9.54%	(14b) DSIC set to 0%
1/1/2023	5.00%	5.79%	9.14%	(14c) DSIC 5% cap reached
4/1/2023	5.00%	7.44%	9.18%	(14c) DSIC 5% cap reached
7/1/2023	5.00%	7.26%	9.36%	(14c) DSIC 5% cap reached
10/1/2023	5.00%	7.86%	8.67%	(14c) DSIC 5% cap reached
1/1/2024	5.00%	6.53%	8.12%	(14c) DSIC 5% cap reached
4/1/2024	5.00%	8.50%	8.49%	(14c) DSIC 5% cap reached
7/1/2024	5.00%	8.04%	8.22%	(14c) DSIC 5% cap reached

WITNESS: Steve Selkregg

PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732

- Q. OCA-I-8 Please identify the extent to which the Company's projected DSIC-eligible investment has or will reduce operating and maintenance expenses during the period 2024 through 2027 by year.
- A. OCA-I-8 PPL Electric's DSIC-eligible investments are focused on maintaining and improving the safety and reliability of service. Primary drivers of those investments are severe weather events and aging infrastructure.
- PPL Electric's DSIC-eligible investments in reliability projects, grid resiliency work, and asset replacements will allow the Company to perform the work in a planful and efficient way, in lieu of emergency repairs and replacements due to equipment failures or storms. Under the Company's current LTIIP, PPL Electric projects that this work will result in a decrease of approximately 5,000 trouble-call truck rolls per year, which has a direct impact on operating and maintenance expense. Specifically, through these reduced trouble-call truck rolls, PPL Electric estimates that it would avoid \$7 million per year in operating and maintenance expenses.

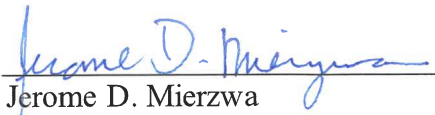
BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	
Distribution System Improvement Charge	:	Docket No. P-2024-3048732
(DSIC) Cap of 5% of Billed Revenues	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts above set forth in my Direct Testimony, OCA Statement 1, are true and correct (or 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 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 18, 2024

Signature: 
Jerome D. Mierzwa

Consultant Address:
Exeter Associates, Inc. 10480
Little Patuxent Parkway, Suite 300
Columbia, MD 21044-3575

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities	)	
Corporation for a Waiver of the	)	
Distribution System Improvement Charge	)	Docket No. P-2024-3048732
(DSIC) Cap of 5% of Billed Revenues	)	

SURREBUTTAL TESTIMONY

OF

JEROME D. MIERZWA

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 27, 2024

SURREBUTTAL TESTIMONY OF JEROME D. MIERZWA

1 Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS
2 ADDRESS?

3 A. My name is Jerome D. Mierzwa. I am a principal with and the President of Exeter
4 Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway,
5 Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-
6 related consulting services.

7 Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS
8 PROCEEDING?

9 A. Yes. My direct testimony was submitted as OCA Statement No. 1 on July 18, 2024.

10 Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

11 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of
12 Steven D. Selkregg and Bethany L. Johnson presented on behalf of PPL Electric
13 Utilities Corporation ("PPL" or "Company").
14

I. Witness: Steven D. Selkregg

1 Q. MR. SELKREGG CLAIMS THAT YOU, JOSEPH KUBAS PRESENTING
2 TESTIMONY ON BEHALF OF THE BUREAU OF INVESTIGATION
3 AND ENFORCEMENT (“I&E”), AND MARK D. EWEN PRESENTING
4 TESTIMONY ON BEHALF OF THE OFFICE OF SMALL BUSINESS
5 ADVOCATE (“OSBA”), ALL ARGUE THAT THE COMPANY HAS NOT
6 DEMONSTRATED THAT THE PROPOSED WAIVER OF THE
7 DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (“DSIC”) CAP IS
8 NECESSARY TO ENSURE AND MAINTAIN ADEQUATE EFFICIENT,
9 SAFE, RELIABLE, AND REASONABLE SERVICE, AND HE
10 DISAGREES WITH YOUR POSITION.¹ WHAT IS YOUR RESPONSE?

11 A. The issue in this proceeding is ratemaking. It is not whether PPL should take additional
12 actions to improve system reliability, but how the costs associated with the additional
13 actions to improve system reliability should be recovered through rates. That is, should
14 PPL be allowed to recover additional costs through an automatic DSIC adjustment to
15 customers’ bills when it has not filed a base rate case in nearly 10 years? PPL has an
16 obligation to provide safe, reliable, and reasonable service and the increase in the DSIC
17 cap is not necessary to ensure and maintain safe, reliable, and reasonable service
18 because PPL can file a base rate case to recover additional system reliability costs at
19 any time. An increase in the DSIC cap is not a reasonable or appropriate remedy for
20 PPL because it has not filed a base rate case in nearly 10 years and consequently has
21 not faced the scrutiny from the Commission and other parties that is afforded by a base
22 rate case but that is absent from an automatic adjustment mechanism such as a DSIC.

¹ PPL Electric Statement No. 1-R at p. 2, lines 10-16.

1 Q. ON PAGES 9 AND 10 OF HIS REBUTTAL TESTIMONY, MR.
2 SELKREGG CLAIMS THAT AN INCREASE IN THE DSIC CAP TO 9%
3 WOULD FREE UP FUNDING FOR THE COMPANY TO PURSUE
4 OTHER PROJECTS THAT WOULD INCREASE SYSTEM RELIABILITY
5 WHOSE COSTS ARE NOT ELIGIBLE FOR RECOVERY THROUGH THE
6 DSIC. WHAT IS YOUR RESPONSE?

7 A. The DSIC provides for the recovery of a subset of utility expenditures. That is, only
8 the costs associated with certain distribution system improvement projects and only a
9 percentage of those costs are eligible for recovery through the DSIC. Mr. Selkregg's
10 testimony addressing PPL's additional plans to increase and accelerate investment to
11 improve system reliability are further reason why the Company should file a base rate
12 case to recover these additional capital expenditures so that it can seek recovery of
13 100% of its additional capital expenditures. Furthermore, without the scrutiny that a
14 rate case provides there is simply no way for the Commission or the parties to determine
15 whether the other projects that Mr. Selkregg asserts that PPL would address are
16 reasonable, prudent or necessary.

17 Q. MR. SELKREGG CONCLUDES HIS REBUTTAL TESTIMONY BY
18 REPEATING THAT THE COMPANY'S PROPOSAL TO INCREASE THE
19 DSIC CAP FROM 5% TO 9% IS NECESSARY TO ENSURE AND
20 MAINTAIN ADEQUATE, EFFICIENT, SAFE, RELIABLE, AND
21 RELIABLE SERVICE AND, THEREFORE, SHOULD BE APPROVED BY
22 THE COMMISSION. DO YOU HAVE ANY FURTHER RESPONSE?
23

1 A. Mr. Selkregg presented no evidence to demonstrate that adequate, efficient, safe,
2 reliable, and reasonable service cannot be maintained under the current DSIC cap of
3 5%. In fact, the Company stated, “If approved by the PUC, the Company will comply
4 with its Modified Third LTIP with or without the DSIC cap waiver.”² Again, PPL may
5 at any time file a base rate case to recover DSIC-eligible and non DSIC-eligible costs.
6

II. Witness: Bethany L. Johnson

7 Q. IN RESPONSE TO CLAIMS BY YOU, I&E, AND OSBA, MS. JOHNSON
8 RECOGNIZES THAT IN OTHER PROCEEDINGS IN WHICH THE
9 COMMISSION HAS APPROVED A DSIC CAP WAIVER, THE
10 DURATION OF THE WAIVER WAS OF A SPECIFIED LIMITED
11 DURATION. DOES MS. JOHNSON SUBSEQUENTLY PRESENT A
12 PROPOSAL TO LIMIT THE DURATION OF THE DSIC CAP WAIVER?

13 A. Yes. Ms. Johnson states that PPL would be amenable to a specified period of either the
14 duration of the Company’s Third LTIP (applicable through December 31, 2027, and
15 included for cost recovery in the DSIC mechanism for the rates effective April 1, 2028,
16 which include plant-in-service for December 2027, January 2028 and February 2028)
17 or the effective date of new distribution rates resulting from a distribution base rate
18 case, whichever were to occur first.³

19 Q. WOULD PPL’S ALTERNATIVE PROPOSAL BE APPROPRIATE AND
20 ACCEPTABLE TO THE OCA BASED ON YOUR UNDERSTANDING OF
21 THE DSIC, ITS PURPOSE, AND THE CUSTOMER IMPACT OF
22 INCREASE?

² See PPL Electric’s Response to OCA-I-9, attached as Exhibit JDM-1SR.

³ PPL Electric Statement No. 2-R at p. 4, lines 7-12.

1 A. PPL's proposal to limit the duration of the wavier puts a collar on the rate impact of
2 any waiver that is granted but should not be entertained by the Commission based on
3 the record in this case because the record does not demonstrate that it would be
4 reasonable to grant a waiver in the first instance. Only if the Commission determines
5 that granting a waiver is appropriate, which I continue to think it is not, should the
6 Commission consider PPL's alternative proposal.

7 Q. YOU AND MR. KUBAS STATED IN YOUR DIRECT TESTIMONIES
8 THAT THE COMPANY'S REQUEST FOR A DSIC CAP WAIVER
9 SHOULD BE DENIED BECAUSE THE COMPANY HAS NOT FILED A
10 BASE RATE CASE SINCE 2015. WHAT IS MS. JOHNSON'S
11 RESPONSE?

12 A. Ms. Johnson claims that this is a new and unwritten condition that both I&E and the
13 OCA seek to impose on PPL.

14 Q. DO YOU AGREE?

15 A. No. Ms. Johnson's objection is that because the statute does not require a certain rate
16 case filing schedule after initially being approved for the DSIC that somehow the
17 Commission cannot deny PPL's request since PPL has chosen to not file a rate case
18 since 2015. Of course, this ignores that the statute contains a 5% cap as a consumer
19 protection and that only with a waiver can that cap be exceeded. It also ignores the fact
20 that the Commission precedent on granting a waiver clearly looks at whether the party
21 requesting the waiver has recently filed a rate case. As explained in my direct
22 testimony, the Commission rejected a request by the Newtown Artesian Water
23 Company ("NAWC") to increase its DSIC cap, when at the time of the request, that
24 utility had not filed a base rate case for 6 years. In addition, the DSIC statute requires
25 that a base rate case must have been filed by a utility within 5 years of establishing an

1 initial DSIC. While there is no explicit statutory requirement that a base rate case must
2 have been filed within a certain time period to support an increase to the DSIC cap, the
3 Commission has embodied the similar protection of requiring base rate review within
4 a reasonable period in controlling case law.⁴ Therefore, it is not a new and unwritten
5 condition. It should not be surprising to PPL that the Commission would scrutinize
6 whether the Company has regularly participated in the Section 1308 base rate process
7 “and its intensive top-to-bottom review of all company revenue, expense, rate base and
8 return claims”⁵ before seeking approval to increase the amount it recovers through the
9 DSIC.

10 Q. ON PAGE 5 OF HER REBUTTAL TESTIMONY, MS. JOHNSON CLAIMS
11 THAT IF THE COMPANY FILED A BASE RATE CASE TO RECOVER
12 SYSTEM RELIABILITY IMPROVEMENT COSTS RATHER THAN
13 RECOVER THOSE COSTS THROUGH THE DSIC, CUSTOMERS
14 WOULD BE MORE IMPACTED BECAUSE THE COMPANY WOULD
15 SEEK TO RECOVER ALL COSTS AND NOT JUST THOSE
16 RECOVERABLE THROUGH THE DSIC. WHAT IS YOUR RESPONSE?

17 A. I agree that PPL would seek to recover all of its costs in a general rate case, but if PPL
18 filed a base rate case, parties would also be provided the opportunity to evaluate
19 revenue increases, expense and operating efficiencies, and PPL’s overall return. As I

⁴ *Pa. PUC v. Newtown Artesian Water Co.*, R-2017-2624240, C-2017-2626954 (July 12, 2018), Order on Remand p. 20. As stated on page 10 of my Direct Testimony, “in its review of prior requests to increase water utility’s DSIC caps, the Commission has considered whether an increase to the DSIC cap could result in a utility avoiding a rate case for an extended period. The Commission repeatedly found this balance where the approval of the DSIC cap increase would encourage reasonably frequent base rate cases of approximately two to three years.” *Pa. PUC v. Aqua Pennsylvania, Inc. (Aqua)*, 2009 PaPUC LEXIS 263 (July 23, 2009), Order pp. *27-28; *Petition of Pennsylvania-American Water Co. for Approval to Revise its DSIC*, 2007 Pa. PUC LEXIS 42 (July 11, 2007), Order p. *32; *Petition of United Water Pennsylvania, Inc. for Approval of a Tariff Supplement to Revise its Maximum DSIC to 7.5% of Billed Revenues*, P-2013-2389331 (Dec. 19, 2013), Order p. 6.

⁵ *Petition of Pennsylvania-American Water Co. for Approval to Implement a Tariff Supplement Establishing a DSIC*, 1996 Pa. PUC LEXIS 182 (Aug. 26, 1996), Order p. *21.

1 noted above, base rate proceedings provide the opportunity for the simultaneous review
2 of all aspects of a utility's revenue, expenses, and capital costs for the same period of
3 time. Here PPL is seeking a single set of costs to pass on to customers in a vacuum
4 without sufficient regulatory scrutiny.

5 Q. ON PAGE 6 OF HER REBUTTAL TESTIMONY, MS. JOHNSON CLAIMS
6 SHE IS UNAWARE OF ANY REQUIREMENT THAT A PUBLIC
7 UTILITY MUST FILE A BASE RATE CASE WITHIN A CERTAIN
8 NUMBER OF YEARS BEFORE RECEIVING A WAIVER OF THE DSIC
9 CAP. WHAT IS YOUR RESPONSE?

10 A. The requirement is that PPL must demonstrate that it needs a waiver. In my view, part
11 of the assessment that the Commission must employ is whether the Company has
12 availed itself of all the tools available to ensure that it has appropriate revenue to fulfill
13 its LTIP and continue to provide safe and reliable service. A denial of the cap waiver,
14 given PPL's failure to file a base rate case is a matter of Commission discretion, and as
15 I already noted is consistent with Commission past precedent. In my view, it would be
16 unreasonable for the Commission to allow a large electric utility to remain out of a rate
17 case for almost 10 years and then approve a waiver of the DSIC cap. This would
18 incentivize single issue ratemaking and unaccountability for earnings that regular rate-
19 case scrutiny allows.
20

1 Q. MS. JOHNSON CLAIMS THAT THERE ARE AMPLE OPPORTUNITIES
2 FOR PARTIES TO INVESTIGATE BOTH THE COMPANY'S LTIPS
3 AND THE DSIC COST RECOVERY OF THE LTIP COSTS WITH OR
4 WITHOUT A DSIC CAP WAIVER IN LIEU OF A FULL DISTRIBUTION
5 BASE RATE CASE AND AS SUCH, ONE IS NOT REQUIRED FOR THE
6 COMMISSION TO APPROVE A WAIVER. WHAT IS YOUR RESPONSE?

7 A. I disagree. While the Company just filed and was approved an amended LTIP and files
8 an annual Asset Optimization Plan, review of these do not address cost recovery. It is
9 simply inaccurate to imply that the review of DSIC or LTIPs in any ways resembles
10 the kind of rate, expense, and earnings scrutiny involved in a rate case. Moreover, it is
11 important to recognize that not all DSIC-eligible costs will be recovered through the
12 DSIC because there is a percentage cap. Both DSIC revenue and general base rate
13 revenue are meant to support a utility's LTIP. Here, PPL wants to effectively "free
14 up" other revenue for its own purposes by increasing the DSIC cap and shifting more
15 of the LTIP spending to increased DSIC revenue, but they want to do so without any
16 scrutiny of this other spending. This is inappropriate where a utility has avoided such
17 scrutiny for almost a decade. At issue in this proceeding is whether a waiver of the 5%
18 DSIC cap is appropriate is a condition precedent to determining the appropriate level
19 of the cap.

20 Q. MS. JOHNSON CLAIMS YOU CITE THE COMMISSION'S DECISION
21 INVOLVING NAWC'S DSIC WAIVER TO SUPPORT YOUR
22 AGREEMENT THAT PPL'S PROPOSAL SHOULD BE DENIED
23 BECAUSE THE COMPANY HAS NOT FILED A BASE RATE CASE
24 SINCE 2015. HOW DOES MS. JOHNSON DISTINGUISH THE NAWC
25 PROCEEDING FROM THIS PROCEEDING?

1 A. Ms. Johnson claims that unlike NAWC, PPL has been meeting its overall LTIIP project
2 completions and accelerating them, has exceeded the DSIC cap in 14 quarters (not the
3 two consecutive quarters experience by NAWC), and has base rates that are designed
4 based on a Fully Projected Future Test Year (“FPFTY”). Thus, although the
5 Commission did call attention to the length of time since NAWC last filed a base rate
6 case, these other critical facts distinguish the NAWC decision from PPL’s proposal.

7 Q. WHAT IS YOUR RESPONSE TO MS. JOHNSON’S CLAIMS
8 CONCERNING THE DIFFERENCES BETWEEN THE NAWC
9 PROCEEDING AND THIS PROCEEDING?

10 A. Ms. Johnson’s claim that PPL has exceeded the DSIC cap in 14 quarters is misleading.
11 It ignores the fact that PPL’s reported earnings made it ineligible to charge a DSIC for
12 7 of those 14 quarters. The claim also fails to recognize that since PPL last established
13 new base rates, it took 28 quarters before PPL charged a DSIC of 5%. As discussed in
14 my Direct Testimony, this is because PPL’s reported earnings made it ineligible to
15 charge a DSIC.⁶ I would also note that the FPFTY in PPL’s last base rate proceeding
16 ended on December 31, 2016, about 8 years ago. I would also note that a look at
17 PPL’s quarterly earnings, as outlined in JDM-5, shows that they have healthy
18 earnings quarter in and quarter out even when they are below the DSIC-earnings cap.
19 There is no indication here that PPL cannot fund its LTIIP commitments based on
20 its current revenue, it would appear simply that it wants to push these costs onto
21 ratepayers through a DSIC increase rather than funding them from base rate revenue
22 that would erode their earnings.
23

⁶ See PPL Electric’s Response to OCA-I-14 Attachment 1, included as Exhibit JDM-5 in OCA Statement No.1.

1 Q. MS. JOHNSON NOTES THAT THE REQUESTED DSIC CAP INCREASE
2 FROM 5% TO 9% IS ESTIMATED TO RECOVER APPROXIMATELY
3 \$45 MILLION PER YEAR, AND THIS IS A FAR CRY FROM THE BASE
4 RATE INCREASES REQUESTED BY PPL'S PEER UTILITIES IN 2024,
5 WHICH RANGED FROM \$133 MILLION TO \$502 MILLION. WHAT IS
6 YOUR RESPONSE?

7 A. This point is a red herring. The \$45 million is based on a 9% DSIC and PPL's existing
8 base rates and, again, does not come with the same scrutiny of expenses and earnings
9 that a rate case would have. There is no evidence suggesting what PPL would ask for
10 in a rate case if it were to file one, and it is simply irrelevant that other electric utilities
11 filed for rate increases that are significantly higher than \$45 million.

12 Q. MS. JOHNSON CLAIMS THAT IN YOUR DIRECT TESTIMONY YOU
13 ARGUE THAT THE COMPANY COULD FILE A DISTRIBUTION RATE
14 BASE CASE RATHER THAN INCREASING THE DSIC CAP. DOES MS.
15 JOHNSON DENY THAT THE COMPANY COULD FILE A
16 DISTRIBUTION BASE RATE CASE RATHER THAN INCREASING THE
17 DSIC CAP?

18 A. No. Instead, the Company made no commitment about when and for what amount it
19 will file a base rate case, so customers would be at risk for higher base rates and a
20 higher DSIC if the 9% cap is approved.⁷
21

⁷ See PPL Electric's Response to OCA-I-4, included as Exhibit JDM-2 in OCA Statement No. 1.

1 Q. MS. JOHNSON CLAIMS THAT BY REQUESTING THE DSIC CAP
2 WAIVER, ALL OF THE CUSTOMER PROTECTIONS IN PLACE AT 5%
3 WILL REMAIN IN PLACE AT 9%, INCLUDING A LIMIT TO WHAT
4 THE COMPANY CAN RECOVER, ALBEIT AT A HIGHER LIMIT AND
5 THE COMPANY CAN REALIZE GREATER RELIABILITY
6 IMPROVEMENTS SOONER, RATHER THAN WAITING UNTIL ITS
7 NEXT BASE RATE CASE. WHAT IS YOUR RESPONSE?

8 A. One of the key protections of the DSIC is the 5% cap on spending, it is the one that
9 PPL wants to evade through its requested waiver. While it is true that the increased
10 DSIC funds could only be spent on DSIC-eligible plant, it would free up other rate base
11 funds that PPL could direct anywhere, including to shareholder return. Thus, it is not
12 at all clear to me that ratepayers would be protected with an increase in the DSIC.
13 Moreover, PPL is in sole control of when it files its next base rate case. If it actually
14 needs additional revenue to fund its system improvements, there is no bar to PPL filing
15 a base rate case now. While neither the OCA or I wish for rate payers to experience an
16 increased rate in the current economy, the Commission and consumers should be
17 afforded the opportunity to view all of the facts and figures in a rate base case and in a
18 holistic manner, instead of permitting PPL to pass on another cost to consumers in a
19 piecemeal approach.

20 Q. I&E WITNESS MR. KUBAS AND OSBA WITNESS MR. EWEN ARGUE
21 THAT THE LENGTH OF TIME SINCE THE COMPANY'S LAST BASE
22 RATE CASE WARRANTS DENIAL OF THE COMPANY'S PETITION,
23 BECAUSE A DSIC CAP INCREASE WOULD EXACERBATE ANY
24 CLASS COST OF SERVICE CHANGES THAT OCCURRED SINCE 2015.
25 DOES MS. JOHNSON AGREE WITH THESE CLAIMS?

1 A. No. Ms. Johnson claims that it is the base rate case process that establishes class cost
2 of service responsibility, and that cost responsibility remains in place until a new rate
3 case is filed. She claims that neither the DSIC mechanism nor any other surcharge
4 mechanism “freezes” anything.

5 Q. DO YOU AGREE WITH MS. JOHNSON THAT THE DSIC MECHANISM
6 DOESN’T FREEZE ANYTHING?

7 A. No. If PPL’s DSIC mechanism is modified to provide for a 9% cap, it may prolong the
8 period of time until PPL files its next base rate case. As such, the class cost of service
9 responsibilities established in PPL’s last base rate case will remain in place and be
10 frozen for a longer period of time than if the cap was not increased.

11 Q. MS. JOHNSON CLAIMS THAT THE DSIC MECHANISM WAS
12 DESIGNED TO BE LESS BURDENSOME THAN A RATE CASE, WAS
13 DESIGNED TO HELP CUSTOMERS WITH MARGINAL RATE
14 ADJUSTMENTS AND INFRASTRUCTURE IMPROVEMENTS, AND
15 WAS APPROVED AT A TIME WHEN MANY UTILITIES HAD BEEN
16 DAMAGED BY RECENT STORMS. WHAT IS YOUR RESPONSE?

17 A. The DSIC mechanism was designed to increase the revenue available to utilities
18 between rate cases to enhance their ability to recover eligible costs. It was not meant as
19 a replacement for rate cases, but rather a bridge between them to ensure that eligible
20 plant and investment would remain funded. PPL’s desire to almost double its DSIC,
21 despite earnings relatively close to the DSIC CAP, and a relatively short history of
22 actually being able to charge the DSIC because of its overearnings, is, in my view,
23 seeking something that is inconsistent with the DSIC’s purpose. Moreover, the DSIC
24 mechanism itself is not at issue in this matter – I agree that it is less burdensome than
25 a rate case, but that is because it requires less scrutiny than a rate case and PPL is

1 seeking to effectively supplant other funds that it could be using to LTIP-eligible
2 project with DSIC funds by requesting a waiver of the DSIC 5% cap. As to the
3 comment regarding storm damage, I do not see how that is relevant to PPL given that
4 PPL currently has a separate storm damage expense rider recovery mechanism in
5 place.⁸

6 Q. MS. JOHNSON CLAIMS THAT THE OCA DOES NOT SEEM
7 CONCERNED THAT WITH THE IMPACT ON CUSTOMERS OF
8 FAILING TO ADOPT AN INCREASE IN THE DSIC CAP TO 9%. WHAT
9 IS YOUR RESPONSE?

10 A. This is not a credible argument. The OCA is concerned with having customer rates
11 increased without the scrutiny afforded by a base rate review. The OCA wants the
12 proposed rate increase of an additional \$45 million per year at current base rates to be
13 subject to review in the context of a base rate case where PPL's revenues and return
14 can also be considered, since base rate proceedings provide the opportunity for
15 simultaneous review of all aspects of a utility's revenues, expenses and capital costs
16 for the same period of time. Instead, PPL wants to add to the amount it can recover
17 through automatic adjustments like the DSIC, a surgical cost recovery mechanism,
18 without demonstrating the need for this additional revenue source. PPL did not seek to
19 reduce customer bills for all the quarters when the Company earned a 10 and 11% ROE.

20 Q. IN YOUR DIRECT TESTIMONY YOU CLAIMED THAT BASE RATE
21 CASES ARE IMPORTANT FOR THE PRUDENCY REVIEW OF DSIC
22 COSTS. DOES MS. JOHNSON AGREE WITH YOUR CLAIM?
23

⁸ <https://www.pplelectric.com/-/media/PPLElectric/At-Your-Service/Docs/Current-Electric-Tariff/Storm-Damage-Expense-Rider-SDER-01012023.ashx>

1 A. Ms. Johnson agrees with the need for prudency review, but believes that there is already
2 a comprehensive process in place for this review. This, Ms. Johnson asserts, includes
3 the review of the Company's LTIP filings and its Annual Asset Optimization Plans
4 ("AAOPs").

5 Q. DO YOU AGREE WITH MS. JOHNSON'S CLAIMS CONCERNING
6 REVIEWING THE PRUDENCY OF DSIC COSTS?

7 A. No. As the Commission has repeatedly established, cost recovery is not addressed in
8 the LTIP review process. Actual prudency review of investments funded through the
9 DSIC does not occur outside of a base rate case. This was stated most recently in the
10 Commission's order approving PPL's Third LTIP: "We also reaffirm that approval of
11 property for inclusion in a LTIP is not dispositive of whether it will receive DSIC
12 approval for cost recovery in the future."⁹

13 Q. IN YOUR DIRECT TESTIMONY YOU TESTIFIED THAT THE "BLACK
14 BOX" SETTLEMENT IN PPL'S 2015 BASE RATE CASE HAS ENABLED
15 PPL TO EARN A SUFFICIENT RETURN. HOWEVER, MS. JOHNSON
16 CLAIMS THAT PPL IS AND HAS BEEN BELOW THE COMMISSION'S
17 DECLARED RETURN OF EQUITY ("ROE") FOR NINE QUARTERS.
18 WHAT IS YOUR RESPONSE TO MS. JOHNSON?

19 A. Ms. Johnson shows a basic misunderstanding of the purpose of the DSIC ROE set forth
20 in the Commission's quarterly earnings report. First, by statute the Commission is
21 required to set an earnings cap for purposes of resetting the DSIC to zero under 66 Pa.
22 C.S. §1358(b)(3). Second, the DSIC ROE set forth in the Commission's quarterly
23 earnings report is not determined in an evidentiary proceeding. Third, it is not utility-
24 specific. It is a composite rate calculated by the Commission for all regulated electric

⁹ Docket No. P-2022-3034972, July 11, 2024, Order at 15-16.

1 utilities. Lastly, it is not a proxy for an appropriate rate of return established for base
2 rate purposes. In other words, there is nothing about the DSIC ROE that should be
3 viewed as a floor, target, or a just and reasonable ROE for purposes of rate setting.
4 Rather it is a proxy that enables a check on whether a utility who does not have an
5 established base rate ROE will be able to assess a DSIC in a given quarter.

6 Q. MS. JOHNSON ALSO CLAIMS THAT IN YOUR DIRECT TESTIMONY
7 YOU TESTIFY THAT THE RATE CASE EXPENSE PROVIDED FOR
8 UNDER THE BLACK BOX SETTLEMENT IN THE 2015 BASE RATE
9 CASE AND THE 9 YEARS THAT HAVE PASSED SINCE THE
10 SETTLEMENT WAS APPROVED HAS PROVIDED THE COMPANY
11 WITH AN ADDITIONAL \$7 MILLION OF REVENUE, AND THAT THIS
12 ADDITIONAL REVENUE HAS PROVIDED THE COMPANY WITH A
13 SUFFICIENT RETURN. WHAT IS MS. JOHNSON'S RESPONSE TO
14 THIS CLAIM?

15 A. Ms. Johnson claims that the additional \$7 million in revenue collected over 9 years
16 does not make for a return sufficient enough to reject the Company's DSIC waiver
17 request.

18 Q. WHAT IS YOUR RESPONSE TO MS. JOHNSON?

19 A. Ms. Johnson misses the point. This is but one example of stale or inaccurate data given
20 the passage of nearly a decade since PPL's current base rates were established,
21 supporting the filing of a base rate case to address whether or not PPL has sufficient
22 return to fund its planned investment. However, PPL doesn't want to open its books,
23 so absent that, the information we do have indicates that PPL has the earnings available
24 to fund planned investments making a DSIC cap waiver unnecessary.

1 Q. IN YOUR DIRECT TESTIMONY YOU NOTED THAT BY THE
2 CONCLUSION OF 2027, THE COMPANY PROJECTS THAT IT WILL
3 HAVE MADE ELIGIBLE DSIC INVESTMENT OF ROUGHLY \$1.4
4 BILLION WHICH ARE CURRENTLY NOT REFLECTED IN BASE
5 RATES. WHAT IS MS. JOHNSON'S RESPONSE?

6 A. Ms. Johnson claims that as of July 1, 2024, the investment amount is \$726 million, or
7 approximately half of the figure I present.

8 Q. WHAT IS YOUR RESPONSE TO MS. JOHNSON?

9 A. Even if the amount identified by Ms. Johnson is correct as of July 1, 2024, it is still a
10 significant amount of money that has not been subject to base rate review.

11 Q. MS. JOHNSON CLAIMS THAT THE COMPANY HAS HELD ITS
12 DISTRIBUTION RATE STEADY FOR CUSTOMERS FOR 9 YEARS AND
13 THAT THIS IS PROOF THAT THE COMPANY CONSIDERS HOW ITS
14 SPENDING IMPACTS CUSTOMERS' BILLS. WHAT IS YOUR
15 RESPONSE?

16 Yes, PPL has held its distribution rates steady for 9 years, but this ignores the other
17 Section 1307 mechanisms that the Company utilizes, increasing customers' bills. These
18 mechanisms include but are not limited to:

- 19 • **Act 129 Compliance Rider.**¹⁰ For the period June 2024 – May 2025,
20 \$83.8 million will be added to customer bills;
- 21 • **Smart Meter Rider.**¹¹ For the period July 2024 – September 2024,
22 \$8.5 million will be added to customer bills;
- 23 • **Storm Damage Expense Rider.** For the period January – December
24 2024, \$2.7 million will be added to customer bills; and

¹⁰ <https://www.pplelectric.com/-/media/PPLElectric/At-Your-Service/Docs/Current-Electric-Tariff/act129-compli-rider-phase4-06012023.ashx>

¹¹ https://www.pplelectric.com/-/media/PPLElectric/At-Your-Service/Docs/Current-Electric-Tariff/Smart-Meter-Rider--Phase-2-SMR.ashx?sc_lang=en&hash=B00FD651CCB8CA002AF8658649088874

- **Competitive Enhancement Rider.**¹² For the period January – December 2024, \$0.9 million will be added to customer bills.

Furthermore, as I have noted throughout this testimony, PPL now seeks to increase customer rates by \$45 million per year without regulatory scrutiny which would have the effect of supplanting other base rate funding that PPL would have otherwise used to fund its LTIIP. In effect, freeing up \$45 million of funding that PPL can use for non-LTIIP related spending including a shareholder return. Thus, in my view, it should be taken with a grain of salt when a utility is asserting that it has customer concerns in mind when it is seeking to increase rates by \$45 million per year, particularly when all of the statutory advocates, whose job it is to protect consumers, are opposed to PPL's request.

Q. MS. JOHNSON CLAIMS THAT UNDER THE COMPANY'S MOST RECENTLY APPROVED LTIIP, THE CALCULATED DSIC RATE COULD BE AS HIGH AS 13.63%, AND THIS JUSTIFIES THE COMPANY'S NEED FOR A WAIVER OF THE CURRENT 5% DSIC CAP. WHAT IS YOUR RESPONSE?

A. The DSIC rate could be as high as 13.63% in 2027 only if PPL does not file a base rate case and only if it is not over earning. The filing of a base rate case would result in the resetting of the DSIC to 0%.

Q. MS. JOHNSON CLAIMS THAT FOR EVERY 0.5% INCREASE IN THE DSIC CAP, THE COMPANY WOULD RECEIVE ON AVERAGE APPROXIMATELY \$5 MILLION IN INCREMENTAL REVENUE TO ADDRESS RELIABILITY CHALLENGES. WHAT IS YOUR RESPONSE?

¹² <https://www.pplelectric.com/-/media/PPLElectric/At-Your-Service/Docs/Current-Electric-Tariff/Competitive-Enhancement-Rider-CER-01012023.ashx>

1 A. PPL has not shown that any incremental revenue through the DSIC is necessary to fund
2 reliability investment. PPL has significant sources of other funding to address these
3 concerns and, as of the last quarter, continues to earn a Rate of Return above 8%. In
4 fact, PPL's ROR has not been below 8.12% since its last rate case in 2015.¹³ Clearly,
5 it has the capital necessary to address its reliability challenges. The fact that it would
6 prefer to fund this with increased DSIC funds rather than base rates is insufficient in
7 and of itself to grant a waiver. In addition, PPL has already committed to make the
8 investment identified in its most recent LTIP whether or not the DSIC cap waiver is
9 approved.¹⁴

10 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

11 A. Yes, it does at this time.

¹³ See PPL Electric's Response to OCA-I-14 Attachment 1, included as Exhibit JDM-5 in OCA Statement No. 1.

¹⁴ See PPL Electric's Response to OCA-I-4, included as Exhibit JDM-2 in OCA Statement No. 1.

WITNESS: Steve Selkregg

**PPL Electric Utilities Corporation
Response to the Set I Data Request of the
Office of Consumer Advocate
Dated June 21, 2024
Docket No. P-2024-3048732**

Q. OCA-I-9

Reference the Company's January 17, 2024, proposed modifications to its third LTIIIP ("LTIIIP III") for the period January 1, 2023 - December 31, 2027. Please explain whether the Company will move forward with its infrastructure replacement schedule and modified LTIIIP III plan if the DSIC cap is not increased to 9.0%.

A. OCA-I-9

Yes. If approved by the PUC, the Company will comply with its Modified Third LTIIIP with or without the DSIC cap waiver.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	
Distribution System Improvement Charge	:	Docket No. P-2024-3048732
(DSIC) Cap of 5% of Billed Revenues	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts above set forth in my Surrebuttal Testimony, OCA Statement 1-SR, are true and correct (or 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 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 27, 2024

Signature: _____

Jerome D. Mierzwa

Consultant Address:

Exeter Associates, Inc. 10480
Little Patuxent Parkway,
Suite 300
Columbia, MD 21044-3575

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution System Improvement Charge	:	
Docket No. P-2024-3048732	:	
(DSIC) Cap of 5% of Billed Revenues	:	Docket No. P-2024-3048732

OFFICE OF CONSUMER ADVOCATE’S ERRATA

The Office of Consumer Advocate (OCA) respectfully submits the following errata to the Surrebuttal Testimony of Jerome D. Mierzwa, OCA Statement 1SR, in the captioned proceeding:

Reference	Reads:	Should Read:
OCA Statement 1SR page 9, lines 16-18.	A. I would also note that a look at PPL’s quarterly earnings, as outlined in JDM-2SR, shows that they have healthy earnings quarter in and quarter out even when they are below the DSIC-earnings cap.	A. I would also note that a look at PPL’s quarterly earnings, as outlined in JDM-5, shows that they have healthy earnings quarter in and quarter out even when they are below the DSIC-earnings cap.

WHEREFORE, the Office of Consumer Advocate respectfully requests that the Commission, the Presiding Officers and the parties to this proceeding note the above errata to the Surrebuttal Testimony of Jerome D. Mierzwa, OCA Statement 1SR.

Respectfully Submitted,

/s/ Emily A. Farren

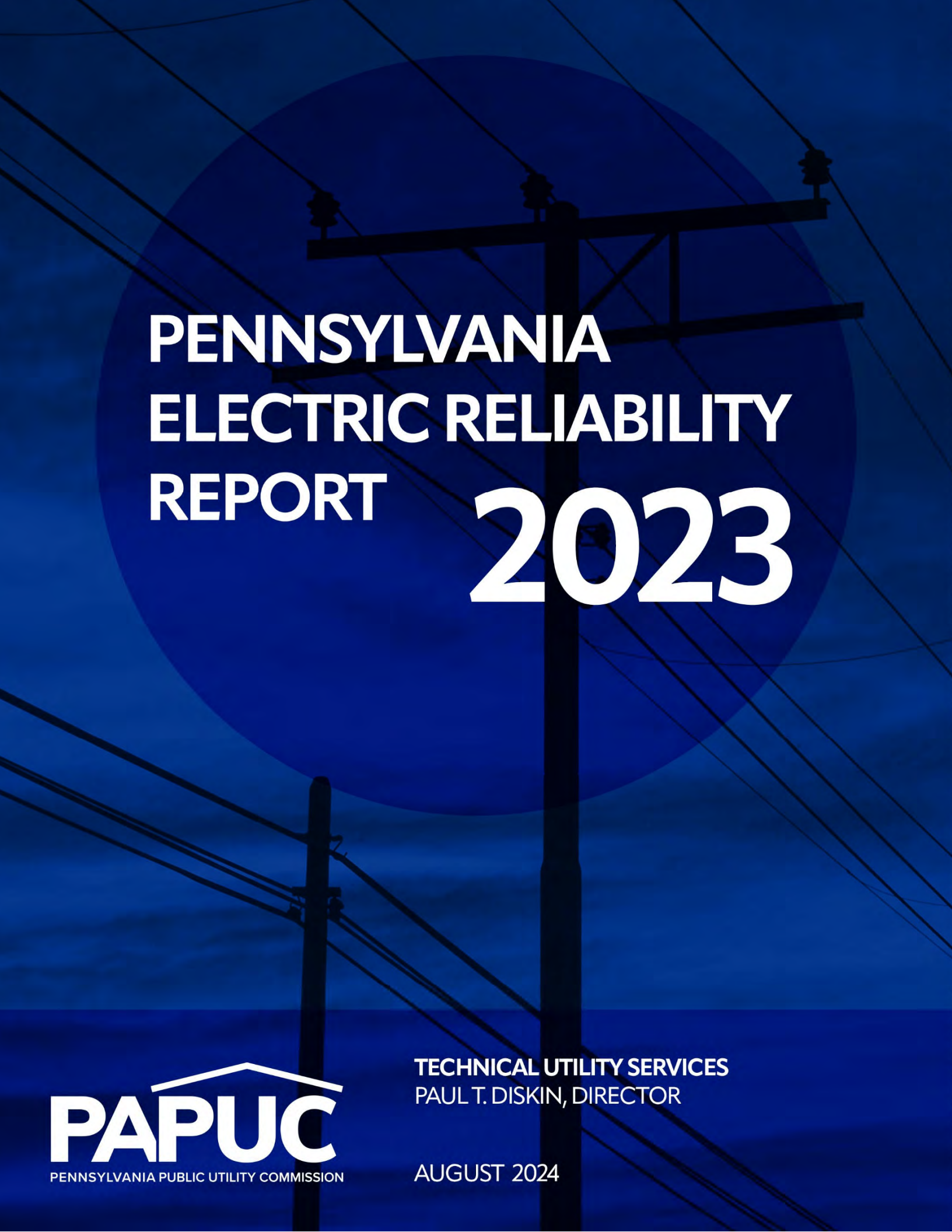
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Dated: August 29, 2024

Counsel for:
Patrick M. Cicero
Consumer Advocate

OCA HEARING EXHIBIT 1



PENNSYLVANIA ELECTRIC RELIABILITY REPORT

2023

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Executive Summary

The Electricity Generation Customer Choice and Competition Act mandated the Pennsylvania Public Utility Commission (PUC or Commission) to ensure levels of reliability that existed prior to the restructuring of the electric utility industry continue in the new competitive markets.¹ In response to this mandate, the Commission adopted reporting requirements designed to ensure the continued safety, adequacy and reliability of the generation, transmission and distribution of electricity in the Commonwealth.² The PUC also established reliability benchmarks and standards to measure the performance of each electric distribution company (EDC).³

The benchmarks and standards established by the Commission are based on four reliability performance metrics adopted by the Institute of Electrical and Electronics Engineers (IEEE). Those metrics are:

- SAIFI: System average interruption frequency index or frequency of outages.
- CAIDI: Customer average interruption duration index or duration of outages.
- SAIDI: System average interruption duration index or frequency of sustained outages.
- MAIFI: Momentary average interruption frequency index or occurrences of momentary customer interruptions.

Note that the Commission has only established benchmarks and standards for CAIDI, SAIDI and SAIFI. Given the uncertainty of weather and other events that affect reliability performance, the Commission has stated EDCs shall set goals to achieve benchmark performance to prepare for times when unforeseen circumstances may briefly and occasionally exceed benchmark performance.⁴ In recognition of these unforeseen circumstances, the PUC set the performance standard as the threshold for those times when an EDC can briefly and occasionally exceed benchmark performance. An EDC that consistently fails to achieve benchmark performance is considered out of compliance with the performance regulations and may require a robust corrective action plan, re-organization of management objectives, and/or regulatory penalties.⁵

As mandated, EDCs report reliability performance metrics⁶ using both a rolling 12-month average and a rolling 3-year average. Appendix B provides a brief visual comparison summary of the EDCs' rolling 12-month reliability performance in each quarter for 2021 through 2023. More detailed analysis can be found in Section 4, *EDC Reliability Performance Data*. Appendix A provides the 2023 rolling 12-month and rolling 3-year reliability metrics for all EDCs.

¹ Act of Dec. 3, 1996, P.L. 802, No. 138, 66 Pa. C.S. §§ 2801 *et seq.*

² Docket No. L-00970120; 52 Pa. Code §§ 57.191-57.197.

³ See, *Amended Reliability Benchmarks and Standards for the Electric Distribution Companies*, Order entered May 11, 2004, at Docket No. M-00991220.

⁴ *Id.* at 24.

⁵ *Id.* at 25.

⁶ For an explanation of performance standards, see Section 2, page 2.

Of note, only two of 11 EDCs achieved the standard performance metric in all three performance categories for the rolling 3-year average. For the rolling 12-months ending Dec. 31, 2023, only three of 11 EDCs achieved the standard performance metric, and only one of 11 EDCs achieved the benchmark metric, in all three reliability performance categories.

In addition to monitoring EDCs' reliability performance, the Commission established inspection and maintenance standards for electric transmission and distribution systems.⁷ Biennial plans for the periodic inspection, maintenance, repair, and replacement of facilities, designed to meet performance benchmarks and standards, were approved by the PUC's Bureau of Technical Utility Services (TUS).

Evaluation

In general, overall reliability performance of most EDCs in meeting benchmark performance metrics declined in some important areas. The EDCs struggled in achieving benchmark and standard performance for the average number of outages experienced by customers, or SAIFI.⁸ As seen in Appendix B, only four of the 11 EDCs achieved benchmark for SAIFI in all four rolling 12-month quarters of 2023, and only three of the 11 EDCs achieved benchmark for SAIFI in all four rolling 12-month quarters of 2022. Five EDCs achieved benchmarks for SAIFI in all four rolling 12-month quarters in 2021. Out of all 11 EDCs, only three (Duquesne, PECO and PPL) have been consistently achieving benchmark for SAIFI in all rolling 12-month quarters for the past six calendar years (2018 through 2023).

Of note, the three large EDCs that have expended the most capital through their Long-Term Infrastructure Investment Plans (LTIIPs) have been the most consistent in achieving benchmark SAIFI performance the past three years.⁹ Duquesne, PECO and PPL have achieved the SAIFI benchmark for all four rolling 12-month quarters each of the past three years.

It is hoped that 2024 will see the beginning of improving performance as TUS views SAIFI as the more important metric to focus on improving as it relates directly to the number of service outages experienced by a customer. The impacts and disruptions to life-sustaining and productive activities caused by electric service outages will obviously be reduced if there are less outages. However, this is not meant to minimize CAIDI as that represents the average duration of an outage for a customer, which is also very important.

As EDCs introduce more distribution automation into their systems, CAIDI will most likely increase. This occurs because of the elimination of non-faulted line sections and their automatic restoration to service by distribution automation systems, *i.e.*, less customers are impacted by any one service outage event. While sectionalizing may reduce the number of customers impacted by an outage, it could possibly lead to increased CAIDI as the outages may be of longer duration as those outages could not be restored by automated means. The Commission finds that in this regard,

⁷ See, *Revision of 52 Pa. Code Chapter 57 Pertaining to Adding Inspection, Maintenance, Repair, and Replacement Standards for Electric Distribution Companies*, Order entered May 22, 2008, at Docket No. L-00040167.

⁸ See, Section 2, below, for an explanation of SAIFI and all other reliability metrics.

⁹ The large EDCs are Duquesne Light, Met-Ed, Penelec, Penn Power, PECO, PPL and West Penn. The Small EDCs are UGI, Citizens', Pike County and Wellsboro.

the CAIDI metric is becoming more realistic of the customer's experienced interruption duration, rather than a general average as determined by aggregate data. The two factors that affect CAIDI are response times and repair times. EDCs will be expected to improve worsening CAIDI, but reducing service outages from occurring in the first place is crucial to improving reliability performance.

Possibly a more significant issue is that most of the EDCs, large and small, have shown very little improvement in reliability as evidenced by the increasing number of service interruption events. From 2015 through 2023, all but four of the EDCs (Citizens', Penn Power, Pike, and Wellsboro) have shown a trend of increasing service interruption events. In terms of the number of customers impacted by those interruption events, only Duquesne, Penn Power, and West Penn had a lower total number of customers interrupted in 2023 than were interrupted during 2015, while PECO had approximately the same number of customers interrupted in 2023 as in 2015.¹⁰ Met-Ed, Penelec, and West Penn have not met benchmark SAIDI in any rolling 12-month quarter in 2021, 2022, or 2023. PPL is currently meeting the SAIFI benchmark metric, but is still experiencing an upward trend in both customer minutes interrupted (CMI) and number of service interruption events.

Electric reliability and resilience¹¹ in Pennsylvania appear to be most challenged during storm activity that brings down off-right-of-way (OROW) trees, and overhanging limbs from canopy trees above the clearing zones within the right-of-way (ROW) onto the distribution lines. Many of those trees and limbs are still standing dead vegetation from the ravages of the Emerald Ash Borer and other pests which have attacked the state woodlands. EDCs are continuing to struggle to achieve sustained benchmark performance. This is the direct result of vegetation management policies, programs and storm activity. Storm activity acts upon the vulnerability of weakened trees in the overhanging canopy, and OROW trees. Since 2015 and continuing throughout 2023, vegetation is the number one cause of outages and lost customer-minutes in Pennsylvania. This issue has increased sharply and can be seen in the individual EDC performance details in Section 4, below, and for all Pennsylvania EDCs in Section 5, below.

Reliability Collaborative

Based on the findings of the PUC's reliability report released on Sept. 16, 2020, and the reliability performance in the first two quarters of 2020, TUS issued an informal data request to the EDCs and the Energy Association of Pennsylvania (EAP) that generally focused on what EDCs believed the challenges were to consistently meet the reliability benchmarks. TUS then held an informal discussion on Oct. 16, 2020, with the EDCs and EAP about the responses to the data request.

¹⁰ Note that Duquesne reports by million kilovolt-amperes interrupted, rather than by customers disrupted. See the individual EDC figures for customers interrupted, customer minutes interrupted, and number of interruption events in the Utility Specific Performance Data portion of Section 4, below.

¹¹ Resilience has many definitions, but commonly is understood to align generally with the definition in Presidential Policy Directive 21: "...the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents." <https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil>.

For the Commission to more fully inform any subsequent electric reliability policies or actions pursuant to those issues, the Commission, via a Secretarial Letter served on June 3, 2021, initiated an Electric Reliability Collaborative (ERC), and invited the EDCs, EAP, and statutory advocates to participate.¹²

The ERC focused on reviewing the electric distribution reliability regulations, with particular attention to the calculation of the reliability performance metrics and also discussed exploring whether options such as performance-based rates tied to reliability metrics may lead to improved reliability performance at a reasonable cost, developing an understanding of the customer experience with electric reliability in Pennsylvania, and exploring how the Commission, EDCs, and other stakeholders can work together to lessen the impact of OROW trees on electric reliability.

The first meeting of the ERC was held on July 21, 2021, subsequent meetings occurred on Sept. 10, 2021, Feb. 11, 2022, April 8, 2022, April 20, 2023, and the latest being April 28, 2023. Meeting points of discussion included electric reliability in general, OROW trees, consideration of the IEEE 2.5 beta method for calculation of the reliability statistics, approaches on the IEEE 2.5 beta in other states, and regulatory and procedural considerations of any proposed change to reliability statistical methodologies in Pennsylvania.¹³ Pennsylvania EDCs have forwarded their positions about utilizing IEEE 2.5 beta methodology as it applies to improving the reliability of Pennsylvania's electric distribution system. TUS is preparing its recommendations to the Commission for consideration on next steps to be taken as the reliability review process moves forward.

¹² The Secretarial Letter was served on June 3, 2021, at Docket No. M-2021-3024513.

¹³ The IEEE methodologies utilized by the EDCs are found at IEEE 1366-2012, *IEEE Guide for Electric Power Distribution Reliability Indices*.

Section 1 – Introduction

Purpose

This report discusses the reliability performance of EDCs operating under the Commission’s jurisdiction, specifically focusing on the reliability of the electric distribution system.¹⁴

The data presented in this report comes from the quarterly and annual reliability reports submitted by EDCs pursuant to the Commission’s regulations. This data focuses on customer power restoration duration (CAIDI), average customer outage duration (SAIDI) and frequency of outages (SAIFI).¹⁵ From these measures, this report provides an overview of the Commonwealth’s electric distribution reliability as well as individual analyses of the EDCs operating within Pennsylvania.

Background

The Electricity Generation Customer Choice and Competition Act mandates the Commission ensure the level of reliability that existed prior to the restructuring of the electric utility industry is maintained in the newly restructured markets.¹⁶ In response to this mandate, the Commission adopted reporting requirements designed to monitor continuing safety, adequacy, and reliability of generation, transmission, and distribution of electricity in the Commonwealth.¹⁷

The Commission also established reliability benchmark and standard values to measure the performance of each EDC.¹⁸ Given the uncertainty of weather and other events that can affect reliability performance, the Commission has stated that EDCs should set goals to achieve consistent benchmark performance in order to prepare for times when unforeseen circumstances occasionally and briefly cause performance to exceed the benchmark threshold.¹⁹ As mandated, enforcement of the 3-year rolling average standard began with the utilities’ filing of their 2006 annual reports. The 3-year performance standard only allows a deviation of 10% from the reliability index benchmark, as compared with the 20% or 35% deviations allowed by the 12-month performance standard.

The Commission set the performance standard as the occasional and brief maximum level an EDC can exceed the benchmark reliability performance value. Reliability performance values that are not considered in compliance require EDCs to provide an evaluation to the Commission that includes a Corrective Action Plan or a credible basis that would justify no corrective action is required. Reliability performance values that are not achieved during an assessment period will be followed up by the Commission. The inability of an EDC to achieve consistent compliance may result in an Order directing specific corrective actions.²⁰ Continuous noncompliance may

¹⁴ The high-voltage transmission system, nominally > 100 kV, is regulated by the Federal Energy Regulatory Commission (FERC). The electric distribution system is under the purview of the PUC.

¹⁵ For more information on CAIDI, SAIDI and SAIFI, see Section 2.

¹⁶ 66 Pa.C.S. § 2802(3).

¹⁷ 52 Pa. Code § 57.195.

¹⁸ 52 Pa. Code §§ 57.191-57.198.

¹⁹ See, *Amended Reliability Benchmarks and Standards for the Electric Distribution Companies*, Order entered May 11, 2004, at Docket No. M-00991220, at 24.

²⁰ 52 Pa. Code § 57.197(a).

trigger additional scrutiny and potential compliance enforcement actions by the Commission's prosecutorial staff in the Bureau of Investigation and Enforcement, including penalties and fines.²¹

Note that by the Order entered on Dec. 7, 2023, the Commission granted certain approvals and certificates of public convenience for the unification of the four FirstEnergy Company EDCs that operated in Pennsylvania (Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company) into one EDC, FirstEnergy Pennsylvania Electric Company (FE PA).²² The former EDCs are now rate districts of FE PA. FE PA assumed all responsibilities and requirements of the former EDCs, including, *inter alia*, for electric reliability (for reliability performance and the requirements of the former EDCs' Inspection and Maintenance Plans filed pursuant to 52 Pa. Code § 57.198).²³ FE PA reports as one EDC but reports data for each rate district. In order to avoid confusion and to allow comparison to previous electric reliability reports, the FE PA rate districts are referred to as EDCs throughout this report.

Section 2 – Reliability Performance Measures

Reliability Performance Metrics

The Commission's benchmarks and standards are based on four reliability performance metrics that have been adopted by the IEEE. The EDCs report metrics on a system-wide basis, rather than on a regional operating area basis. EDCs report the four-reliability metrics on both a rolling 12-month average and a 3-year calendar year average. Note that the Commission has only established benchmarks and standards for CAIDI, SAIDI and SAIFI. The metrics are defined as:

1. **CAIDI** (Customer Average Interruption Duration Index): Measures average power restoration time (by minutes) for every customer who lost power during reporting period.
2. **SAIDI** (System Average Interruption Duration Index): Measures average outage duration time (by minutes) for every customer served during reporting period.
3. **SAIFI** (System Average Interruption Frequency Index): Measures average frequency of power interruptions for every customer served during reporting period.
4. **MAIFI** (Momentary Average Interruption Frequency Index): Measures average frequency of momentary (five minutes or less) interruptions for every customer served during reporting period.²⁴

Additional information and data reported by EDCs:

²¹ 52 Pa. Code § 57.194(h)(1).

²² See, *Joint Application of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, West Penn Power Company, Keystone Appalachian Transmission Company, Mid-Atlantic Interstate Transmission, LLC, and FirstEnergy Pennsylvania Electric Company*, at Docket Nos. A-2023-3038771, et al.

²³ *Id.* See also at the same Docket Nos., *Joint Petition for Approval of Settlement of All Issues*, filed Aug. 30, 2023, and *Recommended Decision of Administrative Law Judge Conrad A. Johnson and Administrative Law Judge Emily I. DeVoe*, dated Oct. 19, 2023.

²⁴ EDCs are required to report MAIFI data, provided the equipment capability is available to obtain relevant data. Only Met-Ed, PECO, Penelec, Penn Power and PPL report MAIFI.

- Average number of customers served.
- Number of sustained customer interruption minutes.
- Number of customers affected by service interruptions.
- Analysis of outage causes such as equipment failure, animal contact and contact with trees.²⁵
- Reliability performance on the 5% of worst performing circuits and a corrective action plan to increase the reliability of these circuits.

Major Events

To analyze and set measurable goals for electric service reliability performance, outage data is separated into either normal or abnormal periods. Only outages during normal event periods are used in calculating the reliability metrics. The term “Major Event” is used to identify an abnormal event, such as a major storm, and is defined as either of the following:²⁶

- An interruption of electric service resulting from conditions beyond the control of the EDC which affects at least 10 % of the customers in the EDC’s service territory during the course of the event for a duration of five minutes or greater; or
- An unscheduled interruption of electric service resulting from an action taken by an EDC to maintain the adequacy and security of the electrical system.

Outage data relating to Major Events are to be excluded from the calculation of reliability metrics. Prior to excluding major event data, an EDC is required to formally request to exclude those service interruptions for reporting purposes. The request must be accompanied by data that demonstrates why the service interruption qualifies as a major event exclusion.

Definitions: benchmark, standard, 12-month average, & 3-year average

The **benchmark** performance value represents the statistical average of the EDC’s annual, system-wide, reliability performance index values for the five years from 1994 through 1998. The benchmark value serves as an upper limit that EDCs should be consistently achieving to ensure reliability performance is considered satisfactory and acceptable.

The **standard** performance value represents an EDC’s performance upper control limit established to allow EDCs to exceed the benchmark performance value occasionally and briefly. Both long-term (rolling 3-year) and short-term (rolling 12-month) performance standards have been established for each EDC based on individual EDC historical performance benchmarks. The performance standard limit allows an EDC to exceed a benchmark limit occasionally and briefly. However, consistently exceeding benchmark performance, or exceeding the standard limit is an indication that the EDC’s performance is not satisfactory and requires additional scrutiny by the Commission.

²⁵ This information is collected and trended by EDCs to reduce customer outages and improve system reliability.

²⁶ See, 52 Pa. Code § 57.192.

The performance rolling **12-month average** is 120% of the benchmark for the large EDCs and 135% for the small EDCs.²⁷ A greater degree of short-term latitude for small EDCs recognizes that small EDCs have fewer customers and fewer circuits than large EDCs, potentially allowing a single event to have a more significant impact on the reliability performance of the small EDCs' distribution systems.

The performance rolling **3-year average** is 110% of the benchmark for all EDCs. This performance standard was set at 10% above the historical benchmark to ensure that the standard is no higher than the worst annual performance experienced during the years prior to the restructuring of the electric industry. The 3-year average performance is measured against the standard at the end of each calendar year. The rolling 3-year standard analysis contained in this report uses 2021, 2022 and 2023 calendar year data.

It is noted that a lower number for any index indicates better reliability performance, i.e., a lower frequency of outages or shorter outage duration. A higher number indicates worse performance.

Example: A large EDC's rolling 12-month **CAIDI benchmark** performance metric is 100 and associated **CAIDI standard** performance metric is 120 (which is 120% of benchmark). Evaluate an EDC's quarterly CAIDI score of 110, 90, and 140:

CAIDI of 110 evaluations: Performance is above **benchmark**, but below **standard**, and may require additional review and action if the EDC is chronically above **benchmark** score and trending toward exceeding **standard**. Upon Commission review, the EDC may be required to develop a Corrective Action Plan (CAP) and **additional PUC oversight will be taken to monitor effectiveness until performance is below benchmark**. In addition, this may result in a referral to the Bureau of Investigation & Enforcement (BIE) for further action.

CAIDI of 90 evaluations: Performance is considered excellent since CAIDI is below both **benchmark and standard**.

CAIDI of 140 evaluations: Performance is considered unacceptable since CAIDI is greater than both **benchmark and standard**. The EDC will be required to develop a Corrective Action Plan (CAP) and additional PUC oversight will be taken to monitor effectiveness until benchmark performance is achieved. In addition, may result in a referral to BIE for further action.

If any EDC's reliability performance does not meet Commission regulations, the Commission may require a report discussing the reasons for not meeting the regulation and the corrective measures the company is taking to improve performance.²⁸ In addition, Commission staff may initiate an investigation to determine whether an EDC is providing reliable service.²⁹

Benchmarks and standards for EDC reliability performance and actual reliability metrics for 2023 are located in Appendix A.

²⁷ The large EDCs are Duquesne Light, Met-Ed, Penelec, Penn Power, PECO, PPL and West Penn. The Small EDCs are UGI, Citizens', Pike County and Wellsboro.

²⁸ See, 52 Pa. Code § 57.195(g).

²⁹ See, 52 Pa. Code § 57.197(a).

Inspection and Maintenance

EDCs are required to have a plan for periodic inspection and maintenance of poles, overhead conductors and cables, wires, transformers, switching devices, protective devices, regulators, capacitors, substations, and other facilities critical to maintaining an acceptable level of reliability.³⁰ The time intervals for such inspections are detailed in Table 1 below. The regulation also sets forth minimum inspection and maintenance intervals for vegetation management, poles, overhead lines and substations.

Listed below are the most recently filed biennial inspection and maintenance (I&M) plans for the periodic inspection, maintenance, repair and replacement of facilities:

- Filed in October 2023 (effective January 2025 through December 2026) for FE PA (Met-Ed, Penelec, Penn Power and West Penn) and UGI.
- Filed in October 2022 (effective January 2024 through December 2025) for Duquesne, PECO, PPL, Citizens', Pike, and Wellsboro.

The plans are subject to acceptance or rejection by the Commission. Most EDCs proposed deviations to the standards for some programs or parts of programs. Appendix C describes the deviations that were requested by the EDCs and provides a summary of the explained justification for said deviations.³¹

Table 1 – Inspection and Maintenance Intervals

Program	Interval
Vegetation Management	4-6 years
Pole Inspections	10-12 years
Overhead Distribution Line Inspections	1-2 years
Overhead Transformer Inspections	1-2 years
Above-Ground Pad-Mounted Transformer Inspections	5 years
Below-Ground Transformer Inspections	8 years
Recloser Inspections	8 years
Substation Inspections	5 weeks

³⁰ See, 52 Pa. Code § 57.198.

³¹ See, 52 Pa. Code § 57.198(c).

Section 3 – 2023 Outage Response Review

Overview

Tables 2A and 2B, below, present a breakdown of reportable outage events (ROEs)³² summarized for 2023 (49 events) as compared to 2022 (42 events).

Table 2C below, details the number of ROEs from 1994 through 2023. Note the number of ROEs that occurred during the benchmark period from 1994 through 1998, as compared to the number that occurred in each of the past 4 years and in the period 2003 through 2012. Some of the increase in ROEs could be due to aging infrastructure that is impacted by weather, but ROEs appear to be increasing in frequency for all EDCs, including those that have strong infrastructure improvement plans, as shown in Table 2E below. This information is highlighted to show that EDCs are expected to provide service at a level equal to or better than that provided during the benchmark period, regardless of whether ROEs are increasing on an annual basis.

Table 2D below details the number of customers affected by ROEs from 1994 through 2023. In 2023, a total of 1,670,056 customers were negatively affected by ROEs as compared to 1,396,669 customers in 2022, 1,964,501 in 2021, and 2,431,842 in 2020.

Note: The high level of customers affected in 2011, 2012, 2014, and 2018 are primarily due to a few high-impact events, such as Irene in 2011, Sandy in 2012, Nika in 2014, and Riley/Quinn in 2018.

Table 2E below, details the cumulative number of ROEs by EDC for the past 10 years (2014 through 2023).

³² Service outages reports are required under 52 Pa. Code § 67.1. The reporting threshold for a 67.1 reportable outage event is five percent of total customers or 2,500 customers, whichever is less, for six or more consecutive hours. The reporting requirements are an initial phone call to the Commission when it is believed the threshold will be reached, followed by a written report 10 working days after the last customer is restored.

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Table 2A – 67.1 Reportable Outage Events Summary 2023

EDC	Date	Customers Affected	Cause
PPL	2/21/23	13,770	Winter storm with heavy, wet snow
Penelec	3/3/23	50,057	Winter storm with rain, snow and ice
PPL	3/3/23	18,659	Wintry mix of rain & snow
West Penn	3/3/23	52,772	Winter storm with snow & ice
Penelec	3/6/23	9,402	Winter storm with heavy, wet snow
PPL	3/6/23	20,438	Winter storm with heavy, wet snow
DLC	3/25/23	62,276	Severe thunderstorms with high winds
Penelec	3/25/23	52,365	Severe thunderstorms with high winds
Penn Power	3/25/23	58,948	Severe thunderstorms with high winds
West Penn	3/25/23	61,090	Severe thunderstorms with high winds
DLC	4/1/23	67,383	Severe thunderstorms with high winds
Met-Ed	4/1/23	18,728	Severe thunderstorms with high winds
PECO	4/1/23	37,848	Severe thunderstorms with high winds
Penelec	4/1/23	115,095	Severe thunderstorms with high winds
Penn Power	4/1/23	49,977	Severe thunderstorms with high winds
PPL	4/1/23	24,323	Severe thunderstorms with high winds
Wellsboro	4/1/23	4,429	Severe thunderstorms with high winds
West Penn	4/1/23	111,285	Severe thunderstorms with high winds
Met-Ed	4/22/23	12,136	Severe thunderstorms with high winds
PPL	4/22/23	41,738	Severe thunderstorms with high winds
Penelec	5/7/23	5,220	Transmission line outage
PPL	6/3/23	17,851	Severe thunderstorms with high winds
PECO	6/25/23	81,325	Severe thunderstorms with high winds
West Penn	7/13/23	29,076	Severe thunderstorms with high winds
West Penn	7/20/23	21,173	Severe thunderstorms with high winds
Penelec	7/20/23	61,346	Severe thunderstorms with high winds
Met-Ed	7/21/23	8,386	Severe thunderstorms with high winds
Met-Ed	7/28/23	19,241	Severe thunderstorms with high winds
Met-Ed	8/7/23	69,434	Severe thunderstorms with high winds
PECO	8/7/23	49,879	Severe thunderstorms with high winds
PPL	8/7/23	58,870	Severe thunderstorms with high winds
PPL	8/12/23	11,284	Severe thunderstorms with high winds
West Penn	8/12/23	11,812	Severe thunderstorms with high winds
Penelec	8/12/23	19,888	Severe thunderstorms with high winds
Met-Ed	8/13/23	20,399	Severe thunderstorms with high winds
PPL	8/18/23	11,002	Severe thunderstorms with high winds
DLC	8/25/23	20,778	Severe thunderstorms with high winds
Penn Power	8/25/23	9,072	Severe thunderstorms with high winds
West Penn	8/25/23	52,401	Severe thunderstorms with high winds
Met-Ed	9/7/23	54,243	Severe thunderstorms with high winds
Penelec	9/7/23	16,214	Severe thunderstorms with high winds
PPL	9/7/23	60,127	Severe thunderstorms with high winds
UGI	9/7/23	6,867	Severe thunderstorms with high winds
PPL	9/9/23	14,657	Severe thunderstorms with high winds
PPL	9/23/23	17,644	Tropical Storm Ophelia remnants
Pike	10/9/23	1,905	Fallen tree on subtransmission serving substation
PPL	12/10/23	15,550	High rain & wind event
PPL	12/27/23	9,301	High rain & wind event
Met-Ed	12/28/23	12,392	High rain & wind event
Totals		1,670,056	

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Table 2B – 67.1 Reportable Outage Events Summary 2022

EDC	Date	Customers Affected	Cause
DLC	2/3/22	18,911	Winter Storm Landon w/rain, snow, ice
DLC	3/7/22	13,147	High winds
DLC	5/3/22	9,562	Severe tsorms, heavy rain, high winds
DLC	6/22/22	25,374	Severe tsorms, high winds, heavy rains
DLC	7/23/22	53,935	Severe tsorms, high winds, heavy rains
DLC	8/29/22	10,993	Severe tsorms with high winds
DLC	12/23/22	36,790	Winter Storm Elliott
Met-Ed	1/16/22	15,030	Winter storm with high winds and wet snow
Met-Ed	2/17/22	48,143	Winter storm with rain, snow, and high winds
Met-Ed	3/7/22	13,538	High winds, rain
Met-Ed	3/12/22	35,704	Winter storm with rain, snow, and high winds
Met-Ed	12/23/22	65,662	Winter Storm Elliott
PECO	2/18/22	57,871	High winds, rain, and lightning
PECO	5/6/22	28,053	Severe tsorms, heavy rain, high winds
PECO	12/23/22	65,562	Winter Storm Elliott
Penelec	2/17/22	17,266	Winter storm with rain, snow, and high winds
Penelec	3/7/22	40,903	High winds, sleet, rain
Penelec	4/19/22	48,934	Winter storm with rain, wet snow and high winds
Penelec	5/21/22	10,900	Severe tsorms, heavy rain, high winds
Penelec	7/22/22	51,707	Severe tsorms, high winds, heavy rains
Penelec	8/4/22	25,556	Severe tsorms with high winds
Penelec	12/22/22	50,105	Winter Storm Elliott
Penn Power	5/21/22	24,536	Severe tsorms, heavy rain, high winds
PPL	1/16/22	15,354	Winter storm with high winds
PPL	2/17/22	44,699	Winter storm with rain, snow, and high winds
PPL	3/7/22	33,332	High wind and rain event
PPL	4/18/22	20,441	Winter storm with rain, wet snow and high winds
PPL	7/12/22	9,732	Scattered severe tsorms
PPL	7/24/22	13,728	Severe tsorms, high winds, heavy rains
PPL	11/30/22	24,686	High wind and heavy rain event
PPL	12/15/22	34,985	Winter storm with ice and high winds
PPL	12/22/22	75,372	Winter Storm Elliott
West Penn	2/3/22	36,402	Winter Storm Landon w/rain, snow, ice
West Penn	2/17/22	34,040	Winter storm with rain, snow, and high winds
West Penn	3/7/22	41,793	Cold front with tsorms, rain, and high winds
West Penn	5/3/22	56,066	Severe tsorms, heavy rain, high winds
West Penn	6/16/22	29,695	Severe tsorms with high winds
West Penn	6/22/22	39,810	Severe tsorms, high winds, heavy rains
West Penn	7/23/22	49,879	Severe tsorms, high winds, heavy rains
West Penn	11/27/22	9,795	Severe tsorms, high winds, heavy rains
West Penn	12/15/22	11,486	Winter storm with ice and high winds
West Penn	12/23/22	47,192	Winter Storm Elliott
TOTALS		1,396,669	

Table 2C – Total 67.1 Reportable Events for EDCs 1994 through 2023

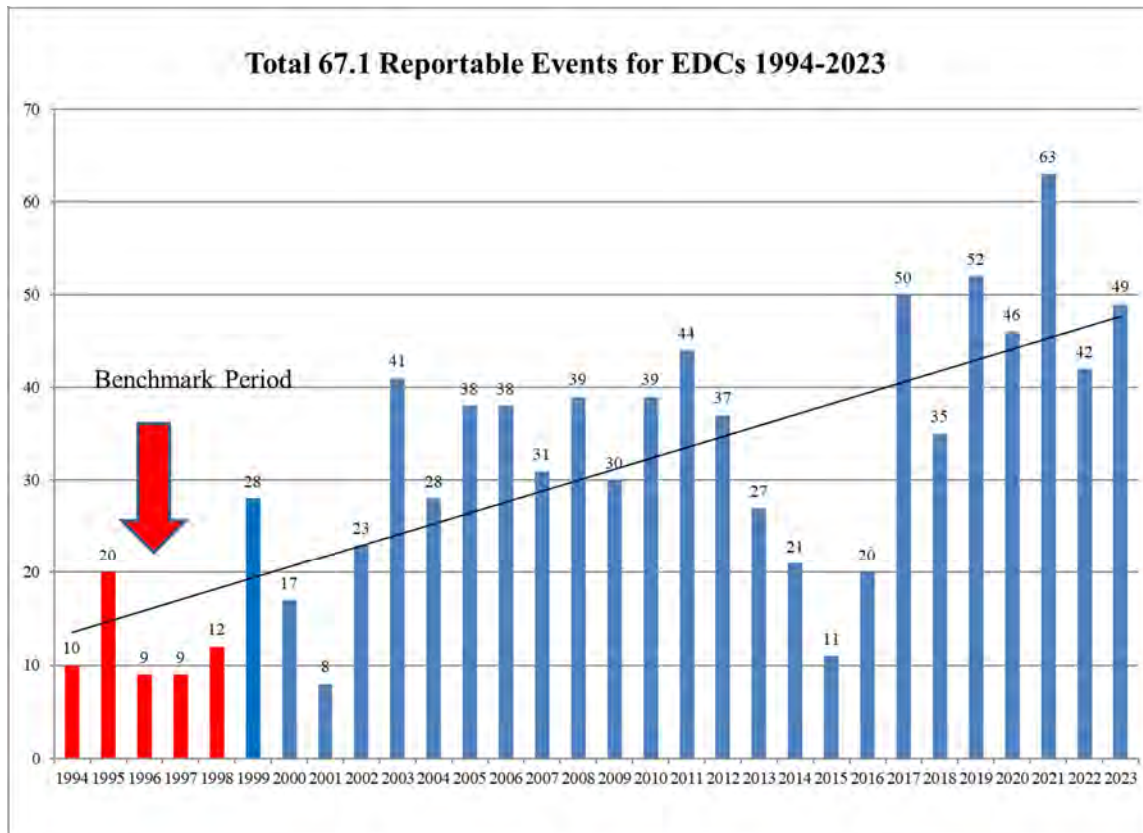


Table 2D – Total Customers Affected by 67.1 Reportable Events 1994 through 2023

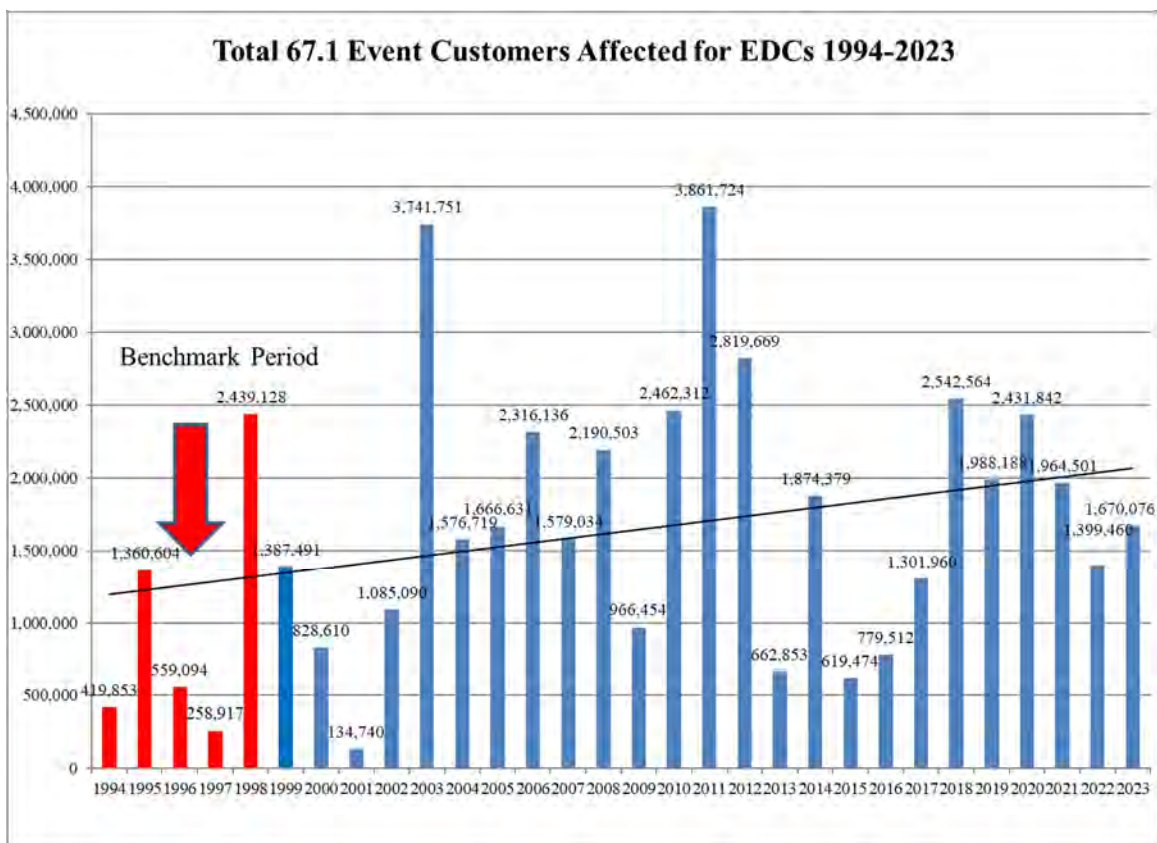
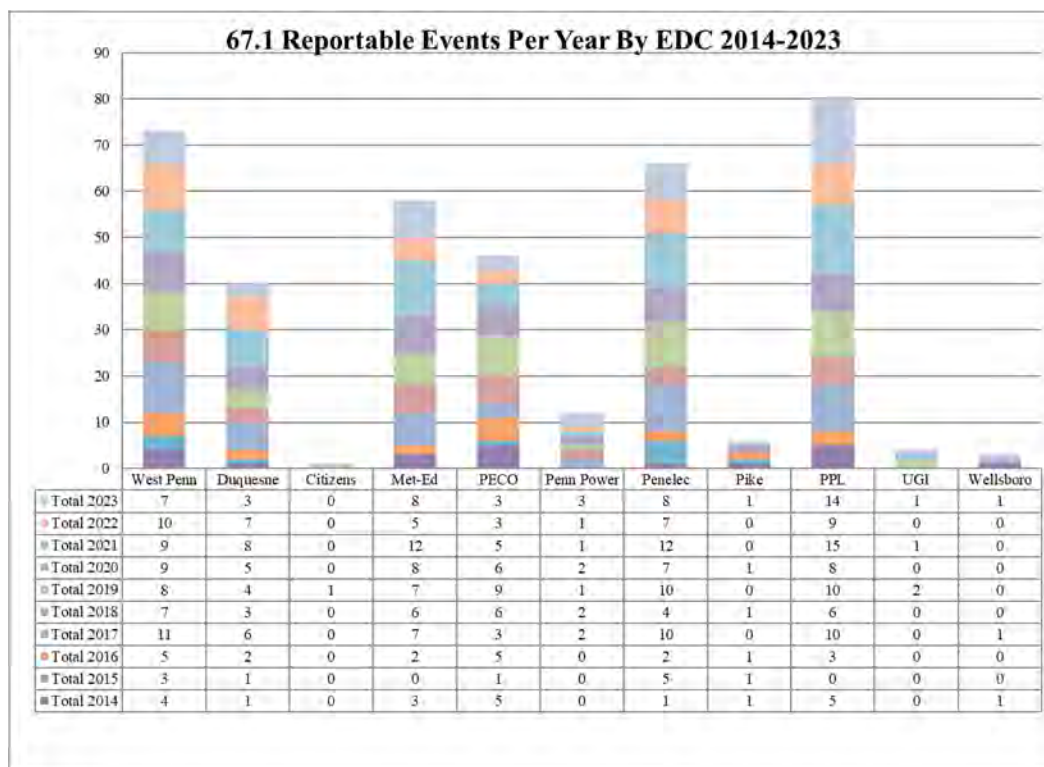


Table 2E – 67.1 Reportable Events by EDC 2014 through 2023



Major Events

In 2023, the resilience of Pennsylvania’s electrical system was challenged with a substantial amount of severe storm activity as evidenced by the number of ROEs. Pennsylvania customers were adversely affected in 2023 with approximately 601,222 customers impacted by Major Events in 2023, as compared to 114,539 customers impacted in 2022 and 177,115 customers in 2021. In 2023, there were 21 Major Event exclusion requests approved, as compared to 16 in 2022, 22 in 2021, 29 in 2020 and 23 in 2019. Note that Major Events are excludable from an EDC’s reliability indices and the additional customer outages and customer-minutes-interrupted are not added to the reliability metrics.

Major Events for 2023 and 2022 are shown below in Tables 3A and 3B, respectively.

Table 3A – Major Events for 2023

EDC	Date	Customers Affected	Cause	Total Customer Minutes Interrupted
Duquense	3/25/23	62,276	Weather	417,158,713 kVA-Min
Duquense	4/1/23	67,383	Weather	234,650,099 kVA-Min
Citizen's	4/1/23	801	High Winds & Tree	97,272
Met-Ed	8/7/23	69,436	Storms with High Winds	93,209,582
Penelec	4/1/23	126,310	Storms with High Winds	85,092,453
Penn Power	3/25/23	59,706	Storms with High Winds	49,757,745
Penn Power	4/1/23	49,977	Storms with High Winds	47,932,357
Pike	10/9/23	1,905	Tree on Feeder	59,055
Pike	12/4/23	1,614	Animal contact	272,766
UGI	1/11/23	10,605	Animal contact (substation)	871,809
UGI	9/7/23	6,867	Weather	2,767,551
Wellsboro	2/3/23	738	High Winds & Trees	49,406
Wellsboro	2/21/23	3,703	High Winds & Trees	219,247
Wellsboro	4/1/23	4,429	High Winds & Trees	1,493,292
Wellsboro	7/27/23	1,723	High Winds & Trees	276,180
Wellsboro	8/8/23	1,726	High Winds & Trees	55,519
Wellsboro	9/22/23	1,124	Fault on Line	15,417
Wellsboro	10/4/23	713	Conductor Failure	140,556
Wellsboro	11/21/23	1,175	High Winds	239,049
West Penn	3/3/23	17,626	Winter Storm	21,202,760
West Penn	4/1/23	111,285	Storms with High Winds	61,088,108
21	Totals	601,122	Totals	364,840,124

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Table 3B – Major Events for 2022

EDC	Date	Customers Affected	Cause	Total Customer Minutes Interrupted
Citizens	4/1/22	801	Weather	97,272
Met Ed	12/23/22	65,662	Winter Storm Elliot	33,801,371
Penn Power	5/21/22	24,536	Weather	20,138,249
Pike	6/18/22	2,157	Human Error (Non-Employee)	204,807
Pike	6/23/22	2,157	Vehicle	195,437
Pike	9/5/22	1,847	Weather & Equipment Failure	251,192
Pike	9/12/22	4,757	Vehicle	3,820,796
Wellsboro	3/7/22	735	Weather - Winds	148,068
Wellsboro	4/19/22	1,239	Weather - Snow	157,284
Wellsboro	7/21/22	1,731	Off ROW Tree	156,360
Wellsboro	7/22/22	815	Animal Contact	51,535
Wellsboro	8/4/22	743	Weather - Winds	64,283
Wellsboro	8/30/22	755	Off ROW Tree	120,334
Wellsboro	9/24/22	1,716	Off ROW Tree	237,208
Wellsboro	9/26/22	2,338	Weather - Winds	466,925
Wellsboro	12/23/22	2,550	Weather - Winds	467,185
16	Totals	114,539	Totals	60,378,306

Review of Long-Duration Outage Events

There were no long duration electric outage events (those with outages lasting six or more days) in 2023.

Section 4 – EDC Reliability Performance Data

Statewide Summary

Rolling 12-month Benchmark Performance Compliance

The 2023 end-of-year reliability data for 12-month CAIDI, SAIDI, and SAIFI Benchmark performance compliance submitted by the 11 EDCs is presented below. **Note that a zero or negative percentage indicates positive performance at or below the benchmark.** The data indicates that:

- Four EDCs achieved the **CAIDI Benchmark**, while seven of the EDCs failed to achieve the CAIDI benchmark (Figure 1 below).
- Only four EDCs achieved the **SAIDI Benchmark**, while seven EDCs failed to achieve the SAIDI benchmark (Figure 2 below).
- Five EDCs achieved the **SAIFI Benchmark**, while six EDCs failed to achieve the SAIFI benchmark (Figure 3 below).

Figure 1 – 2023 CAIDI Comparison (percent above or below benchmark)

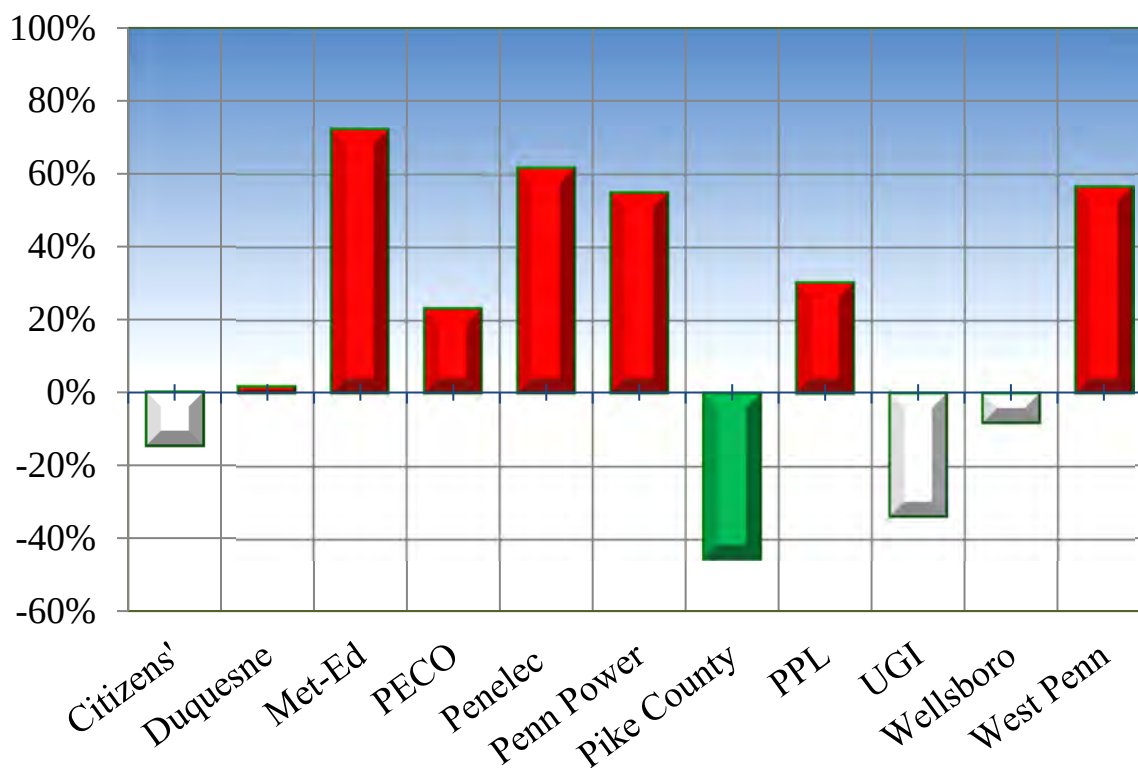


Figure 2 – 2023 SAIDI Comparison (percent above or below benchmark)

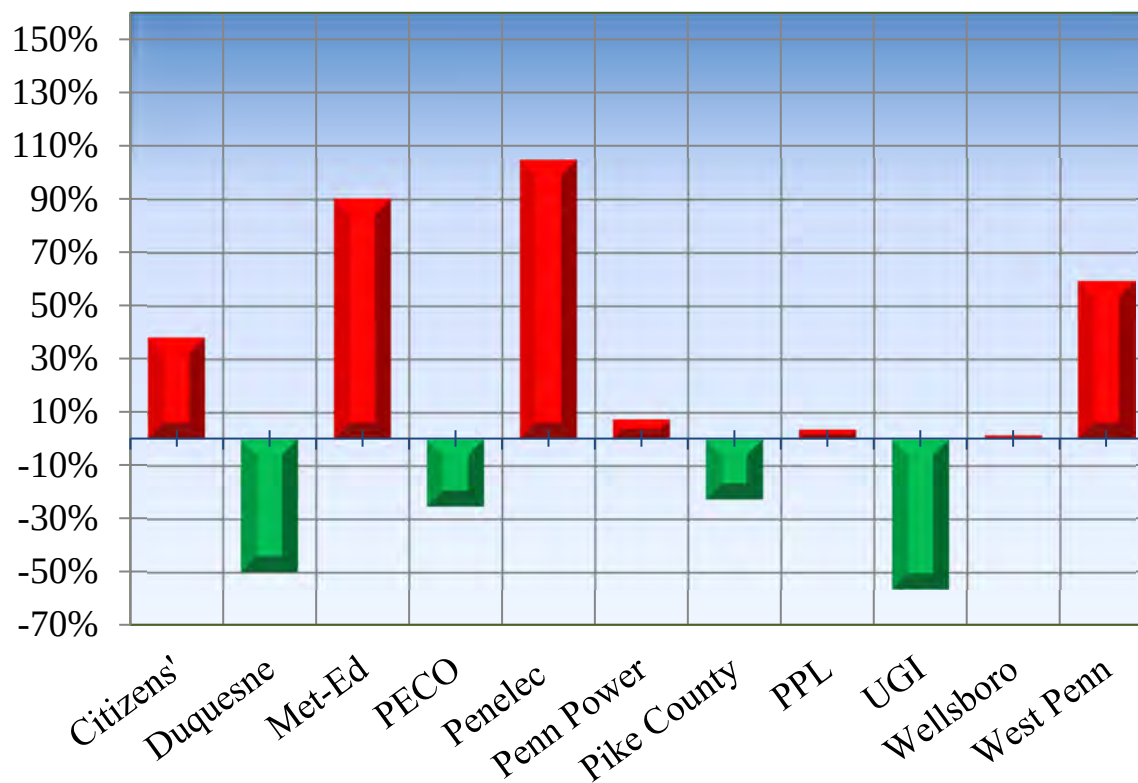


Figure 3 – 2023 SAIFI Comparison (percent above or below benchmark)



Rolling 3-year Average (2021-2023) Performance Compliance

Appendix A provides the 2023 results for the 12-month average and 3-year average reliability performance metrics for individual EDCs.

Seven EDCs (Duquesne Light, Met-Ed, PECO, Penelec, Penn Power, PPL, and West Penn) failed to meet the rolling 3-year **CAIDI performance standard**.

Five EDCs (Citizens', Met-Ed, Penelec, Pike County, and West Penn) failed to meet the rolling 3-year **SAIFI performance standard**.

Four EDCs (Citizens', Met-Ed, Penelec, and West Penn) failed to meet the rolling 3-year **SAIDI performance standard**.

Utility-Specific Performance Data

The Commission compares reliability metrics on a quarterly basis, using data obtained for the preceding 12 months. This periodic assessment determines the status of electric service reliability on an ongoing basis and is instrumental in identifying negative trends. The 3-year average performance is measured at the end of each calendar year, using the average of the past three end-year metrics, as indicated in Appendix A. The following sections provide a detailed description of the 11 EDCs' individual reliability performance on a rolling 12-month and 3-year average basis.

Citizens' Electric Company

Citizens' Electric Company (Citizens') has an operating service area of about 41 square miles with about 7,139 customers. The electric system consists of one distribution substation and nine distribution feeder lines.

In 2023, Citizen's experienced 2,309 customer interruptions and 207,294 CMI, as compared to: 1,947 customer interruptions and 195,608 CMI in 2022; 1,926 customer interruptions and 181,274 CMI in 2021; 561 customer interruptions and 48,645 CMI in 2020; and 1,982 customer interruptions and 154,257 CMI in 2019.

Citizens' experienced one Major Event in 2023. The Major Event impacted over 801 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month: Decreased from 101 minutes in 2022 to 90 minutes in 2023; achieved benchmark by 14.5%.

3-year average: Increased from 94 minutes in 2022 to 95 minutes in 2023; achieved standard by 17.4%.

SAIDI

Rolling 12-month: Increased from 28 minutes in 2022 to 29 minutes in 2023; failed to achieve benchmark by 38.1%.

3-year average: Increased from 20 minutes in 2022 to 27 minutes in 2023; failed to achieve standard by 9.5%.

SAIFI

Rolling 12-month: Increased from 0.27 outages in 2022 to 0.32 outages in 2023; failed to achieve benchmark by 60.0%.

3-year average: Increased from 0.21 outages in 2022 to 0.29 outages in 2023; failed to achieve standard by 30.3%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown below in Figures 4 and 5. Beginning in 2004, Citizens' CAIDI performance has been overall positive for most years.²⁹ Citizens' CAIDI performance is currently good and below the "green" benchmark performance upper-control-limit-line. It appears the Citizens' CAIDI performance trend is now in a positive direction. However, more management attention is needed to continue CAIDI performance below the "green" benchmark performance upper-control-limit-line. The Commission finds this is indicative of consistently good response and restoration times.

Beginning in 2004, Citizens' SAIFI performance has been inconsistent. From the 4th quarter 2011 through the 4th quarter 2023, Citizens' SAIFI performance has frequently been above the "green" benchmark performance upper-control-limit-line. Citizens' SAIFI performance in 2020 was excellent and well below the benchmark. However, from 2021 through 2023, Citizens' has not met the SAIFI benchmark. SAIFI has been trending upward past benchmark and has exceeded the 12-month standard. More management attention is needed to ensure consistent SAIFI performance is sustained below the "green" benchmark performance upper control-limit-line.

Outage Causes

Figure 6 below, shows the top five reported 2023 outage-cause categories, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. OROW trees, Vehicle and Other were the top causes for number of customers affected. The OROW trees and Vehicle causes were the largest contributors to CMI.

Figure 7 below shows the historical trend of the top three main outage causes. OROW trees, Equipment, and Animals are the three most frequent outage-causes that are significantly

²⁹ Smaller CAIDI, SAIFI, and SAIDI benchmark values are typical for companies with fewer customers. While Citizens' did not achieve benchmark for SAIDI in 2023, its SAIDI value for 2023 is still much lower than that of all other EDCs. The same can be said about Citizens' SAIFI metrics.

negatively affecting Citizens' distribution system reliability and resilience. Trees are the most frequent cause of EDC customer outages in Pennsylvania.

General Reliability

Citizens' noted that it experienced very slight increases in SAIFI and SAIDI in 2023 while CAIDI remained lower than the previous two years. Citizens' noted that it experienced half as many outages from OROW trees in 2023 as compared to 2022. Citizens' noted that the company's direct communication with customers targeting danger and OROW hazard trees was a contributing factor in the decline. Citizens' also noted that CMI was most impacted by the increase in vehicle-related outages.

Citizens' indicated that it was again recognized in 2023 as a "Tree Line USA" utility. This award from the National Arbor Day Foundation recognized Citizens' for the 21st consecutive year for its use of nationally approved trimming techniques and procedures in its vegetation management program. The Company continues to partner with the Penn State Extension for its annual educational session. Citizens' noted that it continues to participate in and gather information from various industry best practices groups. These groups include members from diverse utility groups such as the Pennsylvania Rural Electric Association, the Energy Association of Pennsylvania, and the National Rural Electric Cooperative Association. The Company will continue to implement best practices defined by these groups as appropriate.

Conclusion

Citizens' CAIDI remained below benchmark for all four rolling 12-month quarters of 2023. Citizens' SAIFI performance has significantly declined over the past two years and continues to show signs of erratic performance. SAIDI performance has also deteriorated over the past two years and is above benchmark at the end of 2023, but still below standard. Citizens' should continue to refine its processes and methods to improve this performance.

The Commission recommends continued and increased efforts in vegetation management and emphasis on response times.

The Commission recognizes overall Citizen's appears to be making improvements in CAIDI as witnessed by the data shown below.

As can be seen in Figures 8 through 9 below, Citizens' seems to maintaining its CMI level and has improved the number of interruptions since 2015 but experienced a slight uptick in the number of customers interrupted in 2023.

Figure 4 – Citizens’ CAIDI (minutes)



Figure 5 – Citizens’ SAIFI (interruptions per customer)

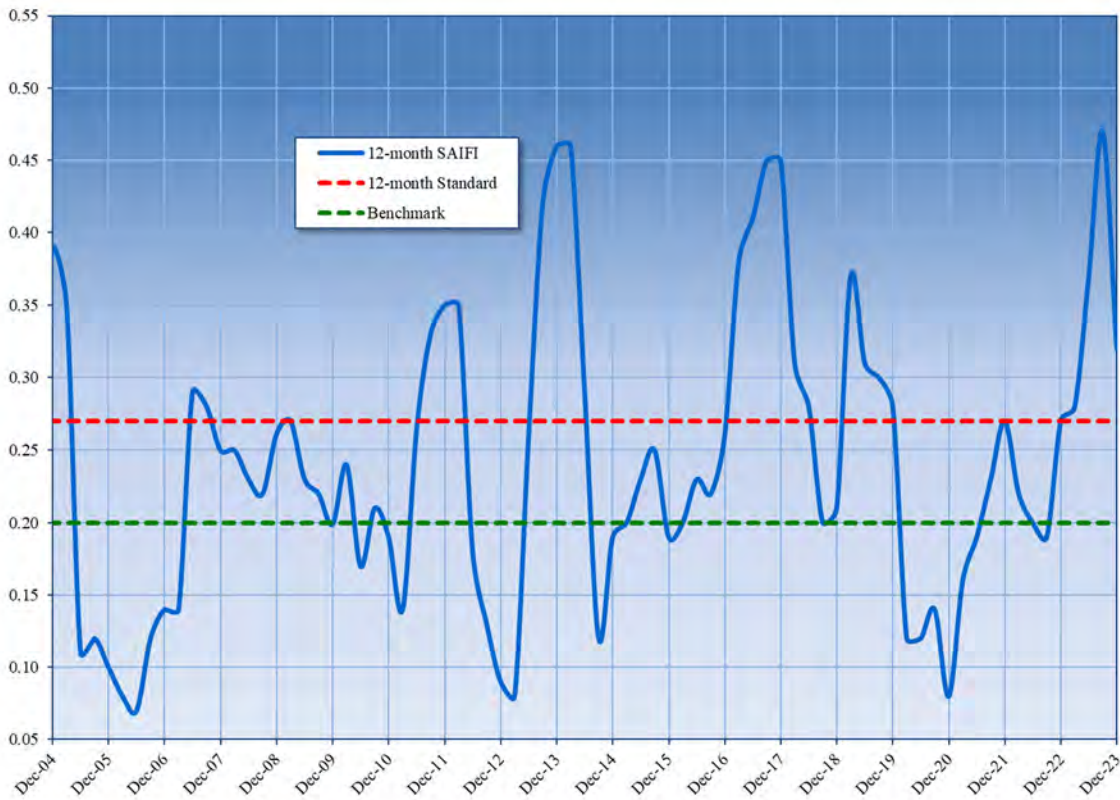


Figure 6 – Citizens' Outage Causes (percent of total outages)

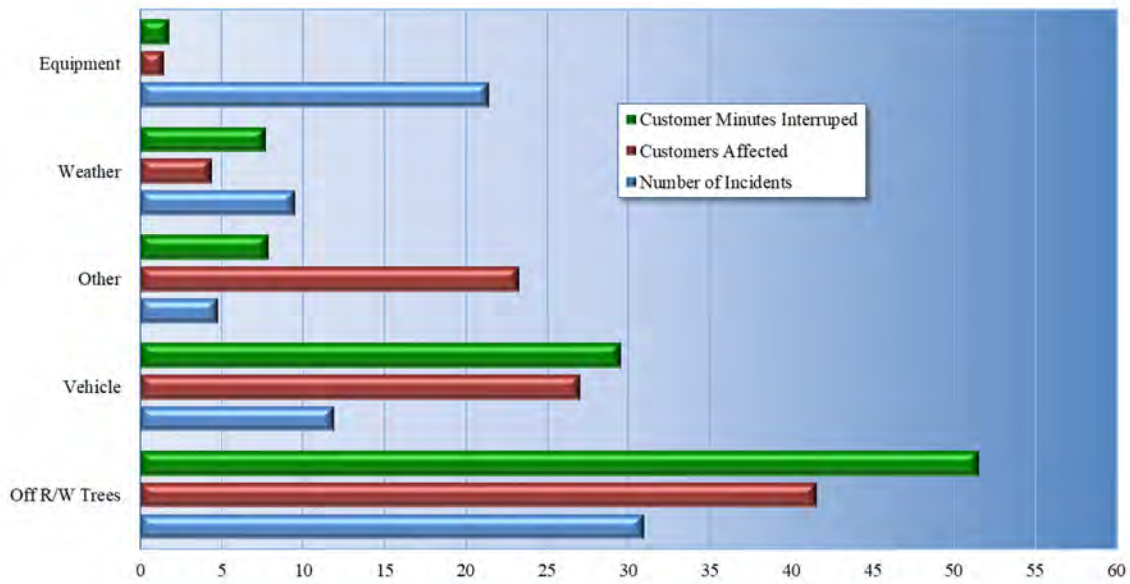


Figure 7 – Citizens' Outage Cause Tracking (number of incidents)

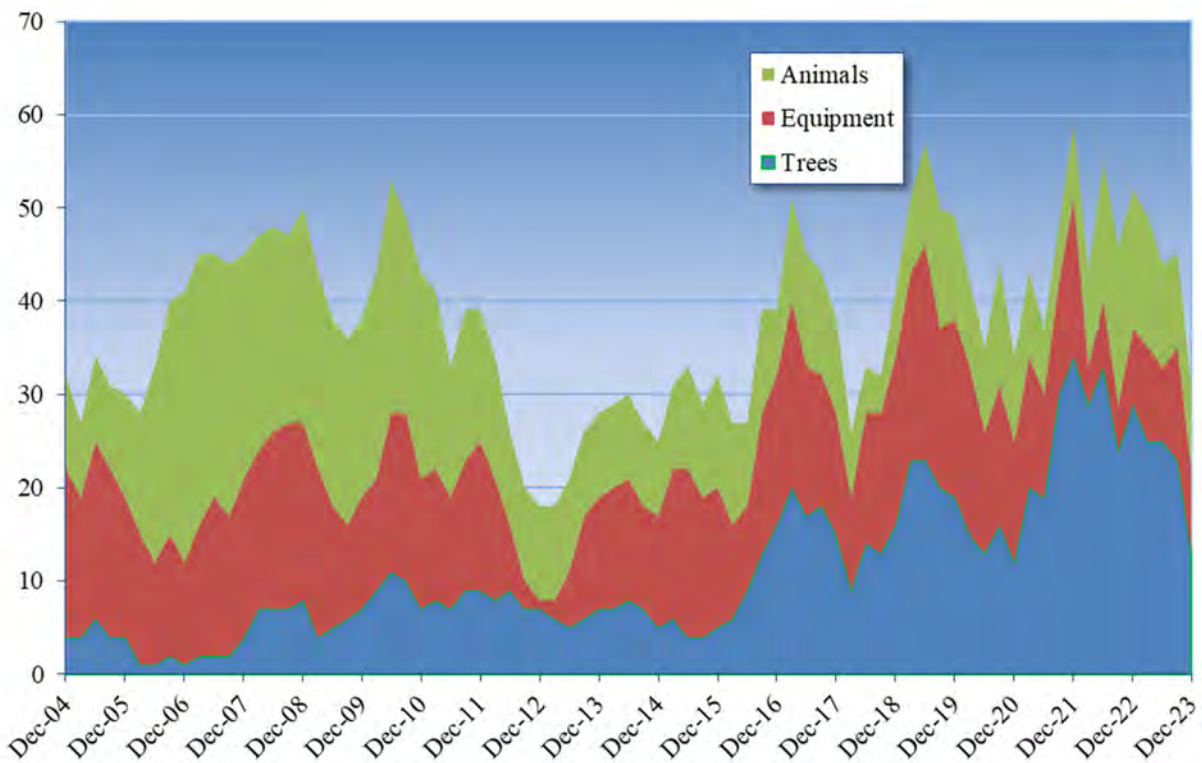


Figure 8 – Citizens' Outage Tracking (number of Customers Interrupted)

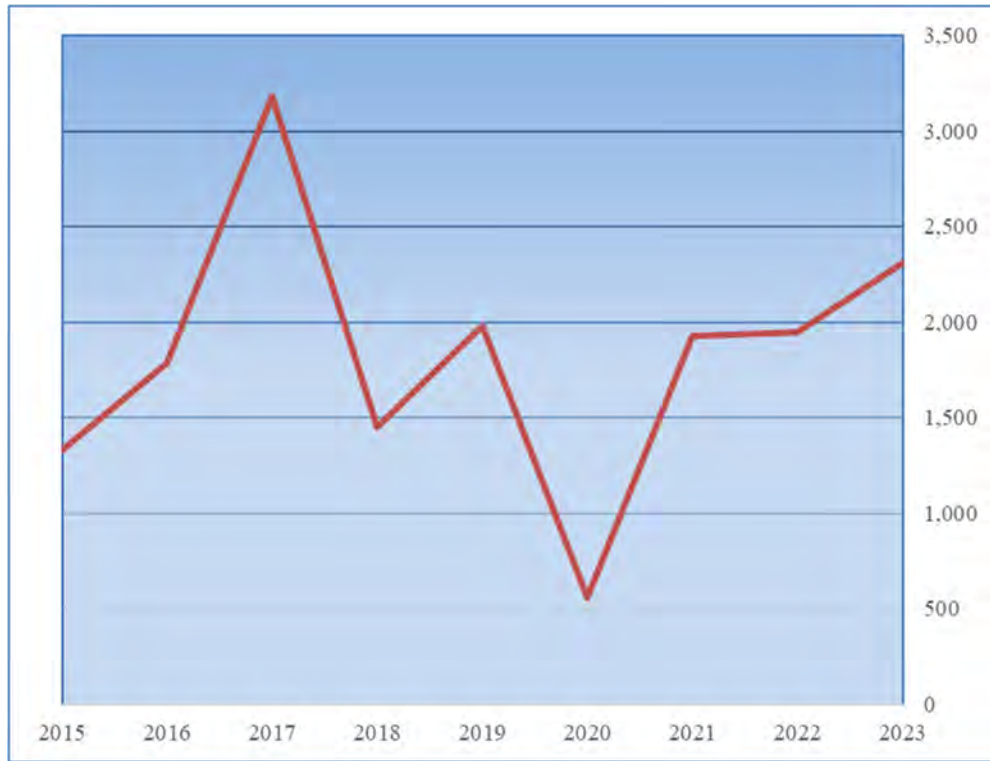


Figure 9 – Citizens' Outage Tracking (Customer-Minutes of Interruptions, or CMI)

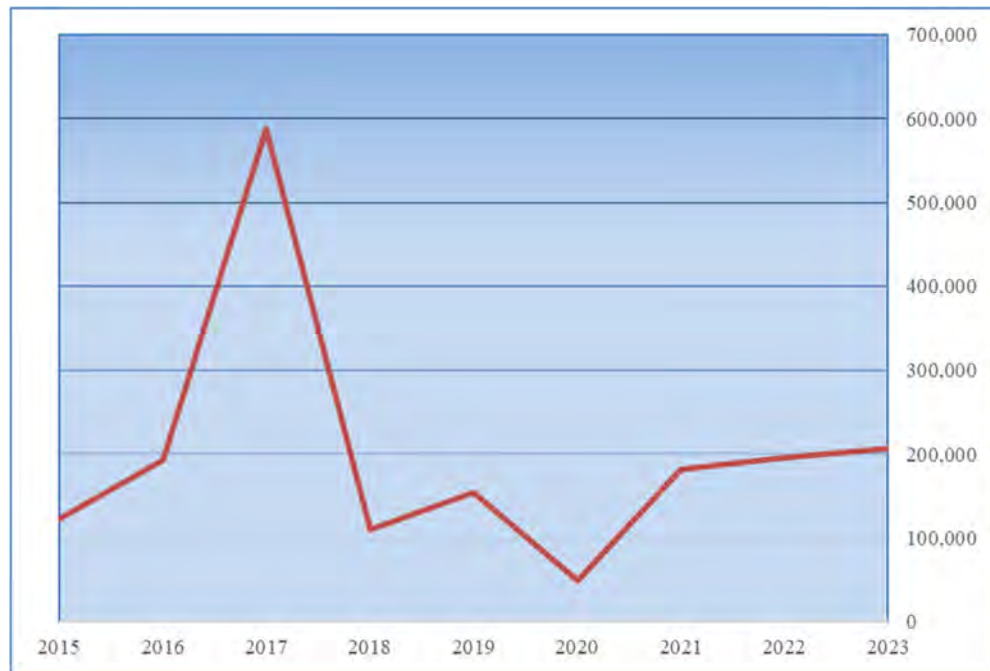
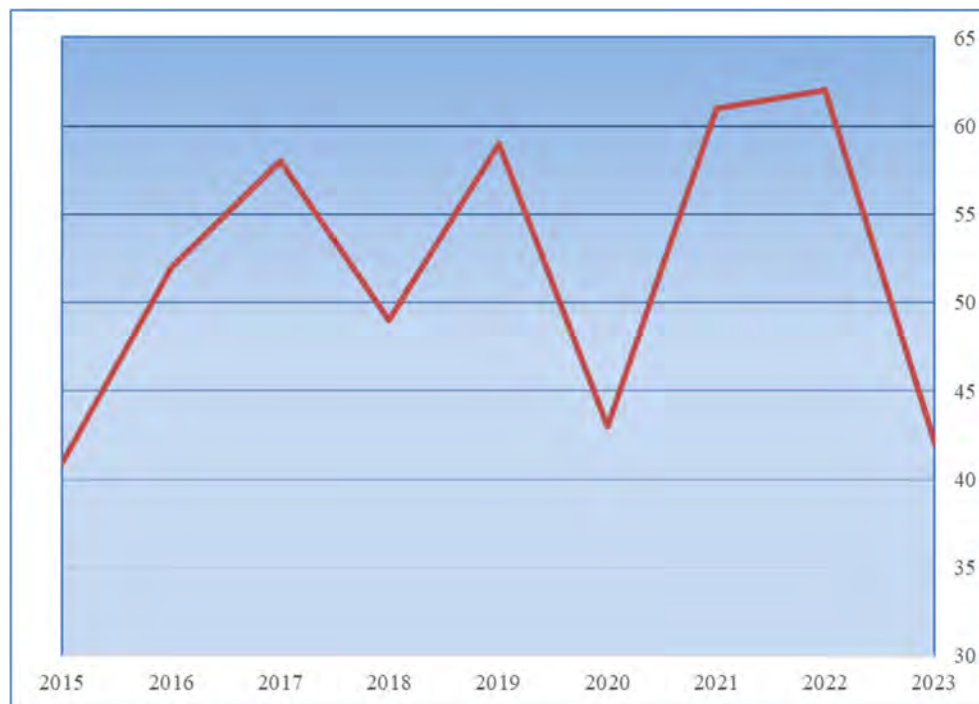


Figure 10 – Citizens’ Outage Tracking (number of interruptions annually)



Duquesne Light Company

Duquesne Light Company (Duquesne) has a service territory of about 817 square miles with a well-developed distribution system serving about 611,458 customers.

In 2023, Duquesne experienced 4.5 million kilovolt-amps (kVA) of customer interruptions and 502 million kVA-minutes of CMI as compared to: 7.3 million kilovolt-amps (kVA) of customer interruptions and 1,060 million kVA-minutes of CMI in 2022; 7.3 million kVA customer interruptions and 1,355 million kVA-minutes of CMI in 2021; 6.5 million kVA customer interruptions and 857 million kVA-minutes of CMI in 2020; and 7.3 million kVA customer interruptions and 772 million kVA-minutes of CMI in 2019.

Duquesne experienced two Major Events in 2023. The Major Events impacted approximately 129,659 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation**CAIDI**

Rolling 12-month:	Decreased from 146 minutes in 2022 to 110 minutes in 2023; failed to achieve benchmark by 1.9%.
3-year average:	Decreased from 155 minutes in 2022 to 148 minutes in 2023; failed to achieve standard by 24.1%.

SAIDI

Rolling 12-month:	Decreased from 134 minutes in 2022 to 63 minutes in 2023; achieved benchmark by 49.9%.
3-year average:	Decreased from 139 minutes in 2022 to 123 minutes in 2023; achieved standard by 19.4%

SAIFI

Rolling 12-month:	Decreased from 0.92 outages in 2022 to 0.57 outages in 2023; achieved benchmark by 51.3%.
3-year average:	Decreased from 0.90 outages in 2022 to 0.81 outages in 2023; achieved standard by 37.5%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 11 and 12 below. Duquesne's CAIDI performance greatly improved in 2023, as seen in Figure 11, but is still above benchmark. Management should place significant emphasis upon achieving CAIDI results at or below the "green" benchmark performance upper-control-limit-line for CAIDI. CAIDI is an important factor in gauging an EDC's response times to interruptions and thus will affect customer satisfaction in that area.

Beginning in 2004 and continuing through 2023, Duquesne's annual SAIFI benchmark performance trend has generally been positive, as shown in Figure 12. This positive performance trend, below the benchmark performance upper-control-limit-line, had been sustained since 2004 by Duquesne, and is considered under control. Duquesne is considered an excellent SAIFI benchmark performer. The Commission commends Duquesne for that accomplishment and encourages use of distribution system automation systems (smart grid systems).

Outage Causes

Figure 13 below shows the top five reported 2023 outage-cause categories reported by Duquesne, as a percentage, for the following three distinct performance metrics: KVA Minutes Interrupted, KVA Interrupted, and Number of Incidents. Trees were the top cause of outages and CMI. Over 28% of outages are caused by OROW trees.

Figure 14 below shows the historical trend of the top three main outage causes. Trees and equipment failures are the two most frequent outage causes that are negatively affecting Duquesne's distribution system reliability and resilience, as well as almost every EDC in Pennsylvania. Duquesne should continue to aggressively pursue cooperation with customers in removal of OROW vegetation that endangers distribution circuits. The reported outage-cause category of "Storms" should be reconsidered and eliminated to spread outages among more defined areas such as vegetation or equipment failures and such, as it can be said that the category of "Storms" only reveals other system deficiencies, such as equipment failure and vegetation trimming deficiencies.

General Reliability

Duquesne noted that achieving outstanding performance in system reliability continues to be one of its most important long-term objectives. Duquesne's Asset Management and System Planning groups perform ongoing analysis of reliability indices, root cause analysis of outages, and tracking and monitoring of other performance measures to identify improvement opportunities and optimize reliability. Duquesne stated that this long-term process includes making recommendations for capital projects such as circuit rehabilitation, new substations, and distribution circuits. This process also includes implementation of new advanced protection and coordination schemes on the distribution system that better localize customer outages and reduce momentary outages.

Duquesne stated that it continues its Emergent Work Process, which is used to identify problems, set priorities, and resolve reliability issues as quickly as possible. Duquesne field personnel perform daily field inspections and any abnormalities are logged into a database. This database is reviewed regularly and any high priority problems are identified and a course of action is determined. Analysis at the device level is used to identify small areas where customers have experienced multiple outages. Assessing only system-level or even circuit-level data may mask these isolated problems.

Duquesne indicated that several capital budget projects in 2023 targeted distribution reliability improvements, including pole replacement, substation rehabilitation, circuit load relief and voltage improvement, underground residential development (URD) rehabilitation, circuit rearrangement, and installation of additional automated remotely controlled pole top devices.

Duquesne noted the following specific programs, procedures, and ongoing maintenance activities supporting its reliability efforts:

- A Distribution Overhead Line Inspection Program, which includes infrared inspections that systematically identifies circuit problems for remedial action in advance of failure.
- Vegetation Management Maintenance Programs with the goal of reducing tree and branch failures through proactive pruning and removal to manage proper clearances. Duquesne finds that this program will help reduce the frequency of outages by addressing targeted tree failure conditions that typically result in physical damage to its facilities.

- An all-pulse-reclosing protection technology has been implemented on some 23kV circuits. This technology eliminates traditional “hard reclosing,” thereby making it easier and faster to conduct repairs and restore circuits to normal operation, which enables customers to be restored more quickly. This technology also reduces stress and damage on the entire circuit since the breaker is no longer required to trip, also contributing to the reduction in momentary outages to customers.
- Line maintenance work of various types is regularly performed in order to maintain distribution plant. This work includes replacement of cross arms, arrestors, insulators, and other equipment on the overhead system as well as inspections and remedial work on the underground system.
- Storm Preparedness Training is conducted each year and Storm Review Meetings are held following major events. These meetings focus on the successes and challenges of the most recent emergency service restoration effort. Service restoration process improvements are made as needed to improve response time and effectiveness during the next restoration effort.

Conclusion

Trees and Equipment Failures are the top two outage causes that substantially negatively affect electrical reliability to Duquesne customers and contributed to over 65.4% of the total lost CMI (Duquesne uses kVA-minutes interrupted) in 2023.

Trees, and especially OROW trees, continue to be a chronic problem for Duquesne, as well as every EDC in Pennsylvania. The Commission recommends continued and increased efforts in vegetation management and emphasis on response times.

As shown in Figures 15 through 17, for 2023, Duquesne exhibited a marked improvement in its kVA interrupted, kVA minutes of interruption, and kVA interruptions. The Commission notes that this performance is the best since 2015 for Duquesne. Duquesne should continue to implement its programs to ensure consistent reliability performance of this quality.

Figure 18 below is included to indicate a growth in the number of customers served. Because Duquesne records their service indicators in kVA rather than customers individually, it is difficult to measure actual impact upon customers. However, the trends in kVA should equivocate to the impacts upon customers.

Figure 11 – Duquesne CAIDI (minutes)

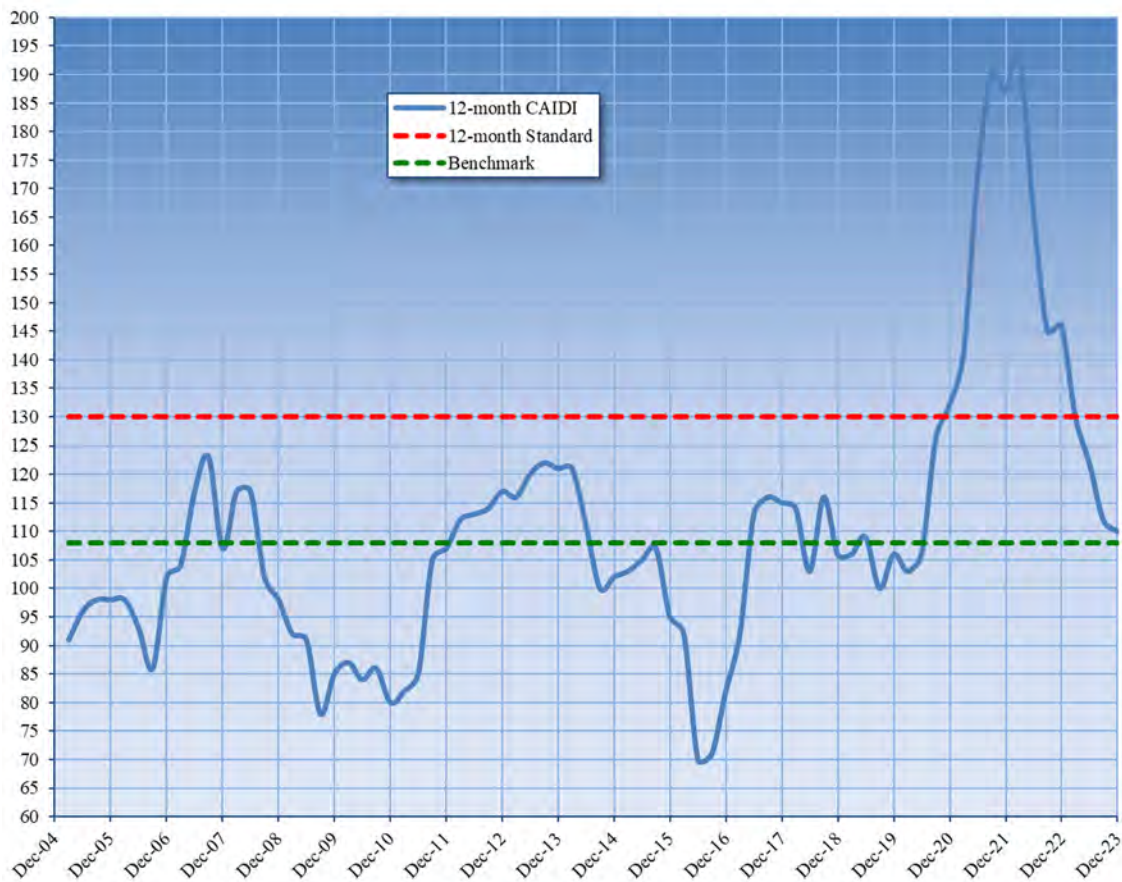


Figure 12 – Duquesne SAIFI (interruptions per customer)



Figure 13 – Duquesne Outage Causes (percent of total outages)

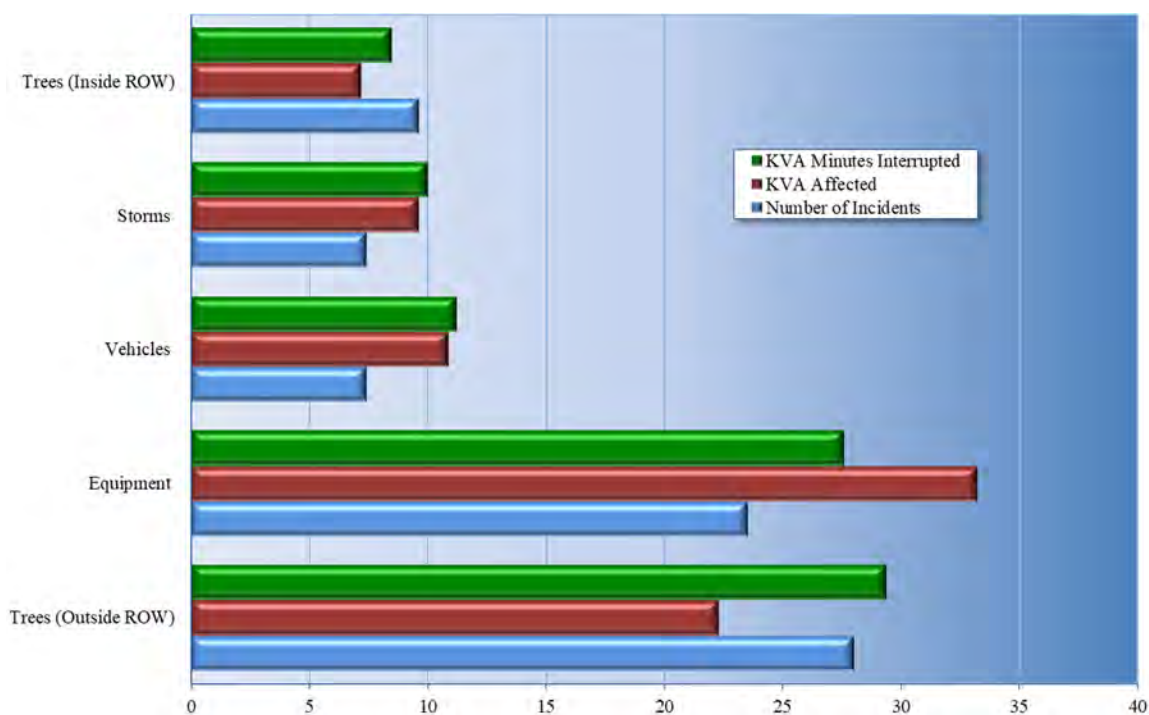


Figure 14 – Duquesne Outage Tracking (number of incidents)

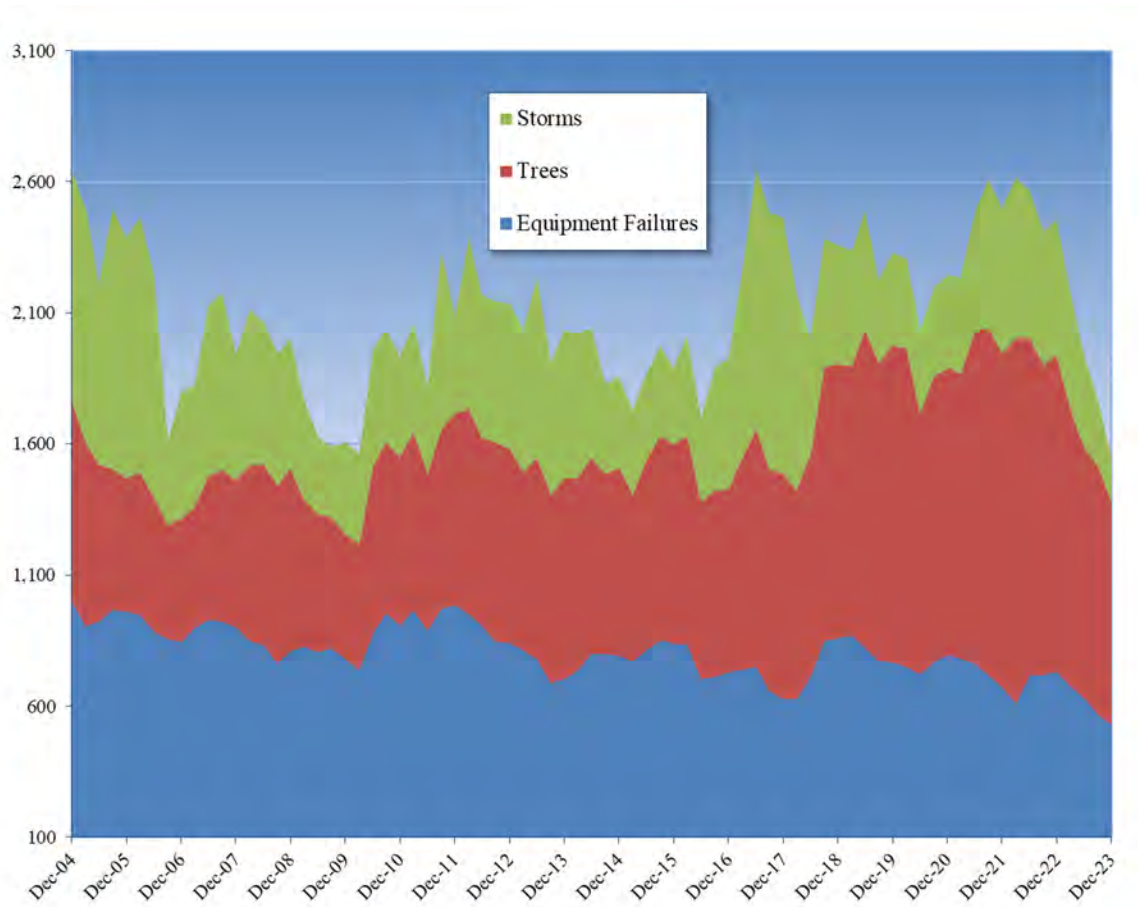


Figure 15 – Duquesne Outage Tracking (number of KVA Interrupted)

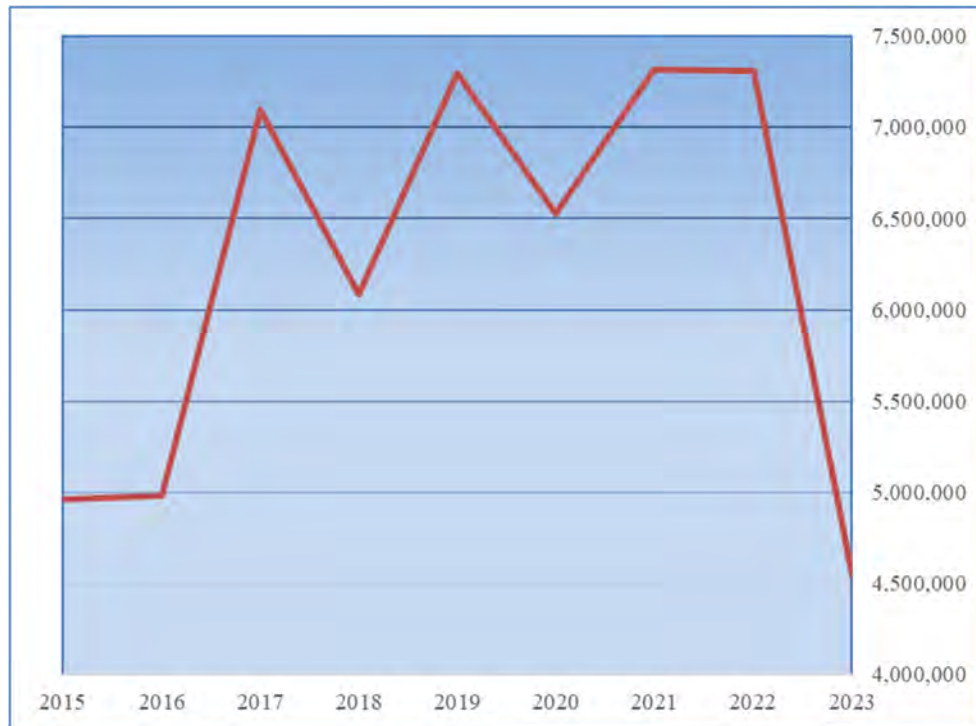


Figure 16 – Duquesne Outage Tracking (KVA-Minutes of Interruptions, or CMI)

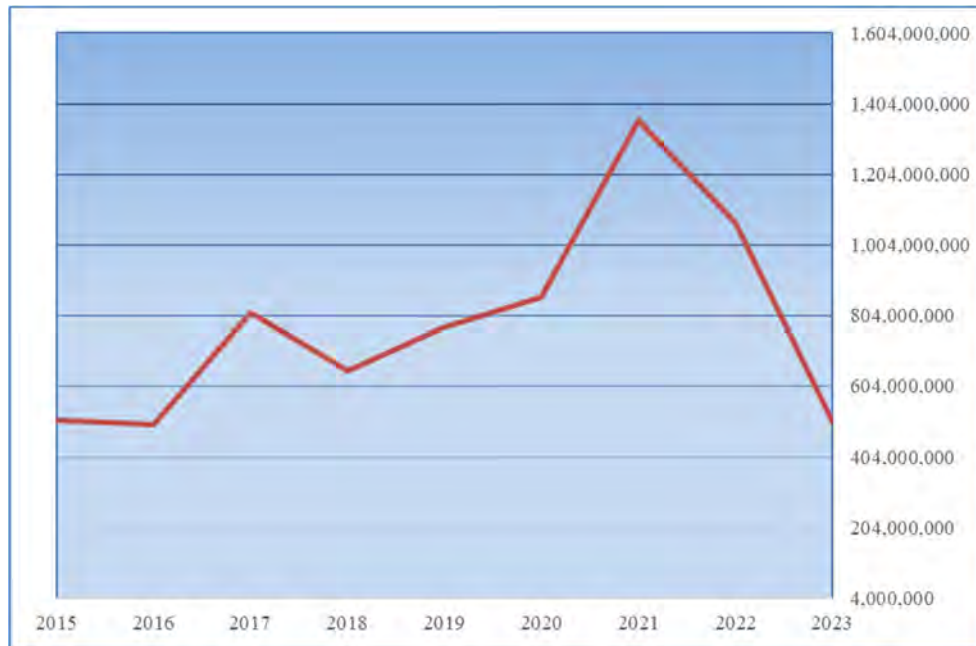
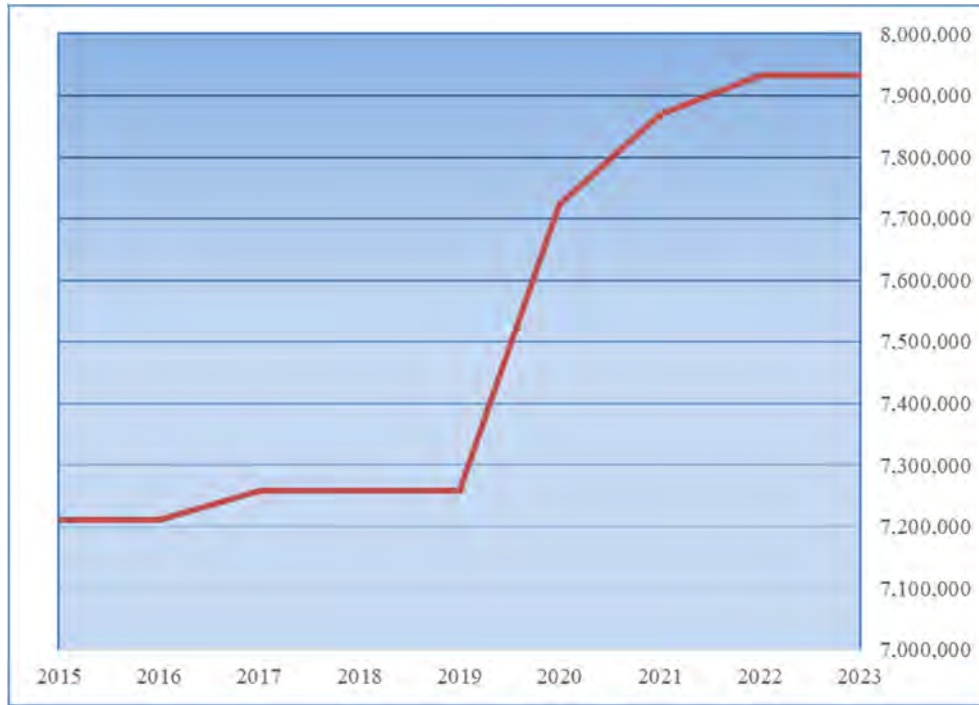


Figure 17 – Duquesne Outage Tracking (number of interruptions annually)



Figure 18 – Duquesne kVA Served (may reflect the number of customers served)



FE PA Companies

General Reliability

Overall, the FE PA EDCs exhibited a very slight improvement in reliability performance in 2023 as compared to 2022. However, all four EDCs continue to struggle to achieve benchmark performance for any of the three reliability metrics, with the exception of Penn Power's SAIFI.

FE PA utilizes core programs in its four EDCs to support cost-effective and reliable service. These programs include, but are not limited to:

- **Inspection and Maintenance (I&M):** FE PA's I&M practices are designed to assist in determining the need for, and prioritization of, the repair or replacement of distribution system components and facilities. Poles showing incipient decay or poles that are thirty-five years old or older will be manually bored or inspected by the use of a Resistograph. The Resistograph is a sophisticated electronically controlled drill that provides increased accuracy, when compared to manual drilling, in measuring the relative density of wood in timber structures. Driven by a drill motor, a long, thin needle is inserted into the wood pole in order to assess its density, structural integrity, and shell thickness.
- **Vegetation Management:** FE PA performs vegetation management on its distribution circuits in order to promote the continued safe and reliable operation of its distribution system. The vegetation management program specification is designed to support line reliability, maintain access, make repairs, or restore service and to support safe and reliable service. The vegetation management program specification prunes vegetation to achieve required cycle clearance, with all circuits on four to five years of cycle clearance, which includes: removing selected incompatible trees within the clearing zone corridor; removing certain defective limbs that are overhanging primary conductors; controlling selected incompatible brush mechanically or using herbicide, or both; relieving limbs causing mechanical strain on secondary/service lines; and removing targeted OROW priority trees that are dead, dying, diseased, and leaning or significantly encroaching the corridor.
 - Portions of a circuit that experience high customer interruption minutes due to vegetation-caused outages may be targeted to include the removal of certain healthy limbs which overhang primary conductors based on tree species and condition.
 - In response to damage caused by the Emerald Ash Borer, a program to proactively remove OROW Ash Trees has been implemented.
 - Post-storm circuit patrols target the areas with high tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead to a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced.
- **Customers Experiencing Multiple Interruptions (CEMI):** FE PA noted that the CEMI program is aimed to reduce frequent or repeated outages for affected clusters of customers or frequently operated devices.

- **Load Forecasting and Distribution Planning:** FE PA noted that the load forecasting application is used to estimate future substation and circuit loading based upon historical load data and the planning criteria guidelines are then used to provide a consistent approach for planning the safe, reliable, orderly, and economic expansion of the distribution system.
- **Circuit Protection:** FE PA circuit protection practices are aimed at achieving safety and security for the public and employees, maximizing service reliability to customers, minimizing damage to distribution equipment, and establishing a consistent process and set of application standards for distribution circuit protection.
- **LTIIP:** the FE PA EDCs first began to execute their respective LTIIP programs in 2016. These plans include expenditures and programs designed to adequately maintain and improve the efficiency, safety, adequacy, and reliability of the distribution system. In January 2020, the Commission approved FE PA's second LTIIP (LTIIP II), which spans the five-year period of 2020 through 2024 and focuses on two areas: asset health and outage exposure.³³ Asset health focuses on maintaining the system in a state of good repair while outage exposure focuses on minimizing the impact of customer outages. LTIIP II includes initiatives and expenditures within these two focus areas that are designed to maximize sustained reliability over the long-term. FE PA noted that it will file for its third LTIIP in 2024.

FE PA noted that in addition to the reliability programs above, it also utilizes various strategies to efficiently respond to customer and equipment outages. These include, but are not limited to:

- **Minimizing Outage Impact:** FE PA noted that it incorporates design philosophies that support grid operation resulting in maximized reliability. These philosophies include instantaneous breaker tripping on select circuits, circuit sectionalizing devices, and remote device operation (such as supervisory control and data acquisition) to minimize the impact of an outage when possible.
- **Storm Exercises:** Each FE PA EDC performs an annual storm exercise. FE PA noted that a well-designed exercise provides a low-risk environment to test and validate capabilities, familiarize personnel with plans, procedures, roles, and responsibilities, and foster meaningful interaction and communication across internal and external organizations.
- **Summer Readiness:** FE PA noted that Summer is the time when most electric utilities experience the highest system loads and most damaging storms. In order to prepare for this period of the year, FE PA EDCs performed summer readiness activities such as capacitor inspections, substation inspections, transmission system reliability and capability review, and post-storm reviews to identify and disseminate lessons learned after significant events.

- Smart Meters: FE PA has completed mass deployment of smart meters to customers across Pennsylvania. FE PA noted that smart meter installation is a step toward a more modernized electric system that will enable automated meter readings. Smart meters also assist during outage restoration periods, especially when there are a significant number of single customer outages, by allowing the FE PA EDCs to ping the meter to determine if a customer's service has been restored.
- Incident Command System (ICS): FE PA is beginning to utilize a more formalized ICS structure, which is designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organization. By expanding the use of ICS, FE PA notes that its incident response ability is improved, and reliability is enhanced by utilizing a common system for incident response personnel (both intrastate and interstate).

FE PA indicated that to support best industry practices, it participates in various external organizations such as the Electric Power Research Institute, the IEEE, and the Energy Association of Pennsylvania, which focus on topics like reliability, power quality, regulatory issues, distribution planning, vegetation management, risk mitigation, distributed energy resources and more. To ensure continuous improvement, FE PA noted that it has a team comprised of reliability engineers to perform an internal review of reliability projects, expenditures, and performance, and to develop an overarching strategy for long-term reliability maintenance and improvements.

Proposed Solutions

FE PA noted that it analyzes its outage data to develop solutions for improving reliability. To address outages caused by trees, FE PA performs cycle-based tree trimming which removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and removes targeted OROW priority trees. FE PA noted that it is limited in its ability to legally address OROW vegetation management. However, FE PA identifies OROW priority trees for removal that are dead, dying, diseased, leaning, and significantly encroaching the corridor when customer consent is obtained or easement rights permit. Trees identified as a potential cause of a future outage are removed to prevent an interruption of electrical service to FE PA customers. FE PA continues its program to mitigate trees subject to damage from the Emerald Ash Borer.

To reduce the likelihood of equipment failure outages, FE PA follows I&M programs that set forth schedules for regular inspections of distribution and substation facilities. These programs are geared towards specific components such as capacitors, poles, circuits, transformers, radio-controlled switches, substations, and reclosers. Equipment identified is repaired or replaced as appropriate.

³³ See, *Petition of Metropolitan Edison Company for Approval of its Long-Term Infrastructure Improvement Plan*, et al., at Docket Nos. P-2019-3012618, et al.

Metropolitan Edison Company

Metropolitan Edison Company (Met-Ed) has a service territory of about 3,300 square miles that serves about 580,873 customers.

In 2023, Met-Ed experienced 739,898 customer interruptions and 149.2 million CMI as compared to: 760,672 customer interruptions and 121.8 million CMI in 2022; 772,644 customer interruptions and 133.4 million CMI in 2021; 724,138 customer interruptions and 108.4 million CMI in 2020; and 874,452 customer interruptions and 143.3 million CMI in 2019.

Met-Ed experienced one Major Event in 2023. The Major Event impacted over 69,436 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month: Increased from 160 minutes in 2022 to 202 minutes in 2023; failed to achieve benchmark by 72.4%.
3-year average: Increased from 161 minutes in 2022 to 178 minutes in 2023; failed to achieve standard by 38.2%.

SAIDI

Rolling 12-month: Increased from 211 minutes in 2022 to 257 minutes in 2023; failed to achieve benchmark by 90.3%.
3-year average: Increased from 211 minutes in 2022 to 234 minutes in 2023; failed to achieve standard by 43.3%.

SAIFI

Rolling 12-month: Decreased from 1.32 outages in 2022 to 1.27 outages in 2023; failed to achieve benchmark by 10.4%.
3-year average: Remained at 1.31 outages in 2023; failed to achieve standard by 3.4%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 19 and 20 below. Met-Ed reported a MAIFI of 0.301 for 2023. Beginning in 2004, Met-Ed's CAIDI performance trend has been worsening, and from 2013 to present has been trending significantly upward. Met-Ed's 2023 rolling 12-month CAIDI is above both the benchmark and standard upper-control-limit-lines. More management attention is needed to address the recent poor CAIDI performance and return the trend line below the "green" benchmark performance upper-control-limit-line. Vegetation control may improve repair times by reducing larger and more damaging foliage contacts and overhanging canopy trees and limbs including off right of way trees.

Beginning in 2004, Met-Ed's SAIFI performance, as seen in Figure 20 below, has been erratic and frequently above the benchmark. From 2007 onward, the overall trend has been continually above benchmark, except for a brief period in 2013 through 2014 when Met-Ed's performance was positive and below the "green" benchmark performance upper-control-limit-line. As of December 2023, SAIFI remained below the "red" standard performance upper-control limit-line, but still above the benchmark measure. By all measures this shows the continuation of unacceptable performance.

Outage Causes

Figure 21 below, shows the top five reported outage cause categories in 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. OROW Trees and equipment failure were the top causes of outages and CMI. Approximately 57.1% of CMI was caused by OROW Trees and Equipment Failure.

Figure 22 below, shows the historical trend of the top three outage causes. Trees and Equipment Failure are the two most frequent causes of power outages that are significantly negatively affecting Met-Ed's distribution system reliability and resilience, as well as every EDC in Pennsylvania.

Conclusion

Trees and Equipment Failure are the top two outage causes that are substantially negatively affecting electrical reliability to Met-Ed's customers. Beginning in 2004, Met-Ed's CAIDI and SAIFI benchmark performance has been inconsistent and frequently out-of-control. Met-Ed's overall CAIDI performance trend is troubling, with a continuing trend above Benchmark and Standard performance upper-control-limit-lines. Met-Ed has not achieved benchmark performance for SAIFI since 2014. The Commission recommends that increased management attention is needed to bring Met-Ed's failing reliability performance back into control and to sustain the trend line below the "green" benchmark performance upper-control-limit-line. While Met-Ed and the other FE PA Companies have seen some minor improvement in SAIFI in 2023, the Commission expects to see improvement in reliability for the FirstEnergy Companies in 2024, especially as it relates to CAIDI.

The Commission recommends increased efforts in vegetation management and emphasis on response times.

The Commission recognizes that, overall, Met-Ed's reliability performance is declining as witnessed by the data shown below. As can be seen in Figure 23 below, the number of Met-Ed customers interrupted annually improved somewhat but is still higher than in 2015. As shown in Figure 24 below, CMI continues to trend upward. Figure 25 below shows a significant increase in the number of interruption events since 2015.

Figure 19 – Met-Ed CAIDI (minutes)

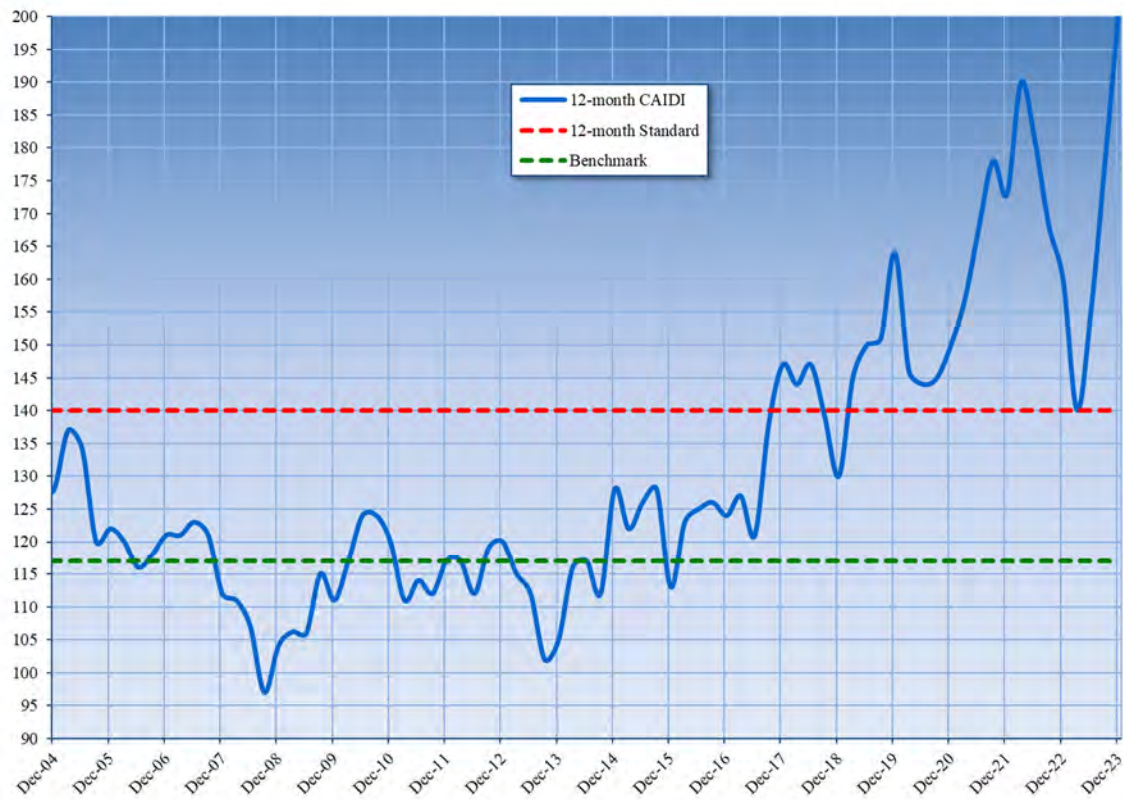


Figure 20 – Met-Ed SAIFI (interruptions per customer)

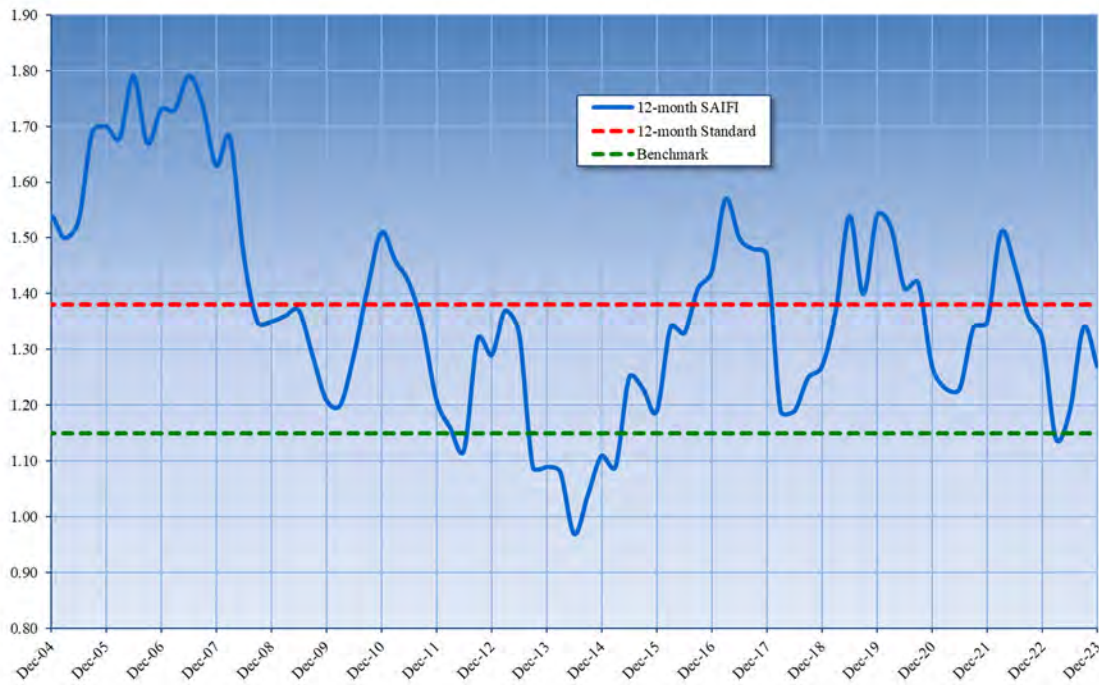


Figure 21 – Met-Ed Causes (percent of total outages)

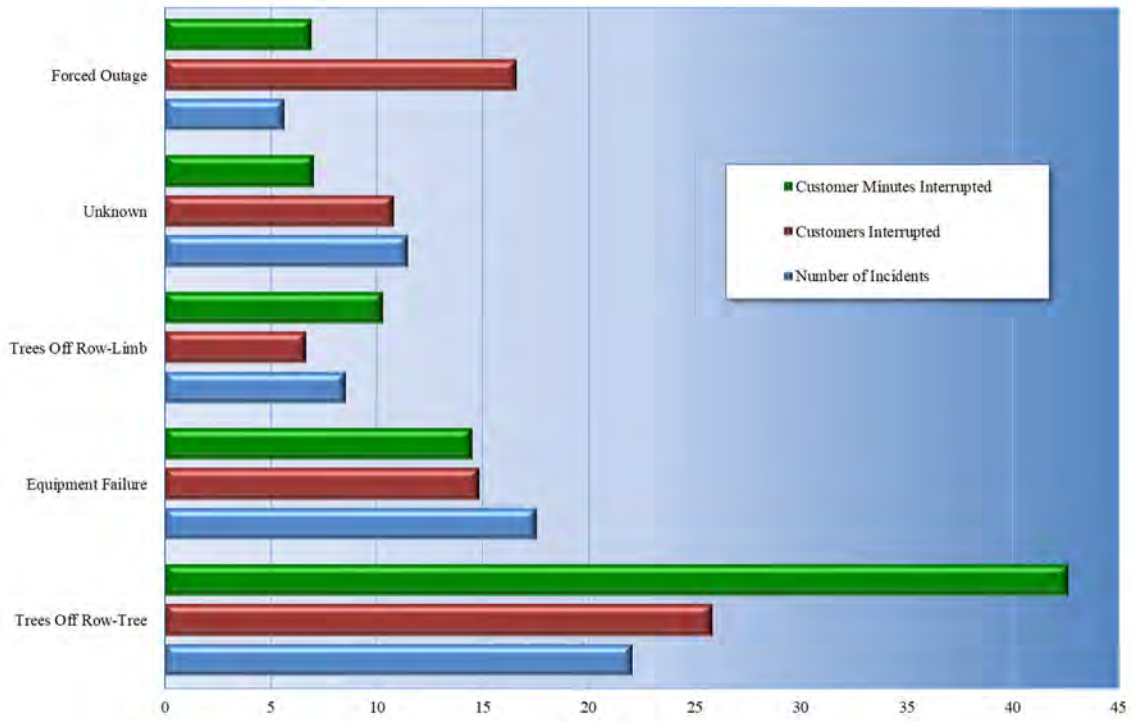


Figure 22 – Met-Ed Outage Tracking (number of incidents)

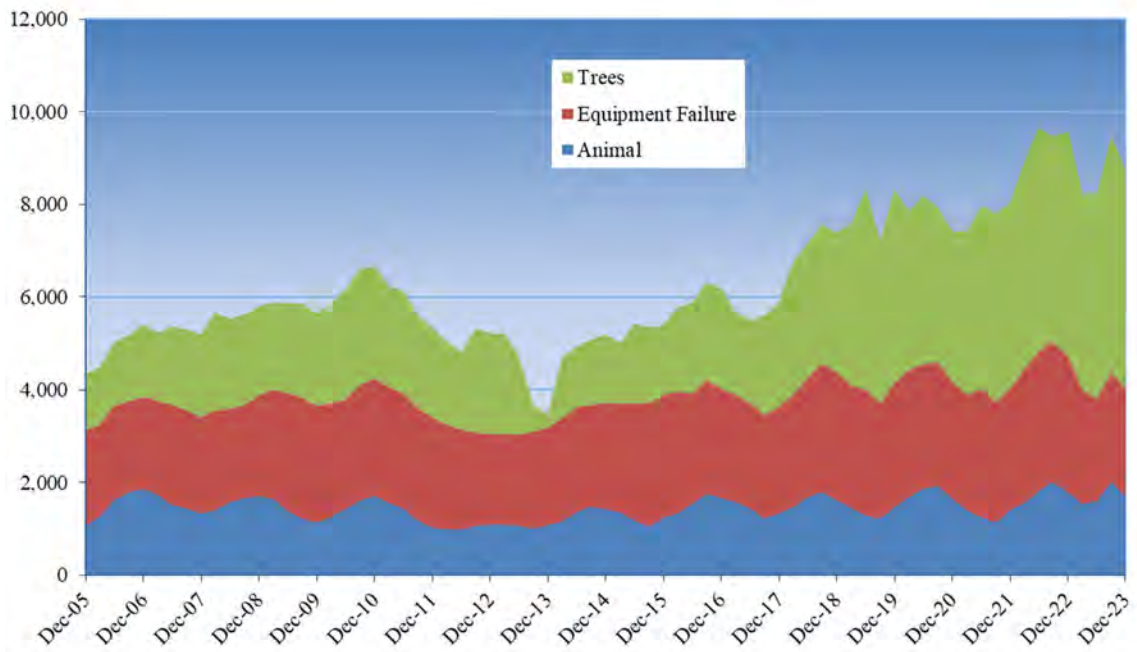


Figure 23 – Met-Ed Outage Tracking (number of customers interrupted)

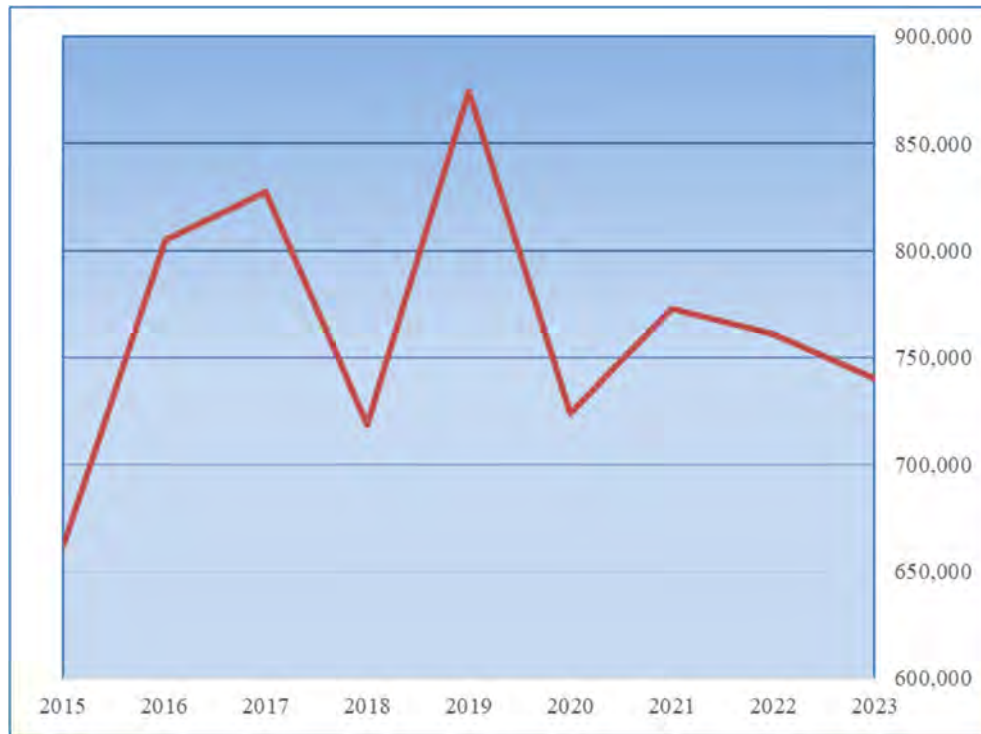


Figure 24 – Met-Ed Outage Tracking (Customer-Minutes of Interruptions, or CMI)

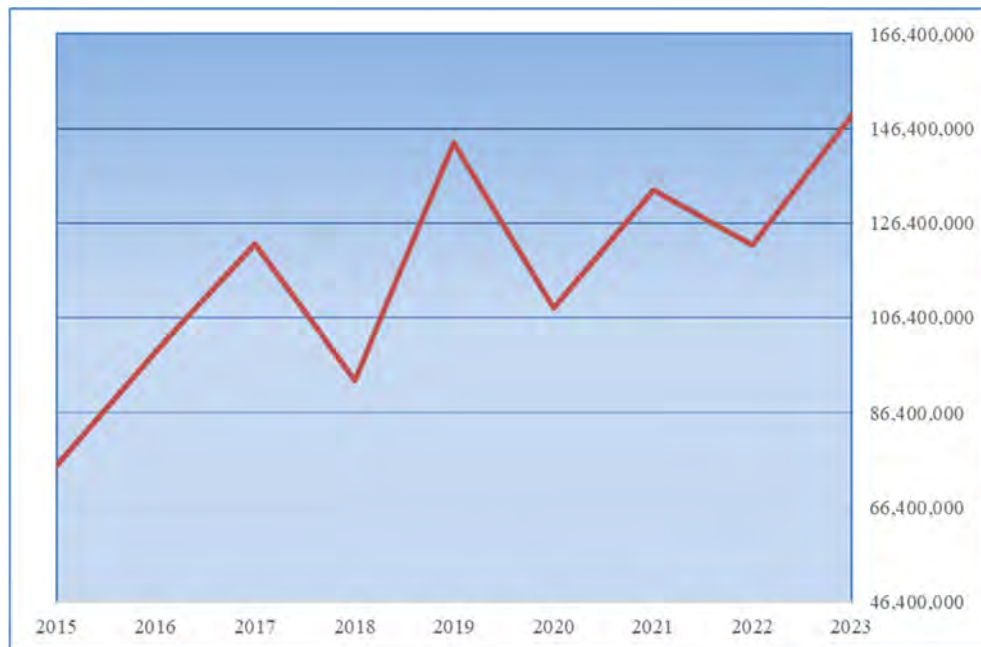
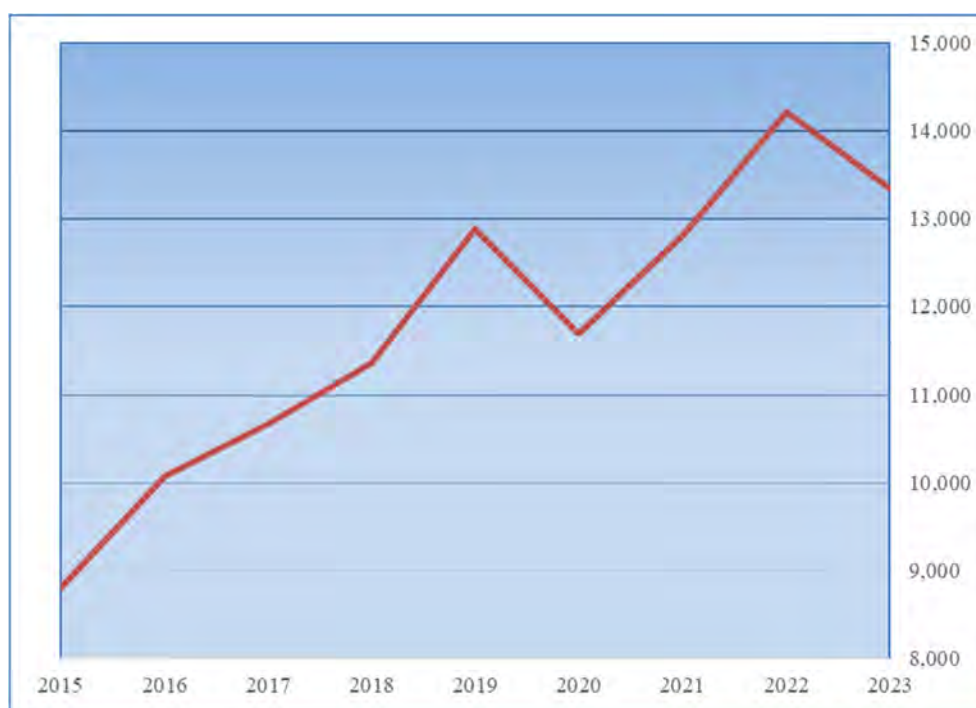


Figure 25 – Met-Ed Outage Tracking (number of interruptions annually)



Pennsylvania Electric Company

Pennsylvania Electric Company (Penelec) has a service territory of about 17,600 square miles serving approximately 585,139 customers.

In 2023, Penelec experienced 938,093 interruptions and 177.5 million CMI as compared to: 1,062,923 interruptions and 211.1 million CMI in 2022; 1,065,004 customer interruptions and 160.5 million CMI in 2021; 914,716 customer interruptions and 124.1 million CMI in 2020; and 995,121 customer interruptions and 146.1 million CMI in 2019.

Penelec experienced one Major Event in 2023. The Major Event impacted 126,310 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month: Decreased from 199 minutes in 2022 to 189 minutes in 2023; failed to achieve benchmark by 61.7%.

3-year average: Increased from 162 minutes in 2022 to 180 minutes in 2023; failed to achieve standard by 39.3%.

SAIDI

Rolling 12-month: Decreased from 364 minutes in 2022 to 303 minutes in 2023; failed to achieve benchmark by 104.9%

3-year average: Increased from 285 minutes in 2022 to 315 minutes in 2023; failed to achieve standard by 75.9%.

SAIFI

Rolling 12-month: Decreased from 1.83 outages in 2022 to 1.60 outages in 2023; failed to achieve benchmark by 27.0%.

3-year average: Increased from 1.75 outages in 2022 to 1.76 outages in 2023; failed to achieve standard by 26.4%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown below in Figures 33 and 34. Penelec reported a MAIFI of 0.488 for 2023. Beginning in 2004, Penelec's CAIDI performance trend has been inconsistent and frequently out of control. In 2021, Penelec's rolling 12-month CAIDI increased to just at the standard performance upper-control-limit-line. Penelec's CAIDI soared to 199 at the end of 2022, which is the highest level ever experienced since the reporting period began in 2004. Penelec's CAIDI improved some in 2023 but was still far above both benchmark and standard. With CAIDI performance at this level, Penelec is required to assert more management attention to address the inconsistent performance and return CAIDI performance trend line to below the "green" benchmark performance upper-control-limit-line. Improved response times and shortened repair times will prove essential to maintaining CAIDI at or below the benchmark level. It is believed that management must focus upon improving CAIDI. The Commission expects improved response and repair times and thus improved CAIDI values.

Beginning in 2004, Penelec's SAIFI performance trend has been inconsistent and frequently outside of acceptable tolerances. From 2008 through 2022, the overall trend has been continually trending negative. For the last six calendar years, Penelec's SAIFI was above both the benchmark and standard performance upper-control-limit-lines. Penelec's overall SAIFI performance trend is outside of acceptable limits, even with its improved SAIFI performance in 2023. Management must direct more attention to the poor SAIFI performance and work to move the trend line to a point below the "green" benchmark performance upper-control-limit-line. Focus upon automatic sectionalizing, auto transfer and smart grid may well prove to move and maintain SAIFI below the benchmark. Improved vegetation management is also a key to improving service reliability.

Outage Causes

Figure 35 below, shows the top five reported outage-cause categories in 2022, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees OROW, Equipment Failure and Wind were the leading causes of CMI. Trees OROW and Equipment Failure were the leading causes of the number of outage incidents.

Figure 36 below, shows the historical trend of the top three outage causes. Equipment failure and trees are the two most frequent outage causes that are significantly negatively affecting Penelec's distribution system reliability and resilience, as well as almost every EDC in Pennsylvania.

Conclusion

Trees and Equipment Failure are the top two outage causes that negatively affect electrical reliability to Penelec customers. In 2022, trees and equipment failure outage causes contributed to over 52% of the total CMI.

Beginning in 2004, Penelec’s CADI and SAIFI benchmark performance has been erratic and frequently outside of acceptable tolerances. Reliability metrics at these current levels are unacceptable and FE PA through its LTIIP needs to address the inconsistent CAIDI and SAIFI performance and sustain the trend line below the “green” benchmark performance upper-control-limit-line.

The Commission recommends increased efforts in vegetation management, increased utilization of LTIIP processes, and emphasis on improving response times.

The Commission recognizes that, overall, Penelec reliability performance is declining as witnessed by the data shown below. As Figures 37 through 39 below indicate, Penelec’s performance, while slightly improving in 2023, is still well below that of its performance in 2015.

Figure 33 – Penelec CAIDI (minutes)

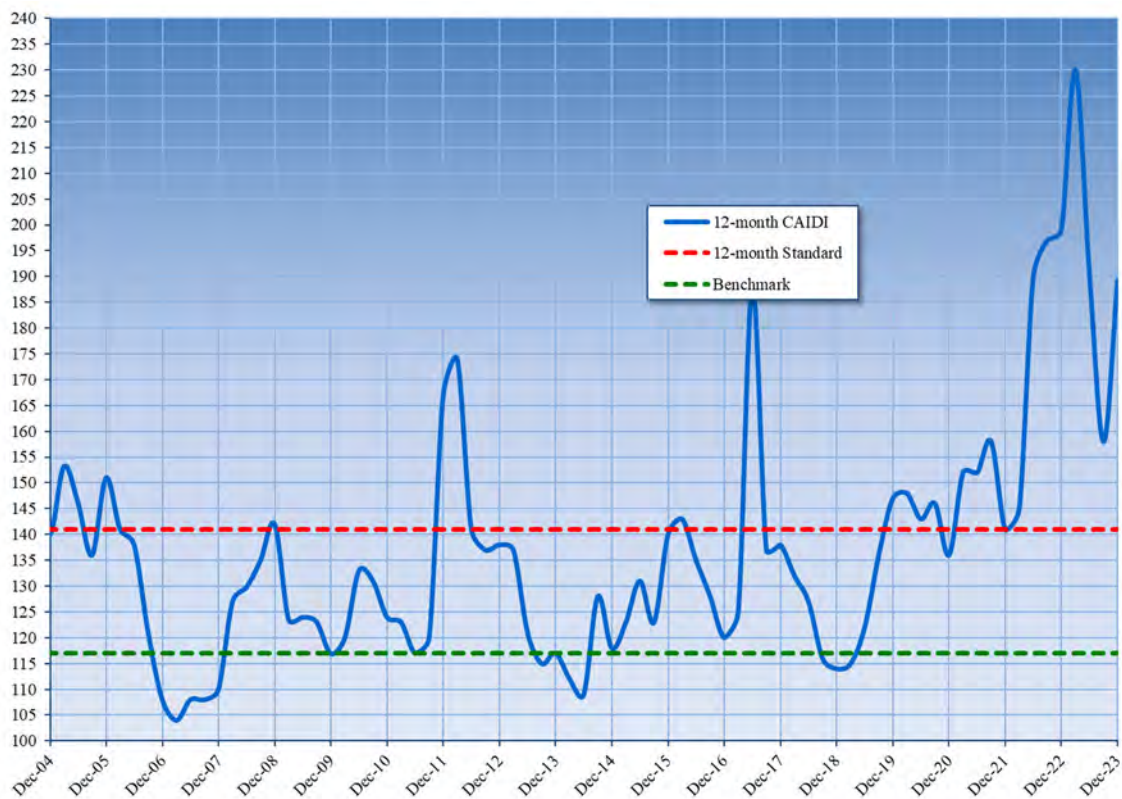


Figure 34 – Penelec SAIFI (interruptions per customer)

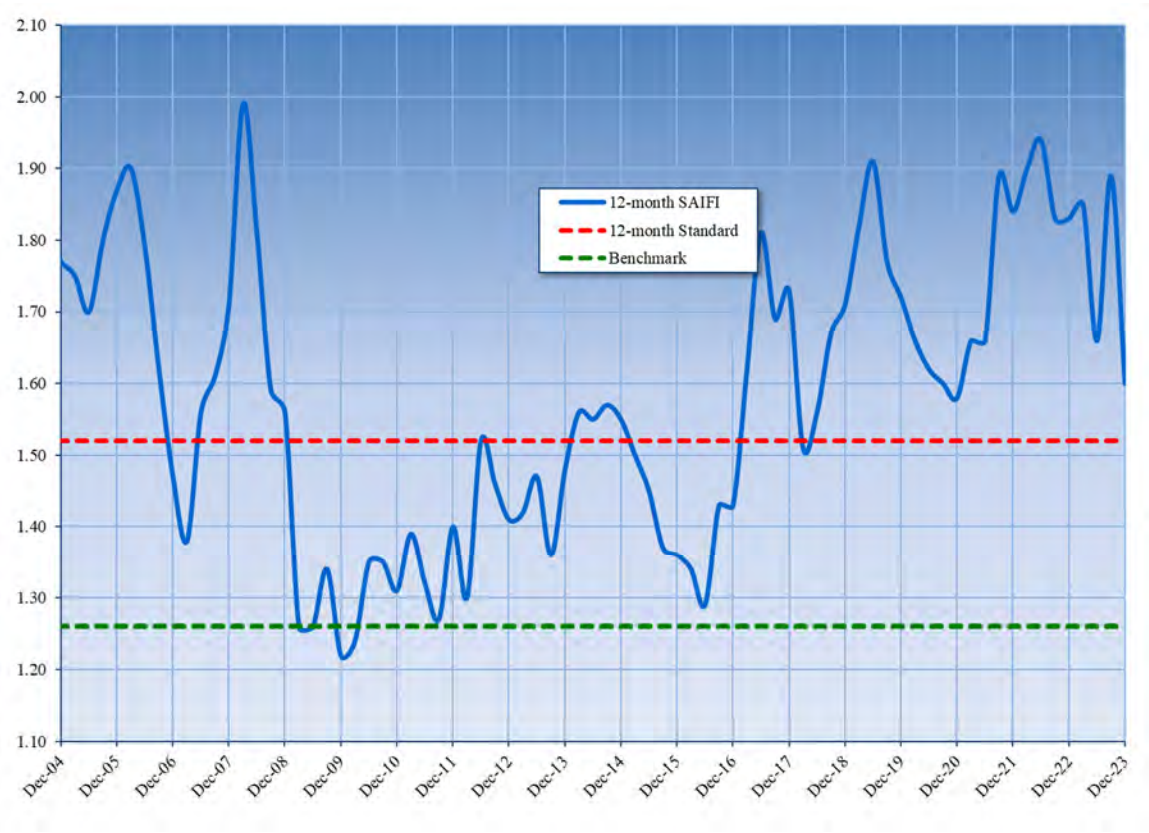


Figure 35 – Penelec Outage Causes (percent of total outages)

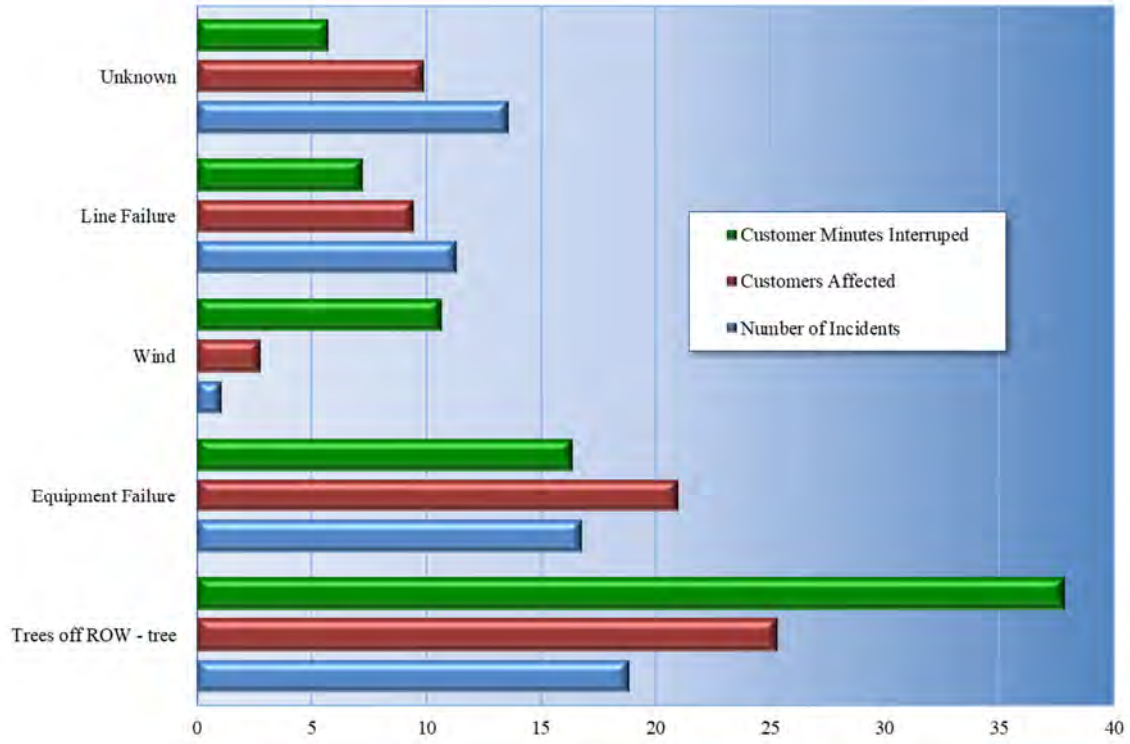


Figure 36 – Penelec Outage Tracking (number of incidents)

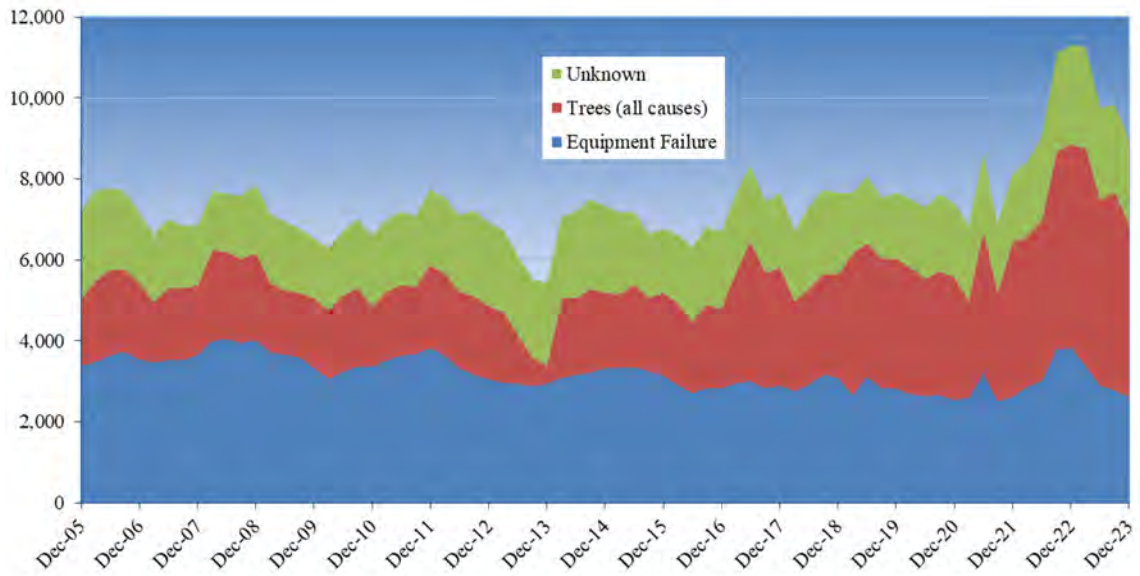


Figure 37 – Penelec Outage Tracking (number of Customers Interrupted)



Figure 38 – Penelec Outage Tracking (Customer-Minutes of Interruptions, or CMI)

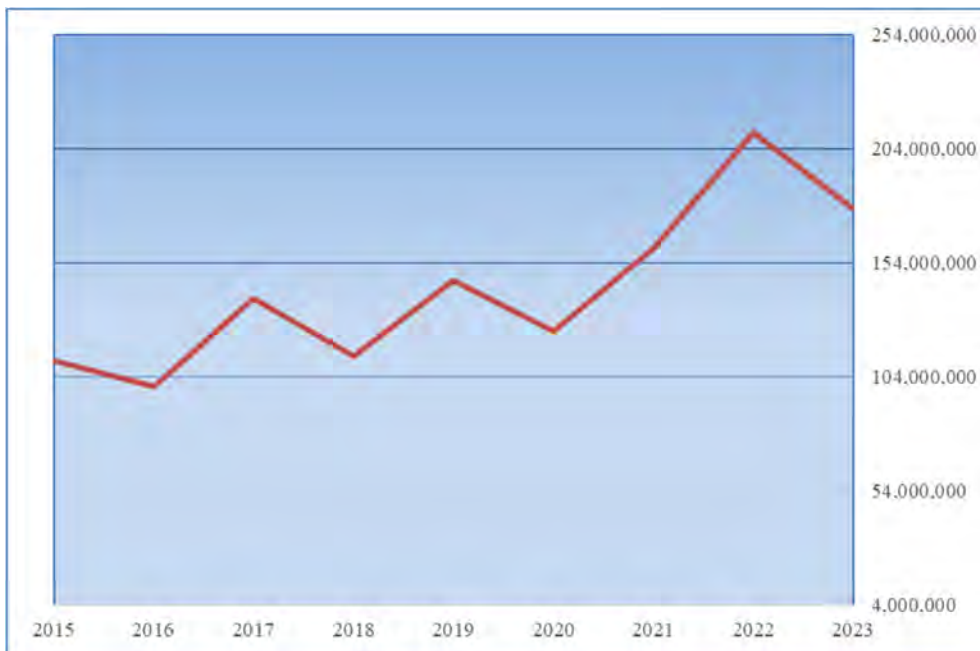
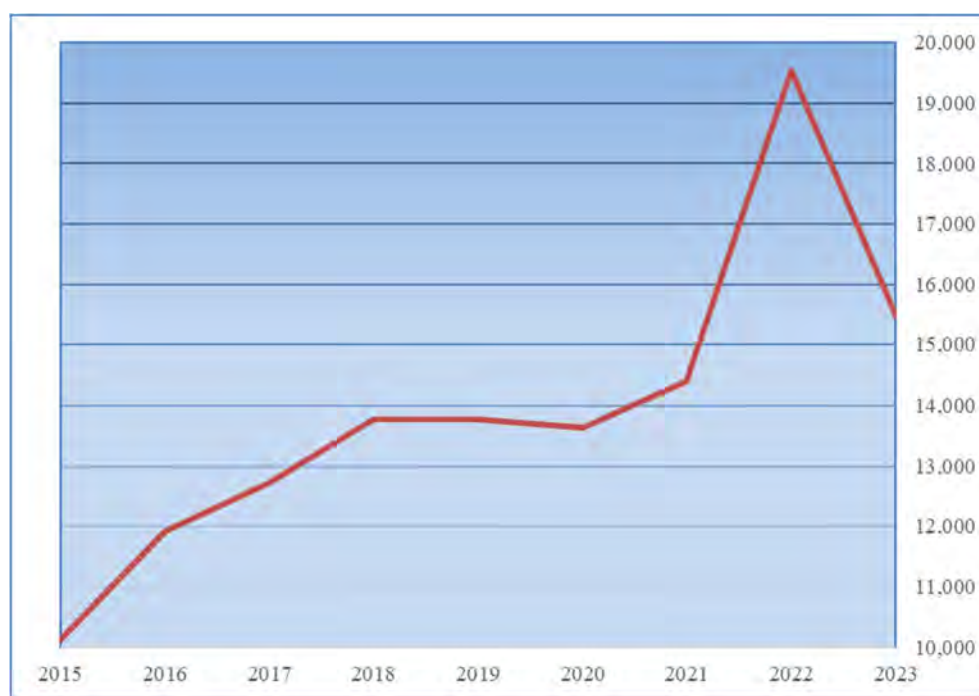


Figure 39 – Penelec Outage Tracking (number of interruptions annually)



Pennsylvania Power Company

Pennsylvania Power Company (Penn Power) has a service territory of about 1,100 square miles that serves approximately 171,259 customers.

In 2023, Penn Power experienced 132,740 customer interruptions and 20.8 million CMI, as compared to: 166,749 customer interruptions and 22.3 million CMI in 2022; 166,681 customer interruptions and 21.6 million CMI in 2021; 159,907 customer interruptions and 29.6 million CMI in 2020; and 226,745 customer interruptions and 29.2 million CMI in 2019.

Penn Power experienced two Major Events in 2023. The Major Events impacted 109,683 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

- Rolling 12-month:** Increased from 134 minutes in 2022 to 157 minutes in 2023; failed to achieve benchmark by 55.0%.
- 3-year average:** Decreased from 149 minutes in 2022 to 140 minutes in 2023; failed to achieve standard by 26.0%.

SAIDI

Rolling 12-month:	Decreased from 133 minutes in 2022 to 121 minutes in 2023; failed to achieve benchmark by 7.4%.
3-year average:	Decreased from 147 minutes in 2022 to 128 minutes in 2023; achieved standard by 6.1%.

SAIFI

Rolling 12-month:	Decreased from 0.99 outages in 2022 to 0.78 outages in 2023; achieved benchmark by 30.4%.
3-year average:	Decreased from 0.99 outages in 2022 to 0.92 outages in 2023; achieved standard by 24.9%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown below in Figures 40 and 41. Penn Power reported a MAIFI of 0.018 for 2023. Beginning in 2016, Penn Power’s CAIDI performance trend has been inconsistent and frequently outside of acceptable tolerances. Penn Power’s rolling 12-month CAIDI has been trending higher and frequently exceeding the “red” standard performance upper-control-limit-line. CAIDI performance is currently above the 12-month benchmark and standard performance levels. The Commission expects more management attention to address the inconsistent performance and sustain the trend line below the “green” benchmark performance upper-control-limit-line. Improved response times and shortened repair times may well prove essential to maintaining CAIDI at or below the benchmark level. It is suggested that management focus upon improving these aspects of Penn Power’s operations.

Penn Power’s SAIFI performance for 2023 was improved and finished at a level below the benchmark upper-control-limit-line. FE PA management should continue to focus attention to ensure consistent SAIFI performance is sustained thus ensuring the trend line remains below the “green” benchmark performance upper-control-limit-line.

Outage Causes

Figure 42 below, shows the top five outage cause categories in 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees OROW, Trees OROW-Limb, and Equipment Failure were the leading cause of CMI and customers affected. Over 68.35% of CMI was caused by trees and equipment failures.

Figure 43 below shows the historical trend of the top three outage causes. Trees, Animal, and Bird were the three most frequent causes of power outages for Penn Power. Most EDCs have equipment failure and trees as the two most frequent outage-causes. Penn Power should examine its animal guarding and protections to reduce outages caused by animals and birds.

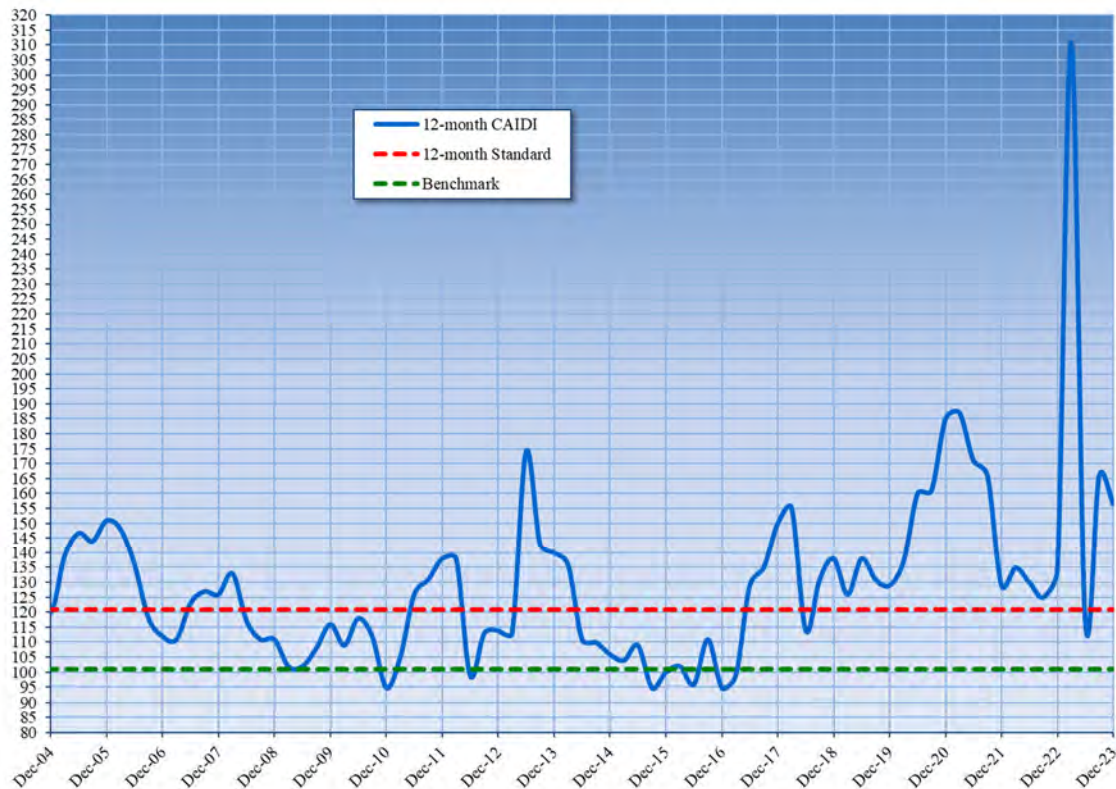
Conclusion

Trees OROW and Equipment Failure are the top two outage causes that substantially negatively affect electrical reliability to Penn Power customers in terms of CMI and total customers impacted.

Beginning in 2004, Penn Power’s CAIDI and SAIFI benchmark performance has been inconsistent. FE PA through its LTIIP will need to address the inconsistent CAIDI performance to reduce outage lengths and SAIFI performance to sustain the trend line below the “green” benchmark performance upper-control-limit-line. The Commission recommends continued and increased efforts in vegetation management and emphasis on response times.

The Commission recognizes that, overall, Penn Power’s reliability performance struggles most with the duration of outages. While fewer customers are being interrupted annually, customers are out of service longer and possibly more frequently. As can be seen in Figure 44 below, the number of Penn Power’s customers interrupted annually is trending downward. However, as shown in Figure 45 below, CMI is still higher than it was in 2015. Figure 46 was showing an overall and steady increase in actual interruption events until 2023.

Figure 40 – Penn Power CAIDI (minutes)



2023 Pennsylvania Electric Reliability Report

Figure 41 – Penn Power SAIFI (interruptions per customer)

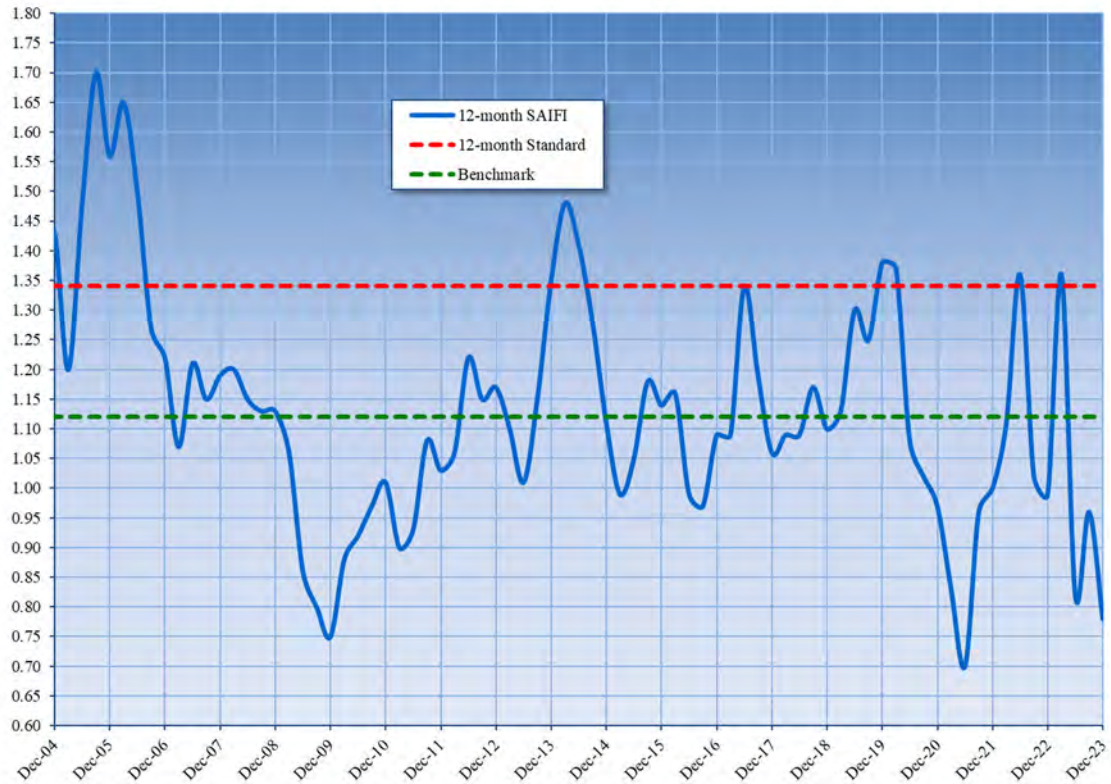


Figure 42 – Penn Power Outage Causes (percent of total outages)

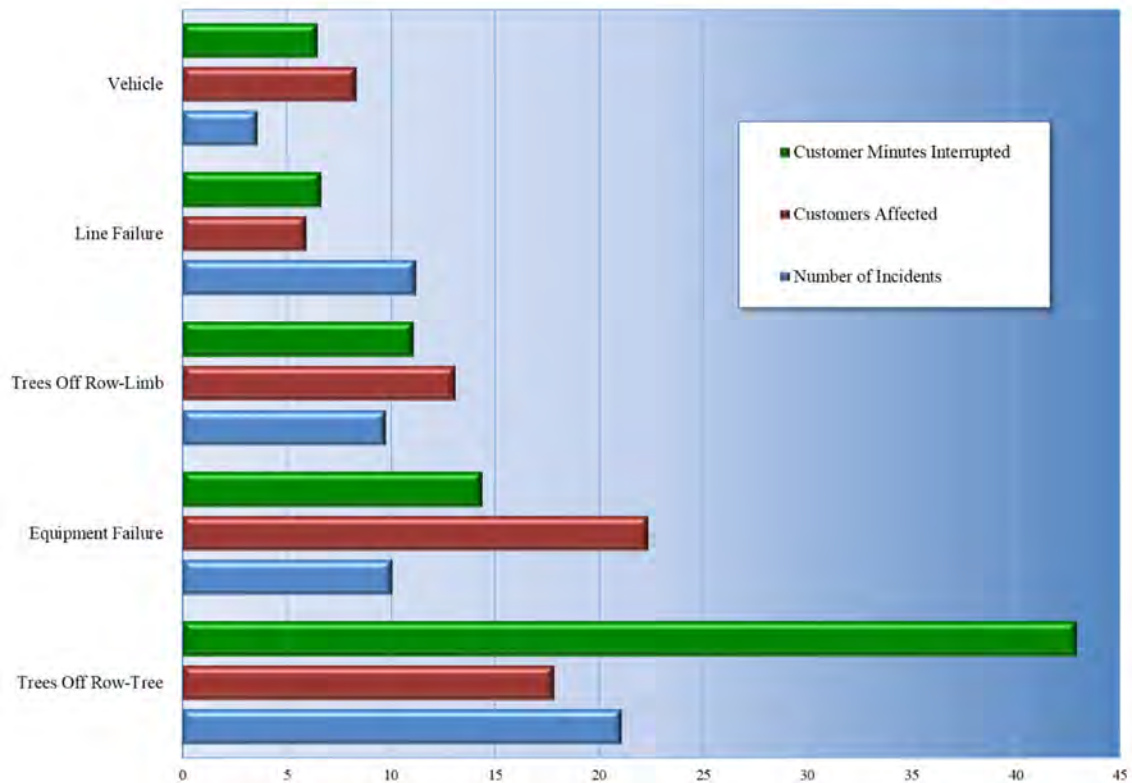


Figure 43 – Penn Power Outage Tracking (number of incidents)

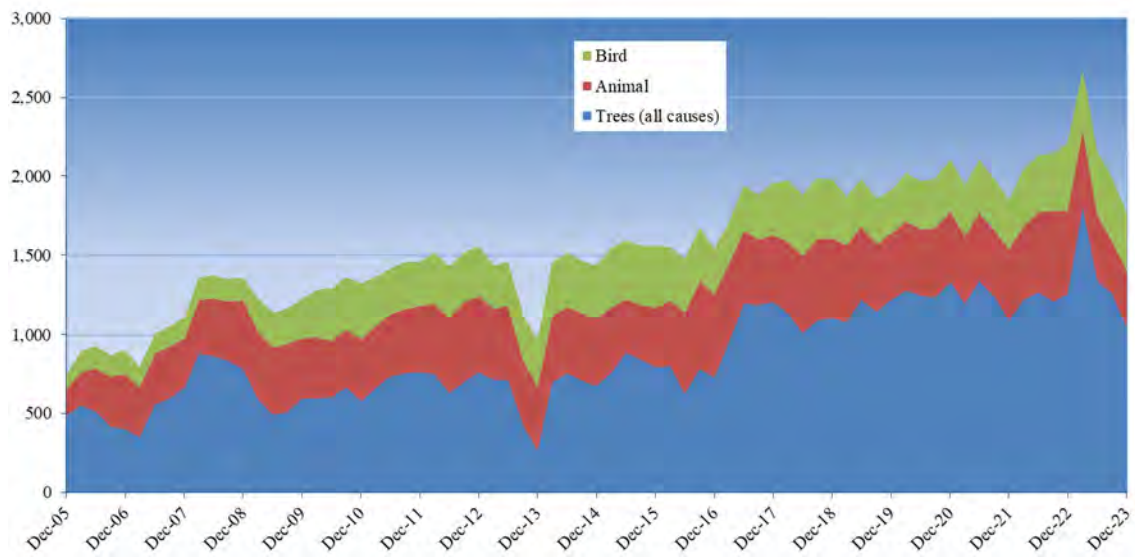


Figure 44 – Penn Power Outage Tracking (number of Customers Interrupted)

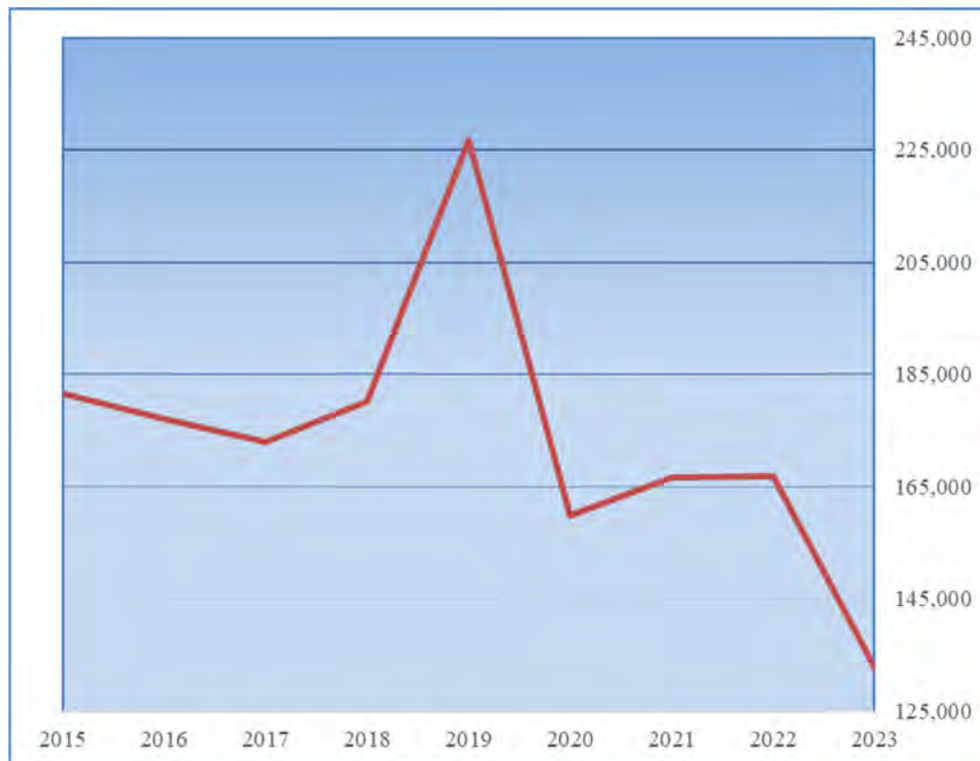


Figure 45 – Penn Power Outage Tracking (Customer-Minutes of Interruptions CMI)

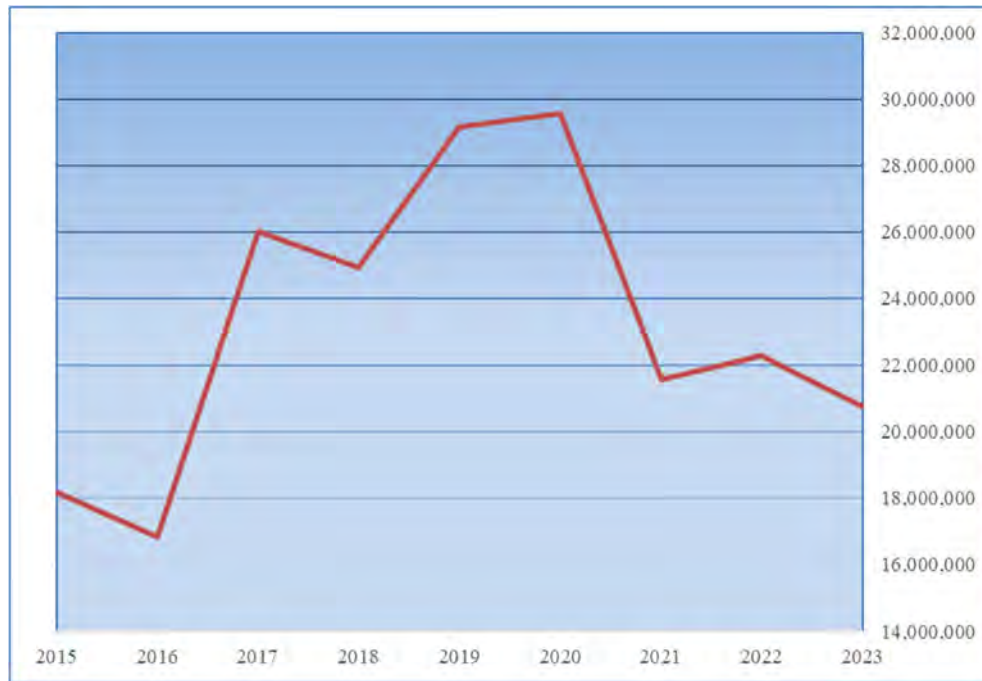
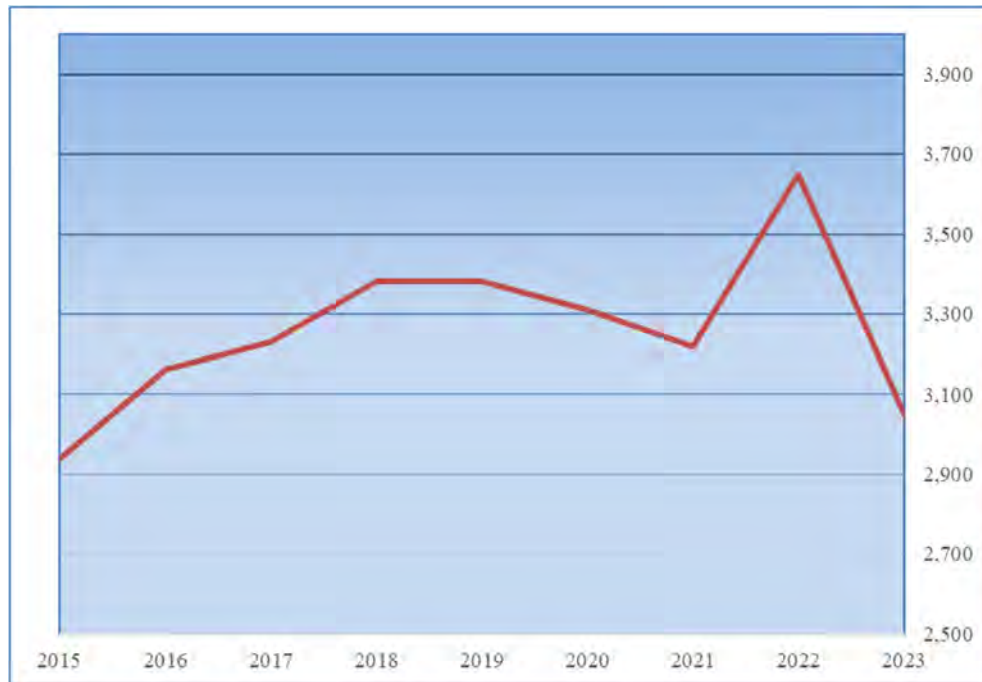


Figure 46 – Penn Power Outage Tracking (number of interruptions annually)



West Penn Power Company

West Penn Power Company (West Penn) has a service territory of about 10,400 square miles and serves about 727,499 customers.

In 2023, West Penn experienced 779,396 customer interruptions and 207.5 million CMI as compared to: 957,562 customer interruptions and 264.3 million CMI in 2022; 910,590 customer interruptions and 174.5 million CMI in 2021; 806,924 customer interruptions and 173.9 million CMI in 2020; and 851,338 customer interruptions and 140.3 million CMI in 2019.

West Penn experienced two Major Events in 2023. The Major Events impacted 128,911 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

- Rolling 12-month:** Decreased from 276 minutes in 2022 to 266 minutes in 2023; failed to achieve benchmark by 56.6%.
- 3-year average:** Increased from 228 minutes in 2022 to 245 minutes in 2023; failed to achieve standard by 30.9%.

SAIDI

- Rolling 12-month:** Decreased from 364 minutes in 2022 to 285 minutes in 2023; failed to achieve benchmark by 59.3%.
- 3-year average:** Increased from 282 minutes in 2022 to 297 minutes in 2023; failed to achieve standard by 36.9%.

SAIFI

- Rolling 12-month:** Decreased from 1.32 outages in 2022 to 1.07 outages in 2023; failed to achieve benchmark by 1.9%.
- 3-year average:** Decreased from 1.23 outages in 2022 to 1.22 outages in 2023; failed to achieve standard by 4.9%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 75 and 76 below. West Penn's CAIDI performance has historically been erratic. However, from 2014 through part of 2019, CAIDI had been positively below the "green" benchmark performance upper-control-limit-line. Beginning in March 2020, West Penn's rolling 12-month CAIDI increased above the benchmark upper-control-limit-line and 10 minutes above the standard. In 2021, West Penn's CAIDI returned to below the rolling 12-month standard, but still above benchmark. Beginning early 2022, and continuing through the remainder of 2023, CAIDI increased to an unacceptable level of 266 minutes. FE PA management attention is required to return West Penn to the positive CAIDI trend it has previously exhibited between 2014 and 2019. Improved response times and shortened repair times may well prove essential to maintaining CAIDI at or below the benchmark level. The Commission recognizes that with the

introduction of more system automation the CAIDI metric becomes more representative of actual customer interruption duration.

Beginning in 2004, West Penn's SAIFI performance trend has been erratic. From 2017 through 2020, West Penn's SAIFI performance had been moving toward benchmark level. West Penn's SAIFI did show improvement in 2023 but FE PA needs to apply a major effort to ensure SAIFI performance at or below the benchmark level and should continue that effort to sustain the trend line below the "green" benchmark performance upper-control-limit-line.

Outage Causes

Figure 77 below, shows the top five reported outage cause categories for 2022, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees OROW and Line Failure were the leading cause of outages and CMI. About 56% of CMI is caused by trees and 15% are caused by equipment and line failures.

Figure 78 below shows historical trend of the top three main outage causes. Trees and Equipment Failure are the two most impactful outage causes that are significantly negatively affecting West Penn's distribution system reliability and resilience, as well as most every EDC in Pennsylvania.

Conclusion

The Trees OROW and Equipment Failure causes are the top two outage causes that substantially negatively affect electrical reliability to West Penn customers. In 2022, these outage causes contributed to over 57% of the total CMI. Both categories are indicative of the need for increased vegetation management efforts.

West Penn's SAIFI and SAIDI performance continue to need much more management effort to establish a trend line heading downward to a point below the "green" benchmark performance upper-control-limit-line. It is recommended that West Penn increase its efforts in vegetation management and on improving outage response times. West Penn would do well to maximize their LTIP efforts to increase storm hardening and increase automatic sectionalizing.

As can be seen in Figures 79 through 81, West Penn exhibited some improvement in the number of customers impacted by outages and in the number of interruption events. However, CMI is still well above the level in 2015 and, correspondingly, West Penn's SAIDI and CAIDI for 2023 are well above both benchmark and standard.

Figure 75 – West Penn CAIDI (minutes)

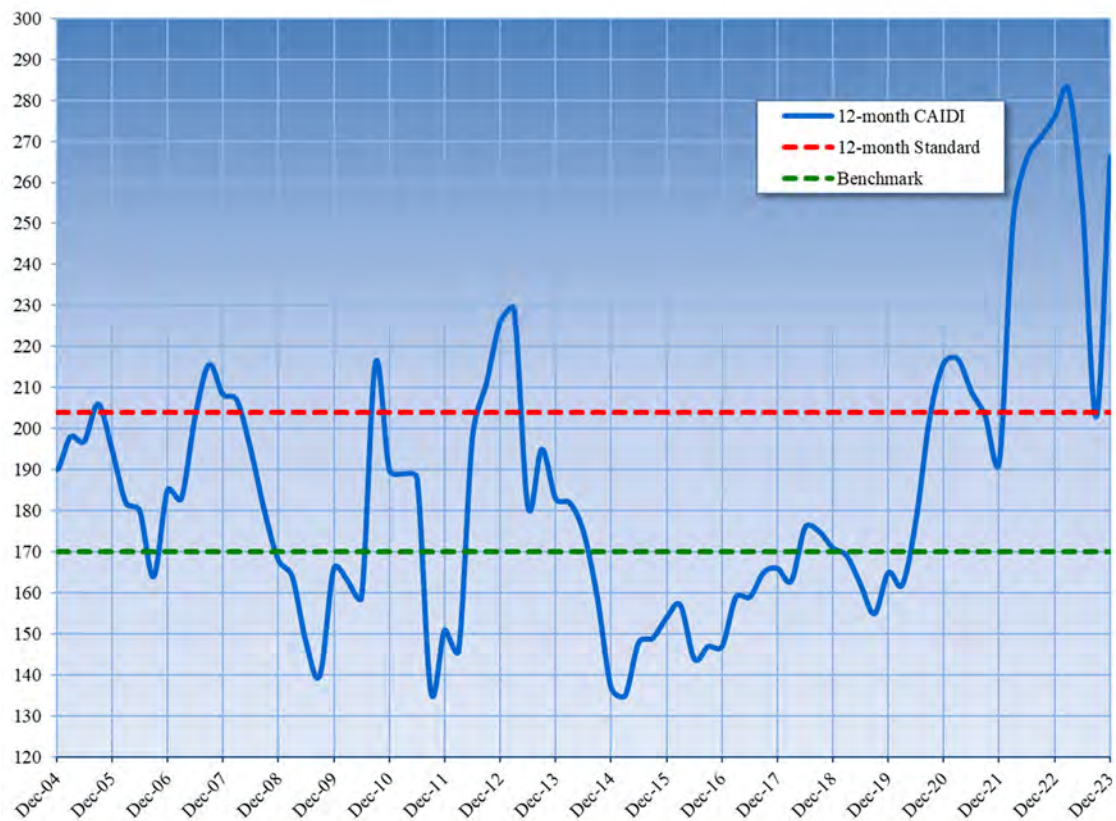


Figure 76 – West Penn SAIFI (interruptions per customer)



Figure 77 – West Penn Outage Causes (percent of total outages)

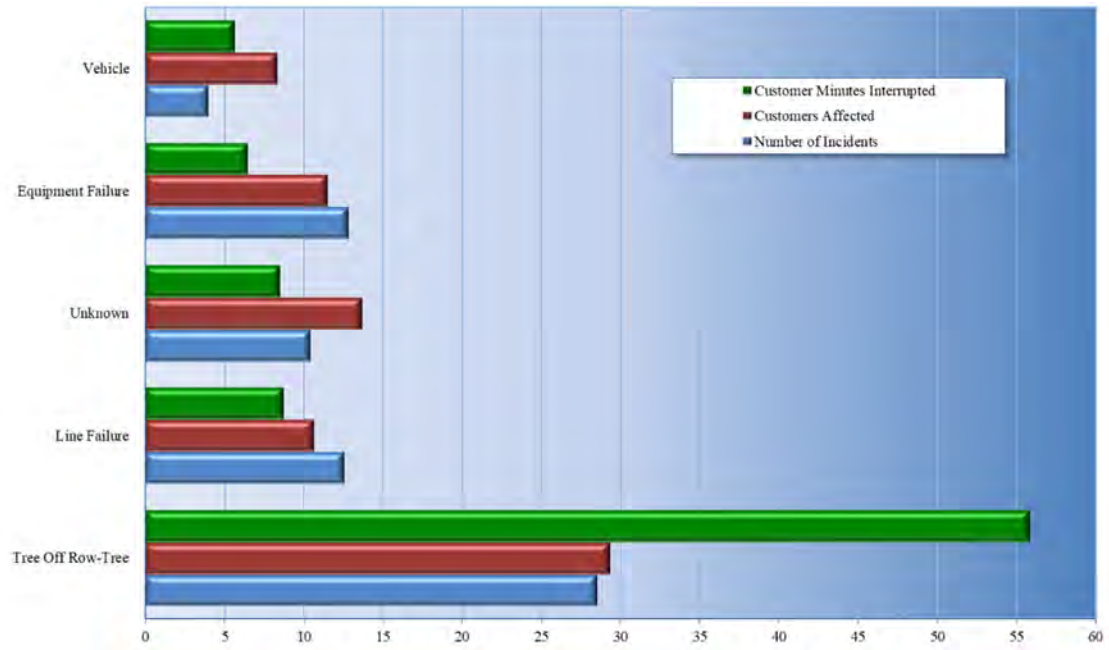


Figure 78 – West Penn Outage Tracking (number of incidents)

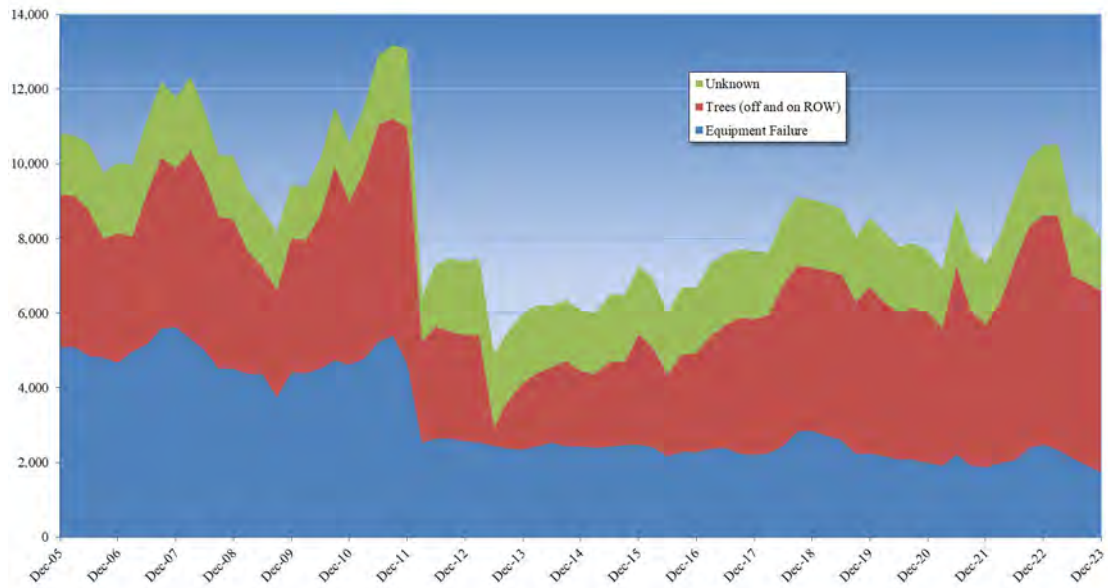


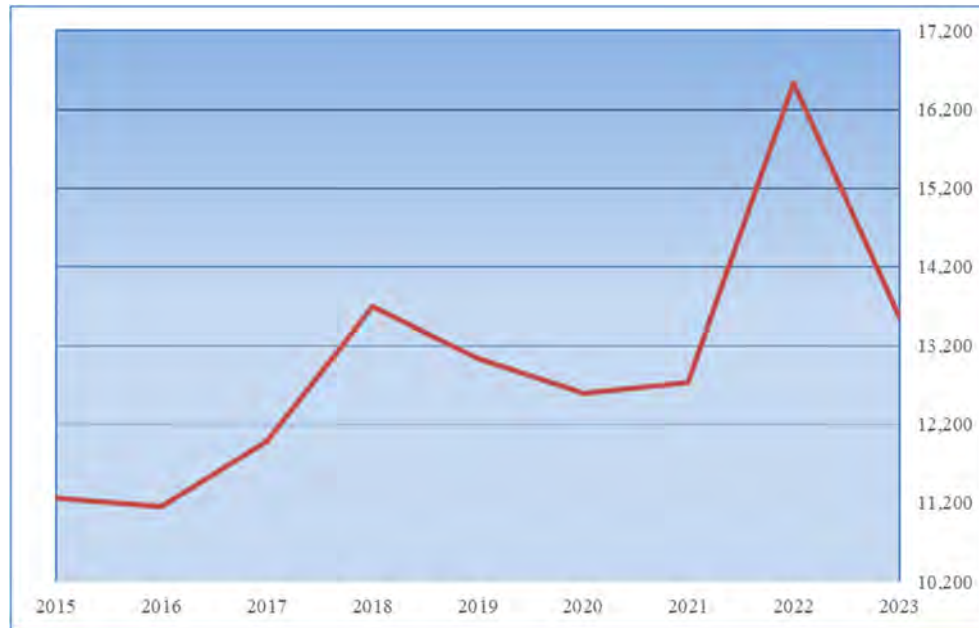
Figure 79 – West Penn Outage Tracking (number of Customers Interrupted)



Figure 80 – West Penn Outage Tracking (Customer-Minutes of Interruptions CMI)



Figure 81 – West Penn Outage Tracking (number of interruptions annually)



PECO Energy Company

PECO Energy Company (PECO) has a service territory of about 2,000 square miles that serves a well-developed distribution system serving about 1.69 million customers.

In 2023, PECO experienced 1.3 million customer interruptions and 174 million CMI as compared to: 1.2 million customer interruptions and 119 million CMI in 2022; 1.48 million customer interruptions and 275 million CMI in 2021; 1.51 million customer interruptions and 203 million CMI in 2020; and 1.80 million customer interruptions and 341 million CMI in 2019.

PECO experienced no Major Events in 2023.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

- Rolling 12-month:** Increased from 99 minutes in 2022 to 138 minutes in 2023; failed to achieve benchmark by 23.2%.
- 3-year average:** Increased from 140 minutes in 2022 to 141 minutes in 2023; failed to achieve standard by 14.9%.

SAIDI

Rolling 12-month:	Increased from 71 minutes in 2022 to 103 minutes in 2023; achieved benchmark by 25.4%.
3-year average:	Decreased from 119 minutes in 2022 to 113 minutes in 2023; achieved standard by 32.5%.

SAIFI

Rolling 12-month:	Increased from 0.71 outages in 2022 to 0.74 outages in 2023; achieved benchmark by 39.8%.
3-year average:	Decreased from 0.83 outages in 2022 to 0.78 outages in 2023; achieved standard by 42.5%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 26 and 27 below. PECO reported a MAIFI of 0.80 for 2023. Beginning in December 2012, PECO's CAIDI benchmark performance trend has been positive, as shown to be below the "green" benchmark performance upper-control limit-line. This positive performance trend, below the benchmark performance upper-control limit-line, has been consistently sustained by PECO until 2019, when PECO's CAIDI began to have significant variances from benchmark and standard performance. During 2022, PECO's CAIDI improved greatly to a level well below benchmark level. However, PECO's CAIDI at the end of 2023 was again above benchmark and standard. Management should continue to work on improving PECO's CAIDI performance in 2024 to maintain current performance levels.

Beginning in December 2012, PECO's SAIFI benchmark performance trend has been positive, as shown below on Figure 27. This positive performance trend, below the benchmark performance upper-control-limit-line, has been consistently achieved by PECO, and is considered under control. PECO is considered an excellent SAIFI benchmark performer.

Outage Causes

Figure 28 below shows the reported 2023 outage-cause categories, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Vegetation-Broken/Uprooted was the top cause of CMI, number of incidents, and customers affected.

Figure 29 below, shows historical trend of the top three main outage causes. Equipment failure and Vegetation (all categories) are the two most frequent outage causes that are significantly and negatively affecting PECO's distribution system reliability and resilience, as well as nearly every EDC in Pennsylvania.

General Reliability

PECO noted that its program for providing reliable electric service is multifaceted. It starts with a transmission and distribution system that is designed and built to reliable standards. Under a formal, comprehensive, predictive, and preventive maintenance program, equipment receives maintenance to ensure its safe, reliable operation. Vegetation in the proximity of the system is

pruned and controlled via a funded, well-managed program that protects the electric facilities while respecting the beauty and environmental importance of the vegetation.

PECO noted that it has also implemented a program to upgrade construction in areas of high vegetation interruptions and continues to install reclosers and other protective equipment to limit impacts when interruptions do occur. In response to invasive insects that cause ash tree deaths, PECO has increased its focus on the removal of ash trees through dedicated mitigation plans and vegetation management programs. In 2021, PECO executed the first year of its second LTIP with additional capital investments to construct reliability-related improvements over the period from 2021 through 2025. PECO noted that the LTIP is focused on storm hardening and resiliency, cable replacements, and substation retirements with related distribution system upgrades.

PECO stated that when interruptions to electric service do occur, customer calls and instant reports from its smart meters are noted in a computer-aided outage management system, which associates calls and meter reports with information about the distribution system configuration to construct probable trouble groupings. These outage reports quickly appear on the screens for the operations center personnel. The current outage management system has kept pace with technology through upgrades made available by the manufacturer and has been enhanced with information from the Advanced Meter Operating System.

PECO noted that it also continues to install and upgrade the latest proven and cost-effective technology in support of reliability and safe, efficient operations. Examples include computers in the vehicles of field workers, smart electronic meters with communications and diagnostic capabilities, electronically controlled switching, and communication equipment to automatically reroute power around problem areas, a new geographic information system (GIS), and a state-of-the-art central distribution system management computer system.

Conclusion

PECO's CAIDI performance in 2023 worsened but PECO has sustained SAIFI benchmark performance and is considered an excellent SAIFI benchmark performer. TUS finds that PECO, like many of the Pennsylvania EDCs, should re-examine and potentially increase efforts to manage vegetation.

The Commission recommends continued and increased LTIP efforts to improve equipment and reduce equipment caused interruptions. PECO should continue or increase vegetation management and increase emphasis on response times.

The Commission recognizes that, overall, PECO's service to its customers is improving and currently registers as one of the best efforts by an EDC in Pennsylvania. PECO's improvement and current efforts can be witnessed by the data shown below.

As can be seen in Figure 30 below, the number of PECO customers interrupted annually is trending downward. As shown in Figure 31 below, CMI is also trending downward, despite the uptick in 2023, and has improved over the past four years. Figure 32 below shows an overall reduction in actual interruption events since 2019. The Commission recognizes this as a positive achievement and recommends that PECO's efforts continue.

Figure 26 – PECO CAIDI (minutes)

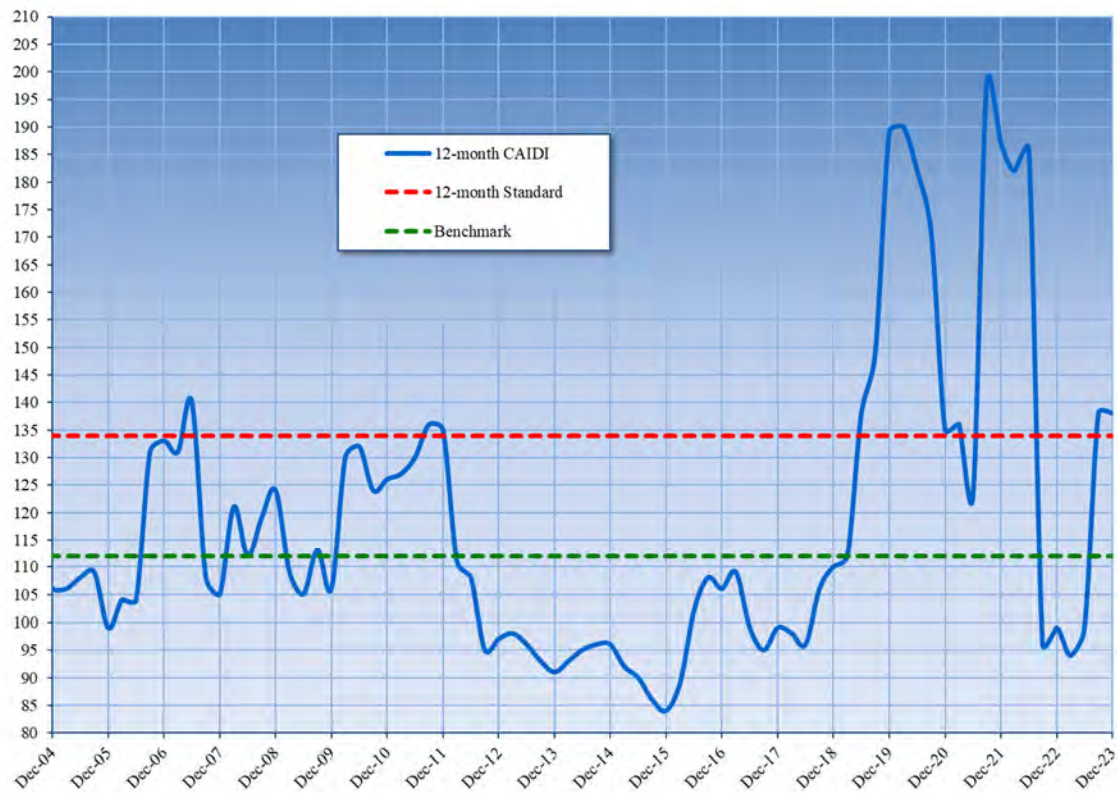


Figure 27 – PECO SAIFI (interruptions per customer)



Figure 28 – PECO Outage Causes (percent of total outages)

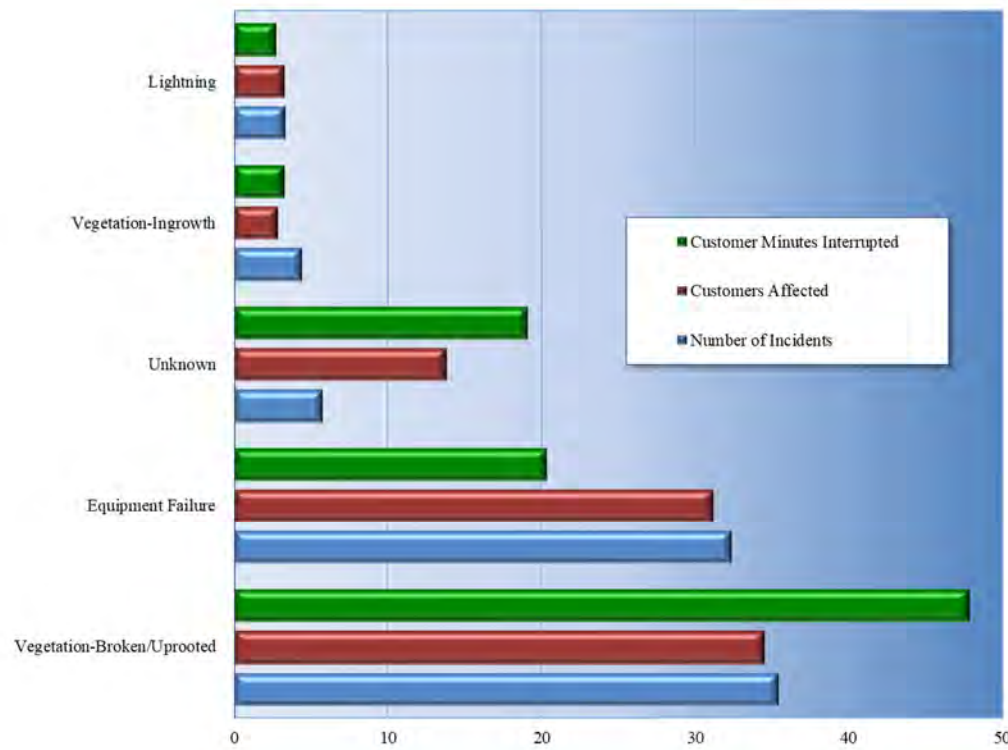


Figure 29 – PECO Outage Tracking (number of incidents)

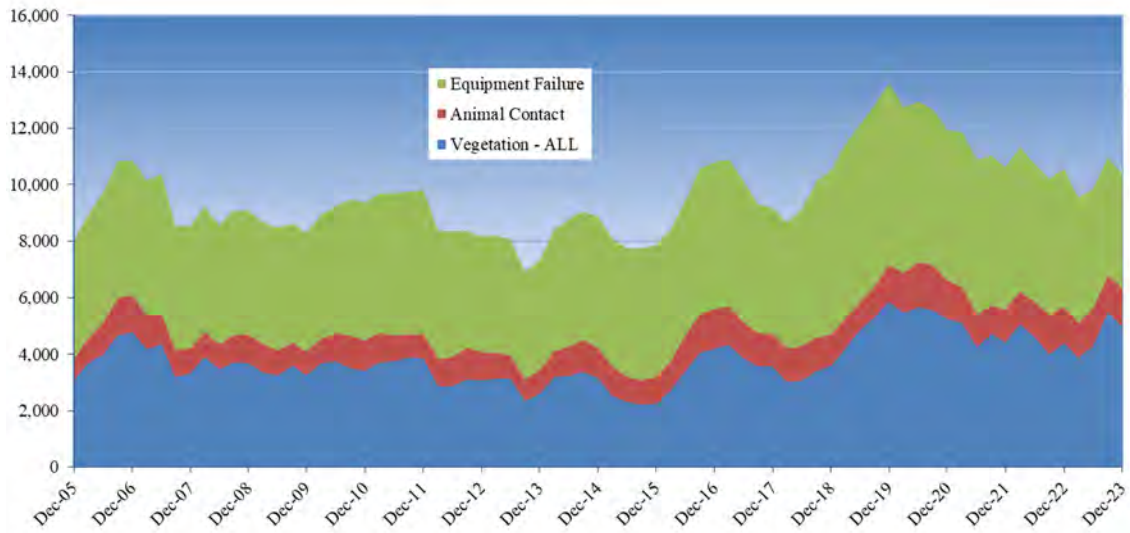


Figure 30 – PECO Outage Tracking (number of Customers Interrupted)

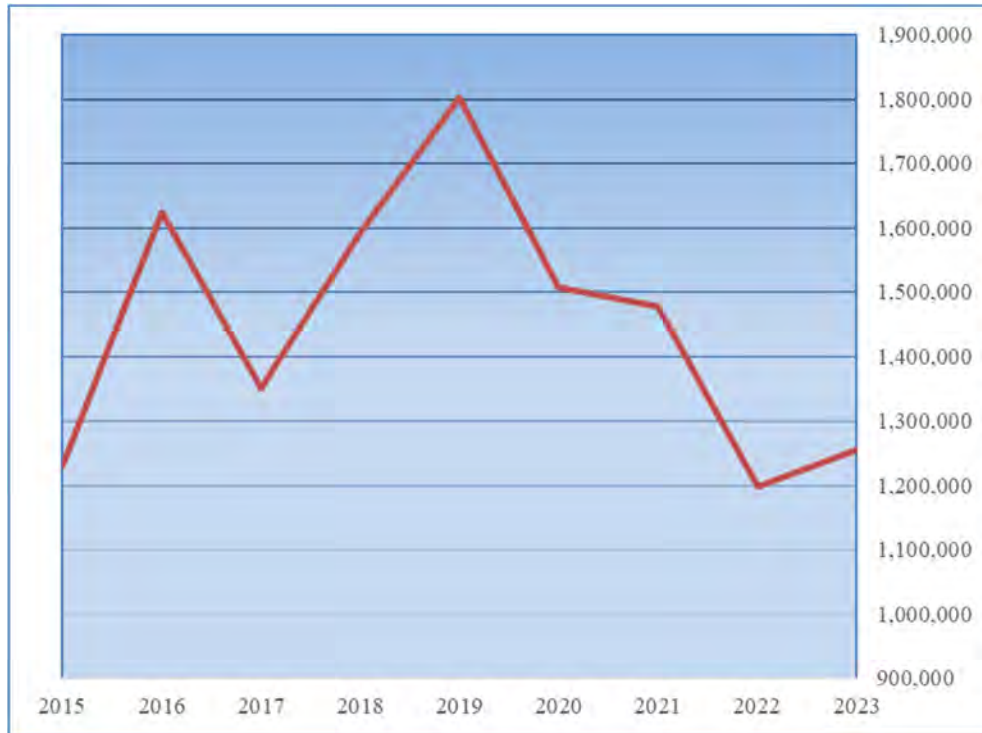


Figure 31 – PECO Outage Tracking (Customer-Minutes of Interruptions, or CMI)

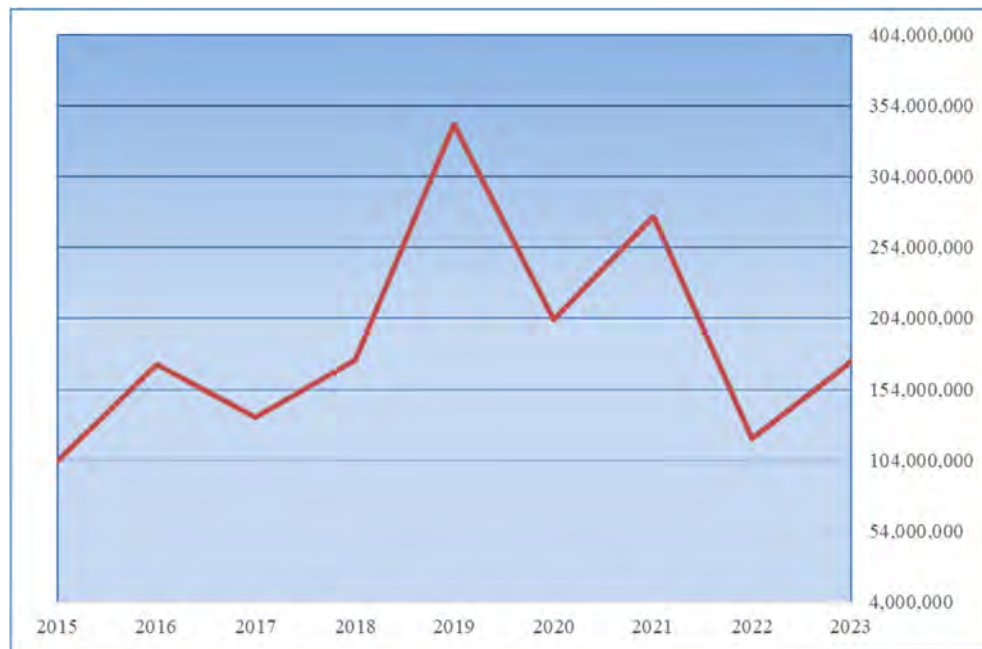
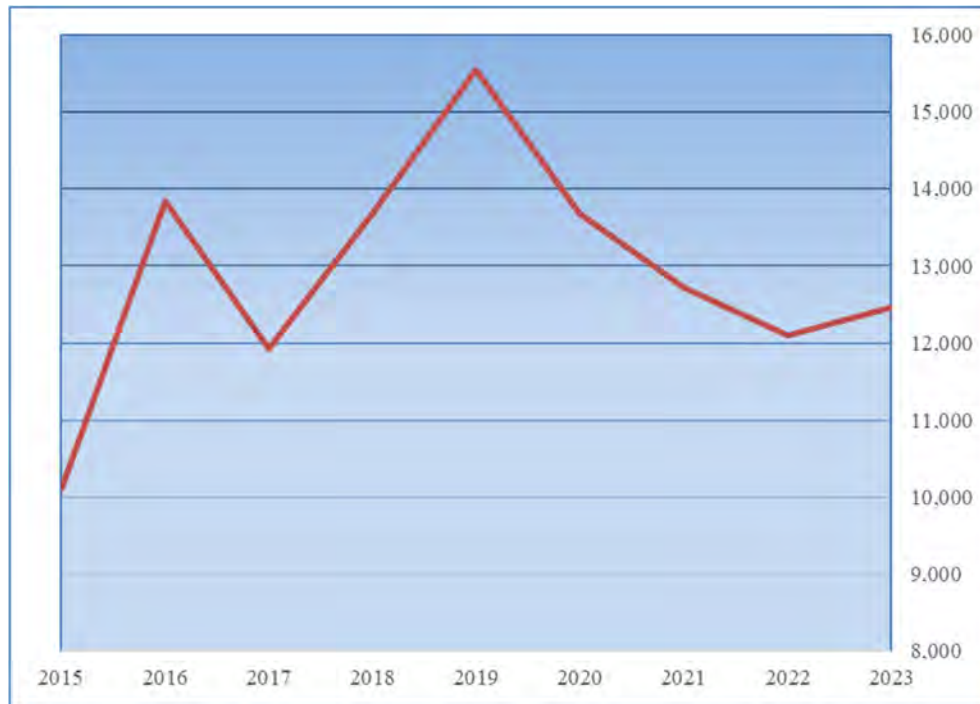


Figure 32 – PECO Outage Tracking (number of interruptions annually)

Pike County Light & Power Company

Pike County Light & Power Company (Pike) has a relatively small operating service area of approximately 44 square miles with about 5,333 customers. The Pike service territory is primarily fed from two 34.5 kV feeders that originate from Orange and Rockland Utilities (ORU). The Borough of Matamoras is served by two 13.2 kV feeders from a substation with backup tie capability to distribution circuitry from ORU. The substation is normally fed by a 34.5 kV feed from ORU circuit 116-2-34, with backup service being provided by ORU 34.5 kV circuit 116-434 through an automatic transfer scheme at the substation. The western portion of the Pike service territory is supplied by a radial feed from the ORU circuit 116-4-34.

In 2023, Pike experienced 4,584 customer interruptions and 437,709 CMI as compared to: 2,646 customer interruptions and 420,975 CMI in 2022; 6,890 customer interruptions and 1,058,853 CMI in 2021; 2,356 customer interruptions and 432,428 CMI in 2020; and 1,870 customer interruptions and 331,335 CMI in 2019.

CAIDI/SAIDI/SAIFI EVALUATION

CAIDI

Rolling 12-month: Decreased from 159 minutes in 2022 to 95 minutes in 2023; achieved benchmark by 45.4%.

3-year average: Decreased from 165 minutes in 2022 to 136 minutes in 2023, achieved standard by 29.3%.

SAIDI

Rolling 12-month: Increased from 79 minutes in 2022 to 82 minutes in 2023; achieved benchmark by 22.6%.

3-year average: Remained at 126 minutes in 2023; achieved standard by 2.6%.

SAIFI

Rolling 12-month: Increased from 0.50 outages in 2022 to 0.86 outages in 2023; failed to achieve benchmark by 41.0%.

3-year average: Increased from 0.78 outages in 2022 to 0.92 outages in 2023; failed to achieve standard by 37.3%.

CAIDI/SAIDI/SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 47 and 48 below. From 2004 through 2019, Pike's CAIDI performance had been erratic and frequently above the "green" benchmark performance upper-control-limit-line and "red" 12-month standard. Pike's CAIDI performance has improved during late 2019 as it returned to benchmark levels, and from 2020 through 2023 it has remained near or even below the benchmark. More management attention is needed to ensure consistent CAIDI performance is sustained below the "green" benchmark performance upper-control-limit-line. The Commission views CAIDI as an important indication of an EDC's ability to respond to, repair and return to service customers that are experiencing an electric service outage.

Pike's SAIFI performance trend has been overall positive during the years of 2015 through 2022. However, in 2018, 2021, and again in 2023, Pike's SAIFI exceeded the 12-month standard. Significant management attention is needed to maintain SAIFI performance below the "green" benchmark performance upper-control-limit-line. The Commission generally views SAIFI performance as an indicator of an EDC's system hardening and outage resistance. Coupled with the weather conditions experienced, it demonstrates the ability to withstand outages.

Outage Causes

Figure 49 below shows the top five reported outage cause categories in 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Tree Contact and Unknown-Other created the greatest number of incidents and CMI. Approximately 20% of outages and 32% of CMI are caused by Unknown-Other. Approximately 60% of CMI are caused by Tree Contact. More management attention should be directed at reducing the number of causes attributed to Unknown-Other as that categorization does not lend itself to providing substantive analysis of those events from a reliability perspective.

Figure 50 below shows the historical trend of the top three main outage causes. Tree Contact is the most frequent outage cause that is significantly negatively affecting Pike's distribution system reliability and resilience, as well as most every EDC in Pennsylvania.

General Reliability

Pike noted most outages, customers affected, and customer-minutes of interruption are primarily the result of vegetation contacts. Pike noted that in prior years, the Company has been effective in removing danger trees but that in recent years external environmental factors such as the Emerald Ash Borer have increased the risk associated with tree contact outages to the Company's distribution system. Pike stated that it prioritizes and aggressively removes danger trees within utility ROW zones and works with individual customers and municipalities to remove those that exist outside of Pike's ROW areas. Pike noted that it also works with the Milford Shade Tree Commission to address danger trees that represent a hazard to the general public as well as the Company's electrical system located within and outside of right-of-way areas.

Pike noted that in 2023 its pole inspection program returned to its 12-year cycle after accelerating inspections in 2022. 60 poles failed inspection and were replaced during the year out of approximately 300 poles that were inspected.

Pike stated that the leading cause of outages was tree contact and that the service reliability program targeted to manage these outages is the 34.5 kV circuit three-year, cycle-based tree clearance program. Pike noted that the 13.2 kV circuits are on 5-year cycle. Pike noted that the focus of its 2023 vegetation management program was on an overgrown ROW exiting the rear of the Matamoras Substation and heading west to Interstate 84. Pike stated that it is unknown when the ROW was last maintained, however, it was overgrown with vegetation on both sides and under the existing pole line. Pike indicated that it completed an LTIIP reliability project involving reconductoring of the existing 34.5 kV circuit and the construction of a new 13.2 kV underbuild to serve as a backup feed to the radial circuit feeding the commercial area along Route 209 in the Town of Westfall. Pike noted that the vegetation removal involved ground-to-sky clearing of the ROW to allow for the new circuit and ingress/egress onto the ROW, which had been limited by the vegetation prior to removal. Pike stated that hot-spot trimming continued on an as-needed basis, and that Pike worked with local municipalities to remove danger trees (specifically, emerald ash trees) as they were identified or at the request of the individual municipalities.

Conclusion

From 2019 through 2023, Pike had improved CAIDI performance. However, Pike did exceed the 12-month standard level for SAIFI in 2021 and 2023. It is expected that Pike will direct more management attention to SAIFI and maintain levels below the "green" benchmark performance upper-control-limit-line. Consistent management attention is needed in the future to sustain the CAIDI trend line below the "green" benchmark performance upper control-limit-line. The Commission recommends continued and increased efforts in vegetation management and use of LTIIP funding to improve system hardening and resiliency.

The Commission recognizes that, overall, Pike appears to have somewhat stabilized its reliability performance, as witnessed by the data shown above and below. Pike is demonstrating effort and SAIFI has generally been at or below benchmark with exception of 2021 and 2023. CAIDI is also more under control as historical CAIDI performance from 2008 through 2018 was very erratic.

As can be seen in Figure 51 below, the number of Pike’s customers interrupted annually is on a very slight upward trend. As shown in Figures 52 and 53 below, CMI and actual interruption events are generally maintaining their level with the exceptions of 2018 and 2021.

Figure 47 – Pike County CAIDI (minutes)

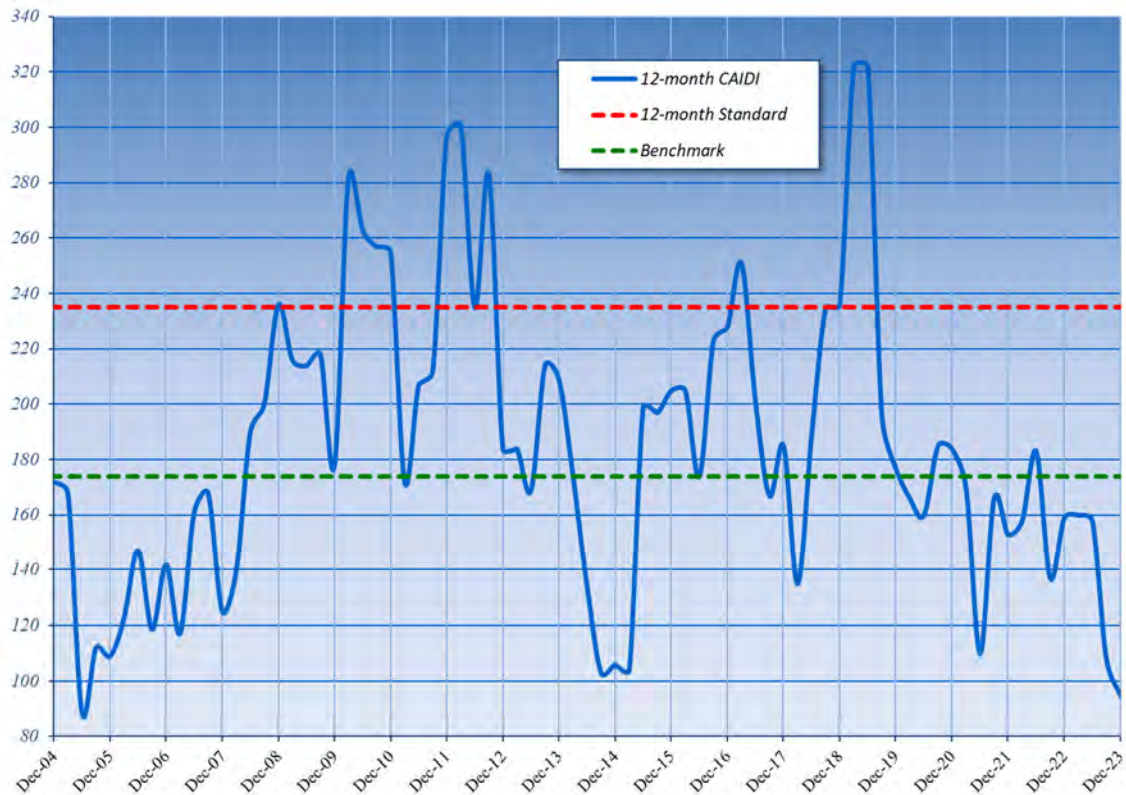


Figure 48 – Pike County SAIFI (interruptions per customer)

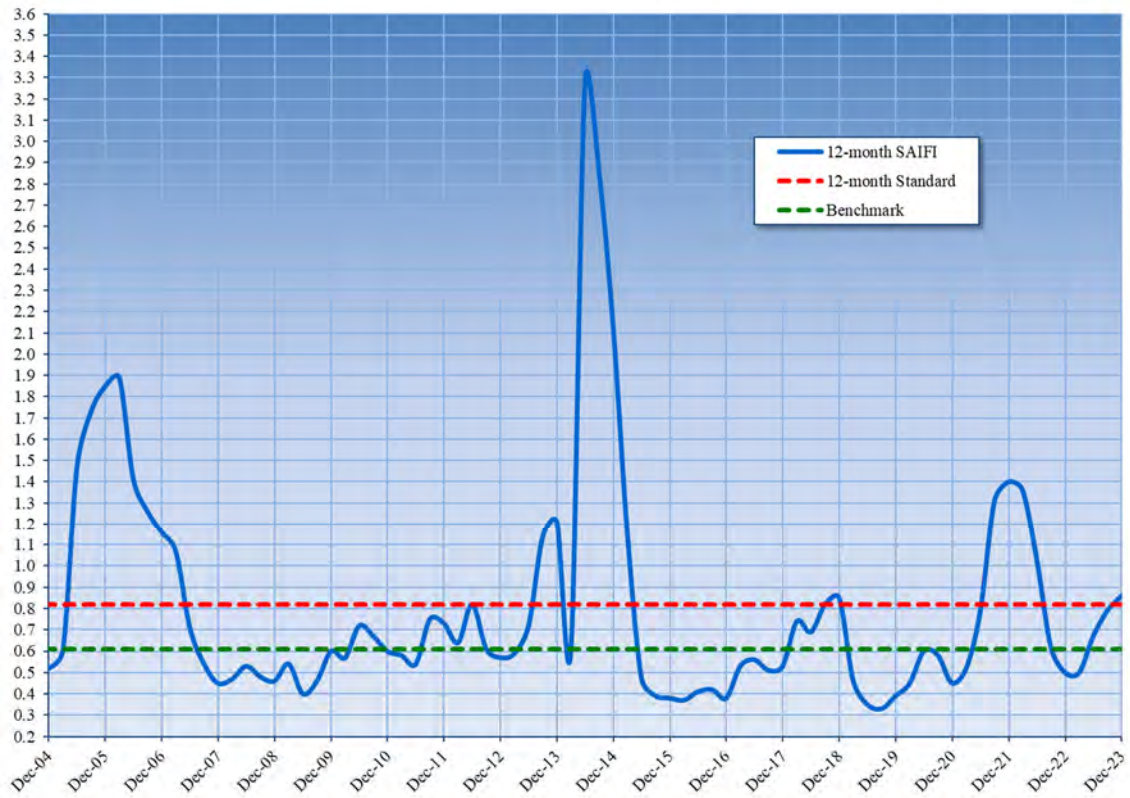


Figure 49 – Pike County Outage Causes (percent of total outages)

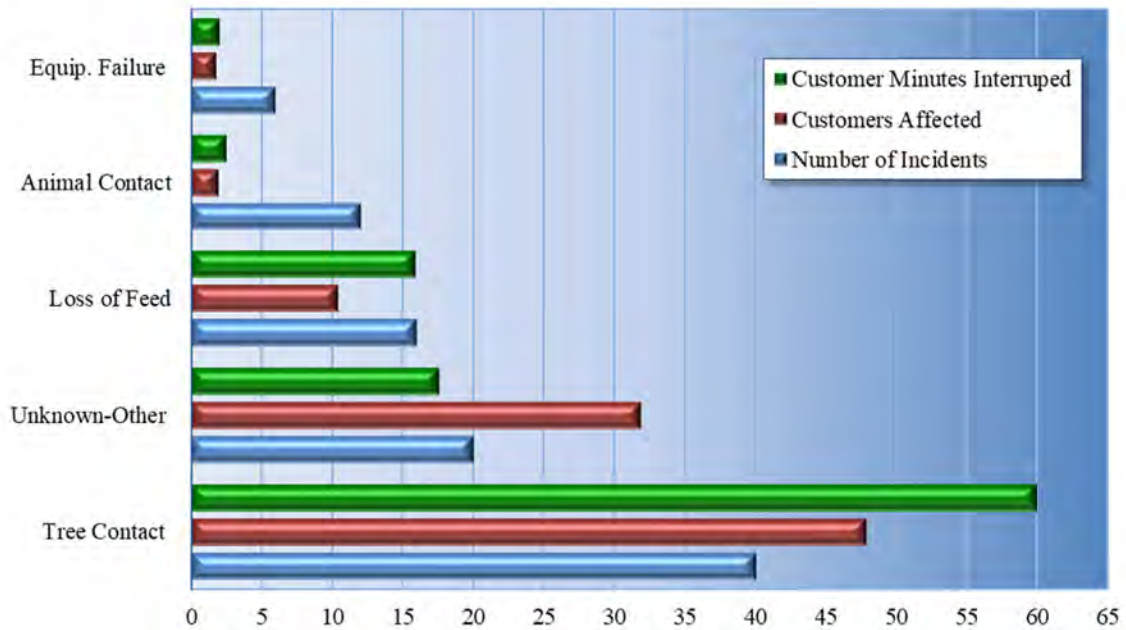


Figure 50 – Pike County Outage Tracking (number of incidents)

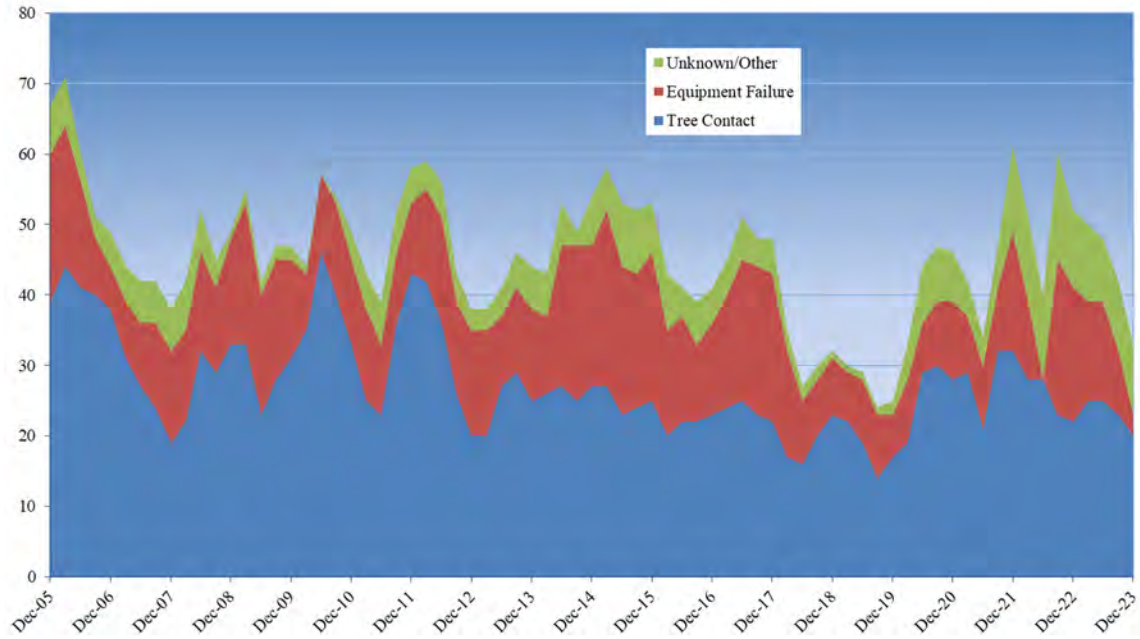


Figure 51 – Pike County Outage Tracking (number of Customers Interrupted)

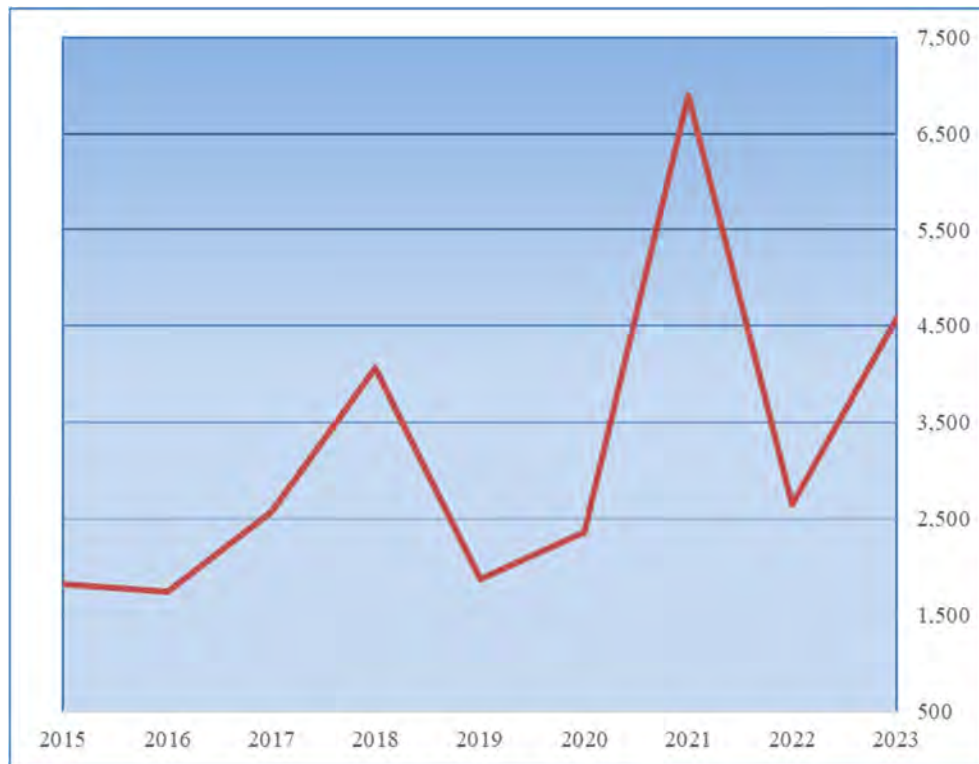


Figure 52 – Pike County Outage Tracking (Customer-Minutes of Interruptions CMI)

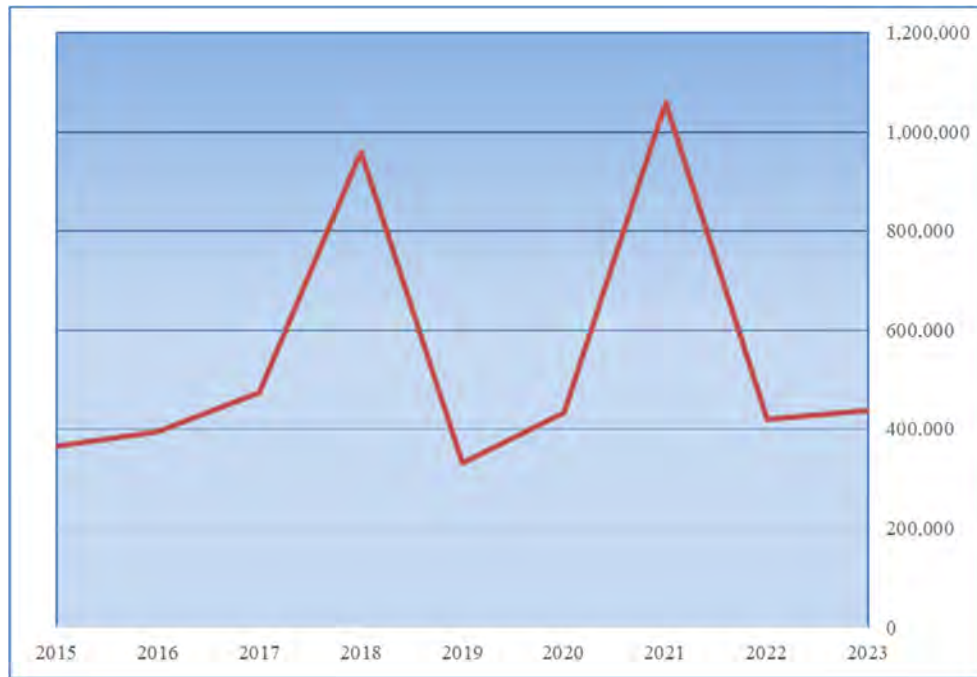
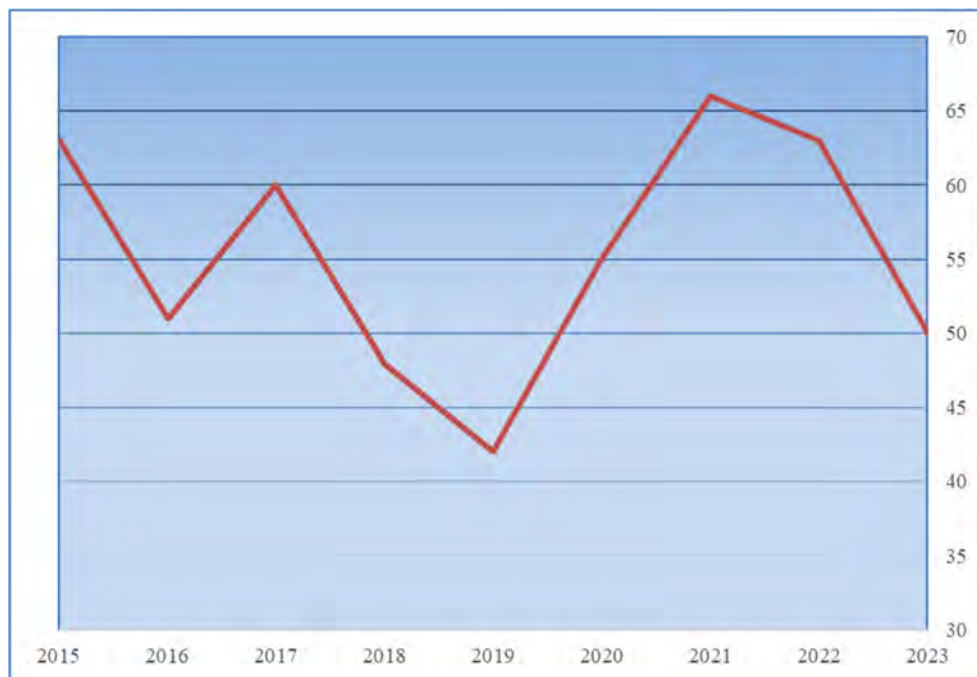


Figure 53 – Pike County Outage Tracking (number of interruptions annually)



PPL Electric Utilities Corporation

PPL Electric Utilities Corporation (PPL) has a service territory of about 10,000 square miles and serves approximately 1.46 million customers.

In 2023, PPL experienced 1.1 million customer interruptions and 214.4 million CMI as compared to: 1.3 million customer interruptions and 206.4 million CMI in 2022; 1.2 million customers interruptions and 245.4 million CMI in 2021; 1.2 million customers interruptions and 166.4 million customer-minutes in 2020; and 1.2 million customer interruptions and 213.9 million CMI in 2019.

PPL did not experience a Major Event in 2023.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month:	Increased from 164 minutes in 2022 to 189 minutes in 2023; failed to achieve benchmark by 30.3%.
3-year average:	Increased from 163 minutes in 2022 to 180 minutes in 2023; failed achieve standard by 12.5%.

SAIDI

Rolling 12-month:	Increased from 142 minutes in 2022 to 147 minutes in 2023; failed to achieve benchmark by 3.5%.
3-year average:	Increased from 143 minutes in 2022 to 153 minutes in 2023; achieved standard by 11.0%.

SAIFI

Rolling 12-month:	Decreased from 0.87 outages in 2022 to 0.78 outages in 2023; achieved benchmark by 20.4%.
3-year average:	Decreased from 0.87 outages in 2022 to 0.85 outages in 2023; achieved standard by 21.0%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI benchmark reliability performance trends are shown in Figures 54 and 55 below. PPL reported a MAIFI of 0.30 for 2023. Beginning in 2004, PPL's CAIDI performance trend has generally been below standard and sometimes below benchmark. However, CAIDI performance beginning in 2017 has been erratic and frequently above both benchmark and standard. PPL's CAIDI for 2021 was 187, which surpassed both the benchmark and standard upper-control-limit lines. CAIDI performance improved some in 2022, but remains above the benchmark measure at the end of 2023. Management should intensify its efforts to improve CAIDI performance and return performance to levels consistently below the "green" benchmark performance upper-control-limit line. The Commission views CAIDI as an indicator of an EDC's ability to respond to, repair and return to service customers following an

outage. It is understood that with the improved system automation that the CAIDI metric will show increases. However, the very use of system automation by an EDC tends to make CAIDI a more valuable indicator of customer outage times and hence actual response to customer interruptions.

Beginning in December 2013, PPL's SAIFI benchmark performance trend has been positive, as shown in Figure 55 below. This positive performance trend, below the benchmark performance upper-control-limit-line, has been consistently sustained by PPL, and is considered under control.

PPL is considered an excellent SAIFI benchmark performer. This trend is also indicative of PPL's increasing use of system automation (Smart Grid) devices.

Outage Causes

Figure 56 below shows the top five reported outage cause categories in 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees were the top cause of outages and customer minutes interrupted. Approximately 70% of CMI is caused by trees and approximately 14% of CMI is caused by equipment failure. The Commission notes a concern with the sharp increase in tree-related outages for PPL from 2015 to present. The Commission is concerned that possible reductions, or insufficient increases, in vegetation management expenditures may be responsible for this increase in tree-related issues. Management should review the present efforts and strategies to evaluate effectiveness. The Commission also recognizes that changes in precipitation levels will affect vegetation growth and hence increase the numbers of outages.

Figure 57 below shows the historical trend of the top three main outage causes. Tree Related and Equipment Failures are the two most frequent outage causes that are significantly negatively affecting PPL's distribution system reliability and resilience, as well as almost every EDC in Pennsylvania.

General Reliability

PPL rolling 12-month SAIFI at the end of 2023 was 0.78, which was an improvement from its performance in 2022. PPL noted its ongoing focus around preventing customer interruptions through system automation, vegetation management and asset performance continues to directly support overall strong reliability results.

PPL stated that it continues to drive high levels of reliability performance through programs such as:

- Commitment to providing safe, reliable, affordable service to PPL's customers.
- A Strategic vegetation management program.
- Continued strategic investment in distribution automation technology such as:
 - o Multi and single-phase Smart Grid Initiative.

- o Increased leverage of its Automated Distribution Management System (ADMS).
- o Full implementation of Fault Isolation and System Restoration (FISR) technology automatically restoring more than 1.9 million customers since 2015.
- Strategic data-driven reliability investments including asset replacement, and system improvements that include storm hardening standards.
- An increased focus on remediating momentary outages before they become permanent outages.
- Continued focus on outage response improvements.
- Moving to data-driven, condition-based maintenance programs

PPL noted that the 2023 results were achieved in a year of record storm frequency. PPL noted that in 2023 it experienced 45 total storm events, which is the most on record for PPL (beginning with 2002). PPL also noted that it had the second most on record in terms of PUC-reportable events (ROEs – see Section 3, above) in 2023 with 14 ROEs.

In terms of CAIDI performance, PPL noted that it was heavily impacted by storms and was 30% above benchmark. PPL stated that its more weather-normalized IEEE CAIDI was 142.5, versus the non-weather normalized PUC value of 188.7. PPL noted that with 2023 storms at record frequency, along with automated systems preventing and converting outages to momentary interruptions, higher CAIDI values are not unexpected. However, PPL noted that it has several initiatives that it continues to evaluate as it looks to improve CAIDI. Some of these strategic initiatives include:

- Optimizing resource planning and scheduling.
- Setting Restore vs. Repair strategy early on in storm response.
- Resource Strategy/Optimization.
- Resource scheduling and prearranging resource availability.
- Leveraging data technology to isolate impact and dispatching of resources needed to address outages.

Conclusion

Tree Related and Equipment Failures are the top two outage causes that negatively affect electrical reliability to PPL customers. PPL's CAIDI performance in 2023 was above both benchmark and standard. Management attention is required to move CAIDI performance below the "green" benchmark performance upper-control-limit line. CAIDI is a measure of customer restoration that in terms of the duration of the experienced outage and can be improved by decreased response and repair times.

SAIFI is a measure of outage frequency and PPL has sustained SAIFI benchmark since 2012 and is considered an excellent SAIFI benchmark performer. This is very indicative of the results the Commission would expect from a company such as PPL that has been a leader in implementing advanced technology such as Smart Grid and other forms of system automation.

The Commission recommends continued and increased efforts in vegetation management, equipment replacement and upgrades through the LTIIP, and a continuing emphasis on improving response times.

The Commission recognizes, overall, that PPL's reliability performance in terms of CMI and number of interruption events is beginning to decline as witnessed by the data shown in Figures 59 and 60 below. As can be seen in Figure 58 below, the number of PPL customers interrupted annually has decreased the past three years, which is encouraging. However, as shown in Figures 59 and 60, since 2015 CMI and the number of customer interruption events are both significantly increasing year-over-year and this is an impact on the customer experience and needs to be addressed by reducing CAIDI.

Figure 54 – PPL CAIDI (minutes)

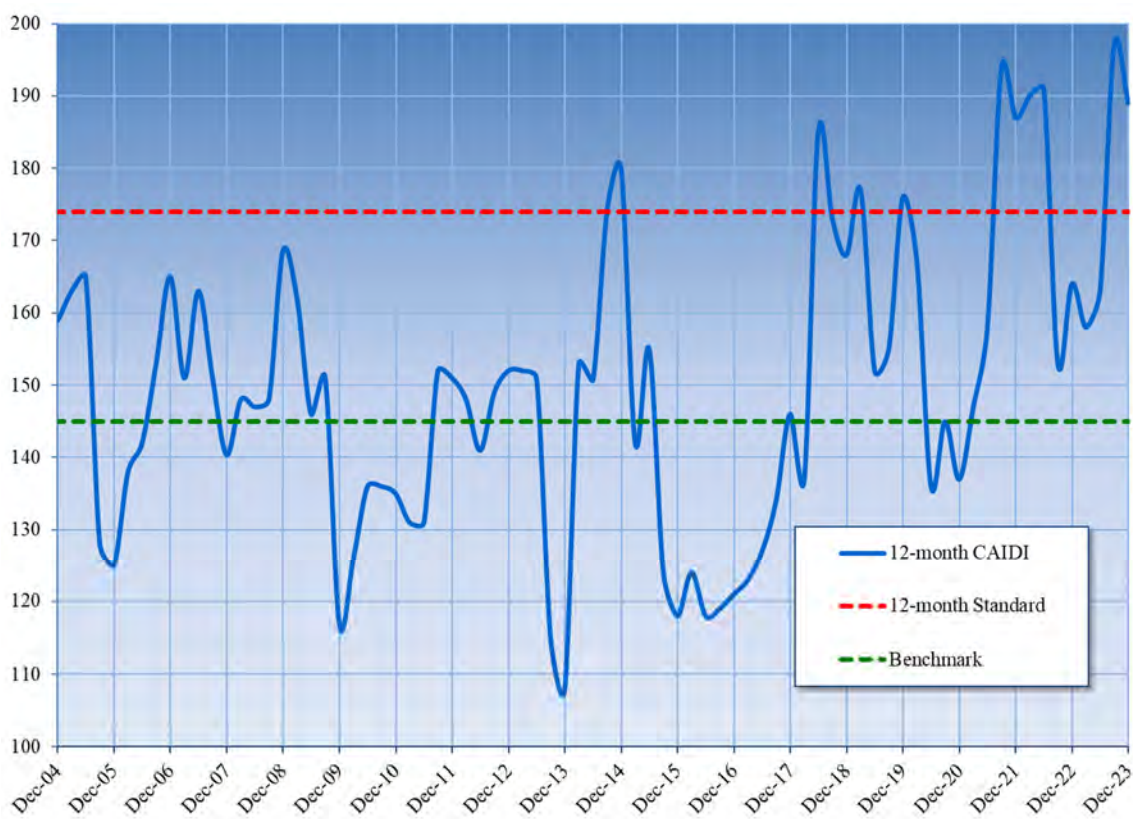


Figure 55 – PPL SAIFI (interruptions per customer)

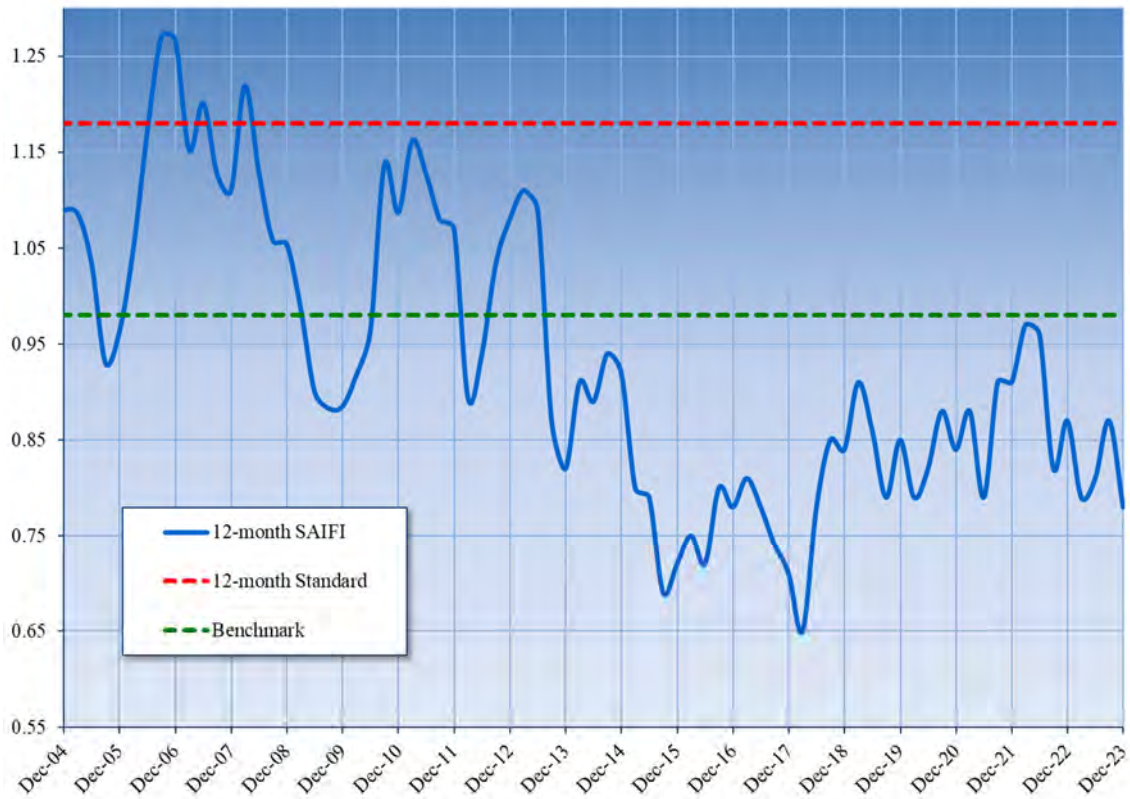


Figure 56 – PPL Outage Causes (percent of total outages)

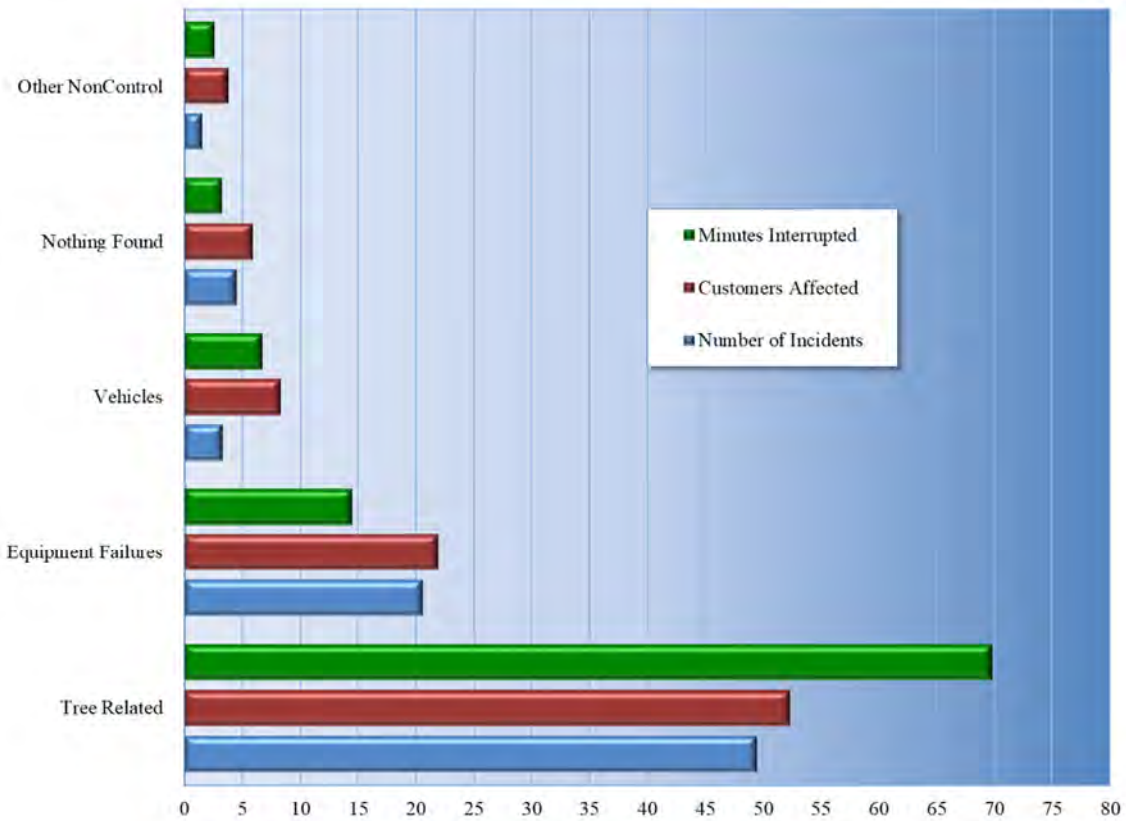


Figure 57 – PPL Outage Tracking (number of incidents)

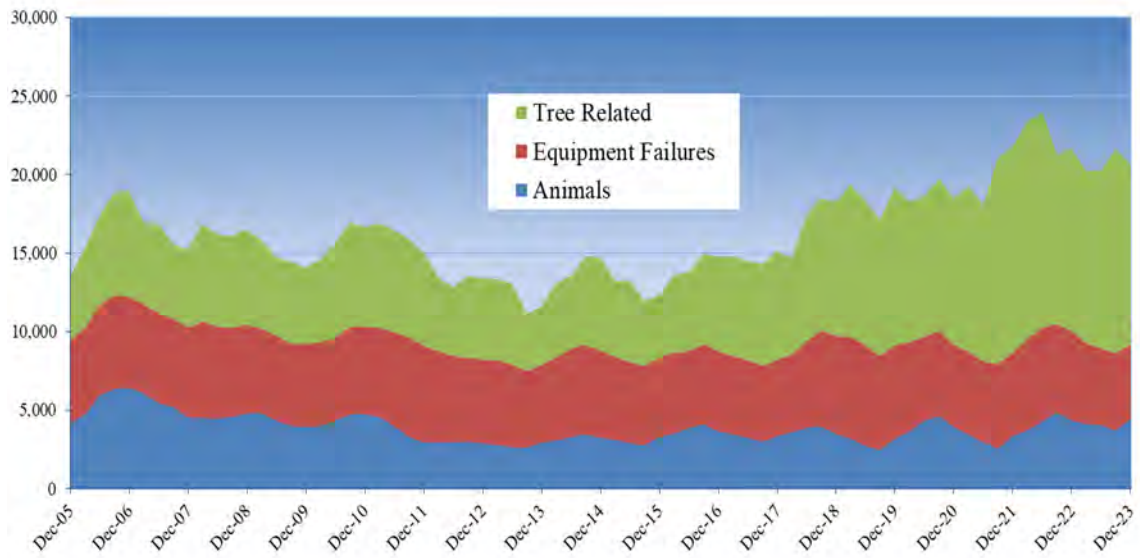


Figure 58 – PPL Outage Tracking (number of Customers Interrupted)

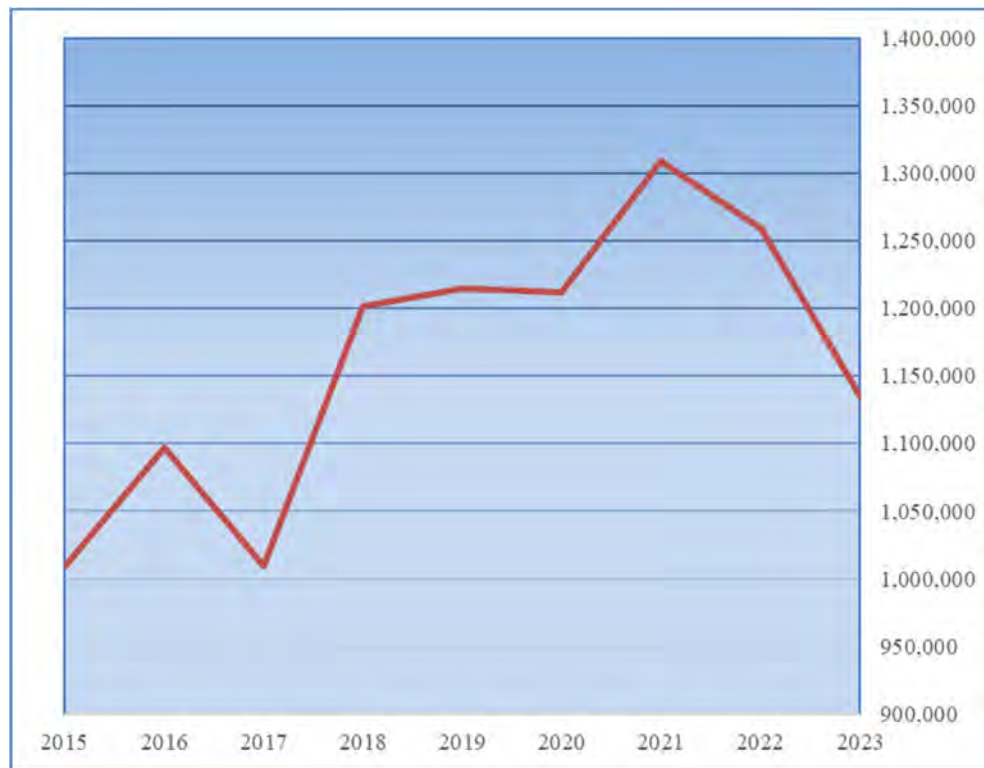


Figure 59 - PPL Outage Tracking (Customer-Minutes of Interruptions CMI)

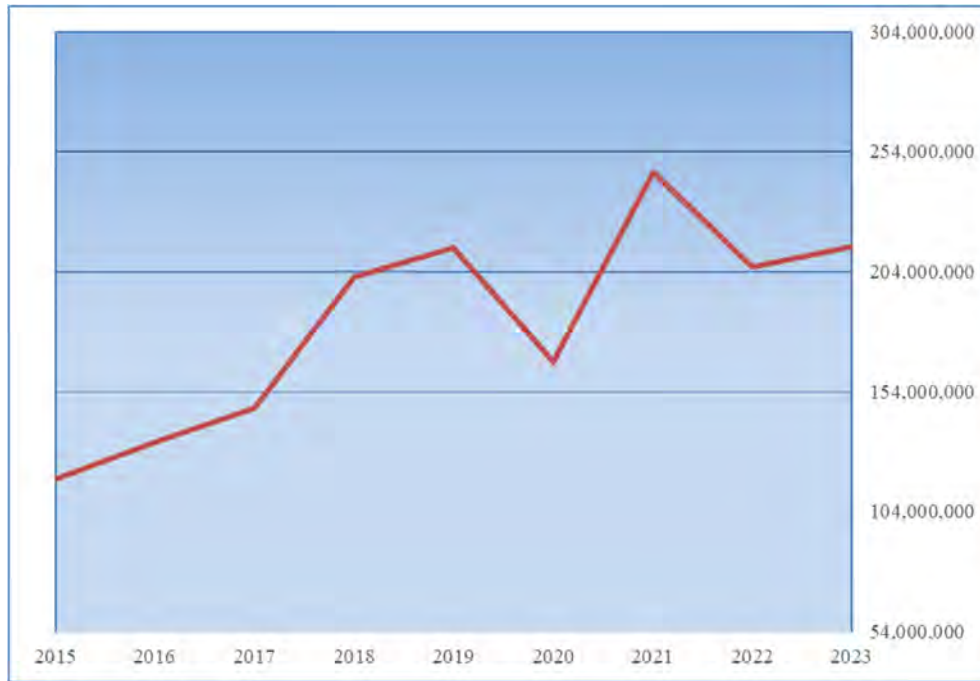


Figure 60 – PPL Outage Tracking (number of interruptions annually)



UGI Utilities Inc.

UGI Utilities, Inc., (UGI) has a service territory of about 410 square miles and serves about 62,446 customers.

In 2023, UGI experienced 33,872 customer interruptions and 3.8 million CMI as compared to: 54,075 customer interruptions and 8.4 million CMI in 2022; 58,992 customer interruptions and 7.9 million CMI in 2021; 25,110 customer interruptions and 4.1 million CMI in 2020; and 59,946 customer interruptions and 11.3 million CMI in 2019.

UGI experienced two Major Events in 2023. The Major Events impacted 17,472 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month: Decreased from 156 minutes in 2022 to 112 minutes in 2023; achieved benchmark by 33.7%.
3-year average: Decreased from 151 minutes in 2022 to 134 minutes in 2023; achieved standard by 28.0%.

SAIDI

Rolling 12-month: Decreased from 135 minutes in 2022 to 61 minutes in 2023; achieved benchmark by 56.4%.
3-year average: Decreased from 109 minutes in 2022 to 108 minutes in 2023; achieved standard by 36.7%.

SAIFI

Rolling 12-month: Decreased from 0.87 outages in 2022 to 0.54 outages in 2023; achieved benchmark by 34.9%.
3-year average: Increased from 0.74 outages in 2022 to 0.79 outages in 2023; achieved standard by 13.6%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI performance trends are shown below in Figures 61 and 62. UGI failed to attain benchmark CAIDI performance in 2018 and 2019, as shown on to be above the “green” benchmark performance upper-control-limit-line. However, UGI did achieve better-than-benchmark CAIDI performance in 2020 through 2023.

UGI’s SAIFI performance in 2018 and 2019 was inconsistent, as shown in Figure 62 to be above the “green” benchmark performance upper-control-limit-line. However, prior to 2018, UGI was a consistent SAIFI benchmark performer and in 2020 matched its best annual SAIFI performance (2015). UGI’s SAIFI was above benchmark for both 2021 and 2022 but UGI’s 2023 SAIFI was well below benchmark. More management attention is needed to keep SAIFI performance consistently below the “green” benchmark performance upper-control-limit-line.

Outage Causes

Figure 63 below, shows the top five reported outage cause categories in 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees, Animal, and Equipment Failure were the leading causes of the number of incidents. Trees were the leading cause of CMI. Over 58% of CMI was caused by Trees.

Figure 64 below shows the historical trend of the top three main outage causes. Trees, Animal and Equipment Failure are the three most frequent outage causes that are significantly negatively affecting UGI's distribution system reliability and resilience. As noted previously in this report, trees and equipment failures are the prominent causes of outages experienced by almost every EDC in Pennsylvania.

General Reliability

UGI noted that it conducted a review of the rolling 12-month fourth quarter and found that the most significant contributions to the reliability metrics were associated with weather-initiated vegetation issues with equipment failures also being a notable contributor to the metrics. UGI stated that OROW tree-related outages initiated by severe weather events continue to be the primary source of interruptions and minutes interrupted. UGI noted that it continues to focus on key capital reliability initiatives in addition to maintaining an aggressive vegetation management program to reduce the frequency of interruptions during high-wind and other severe weather events. UGI noted that it continues operating at an elevated resource level to increase hazard tree removals and continues the process of reducing the vegetation trim cycles from nearly six years to a goal of four and a half years.

UGI stated that it addresses equipment failures through its LTIP as it continues to replace aging system components such as wood poles, porcelain insulators, underground cable and open wire secondary. UGI noted that it also recognized a high number of animal related outages over the last year which has resulted in additional steps to increase animal guard protection in substations and review distribution animal guarding standards.

UGI noted that weather has been identified as a significant factor for initiating vegetation-related outages. UGI noted that it continues to storm harden its system through infrastructure upgrades, such as constructing inter-substation tie lines, relocations, adding sectionalizing points, and maintaining an aggressive vegetation management program to mitigate damages from frequent weather events. To aid in overall system reliability, UGI noted that it continues to add Distribution Automation (DA) devices, controllable from its Control Center, reducing outage duration by providing remote switching capability. When eventually coupled with fault location, isolation and service restoration technology (FLISR), UGI expects to reduce the amount of sustained customer interruptions and customer minutes interrupted on many poorly performing feeders.

Conclusion

Trees and Equipment Failure are two of the leading causes of outages that negatively affect electrical reliability to UGI customers. In 2023, Trees and Equipment Failure outage causes

contributed to over 76% of total CMI. The Commission notes that an increased focus on vegetation management is key to achieving and maintaining consistent reliability performance.

UGI has continued to improve its CAIDI and SAIFI performance over the past three years. Management focus should be on sustaining the CAIDI and SAIFI trend lines below the “green” benchmark performance upper-control-limit-lines. The Commission recommends continued and increased efforts in vegetation management and increased emphasis on response times.

The Commission recognizes that, overall, UGI’s reliability, especially as related to the number of interruption events, may be worsening over time as witnessed by the data shown below. UGI’s performance for customers interrupted, CMI, and interruption events improved in 2023, but needs to be sustained. As can be seen in Figure 67 below, there is an overall increase in actual interruption events since 2015.

Figure 61 – UGI CAIDI (minutes)

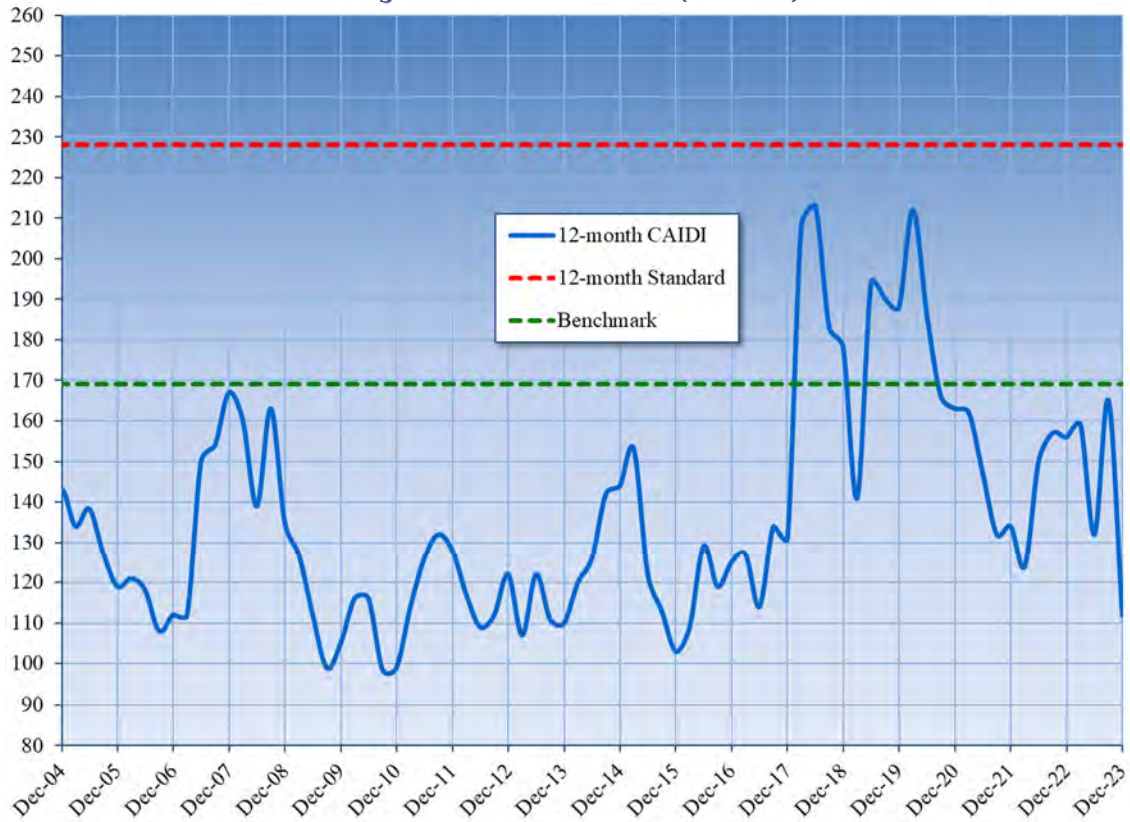


Figure 62 – UGI SAIFI (interruptions per customer)

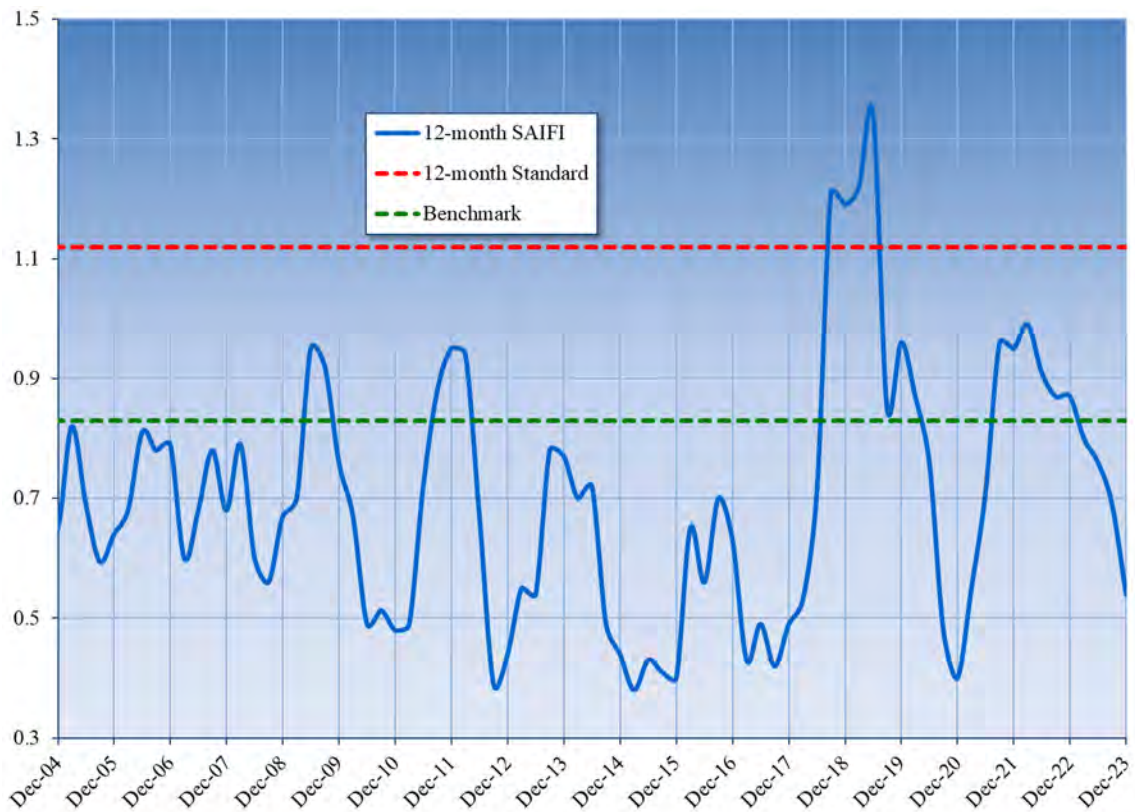


Figure 63 – UGI Outage Causes (percent of total outages)

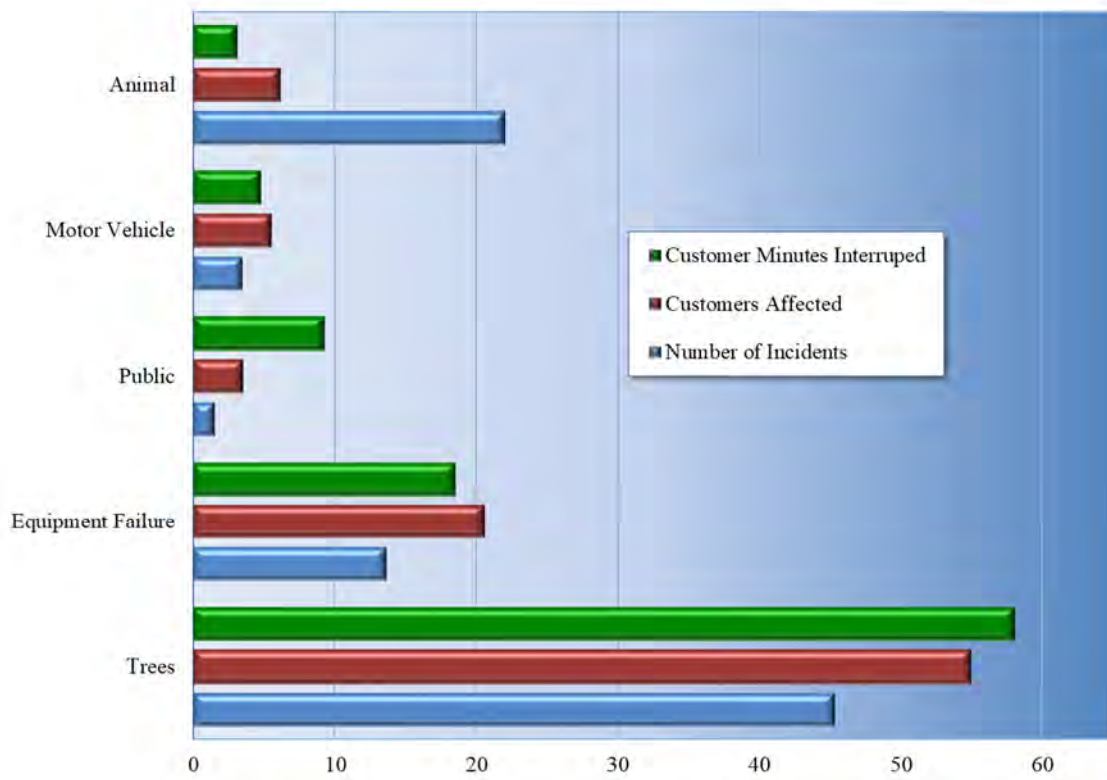


Figure 64 – UGI Outage Tracking (number of incidents)

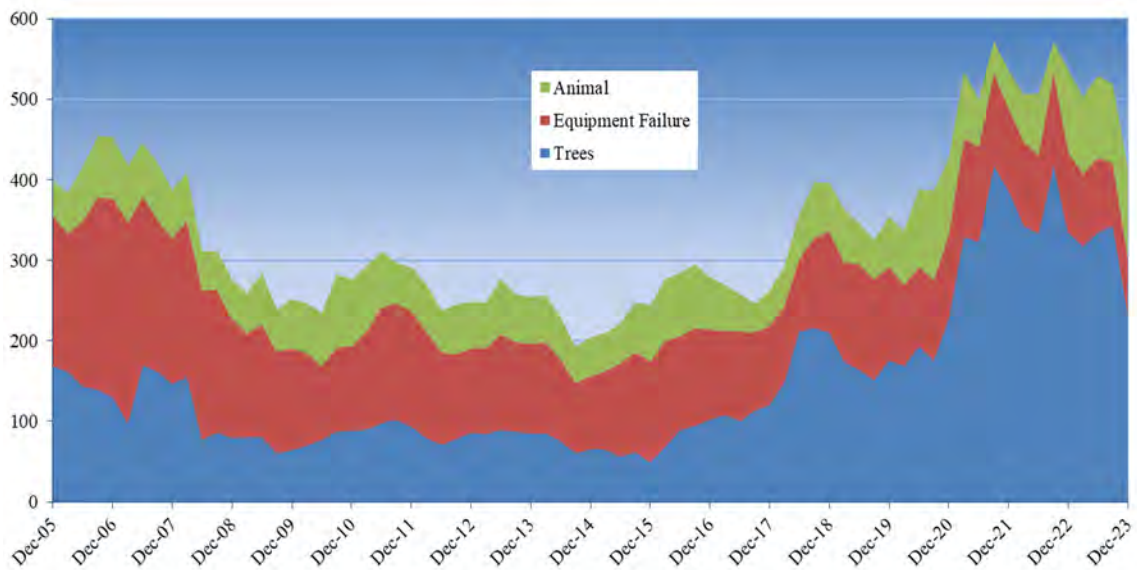


Figure 65 – UGI Outage Tracking (number of Customers Interrupted)

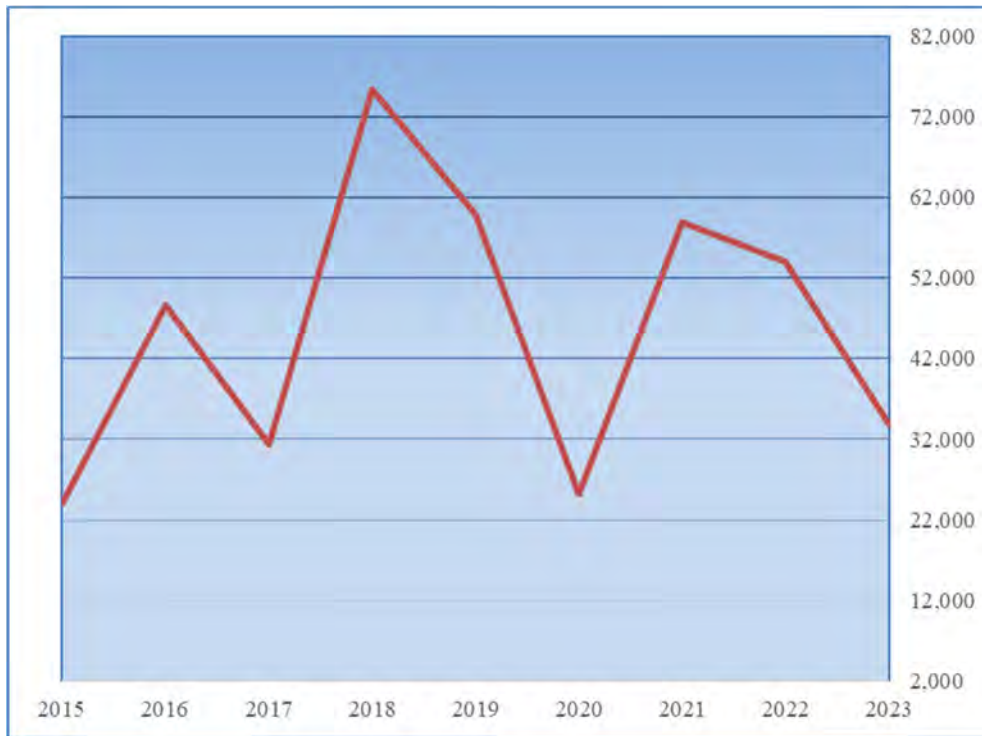


Figure 66 – UGI Outage Tracking (Customer-Minutes of Interruptions, or CMI)

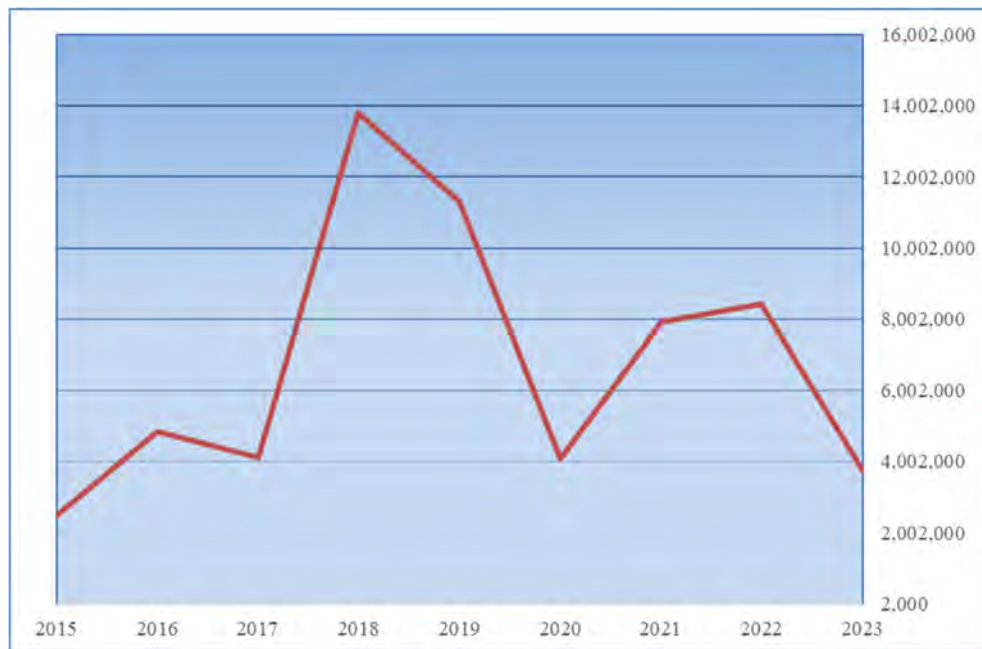


Figure 67 – UGI Outage Tracking (number of interruptions annually)

Wellsboro Electric Company

Wellsboro Electric Company (Wellsboro) has a service territory of about 178 square miles and serves about 6,439 customers.

In 2023, Wellsboro experienced 8,822 customer interruptions and 1 million CMI as compared to: 7,024 customer interruptions and 0.92 million CMI in 2022; 5,922 customer interruptions and 0.85 million CMI in 2021; 7,543 customer interruptions and 0.7 million CMI in 2020; and 4,815 customer interruptions and 0.7 million CMI in 2019.

Wellsboro experienced eight Major Events in 2023. The Major Events impacted 15,331 customers, which is not reflected in the totals above.

CAIDI/SAIDI/SAIFI Evaluation

CAIDI

Rolling 12-month: Decreased from 130 minutes in 2022 to 114 minutes in 2023; achieved benchmark by 8.1%

3-year average: Increased from 124 minutes in 2022 to 129 minutes in 2023; achieved standard by 4.9%.

SAIDI

Rolling 12-month: Increased from 142 minutes in 2022 to 155 minutes in 2023; failed to achieve benchmark by 1.3%.

3-year average: Increased from 130 minutes in 2022 to 143 minutes in 2023; achieved standard by 22.5%.

SAIFI

Rolling 12-month: Increased from 1.09 outages in 2022 to 1.37 outages in 2023; failed to achieve benchmark by 11.4%.

3-year average: Increased from 1.06 outages in 2022 to 1.13 outages in 2023; achieved standard by 16.3%.

CAIDI and SAIFI Performance

Historical rolling 12-month CAIDI and SAIFI reliability performance trends are shown in Figures 68 and Figure 69 below. Wellsboro's 2023 SAIFI performance worsened as shown to be above the "green" benchmark performance upper-control-limit-line. Wellsboro had achieved annual benchmark SAIFI performance from 2019 through 2022. Wellsboro's CAIDI performance in 2023 was improved and again below benchmark. Increased management attention is needed to ensure SAIFI performance is returned below the "green" benchmark performance upper-control-limit-line and that CAIDI is more consistently at or below benchmark.

Outage Causes

Figure 70 below, shows the top five reported outage cause categories for 2023, as a percentage, for the following three distinct performance metrics: CMI, Customers Affected, and Number of Incidents. Trees OROW were the top cause of CMI. Over 83% of CMI is caused by Trees OROW.

Figure 71 below, shows the historical trend of the leading three main outage causes. Trees (all causes) and Animals are the two most frequent outage causes.

General Reliability

Wellsboro noted that it will continue tree trimming 70-75 miles of conductor per year which amounts to a circuit or a portion of a circuit each year and maintains a tree-trimming cycle of approximately five years. Wellsboro stated that it identified hot spot trimming on the downtown three phase portion of its system. Danger trees were identified for both on and OROW during the year and urgent removals were dealt with immediately. Wellsboro noted that other danger trees are prioritized and removed as funding is available.

Wellsboro stated that it reconducted six miles of line in 2023 in addition to other group operated switches that it installed in order to create tie points in the system. Wellsboro noted that it plans to reconduct another six miles of line and work to build another tie point in 2024. Wellsboro noted that this will provide reliability to the circuits allowing an alternate feed.

Wellsboro is also pursuing federal grant funds from the Pennsylvania Department of Environmental Protection's Energy Programs Office in order to continue resiliency and automation work on the circuits where a loop exists. Wellsboro noted that it continues to participate in and gather information from various industry best practice groups. These groups include members from diverse utility groups such as the Pennsylvania Rural Electric Association,

the Energy Association of Pennsylvania, and the National Rural Electric Cooperative Association. Wellsboro noted that it will continue to implement best practices defined by these groups as appropriate.

Conclusion

Wellsboro achieved benchmark performance for CAIDI in 2023. However, Wellsboro's SAIFI and SAIDI metrics remain at a level above the rolling 12-month benchmark. Wellsboro also experienced eight Major Events in 2023 and the impacts of those events were excluded from those reliability metric calculations. Wellsboro should continue to implement its reliability improvement plans to reduce the impact of severe weather to avoid Major Events and large customer disruption events. More management attention is also needed to sustain SAIFI below the "green" benchmark performance level.

As shown in Figures 72 and 73, below, Wellsboro is seeing a significant increase in the number of customers impacted by outage events and CMI. However, as shown below in Figure 74, Wellsboro is experiencing less outage events. This indicates that Wellsboro should continue to examine and install locations for sectionalizing of circuits in order to lessen the number of customers impacted by events. However, while sectionalizing may reduce the number of customers impacted by an outage, it could possibly lead to increased CAIDI reliability metrics as the outages may be of longer duration. The Commission finds that in this regard, the CAIDI metric is becoming more realistic of the customer's experienced interruption duration, rather than a general average as determined by aggregate data. As this occurs, the drivers of these metrics; response times, repair times and overall restoration times, will have more effect on the results. The Commission posits that an emphasis on Vegetation Management efforts and automatic sectionalizing would improve Wellsboro's customer service.

Figure 68 – Wellsboro CAIDI (minutes)

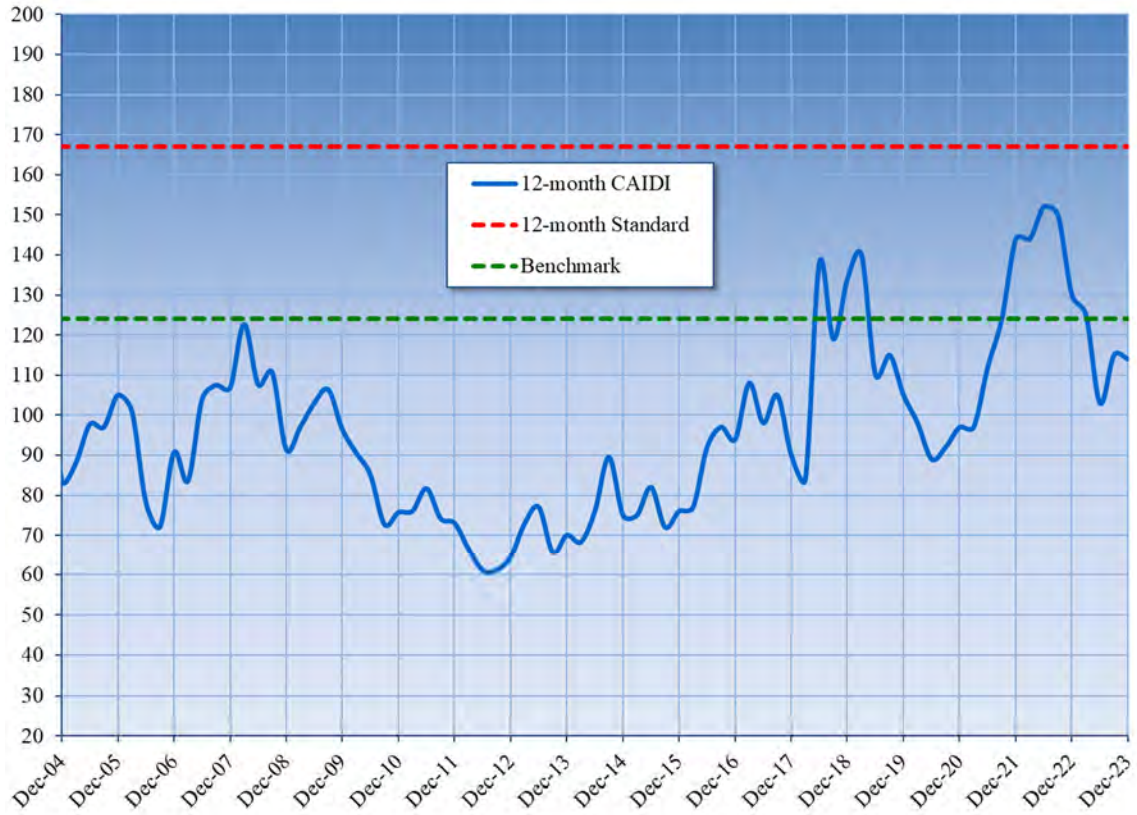


Figure 69 – Wellsboro SAIFI (interruptions per customer)

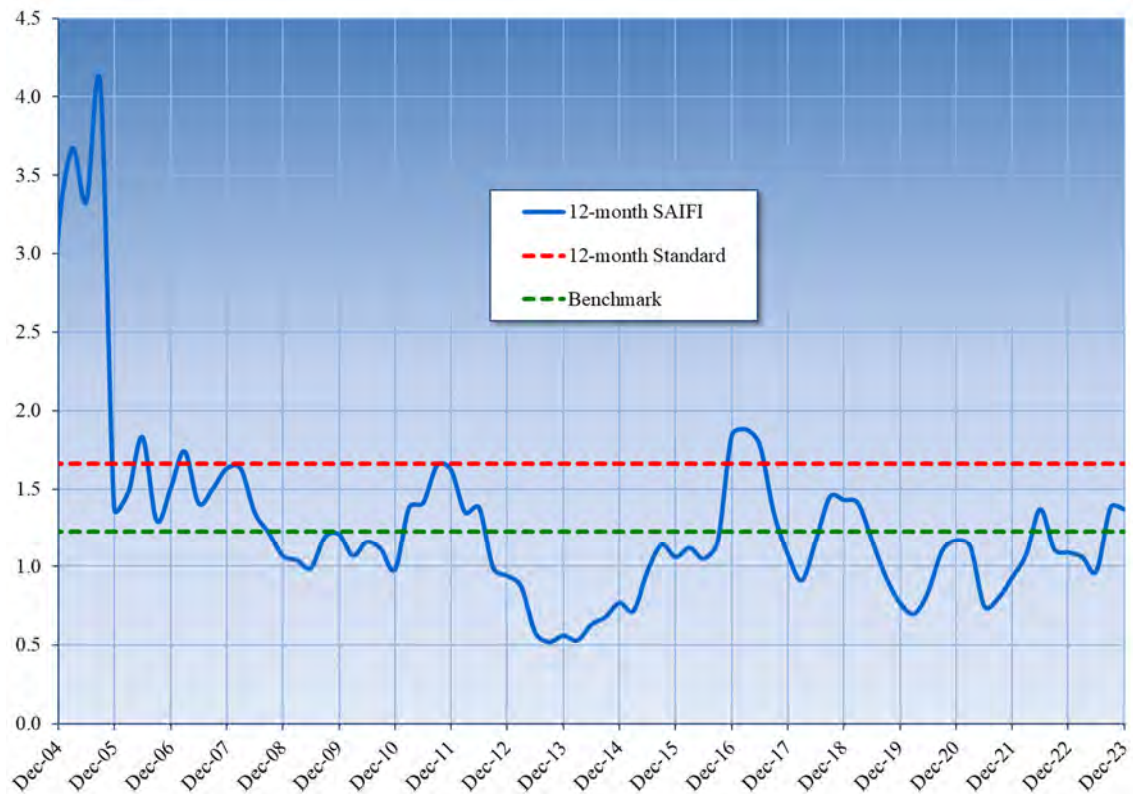


Figure 70 – Wellsboro Outage Causes (percent of total outages)

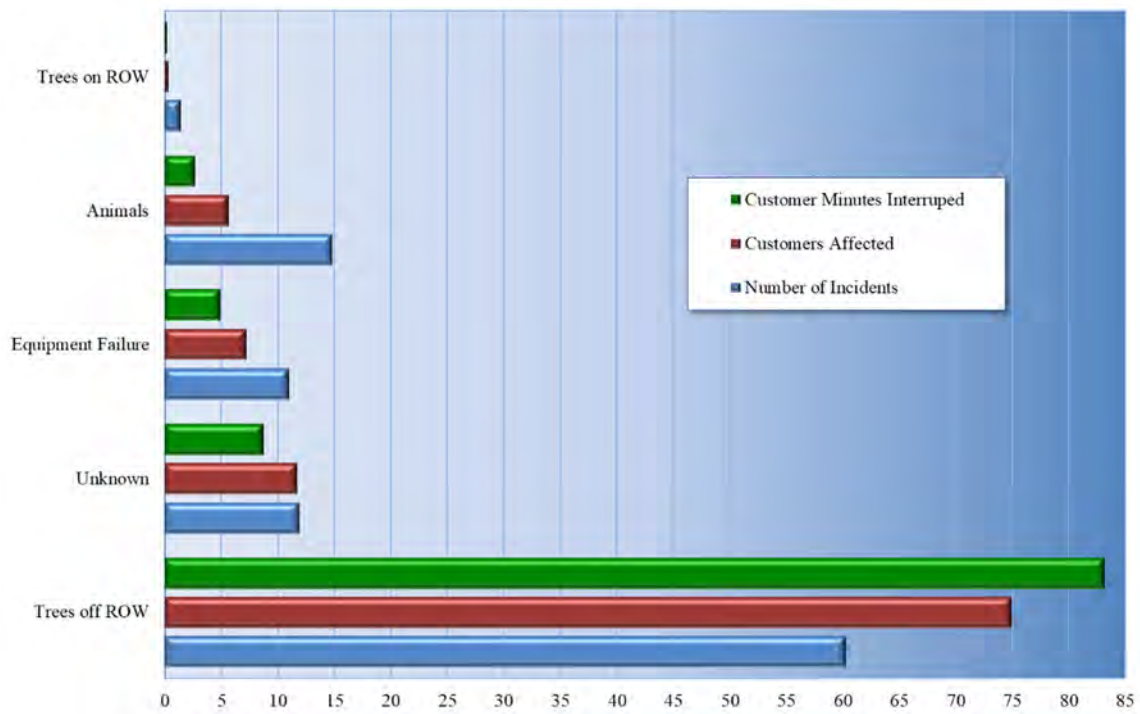


Figure 71 – Wellsboro Outage Tracking (number of incidents)

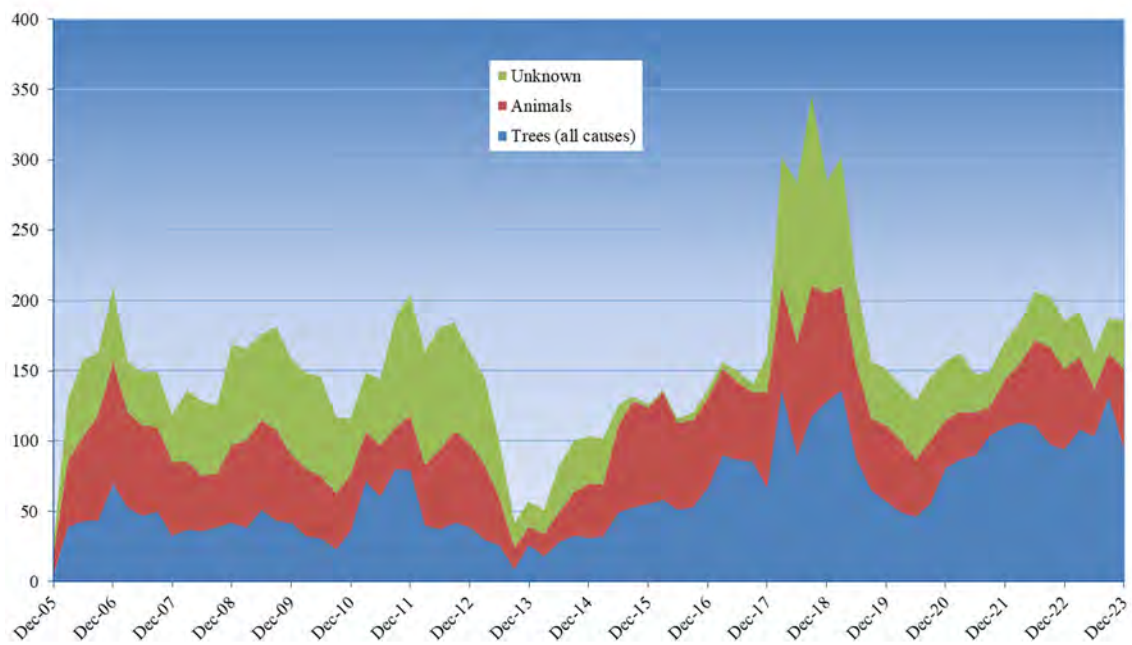


Figure 72 – Wellsboro Outage Tracking (number of Customers Interrupted)

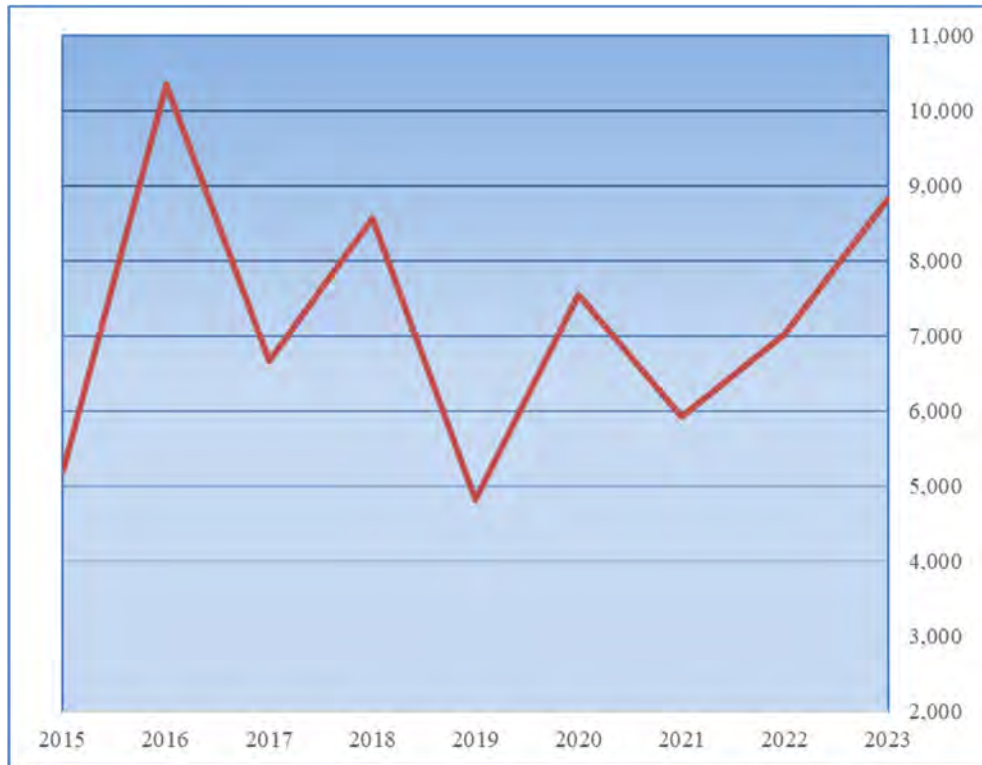


Figure 73 – Wellsboro Outage Tracking (Customer-Minutes of Interruptions CMI)

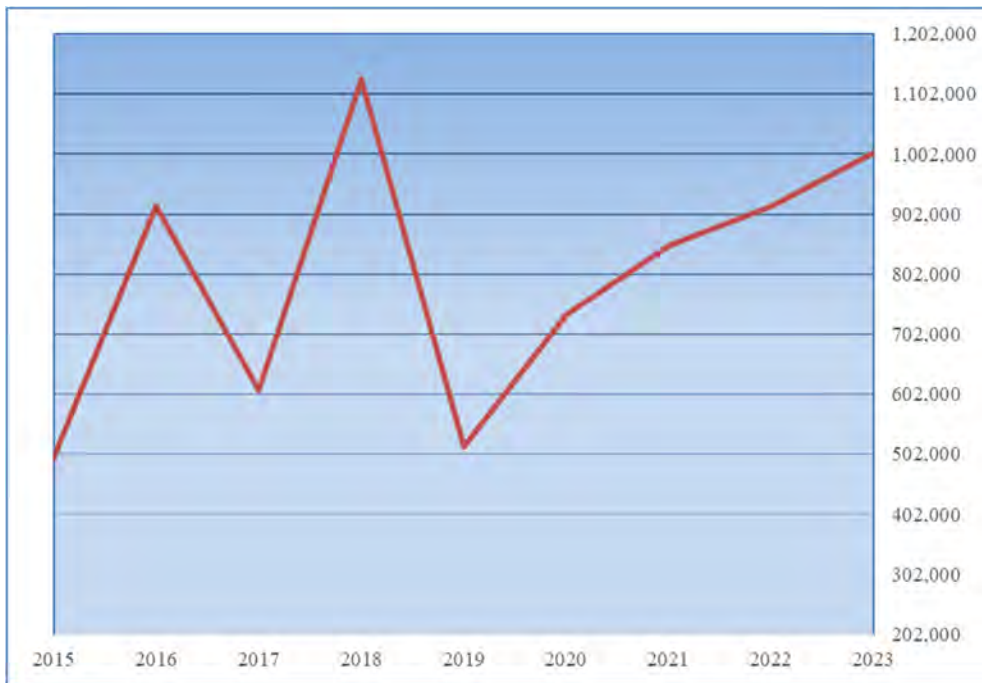
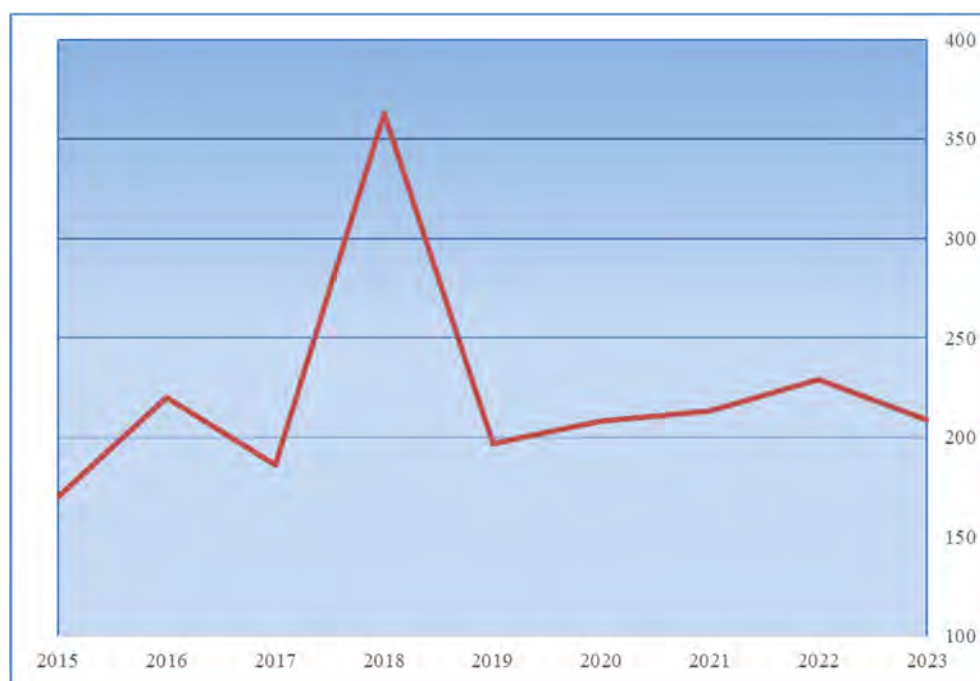


Figure 74 – Wellsboro Outage Tracking (number of interruptions annually)

Section 5 – Conclusion

Based on the information in this report and its Appendices, it can be seen that, with few exceptions, the reliability performance of the EDCs has continued to degrade with regard to CMI and the number of interruption events. As shown in each EDC's section above and Figures 82 through 84, below, CMI and interruption event reliability performance has exhibited a declining trend since 2015. Of the seven large EDCs, none have achieved CAIDI benchmark performance for the rolling 12-months ending in December 2023 and only one (PECO) achieved CAIDI benchmark for any of four rolling 12-month quarters of 2023. Of the four small EDCs, only two (UGI and Citizens') achieved CAIDI benchmark for all four rolling 12-month quarters of 2023. Overall, EDCs have demonstrated worsening CAIDI performance for the past three years.

CAIDI is an important measure as it relates to the average duration of a service outage. TUS views CAIDI as an important metric because it is a measure of resiliency and thus a good measure of an EDC's customer service. TUS notes that CAIDI is highly dependent upon the EDCs ability to respond to outages and restoration times. EDCs will be expected to improve worsening CAIDI. As noted above, as the EDCs install more sectionalizing devices (reclosers, etc.) that reduce the number of customers impacted by a sustained outage, it could possibly lead to increased CAIDI reliability metrics as the outages may be of longer duration. The Commission finds that in this regard, the CAIDI metric is becoming more realistic of the customer's experienced interruption duration, rather than a general average as determined by aggregate data.

In effect, CAIDI is moving toward being more realistic and representative of the average customer interruption length. As this occurs, the improvement of the drivers of these metrics such as response times, repair times and overall restoration times, will have more effect on the results.

As seen in Appendix B, only four of the 11 EDCs achieved benchmark for SAIFI in all rolling 12-month quarters in 2023, as compared to three in 2022 and four in 2021. In 2020, six of the EDCs achieved benchmark for SAIFI in all of the rolling 12-month quarters. In 2023, six of the 11 EDCs achieved the rolling 12-month SAIFI standard in all four rolling 12-month quarters, as compared to five in 2022, six in 2021 and eight in 2020. TUS views SAIFI as an important metric to focus on improving as it relates directly to the number of service outages experienced by a customer. Reducing service outages from occurring in the first place is crucial to improving reliability performance. As noted in the Executive Summary, the three EDCs that have expended the most capital through their LTIPs have been the most consistent in achieving benchmark SAIFI performance the past three years (Duquesne, PECO, and PPL).

For all EDCs except Duquesne, approximately 5.03 million customers experienced interruptions in 2022 as compared to approximately 5.47 million in 2022, 5.78 million in 2021 and 5.36 million in 2020. Duquesne calculates customer outages as kVA disrupted, rather than individual customers. Duquesne saw approximately 4.5 million kVA interrupted in 2023, which was a significant drop from the approximate 7.3 million kVA interrupted in both 2022 and 2021. Customer interruption data for all EDCs (excluding Duquesne) can be seen in figure 82 below. As shown in Figure 83 below, total CMI for all EDCs (except Duquesne) decreased slightly to 948 million in 2023, as compared to 954 million in 2022, 1.02 billion in 2021 and 811 million in 2020.

Even though it slightly declined in 2023, EDCs continue to experience increasing numbers of outages annually, *i.e.*, outage events that lead to customers experiencing sustained interruptions. Outages have increased from an annual level of 60,218 in 2015 to 81,786 in 2023, which is an increase of approximately 36%. See Figure 84 below. The number of PA EDC customers served (excluding Duquesne) has only increased from 5,192,839 in 2015 to 5,289,271 in 2023, or approximately 1.9%, as shown in figure 85 below.

EDCs are experiencing a significant increase in vegetation-caused outages since 2015. In December 2015 there were 14,462 outages reportedly caused by vegetation. By December 2023 the annual figure had risen to 31,680 outages attributed to vegetation problems, which is an increase of approximately 120%. See Figure 86 below.

As noted in Section 3 of this report, EDCs experienced 49 reportable outage events (ROEs) in 2023. EDCs had 42 ROEs in 2022 and 63 ROEs in 2021. The 63 ROEs in 2021 were the highest number reported to the Commission since 1994 (the first year of the five-year benchmarking period). All of the ROEs were caused by weather impacts on the EDC distribution systems. Noting this fact is not to excuse a slip in reliability performance of the EDCs, but rather to reiterate the importance of EDCs continuing to invest in reliability improvement and resiliency to weather events. As the EDCs continue to accelerate infrastructure improvement and to work on improving reliability and resilience through their LTIPs the Commission will expect to see

those numbers drop as increased automatic sectionalizing, storm hardening, and newer equipment is installed.

Another factor in reducing the number of events is the improvement of vegetation management by the EDCs. TUS expects all EDCs to review their vegetation management programs as vegetation issues are the number one cause of service outages for EDCs. Currently nine of the 11 EDCs have approved LTIIPs. As seen in this report's Executive Summary, TUS agrees with the EDCs that LTIIPs are an important tool in the toolbox for addressing failing infrastructure and improving resiliency. However, vegetation management is not an eligible project category for LTIIPs. As noted, EDCs should review their vegetation management programs to ensure that expenditures and procedures are most efficiently and effectively directed at the main cause of service outages. TUS also notes that it expects to see improvements in reliability as EDCs continue to execute their LTIIPs.

Figure 82 – ALL EDCs (except Duquesne) Customers Interrupted

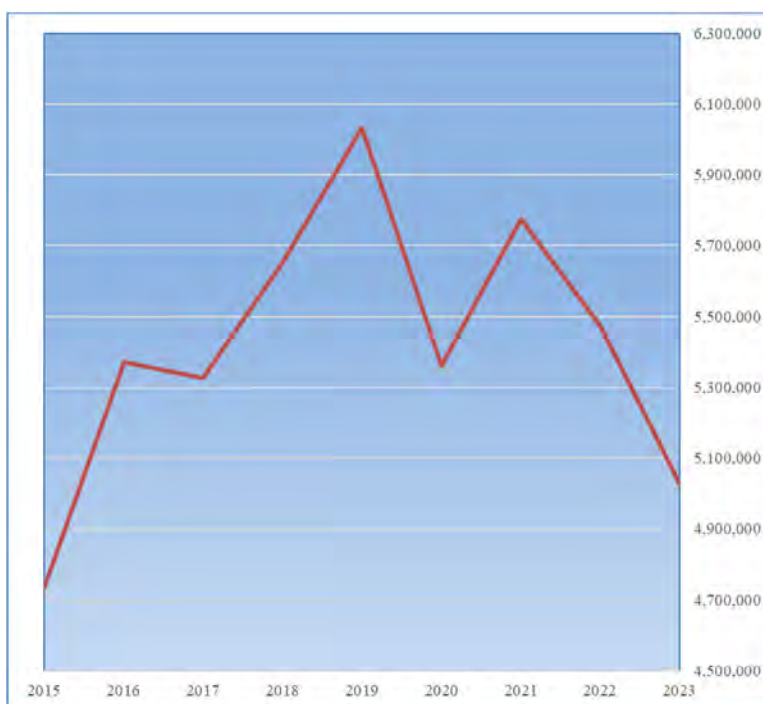


Figure 83 – ALL EDCs (except Duquesne) Customer-Minutes of Interruptions, or CMI

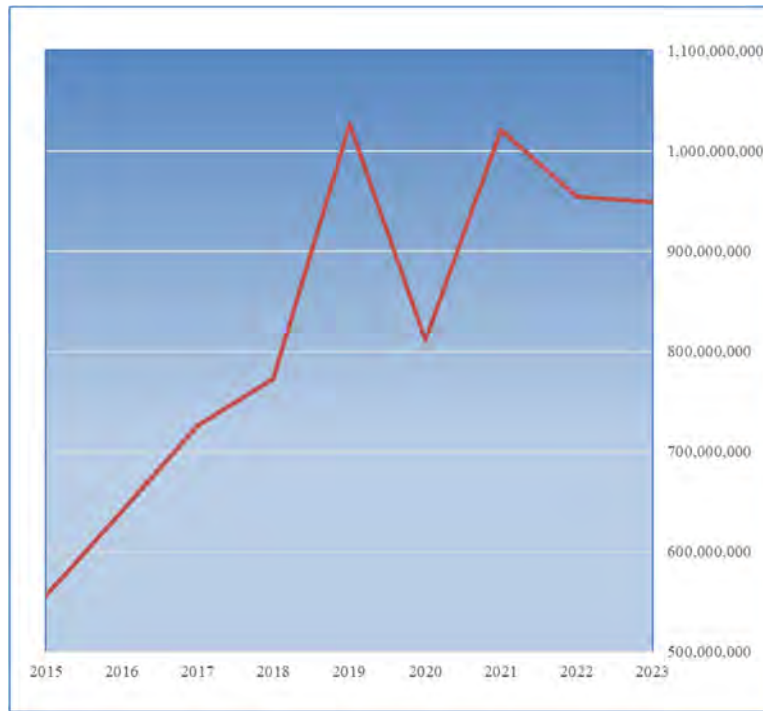


Figure 84 – ALL EDCs (except Duquesne) Number of Interruptions Annually

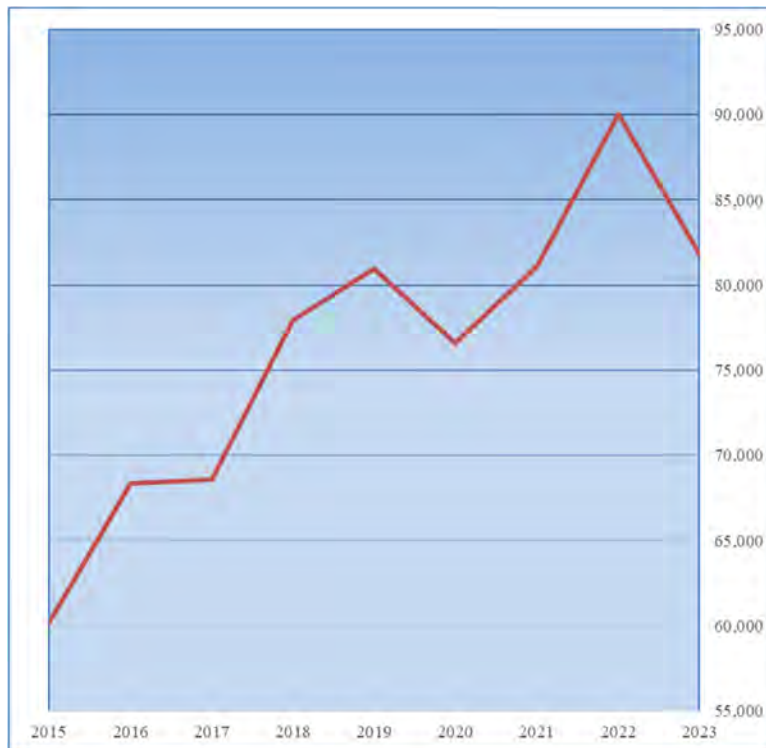


Figure 85 – ALL EDCs (except Duquesne) Number of Customers Served³⁴

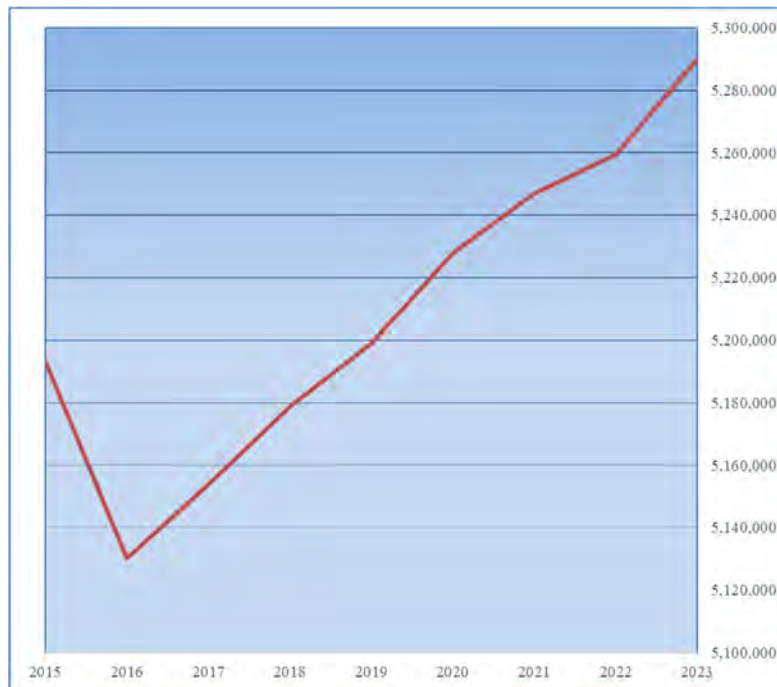
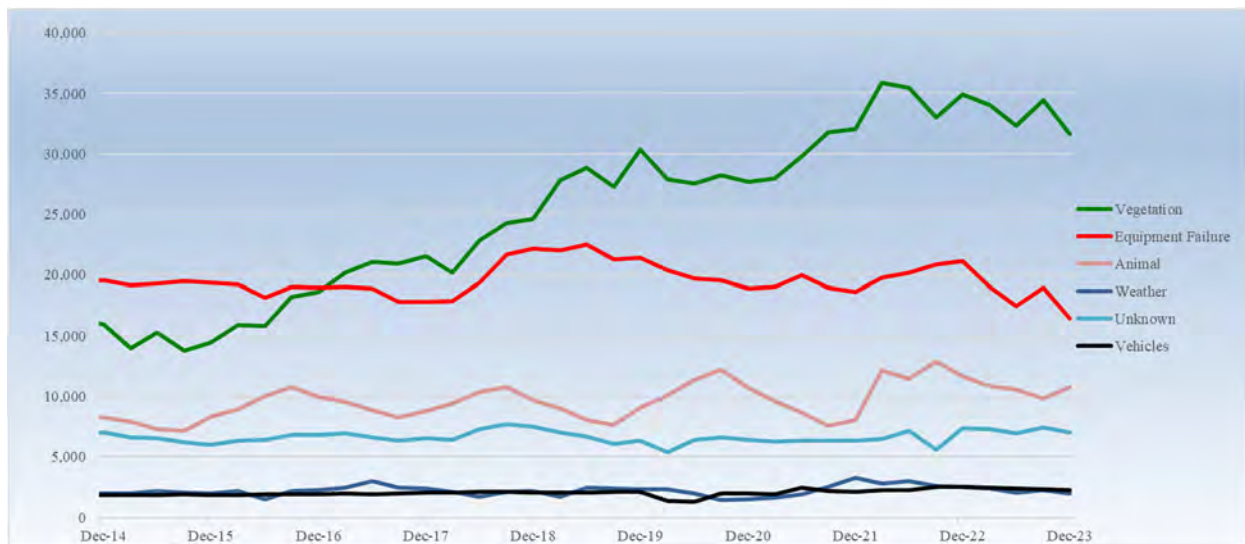


Figure 86 – Outage Causes ALL EDCs as Reported by EDCs for 2014-2023



³⁴ The drop in customers in 2016 was primarily due to PECO's effort to remove inactive accounts with their GIS update.

Appendix A – Electric Reliability Metrics

12-Month Average Electric Reliability Indices for 2023

Customer Average Interruption Duration Index (CAIDI)- min/yr/cust				% Above (+) or	% Above (+) or
EDC	Dec-23	Benchmark	Standard	Below (-) Benchmark	Below (-) Standard
Citizens'	90	105	141	-14.5%	-36.3%
Duquesne Light	110	108	130	1.9%	-15.4%
Met-Ed (FE)	202	117	140	72.4%	44.0%
PECO	138	112	134	23.2%	3.0%
Penelec (FE)	189	117	141	61.7%	34.2%
Penn Power (FE)	157	101	121	55.0%	29.3%
Pike County	95	174	235	-45.4%	-59.6%
PPL	189	145	174	30.3%	8.6%
UGI	112	169	228	-33.7%	-50.9%
Wellsboro	114	124	167	-8.1%	-31.7%
West Penn (FE)	266	170	204	56.6%	30.5%
System Average Interruption Frequency Index (SAIFI)- outages/yr/cust				% Above (+) or	% Above (+) or
EDC	Dec-23	Benchmark	Standard	Below (-) Benchmark	Below (-) Standard
Citizens'	0.32	0.20	0.27	60.0%	18.5%
Duquesne Light	0.57	1.17	1.40	-51.3%	-59.3%
Met-Ed (FE)	1.27	1.15	1.38	10.4%	-8.0%
PECO	0.74	1.23	1.48	-39.8%	-50.0%
Penelec (FE)	1.60	1.26	1.52	27.0%	5.3%
Penn Power (FE)	0.78	1.12	1.34	-30.4%	-41.8%
Pike County	0.86	0.61	0.82	41.0%	4.9%
PPL	0.78	0.98	1.18	-20.4%	-33.9%
UGI	0.54	0.83	1.12	-34.9%	-51.8%
Wellsboro	1.37	1.23	1.66	11.4%	-17.5%
West Penn (FE)	1.07	1.05	1.26	1.9%	-15.1%
System Average Interruption Duration Index (SAIDI)- min/yr/cust				% Above (+) or	% Above (+) or
EDC	Dec-23	Benchmark	Standard	Below (-) Benchmark	Below (-) Standard
Citizens'	29	21	38	38.1%	-23.7%
Duquesne Light	63	126	182	-49.9%	-65.3%
Met-Ed (FE)	257	135	194	90.3%	32.4%
PECO	103	138	198	-25.4%	-48.0%
Penelec (FE)	303	148	213	104.9%	42.4%
Penn Power (FE)	121	113	162	7.4%	-25.1%
Pike County	82	106	194	-22.6%	-57.7%
PPL	147	142	205	3.5%	-28.3%
UGI	61	140	256	-56.4%	-76.2%
Wellsboro	155	153	278	1.3%	-44.2%
West Penn (FE)	285	179	257	59.3%	11.0%

Note: **GREEN** = better than benchmark; **RED** = worse than standard; **BLACK** = between benchmark and standard.

Performance Benchmark. An EDC's performance benchmark is calculated by averaging the EDC's annual, system-wide reliability performance indices over the five-year period directly prior to the implementation of electric restructuring (1994 to 1998). The benchmark is the level of performance that the EDC should strive to achieve and maintain.

2023 Pennsylvania Electric Reliability Report

Three-Year Average Electric Reliability Indices for 2021-2023

Customer Average Interruption Duration Index (CAIDI)-min/yr/cust				3-Year	3-Year	% Above (+) or
EDC	2021	2022	2023	Average	Standard	Below (-) Standard
Citizens'	94	101	90	95	115	-17.4%
Duquesne Light	187	146	110	148	119	24.1%
Met-Ed (FE)	173	160	202	178	129	38.2%
PECO	187	99	138	141	123	14.9%
Penelec (FE)	151	199	189	180	129	39.3%
Penn Power (FE)	129	134	157	140	111	26.0%
Pike County	153	159	95	136	192	-29.3%
PPL	187	164	189	180	160	12.5%
UGI	134	156	112	134	186	-28.0%
Wellsboro	144	130	114	129	136	-4.9%
West Penn (FE)	192	276	266	245	187	30.9%
System Average Interruption Frequency Index (SAIFI)-outages/yr/cust				3-Year	3-Year	% Above (+) or
EDC	2021	2022	2023	Average	Standard	Below (-) Standard
Citizens'	0.27	0.27	0.32	0.29	0.22	30.3%
Duquesne Light	0.93	0.92	0.57	0.81	1.29	-37.5%
Met-Ed (FE)	1.35	1.32	1.27	1.31	1.27	3.4%
PECO	0.88	0.71	0.74	0.78	1.35	-42.5%
Penelec (FE)	1.84	1.83	1.60	1.76	1.39	26.4%
Penn Power (FE)	1.00	0.99	0.78	0.92	1.23	-24.9%
Pike County	1.40	0.50	0.86	0.92	0.67	37.3%
PPL	0.91	0.87	0.78	0.85	1.08	-21.0%
UGI	0.95	0.87	0.54	0.79	0.91	-13.6%
Wellsboro	0.93	1.09	1.37	1.13	1.35	-16.3%
West Penn (FE)	1.26	1.32	1.07	1.22	1.16	4.9%
System Average Interruption Duration Index (SAIDI)-min/yr/cust				3-Year	3-Year	% Above (+) or
EDC	2021	2022	2023	Average	Standard	Below (-) Standard
Citizens'	26	28	29	27	25	9.5%
Duquesne Light	173	134	63	123	153	-19.4%
Met-Ed (FE)	233	211	257	234	163	43.3%
PECO	164	71	103	113	167	-32.5%
Penelec (FE)	277	364	303	315	179	75.9%
Penn Power (FE)	129	133	121	128	136	-6.1%
Pike County	216	79	82	126	129	-2.6%
PPL	170	142	147	153	172	-11.0%
UGI	127	135	61	108	170	-36.7%
Wellsboro	133	142	155	143	185	-22.5%
West Penn (FE)	242	364	285	297	217	36.9%

Note: **GREEN** = better than standard; **RED** = worse than standard.

Performance Standard. An EDC's performance standard is a numerical value that represents the minimal performance allowed for each reliability index for a given EDC. Performance standards are based on a percentage of each EDC's historical performance benchmarks.

Appendix B – Reliability Performance Scorecard Results 2021-2023

2023 EDC Performance Scorecard												
Metrics achieved		GREEN	Benchmark Metrics not achieved				YELLOW	Standard Metrics not achieved				RED
		Rolling 12-Month										
		Benchmark Score					Standard Score					
EDCs	¹ Metrics	² BM	Q1	Q2	Q3	Q4	³ STD	Q1	Q2	Q3	Q4	
Large EDCs												
Duquesne Light	CAIDI	108	130	122	112	110	130	130	122	112	110	
	SAIDI	126	111	95	76	63	182	111	95	76	63	
	SAIFI	1.17	0.86	0.77	0.68	0.57	1.40	0.86	0.77	0.68	0.57	
PECO	CAIDI	112	94	99	138	138	134	94	99	138	138	
	SAIDI	138	59	65	112	103	198	59	65	112	103	
	SAIFI	1.23	0.62	0.66	0.81	0.74	1.48	0.62	0.66	0.81	0.74	
PPL	CAIDI	145	158	163	197	189	174	158	163	197	189	
	SAIDI	142	125	132	172	147	205	125	132	172	147	
	SAIFI	0.98	0.79	0.81	0.87	0.78	1.18	0.79	0.81	0.87	0.78	
Met-Ed (FirstEnergy)	CAIDI	117	140	155	178	202	140	140	155	178	202	
	SAIDI	135	160	185	237	257	194	160	185	237	257	
	SAIFI	1.15	1.14	1.19	1.34	1.27	1.38	1.14	1.19	1.34	1.27	
Penelec (FirstEnergy)	CAIDI	117	230	190	158	189	141	230	190	158	189	
	SAIDI	148	425	317	299	303	213	425	317	299	303	
	SAIFI	1.26	1.85	1.66	1.89	1.60	1.52	1.85	1.66	1.89	1.60	
Penn Power (FirstEnergy)	CAIDI	101	311	117	166	157	121	311	117	166	157	
	SAIDI	113	422	96	159	121	162	422	96	159	121	
	SAIFI	1.12	1.36	0.82	0.96	0.78	1.34	1.36	0.82	0.96	0.78	
West Penn (FirstEnergy)	CAIDI	170	282	254	203	266	204	282	254	203	266	
	SAIDI	179	386	280	268	285	257	386	280	268	285	
	SAIFI	1.05	1.37	1.10	1.32	1.07	1.26	1.37	1.10	1.32	1.07	
Small EDCs												
Citizens'	CAIDI	105	95	84	92	90	141	95	84	92	90	
	SAIDI	21	27	31	43	29	38	27	31	43	29	
	SAIFI	0.20	0.28	0.37	0.47	0.32	0.27	0.28	0.37	0.47	0.32	
Pike County	CAIDI	174	160	158	108	95	235	160	158	108	95	
	SAIDI	106	81	107	85	82	194	81	107	85	82	
	SAIFI	0.61	0.50	0.67	0.79	0.86	0.82	0.50	0.67	0.79	0.86	
UGI	CAIDI	169	159	132	165	112	228	159	132	165	112	
	SAIDI	140	127	100	113	61	256	127	100	113	61	
	SAIFI	0.83	0.80	0.76	0.69	0.54	1.12	0.80	0.76	0.69	0.54	
Wellsboro	CAIDI	124	125	103	115	114	167	125	103	115	114	
	SAIDI	153	133	100	158	155	278	133	100	158	155	
	SAIFI	1.23	1.06	0.97	1.38	1.37	1.66	1.06	0.97	1.38	1.37	
¹ CAIDI	(Customer Average Interruption Duration Index) - Measures average power restoration time (minutes) for every customer who lost power during this year.											
SAIDI	(System Average Interruption Duration Index) - Measures average outage duration time (minutes) for every customer served during this year.											
SAIFI	(System Average Interruption Frequency Index) - Measures average frequency of power interruptions for every customer served during this year.											
² BM	(Benchmark) - EDC's attained performance baseline score prior to electric restructuring. Calculated by averaging historical performance metrics over the five-year period directly prior to electric restructuring (1994 to 1998).											
³ STD	(Standard) - EDC's upper limit performance value. CAIDI STD & SAIFI STD is calculated by multiplying BM by 120% for large EDCs and 135% for small EDCs. SAIDI STD is calculated by multiplying CAIDI STD x SAIFI STD.											

2023 Pennsylvania Electric Reliability Report

2022 EDC Performance Scorecard												
Metrics achieved		GREEN	Benchmark Metrics not achieved					YELLOW	Standard Metrics not achieved			RED
		Rolling 12-Month										
		Benchmark Score					Standard Score					
EDCs	¹ Metrics	² BM	Q1	Q2	Q3	Q4	³ STD	Q1	Q2	Q3	Q4	
Large EDCs												
Duquesne Light	CAIDI	108	193	166	145	146	130	193	166	145	146	
	SAIDI	126	190	162	130	134	182	190	162	130	134	
	SAIFI	1.17	0.98	0.98	0.89	0.91	1.40	0.98	0.98	0.89	0.91	
PECO	CAIDI	112	182	186	96	99	134	182	186	96	99	
	SAIDI	138	173	170	67	71	198	173	170	67	71	
	SAIFI	1.23	0.95	0.92	0.69	0.71	1.48	0.95	0.92	0.69	0.71	
PPL	CAIDI	145	190	191	153	164	174	190	191	153	164	
	SAIDI	142	185	183	125	142	205	185	183	125	142	
	SAIFI	0.98	0.97	0.96	0.82	0.87	1.18	0.97	0.96	0.82	0.87	
Met-Ed (FirstEnergy)	CAIDI	117	190	181	168	160	140	190	181	168	160	
	SAIDI	135	288	262	229	211	194	288	262	229	211	
	SAIFI	1.15	1.51	1.45	1.36	1.32	1.38	1.51	1.45	1.36	1.32	
Penelec (FirstEnergy)	CAIDI	117	145	190	197	199	141	145	190	197	199	
	SAIDI	148	275	369	360	364	213	275	369	360	364	
	SAIFI	1.26	1.90	1.94	1.83	1.83	1.52	1.90	1.94	1.83	1.83	
Penn Power (FirstEnergy)	CAIDI	101	135	130	125	134	121	135	130	125	134	
	SAIDI	113	149	176	128	133	162	149	176	128	133	
	SAIFI	1.12	1.11	1.36	1.02	0.99	1.34	1.11	1.36	1.02	0.99	
West Penn (FirstEnergy)	CAIDI	170	251	266	271	276	204	251	266	271	276	
	SAIDI	179	344	388	344	364	257	344	388	344	364	
	SAIFI	1.05	1.37	1.46	1.27	1.32	1.26	1.37	1.46	1.27	1.32	
Small EDCs												
Citizens'	CAIDI	105	98	112	98	101	141	98	112	98	101	
	SAIDI	21	22	22	19	28	38	22	22	19	28	
	SAIFI	0.20	0.22	0.20	0.19	0.27	0.27	0.22	0.20	0.19	0.27	
Pike County	CAIDI	174	158	183	137	159	235	158	183	137	159	
	SAIDI	106	215	188	85	79	194	215	188	85	79	
	SAIFI	0.61	1.36	1.03	0.62	0.50	0.82	1.36	1.03	0.62	0.50	
UGI	CAIDI	169	124	150	157	156	228	124	150	157	156	
	SAIDI	140	122	136	136	135	256	122	136	136	135	
	SAIFI	0.83	0.99	0.91	0.87	0.87	1.12	0.99	0.91	0.87	0.87	
Wellsboro	CAIDI	124	144	152	150	130	167	144	152	150	130	
	SAIDI	153	155	207	166	142	278	155	207	166	142	
	SAIFI	1.23	1.08	1.37	1.11	1.09	1.66	1.08	1.37	1.11	1.09	
¹ CAIDI	(Customer Average Interruption Duration Index) - Measures average power restoration time (minutes) for every customer who lost power during this year.											
SAIDI	(System Average Interruption Duration Index) - Measures average outage duration time (minutes) for every customer served during this year.											
SAIFI	(System Average Interruption Frequency Index) - Measures average frequency of power interruptions for every customer served during this year.											
² BM	(Benchmark) - EDC's attained performance baseline score prior to electric restructuring. Calculated by averaging historical performance metrics over the five-year period directly prior to electric restructuring (1994 to 1998).											
³ STD	(Standard) - EDC's upper limit performance value. CAIDI STD & SAIFI STD is calculated by multiplying BM by 120% for large EDCs and 135% for small EDCs. SAIDI STD is calculated by multiplying CAIDI STD x SAIFI STD.											

2023 Pennsylvania Electric Reliability Report

2021 EDC Performance Scorecard												
Metrics achieved	GREEN	Benchmark Metrics not achieved					YELLOW	Standard Metrics not achieved				RED
		Rolling 12-Month										
		Benchmark Score					Standard Score					
EDCs	¹ Metrics	² BM	Q1	Q2	Q3	Q4	³ STD	Q1	Q2	Q3	Q4	
Large EDCs												
Duquesne Light	CAIDI	108	141	172	190	187	130	141	172	190	187	
	SAIDI	126	112	151	184	173	182	112	151	184	173	
	SAIFI	1.17	0.79	0.88	0.97	0.93	1.40	0.79	0.88	0.97	0.93	
PECO	CAIDI	112	136	123	134	187	134	136	123	134	187	
	SAIDI	138	121	102	198	164	198	121	102	198	164	
	SAIFI	1.23	0.89	0.83	0.94	0.88	1.48	0.89	0.83	0.94	0.91	
PPL	CAIDI	145	147	158	194	187	174	147	158	194	187	
	SAIDI	142	130	126	176	170	205	130	126	176	170	
	SAIFI	0.98	0.89	0.79	0.91	0.91	1.18	0.89	0.79	0.91	0.91	
Met-Ed (FirstEnergy)	CAIDI	117	157	168	178	173	140	157	168	178	173	
	SAIDI	135	193	206	237	233	194	193	206	237	233	
	SAIFI	1.15	1.23	1.23	1.34	1.35	1.38	1.23	1.23	1.34	1.35	
Penelec (FirstEnergy)	CAIDI	117	152	152	158	151	141	152	152	158	151	
	SAIDI	148	253	252	299	277	213	253	252	299	277	
	SAIFI	1.26	1.66	1.66	1.89	1.84	1.52	1.66	1.66	1.89	1.84	
Penn Power (FirstEnergy)	CAIDI	101	187	171	166	129	121	187	171	166	129	
	SAIDI	113	154	119	159	129	162	154	119	159	129	
	SAIFI	1.12	0.83	0.70	0.96	1.00	1.34	0.83	0.70	0.96	1.00	
West Penn (FirstEnergy)	CAIDI	170	217	209	203	192	204	217	209	203	192	
	SAIDI	179	240	230	268	242	257	240	230	268	242	
	SAIFI	1.05	1.10	1.10	1.32	1.26	1.26	1.10	1.10	1.32	1.26	
Small EDCs												
Citizens'	CAIDI	105	88	78	94.1	94	141	88	78	94.1	94	
	SAIDI	21	14	15	21.8	25.6	38	14	15	21.8	25.6	
	SAIFI	0.20	0.16	0.19	0.23	0.27	0.27	0.16	0.19	0.23	0.27	
Pike County	CAIDI	174	170	110	166	153	235	170	110	166	153	
	SAIDI	106	89	88	219	216	194	89	88	219	216	
	SAIFI	0.61	0.52	0.79	1.31	1.40	0.82	0.52	0.79	1.31	1.40	
UGI	CAIDI	169	162	147	132	134	228	162	147	132	134	
	SAIDI	140	89	104	127	127	256	89	104	127	127	
	SAIFI	0.83	0.55	0.71	0.96	0.95	1.12	0.55	0.71	0.96	0.95	
Wellsboro	CAIDI	124	97	112	124	144	167	97	112	124	144	
	SAIDI	153	110	83	99	133	278	110	83	99	133	
	SAIFI	1.23	1.13	0.75	0.80	0.93	1.66	1.13	0.75	0.80	0.93	
¹ CAIDI	(Customer Average Interruption Duration Index) - Measures average power restoration time (minutes) for every customer who lost power during this year.											
SAIDI	(System Average Interruption Duration Index) - Measures average outage duration time (minutes) for every customer served during this year.											
SAIFI	(System Average Interruption Frequency Index) - Measures average frequency of power interruptions for every customer served during this year.											
² BM	(Benchmark) - EDC's attained performance baseline score prior to electric restructuring. Calculated by averaging historical performance metrics over the five-year period directly prior to electric restructuring (1994 to 1998).											
³ STD	(Standard) - EDC's upper limit performance value. CAIDI STD & SAIFI STD is calculated by multiplying BM by 120% for large EDCs and 135% for small EDCs. SAIDI STD is calculated by multiplying CAIDI STD x SAIFI STD.											

Appendix C – Deviations to Inspection and Maintenance Intervals

Deviations to Inspection and Maintenance (I&M) Intervals (Group 1) Submitted October 2023, effective Jan. 1, 2025 – Dec. 31, 2026

Company	Deviation Requested	Justification
FE PA: Penelec, Penn Power, Met- Ed, and West Penn Power	Pole loading calculations	Approved previously in the Jan. 1, 2013- Dec. 31, 2014, I&M Plan.
UGI Electric	Pole loading calculations	Approved previously in the Jan. 1, 2021- Dec. 31, 2022, I&M Plan.

Deviations to Inspection and Maintenance Intervals (Group 2) Submitted October 2022, effective Jan. 1, 2024 – Dec. 31, 2025

Company	Deviation Requested	Justification
Citizens'	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan.
Duquesne	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
Duquesne	Overhead line inspections	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
Duquesne	Overhead transformer inspections	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
Duquesne	Above-ground pad-mounted transformers	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PECO	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PECO	Above-ground pad-mounted transformers	Approved previously in the Jan. 1, 2020- Dec. 31, 2021, I&M Plan
Pike County	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PPL	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PPL	Overhead line inspections	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PPL	Overhead transformer inspections	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PPL	Pad mounted and belowground transformer inspections	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan
PPL	Recloser inspections	Approved previously in the Jan. 1, 2014- Dec. 31, 2015, I&M Plan
PPL	Substation inspections	Provisional approved in the Jan. 1, 2017- Dec. 31, 2018, I&M Plan (docket M-2009-2094773)
Wellsboro	Pole loading calculations	Approved previously in the Jan. 1, 2012- Dec. 31, 2013, I&M Plan



Pennsylvania Public Utility Commission
400 North Street
Harrisburg, PA 17120
www.puc.pa.gov



**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No.: P-2024-3048732
Distribution System Improvement	:	
Charge Cap of 5% of Billed Revenues	:	

**ADMITTED TESTIMONY AND EXHIBITS
OF THE
OFFICE OF SMALL BUSINESS ADVOCATE**

The Office of Small Business Advocate (“OSBA”) admitted the attached testimony and exhibits as evidence into the evidentiary record at the Evidentiary Hearing on September 4, 2024, in the above-captioned proceeding:

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

Date: September 4, 2024



COMMONWEALTH OF PENNSYLVANIA

July 18, 2024

The Honorable Arlene Ashton
Administrative Law Judge
Pennsylvania Public Utility Commission
801 Market Street, Suite 4063
Philadelphia, PA 19107

Re: Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Revenues / Docket No.: P-2024-3048732

Dear Judge Ashton:

Enclosed please find the Direct Testimony of Mark D. Ewen, labelled **OSBA Statement No. 1 and associated Exhibits IEC-1**, 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 Chiavetta (Cover Letter & Certificate of Service only)
Mark D. Ewen
Parties of Record

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No. P-2024-3048732
Distribution System Improvement Charge	:	
Cap of 5% Of Billed Revenues	:	
	:	

**Direct Testimony and Exhibit of
MARK D. EWEN**

**On Behalf of the
Pennsylvania Office of Small Business Advocate (“OSBA”)**

Date Served: July 18, 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 Utility 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. OSBA requested that I review the petition of PPL Electric Utilities Corporation (“PPL
16 Electric” or “the Company”) for approval of a waiver of its distribution system improvement
17 charge (“DSIC”) cap of 5.0 percent of billed revenues for services rendered on or after
18 January 1, 2025 (the “Waiver Petition”), and that I determine whether the proposal is
19 consistent with sound economics and regulatory policy and fairly treats small business
20 customers.

21 **Q. Please explain what the Company proposes with respect to its DSIC.**

22 A. PPL Electric is permitted to make investments to repair, improve or replace existing
23 distribution system assets in between rate cases, and to pass the costs associated with those
24 investments to ratepayers in the form of a DSIC. The Commission approved PPL Electric’s
25 DSIC in Orders entered in May 2023 and April 2015. The DSIC is reset with each base rates
26 case, and investments are includable in the DSIC only after they have exceeded the amounts
27 established for the test year in the base rates proceeding. DSIC-eligible costs are allocated
28 to all classes based on the overall distribution plant allocation factor derived in the most

1 recent base rates proceeding. The DSIC applies as a percentage of the distribution bill. At
2 present, that percentage may not exceed 5.0 percent. In this proceeding, the Company
3 proposes that it be permitted to increase this upper bound to 9.0 percent.

4 **Q. What is the legal standard for a waiver to the 5 percent limit on the DSIC?**

5 **A.** I am advised by OSBA counsel that the DSIC cap is governed by 66 Pa. C.S. § 1358(a)(1),
6 which states:

7 *“Except as provided under paragraph (2), the distribution system improvement*
8 *charge may not exceed 5% of the amount billed to customers under the*
9 *applicable rates of the wastewater utility or distribution rates of the electric*
10 *distribution company, natural gas distribution company or city natural gas*
11 *distribution operation. The commission may upon petition grant a waiver of the*
12 *5% limit under this paragraph for a utility in order to ensure and maintain*
13 *adequate, efficient, safe, reliable and reasonable service.”*

14 Counsel further advises that this statutory provision implies that the 5 percent cap for non-
15 water utilities may only be exceeded in extraordinary circumstances, when there is a
16 significant threat to safe and reliable service under the 5 percent cap.

17 **Q. How do you interpret this language?**

18 **A.** From my non-legal perspective, I would interpret the plain language of the legislation to
19 require the utility to demonstrate that a waiver was necessary to meet the “*adequate,*
20 *efficient, safe, reliable and reasonable service*” standard. That is, if the utility could provide
21 the requisite level of service without a waiver of the DSIC, such as through base rate
22 increases or costs reductions or sound management, it would not be eligible for the waiver.

23 It would appear that the legislature a) wanted the Commission to establish DSICs, b) enact
24 some basic consumer protections to avoid abuse, and c) include an opportunity for the
25 Commission to waive one such consumer protection under certain circumstances.

26 The intent of Act 11 appears to allow utilities to implement a DSIC in order to encourage
27 replacement (and perhaps accelerated replacement) of aging distribution assets. Thus, it
28 seems unlikely that the legislature intended that utilities be required to demonstrate that they
29 would be unable to provide adequate service without a DSIC. Moreover, Pennsylvania
30 utilities have been able to meet their service obligations for a long time without a DSIC
31 mechanism, and it would be difficult for them to demonstrate that they could not continue

1 to do so without a DSIC. Consequently, in granting petitions to adopt a DSIC, it does not
2 appear to me that the Commission has insisted on any such requirement.

3 **Q. What is OSBA’s position with respect to the Company’s waiver request?**

4 A. I am advised by counsel that OSBA interprets the legislative history relating to the cap on
5 the DSIC as indicating that the cap was an important consumer protection that was integral
6 to the adoption of the DSIC, and that the cap was intended to be waived only in extraordinary
7 circumstances. As such, the OSBA concludes that the legislation requires a utility to
8 demonstrate that it is financially or otherwise incapable of meeting its service obligations
9 without a waiver of the cap.

10 **Q. If the Commission adopts the OSBA’s position, is a waiver justified?**

11 A. No. The Company has offered no evidence that it is financially unable to meet its service
12 obligations without the proposed waiver.

13 **Q. How does PPL Electric justify the waiver request in this proceeding?**

14 A. The Company represents that “a higher DSIC cap is necessary to ensure and maintain
15 adequate, efficient, safe, reliable, and reasonable service for the benefit of PPL Electric’s
16 customers”, citing 66 Pa. C.S. § 1501 and 66 Pa. C.S. § 1358(a)(1).¹ The Company’s
17 supporting arguments appear in its petition and accompanying testimony. I summarize the
18 arguments as follows:

- 19 • Deteriorating reliability performance: the Company has missed several reliability
20 indicators over the past 4 years, including the System Average Interruption
21 Duration Index (“SAIDI”) benchmark, the Customer Average Interruption
22 Duration Index (“CAIDI”) benchmark, the System Average Interruption
23 Frequency Index (“SAIFI”) benchmark, and the Experiencing Multiple
24 Interruptions (“CEMI”) performance metric. More frequent and severe weather
25 events, in addition to inflation and supply chain constraints, have impaired the
26 Company’s ability to maintain and improve service reliability. For example,
27 procurement costs for transformers have averaged over \$1 million since 2021, up
28 from \$590,000 on average between 2016 and 2020.² Increasing the DSIC will
29 therefore allow the company to improve and maintain service reliability in a timely
30 manner.

¹ Waiver Petition at 1.

² Waiver Petition at 14-15.

- Insufficient capital to finance the Company’s Long-Term Infrastructure Improvement Plan (“LTIIIP”): PPL Electric claims that increasing the DSIC cap will help the company finance and carry out the projects outlined in its current LTIIIP and its Petition for Approval of Major Modifications to its Existing LTIIIP at Docket No. P-2022-3034972 (“Modified LTIIIP”). The Commission approved the Modified LTIIIP, excluding the proposed \$84.44 million Predictive Failure Technology program, on July 11, 2024. This decision will add total project costs of \$203.42 million to PPL Electric’s current LTIIIP. The Company estimates that its DSIC would range between 6.0% and 14.53% for the remainder of the Modified LTIIIP.³ Increasing the DSIC cap would also release funding for additional projects that can improve service reliability but are not set forth in the LTIIIP or Modified LTIIIP.⁴
- Minimal impact on customers’ bills: PPL Electric claims that the proposed increase in the DSIC cap will have a “minimal” impact on customers’ bills. Bethany L. Johnson’s direct testimony (Statement No. 2) provides supporting calculations for this claim. The Company states that increasing the DSIC cap to 9 percent would increase the monthly bill for a residential customer using 1,000 kWh per month by \$2.37 per month at the cap. PPL Electric does not analyze the bill impacts on small business customers.
- Reduced frequency between base rate cases: the Company argues that the DSIC reduces the time and expense the Commission and other parties must dedicate to base rate proceedings.

Q. Please address the Company’s rationale that the 5 percent cap is insufficient to improve its reliability metrics.

A. As a general matter, it would appear counterintuitive as a regulatory policy to abandon basic consumer protections written into the legislation as a direct result of the Company’s inadequate performance. Increasing the cap thus represents a moral hazard which may incentivize other Pennsylvania utilities to request DSIC waivers rather than improve services in a cost-effective manner. In this case, the Commission has found evidence that the Company’s ineffective and decreasing operation and maintenance (“O&M”) expenditures are also impacting its performance. I discuss this issue in detail below.

Q. Please comment on the Company’s rationale that the 5 percent cap is insufficient to recover all DSIC-eligible costs and investments in LTIIIP projects?

³ Waiver Petition, Statement No. 2 at 7.

⁴ Waiver Petition at 3.

1 A. From my non-legal perspective, I do not agree that this argument should justify a waiver. If
2 simply exceeding the cap is sufficient justification for a waiver, there is no point to including
3 the cap as a basic consumer protection within the legislation.

4 **Q. Please comment on the Company's rationale that increasing the DSIC cap will have**
5 **only a modest impact on ratepayers.**

6 A. From a commonsense standpoint, I conclude that the legislature used its judgment in
7 establishing the 5 percent cap as to what constituted an acceptable rate increase without a
8 full base rates review. The Company therefore appears to argue that it should be allowed to
9 substitute their judgment for that of the legislature as to what constitutes too large an
10 increase. From a lay perspective, this would appear to be inappropriate.

11 **Q. Please comment on the Company's rationale that increasing the cap will avoid costs of**
12 **frequent base rates proceeds?**

13 A. In general, I agree that reducing the need for frequent and costly base rates proceedings is
14 one reasonable justification for adopting a DSIC or a similar rate mechanism, which is offset
15 by all of the disadvantages and problems associated with single-issue ratemaking. For
16 example, a single-issue approach can lead to "cherry-picking" of cost items by utilities,
17 wherein they are permitted to get rate increases for certain specific cost increases, but then
18 ignore other factors driving the cost increases or factors which can cause unit costs to
19 decline. Some reasonable balance needs to be struck between these objectives. My non-
20 legal interpretation of the DSIC statutes is that the legislature considered this balance in
21 establishing the 5 percent cap, and it made no explicit reference to avoiding the need for
22 frequent base rates proceedings in specifying criteria for waiving the cap.

23 In addition, it should be recognized that the DSIC mechanism simply defers the issue of
24 moving class rates into line with allocated costs. The DSIC is a flat percentage charge that
25 applies to all rate classes. As such, it essentially freezes the relative cost responsibility for
26 each of the rate classes. To the extent that this freeze defers base rates proceedings, it can
27 also have the effect of deferring progress toward cost-based rates that may have been
28 constrained in the most recent base rates proceedings due to rate "gradualism" concerns.

1 In the specific case of PPL Electric, increasing the DSIC cap appears to be an inappropriate
2 substitute for a full base rates filing. When the Commission approved PPL Electric's
3 Modified LTIP, it also expressed concern with the Company's reliability metrics,
4 customers interruptions, and vegetation-caused outages, the latter related to the Company's
5 decreasing O&M and vegetation management expenses since 2013. The Commission
6 stated:

7 *The issue of PPL's apparent decreasing O&M expenditures, including vegetation*
8 *management expenditures, are beyond the scope of this Petition and Order, but we*
9 *highlight these issues here for such consideration as may be warranted by parties to*
10 *PPL's next base rate case.*⁵

11 By highlighting the connection between the Company's decreasing O&M and vegetation
12 expenditures and its reliability metrics, the Commission seemed to indicate that a base
13 rates proceeding is the proper setting in which to evaluate the related issues together. The
14 Commission should not grant the Company's waiver request given the other factors
15 (namely, decreasing O&M and other standard and prudent expenditures) besides the 5.0%
16 DSIC cap that are impacting PPL Electric's reliability metrics. In the same Order, the
17 Commission noted that "the DSIC is not intended to displace or impact a company's
18 baseline (meaning pre-DSIC and pre-LTIP) budgets for O&M and capital improvements.
19 In fact, the DSIC and LTIP are to reflect an acceleration of infrastructure replacement
20 over the utility's historic level of capital improvement, or to maintain an already
21 accelerated rate of infrastructure replacement."⁶

22 The Company's own customer bill impacts analysis suggests it may file a new base rates
23 case soon. As noted above, the Company calculated that its DSIC may range from 6.0%
24 and 14.54% for the remainder of the 2023-2027 Modified LTIP; the DSIC rate would be
25 above 8.0% percent in 2025 and above 9.0% in 2026-2027. The 9.0% cap was chosen to

⁵ Opinion and Order, Pennsylvania Public Utility Commission, Docket No. P-2022-3034972, Order entered July 11, 2024, page 21.

⁶ Opinion and Order, Pennsylvania Public Utility Commission, Docket No. P-2022-3034972, Order entered July 11, 2024, page 21.

1 balance the Company's need for financial relief and the impact on customers' bills.⁷ If the
2 Company cannot recover all DSIC-eligible charges even with a 9.0% cap, it will likely
3 request another cap increase or file a base rates case to finance/recover investments in the
4 Modified LTIP and other eligible projects.

5 **Q. Based on your review, what do you recommend with respect to the Company's**
6 **proposed DSIC cap waiver?**

7 A. I recommend that it be rejected. At a minimum, the Commission should not approve any
8 waiver that does not include an explicit alternative deadline to the next base rates case (e.g.,
9 the end of the Company's LTIP).

10 **Q. Does this conclude your direct testimony?**

11 A. Yes, it does.
12
13

⁷ Waiver Petition, Statement No. 2 at 6-7.

EXHIBIT IEc-1

RÉSUMÉ AND EXPERT TESTIMONY LIST

FOR

MARK D. EWEN

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.

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 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.

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 Andrienas 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).

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

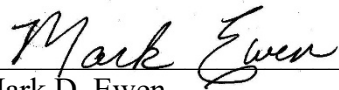
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Corporation for a Waiver of the	:	Docket No. P-2024-3048732
Distribution System Improvement Charge	:	
Cap of 5% Of Billed Revenues	:	
	:	

VERIFICATION

I, Mark D. Ewen, hereby state that the facts set forth in the Direct Testimony labelled OSBA Statement No. 1 and associated Exhibit IEc-1 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: 7.18.2014



Mark D. Ewen

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No.: P-2024-3048732
Distribution System Improvement	:	
Charge Cap of 5% of Billed Revenues	:	
	:	

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).

The Honorable Arlene Ashton
Administrative Law Judge
Pennsylvania Public Utility Commission
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Philadelphia, PA 19107
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DATE: July 18, 2024

/s/ Sharon E. Webb
Sharon E. Webb
Assistant Small Business Advocate
Attorney I.D. No. 73995



COMMONWEALTH OF PENNSYLVANIA

August 27, 2024

The Honorable Arlene Ashton
Administrative Law Judge
Pennsylvania Public Utility Commission
801 Market Street, Suite 4063
Philadelphia, PA 19107

Re: Petition of PPL Electric Utilities Corporation for a Waiver of the Distribution System Improvement Charge Cap of 5% of Billed Revenues / Docket No.: P-2024-3048732

Dear Judge Ashton:

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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 Chiavetta (Cover Letter & Certificate of Service only)
Mark D. Ewen
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**BEFORE THE
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	:	

Surrebuttal Testimony of

MARK D. EWEN

On Behalf of the

Pennsylvania Office of Small Business Advocate (“OSBA”)

Date Served: August 27, 2024

Date Submitted for the Record: _____

SURREBUTTAL TESTIMONY OF MARK D. EWEN

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

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

Q. What this the purpose of this surrebuttal testimony>

A. This surrebuttal testimony responds to the rebuttal testimony of PPL Electric Utilities Corporation (“PPL Electric” or “the Company”) witnesses Steven Selkregg and Bethany Johnson, regarding the Company’s requested approval of a waiver of its distribution system improvement charge (“DSIC”) cap of 5.0 percent of billed revenues for services rendered on or after January 1, 2025 (the “Waiver Petition”).

Q. Please summarize Witness Selkregg’s rebuttal testimony.

A. Witness Selkregg states that in my direct testimony, I did not explicitly address the Company’s reliability metrics, namely its Customer Average Interruption Duration Index (“CAIDI”), System Average Interruption Duration Index (“SAIDI”), or System Average Interruption Frequency Index (“SAIFI”). Witness Selkregg represents that the Company’s poor performance in these metrics justifies an increase in the DSIC cap from 5.0 percent to 9.0 percent. Witness Selkregg claims that the Company’s reliability performance and challenges are driven by “storm related impacts” and “increasing weather events in the territory.”

Witness Selkregg also comments on my argument that a full base rate case is the proper setting in which to address the Company’s reliability metrics, customers interruptions, and vegetation-caused outages, the latter related to the Company’s decreasing operation and maintenance (“O&M”) and vegetation management expenses since 2013. Witness Selkregg argues that a DSIC cap waiver would allow the Company to invest in storm-hardening investments on the distribution system to supplement vegetation management and to invest in other projects more generally.

1 **Q. Please comment on Witness Selkregg’s rebuttal testimony.**

2 **A.** While it is true that in my direct testimony, I did not directly respond to the Company’s
3 performance reliability metrics, I did and continue to argue that PPL Electric’s inadequate
4 performance does not justify a DSIC wavier increase. In my direct testimony, I stated that
5 it is counterintuitive as a regulatory policy to abandon basic consumer protections written
6 into the legislation as a direct result of the Company’s inadequate performance. Increasing
7 the cap thus represents a moral hazard which may incentivize other Pennsylvania utilities
8 to request DSIC waivers rather than improve services in a cost-effective manner. The
9 Company has offered no evidence that storm-related impacts are the primary cause of its
10 poor performance or that the Company is financially unable to meet its vegetation
11 management expenditures or service obligations without the proposed waiver.

12 In addition, in my direct testimony I noted that when the Commission approved PPL
13 Electric’s Modified LTIP in July 2024, it seemed to indicate that a base rates proceeding is
14 the proper setting in which to evaluate related issues – the Company’s decreasing O&M and
15 vegetation-related expenditures and its reliability metrics – together.

16 **Q. Please summarize Witness Johnson’s rebuttal testimony.**

17 **A.** Witness Johnson presents legal arguments in support of a DSIC cap increase in lieu of a
18 base rates case. Witness Johnson objects to my argument in my direct testimony that the
19 DSIC mechanism simply defers the issue of moving class rates into line with allocated costs
20 and essentially freezes the relative cost responsibility for each of the rate classes. Instead,
21 the Company argues that it “is the base rate case process that establishes cost responsibility,
22 and that cost responsibility remains in place until a new rate case is filed.” Witness Johnson
23 also states that PPL Electric would be amenable to a specified period for the DSIC cap
24 waiver and increase to either the duration of the Company’s Third LTIP or the effective
25 date of new distribution rates resulting from a distribution base rates case, whichever were
26 to occur first.

27 **Q. What is OSBA’s position with respect to the Company’s waiver request?**

28 **A.** I am advised by counsel that the legislation concerning DSIC caps requires a utility to
29 demonstrate that it is financially or otherwise incapable of meeting its service obligations
30 without a waiver of the cap. In other words, the burden of proof is on the utility to justify

1 that it has no alternative, cost-effective means to improve services in the absence of a higher
2 DSIC cap. Further, Witness Johnson's abstract arguments in defense of the DSIC
3 mechanism, in this specific case, do not obviate the need for a full base rates proceeding to
4 address the relationship between the Company's inadequate performance and decreasing
5 O&M and vegetation-related expenditures.

6 **Q. Do you have any other comments on Witness Johnson's rebuttal testimony?**

7 A. Yes, one minor comment. For the record I note that on page 20, Witness Johnson mistakenly
8 cites my name as an "I&E witness" concerning an analysis that I did not conduct.

9 **Q. Based on your review, what do you recommend with respect to the Company's**
10 **proposed DSIC cap waiver?**

11 A. I recommend that it be rejected. At a minimum, the Commission should not approve any
12 waiver that does not include an explicit alternative deadline to the next base rates case (e.g.,
13 the end of the Company's LTIP).

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

15 A. Yes, it does.
16

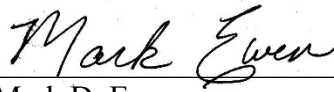
**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No. P-2024-3048732
Distribution System Improvement Charge	:	
Cap of 5% Of Billed Revenues	:	
	:	

VERIFICATION

I, Mark D. Ewen, hereby state that the facts set forth herein above 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 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Date: 8.27.2024



Mark D. Ewen

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities	:	
Corporation for a Waiver of the	:	Docket No.: P-2024-3048732
Distribution System Improvement	:	
Charge Cap of 5% of Billed Revenues	:	

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).

The Honorable Arlene Ashton
Administrative Law Judge
Pennsylvania Public Utility Commission
801 Market Street, Suite 4063
Philadelphia, PA 19107
aashton@pa.gov

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Chief Prosecutor
Bureau of Investigation & Enforcement
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
akaster@pa.gov

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(Email & Via First Class Mail)

DATE: August 27, 2024

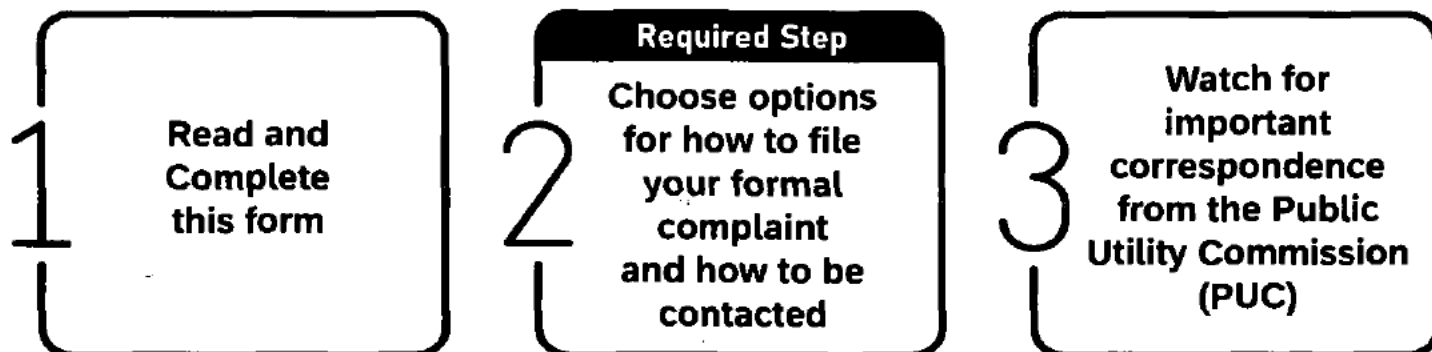
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/s/ Sharon E. Webb
Sharon E. Webb
Assistant Small Business Advocate
Attorney I.D. No. 73995

FORMAL COMPLAINT - PRINTABLE FORM

Filing this form begins a legal proceeding and you will be a party to the case. If you do not wish to be a party to the case, consider filing an informal complaint.



Please legibly complete this form in ink.

1. CUSTOMER (COMPLAINANT) INFORMATION

Provide your contact information and utility account number. *It is your responsibility to update the PUC with any changes to your address and to where you want documents sent to you.*

Name John Gadomski
Street/P.O. Box 446 Bidwell Hill Road Apt#
City LAKE ARIZEL State PA Zip 18436
County WAYNE DATE OF DEPOSIT

Telephone Number(s) Where We Can Contact You During the Day:

JUL 19 2024

Home: (570) 689-0830 Mobile: ()

PA PUBLIC UTILITY COMMISSION

Email Address _____ SECRETARY'S BUREAU

Utility Account Number (from your bill) _____

If your complaint involves utility service provided to a different address or in a different name than your mailing address, please list this information below.

Name _____
Street/P.O. Box _____ Apt# _____
City _____ State _____ Zip _____

2. NAME OF UTILITY OR COMPANY (RESPONDENT)

Provide the full name of the utility or company about which you are complaining. The name of your utility or company is on your bill.

PP & L ELECTRIC UTILITIES

3. TYPE OF UTILITY SERVICE

Check the box listing the type of utility service that is the subject of your complaint (check only one):

- | | |
|--|--|
| ☒ Electric | ☐ Storm Water |
| ☐ Gas | ☐ Steam Heat |
| ☐ Water | ☐ Motor Carrier (taxi, moving company, limo) |
| ☐ Wastewater/Sewer | ☐ Telephone/Telecommunications (local, long distance) |

Note: The PUC does not regulate high-speed internet service, cell phones or cable TV.

4. REASON FOR COMPLAINT

What kind of problem are you having with the utility or company?

Check all boxes below that apply and state the reason for your complaint. Explain specifically what you believe the utility or company has done wrong. Provide relevant details including dates, times and places and any other information that may be important. If the complaint is about billing, tell us the amount you believe is not correct. Use additional paper if you need more space. Your complaint may be dismissed without a hearing if you do not provide specific information.

- ☐ The utility is threatening to shut off my service or has already shut off my service.
- ☐ I would like a payment agreement.
- ☐ Incorrect charges are on my bill. Provide dates that are important and an explanation about any amounts or charges that you believe are not correct. Attach a copy of the bill(s) in question if you have them.
- ☒ I am having a reliability, safety or quality problem with my utility service. Explain the problem, including dates, times or places and any other relevant details that may be important.

- ☒ Other (explain) I OPPOSE RATE HIKE for the following REASONS?
 - ① LOSS OF SERVICE in ONE WEEK 6-23-24 1/2 hr., 6-24-24-3 hrs. & 6-26-24-6-27-24 OVER 12 hrs. DOWN LINES AND TRANSFORMERS ETC.
 - ② THEY NEED TO MAINTAIN THESE LINES & ARN'T DOING THAT NO ONE HAS BEEN ON OUR ROADS FOR YEARS.
 - ③ NOT AFFORDABLE OR REASONABLE in ANY MEANS

5. REQUESTED RELIEF

How do you want your complaint to be resolved?

Explain what you want the PUC to order the utility or company to do. Use additional paper if you need more space.

- ① BETTER MAINTENANCE OF LINES ESPECIALLY TREE ISSUES
- ② BETTER SERVICE
- ③ TO BE ABLE TO SPEAK WITH SOMEONE IN THE U.S. NOT ELSEWHERE
- ④ WHERE TO YOU EXPECT PEOPLE TO GET ALL THIS MONEY FROM WHEN PEOPLE ARE ON FIXED INCOMES WE ONLY GET WHAT 2-3% MOST OF THE TIME.
- ⑤ PLEASE LOOK AT THE PHOTOS I HAVE ENCLOSED. THIS IS A 7.1 MILE RADIUS ONLY { 29 TREES ON 348 { 17 TREES ON 590 { 8 TREES ON BIDEWELL HILL RD. }
4.4 MILES 2.1 MILES 1 MILE

Note: The PUC can decide that a customer was not billed correctly and can order billing refunds. The PUC can also fine a utility or company for not following rules and can order a utility or company to correct a problem with your service. Under state law, the PUC cannot decide whether a utility or company should pay customers for loss or damages. Damage claims may be sought in an appropriate civil court.

6. PROTECTION FROM ABUSE (PFA)/DOMESTIC VIOLENCE

Has a court granted you a PFA order or any other order which provides clear evidence of domestic violence against you that is currently in effect for your personal safety or welfare? The PUC needs this information to properly process your complaint so that your identity is not made public.

Has a court granted a PFA order or any other order for your personal safety or welfare?

☐ Yes

If your answer is "yes," attach a copy of the current PFA order to this Formal Complaint form. Due to the confidential nature of the PFA, you cannot eFile your Formal Complaint. You will need to print out this form and mail it to the Secretary of the Commission.

☒ No

Note: You **MUST** answer this question if your complaint is against a natural gas distribution utility, an electric distribution utility or a water distribution utility AND your complaint is about a problem involving billing, a request to receive service, a security deposit request, termination of service or a request for a payment agreement.

7. PRIOR UTILITY CONTACT

a. Is this an appeal from a decision of the PUC's Bureau of Consumer Services (BCS)?

☐ Yes

☒ No

Note: If you answered yes, move to Section 8. No further contact with the utility or company is required. If you answered no, answer the question in Section 7 b. and answer the question in Section 7 c. if relevant.

b. If this is not an appeal from a BCS decision, have you spoken to a utility or company representative about this complaint?

☒ Yes

*-AEL- 7/31/24
I HAVE tried*

☒ No

Note: You **MUST** contact the utility first if (1) you are a residential customer, (2) your complaint is against a natural gas distribution utility, an electric distribution utility or a water utility AND (3) your complaint is about a billing problem, a service problem, a termination of service problem, or a request for a payment agreement.

c. If you tried to speak to a utility company representative about your complaint but were not able to do so, please explain why.

YOU ONLY GET A COMPUTER + WHEN YOU CAN GET THROUGH
YOU ARE TALKING TO INDIVIDUALS OUT OF THE COUNTRY EX.
PHILIPPINES EVEN WHEN THERE IS A POWER OUTAGE (WHY)?

Note: Even if you are not required to contact the utility or company, you should always try to speak to a utility or company representative about your problem before you file a Formal Complaint with the PUC.

8. TWO OPTIONS TO FILE YOUR FORMAL COMPLAINT — CHOOSE ONE

OPTION 1

Electronically by eFile

One option is to create an account on the PUC's eFiling system, or, use your existing eFiling account. This is the quickest and easiest way to receive, file and submit documents.

eFiling permits consumers, utilities and attorneys to file certain documents electronically with the PUC without filing paper copies, serve documents electronically on other parties if they agree to such service, and to receive electronic service of documents from the PUC.

You agree to open and use an eFiling account - free of charge through the PUC's website. By selecting this method, you will electronically receive documents.

Visit <https://efiling.puc.pa.gov/> to learn more and create an eFiling account.

You will automatically receive eService with your eFiling account.

OPTION 2

Mail

Mail the completed form with your original signature and any attachments to this address and retain the tracking information as proof of submission:

**Secretary
Pennsylvania Public Utility Commission
400 North Street
Harrisburg, Pennsylvania 17120**

If you select the option to mail your formal complaint, you are required to select the method by which you would like the PUC to communicate with you. You must choose one of the three options on the next page for ways you would like to receive documents.

9. THREE OPTIONS TO RECEIVE DOCUMENTS — CHOOSE ONE

It is REQUIRED to select ONE of the following options for receiving all hearing notices, orders and related documents from the PUC:

OPTION 1

eFILING: This is the quickest and easiest way to receive all documents. You agree to open and use an eFiling account - free of charge through the PUC's website. By selecting this method you will electronically receive documents. To create an eFiling account, visit <https://efiling.puc.pa.gov/>.

☐

You will automatically receive eService with your eFiling account.

OPTION 2

FIRST CLASS MAIL: You agree to receive all documents by First Class Mail (using the address you provided on Page 1).

☒

Check the box and initial here J.G. if you are selecting **FIRST CLASS MAIL** service.

OPTION 3

EMAIL: You agree to receive all documents by email (using the email address you provided on page 1). Keep in mind, you will only be able to receive documents by email from the PUC. You will not be able to email documents to the Commission.

To file documents, you must submit them through an eFiling account or mail them. To create an eFiling account, visit <https://efiling.puc.pa.gov/>.

☐

Check the box and initial here _____ if you are selecting **EMAIL** service.

Please Note: It is important to select **ONE** of the three options above.

IF AN OPTION IS NOT SELECTED, THIS MAY DELAY THE PROCESSING OF YOUR COMPLAINT.

10. LEGAL REPRESENTATION

If you are filing a Formal Complaint as an individual on your own behalf, you are NOT required to have a lawyer. You may represent yourself at the hearing.

If you are already represented by a lawyer in this matter, provide your lawyer's contact information, which is required. Please make sure your lawyer is aware of your complaint. If represented by a lawyer, both you and your lawyer must be present at your hearing.

Lawyer's Name _____
Street/P.O. Box _____ Apt# _____
City _____ State _____ Zip _____
Area Code/Phone Number _____
Email Address _____

Note: Corporations, associations, partnerships, limited liability companies and political subdivisions are required to have a lawyer represent them at a hearing and to file any motions, answers, briefs or other legal pleadings.

11. VERIFICATION AND SIGNATURE

You MUST sign and date your complaint. If you file by mail, you must sign your name in ink on the line provided below. Date the form. If you do not sign with your original signature and date, the PUC will not accept your complaint.

Verification:

I John Gadomski, hereby state that the facts above set forth are true and correct (or 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 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

John Gadomski
(Signature of Complainant)

7/18/24
(Date)

Title of authorized employee or officer (only applicable to corporations, associations, partnerships, limited liability companies or political subdivisions)

Note: If the Complainant is a corporation, association, partnership, limited liability company or political subdivision, the verification must be signed by an authorized officer or authorized employee. If the Formal Complaint is not signed by one of these individuals, the PUC will not accept it.

APPEALING A BCS DECISION?

If you are appealing a BCS decision: follow the directions in the cover letter you received from the PUC Secretary's Bureau with the formal complaint form. **ONLY** formal complaints appealing a BCS decision can be filed by fax, email or overnight delivery to meet filing deadlines. All other formal complaints **MUST** be eFiled or mailed.

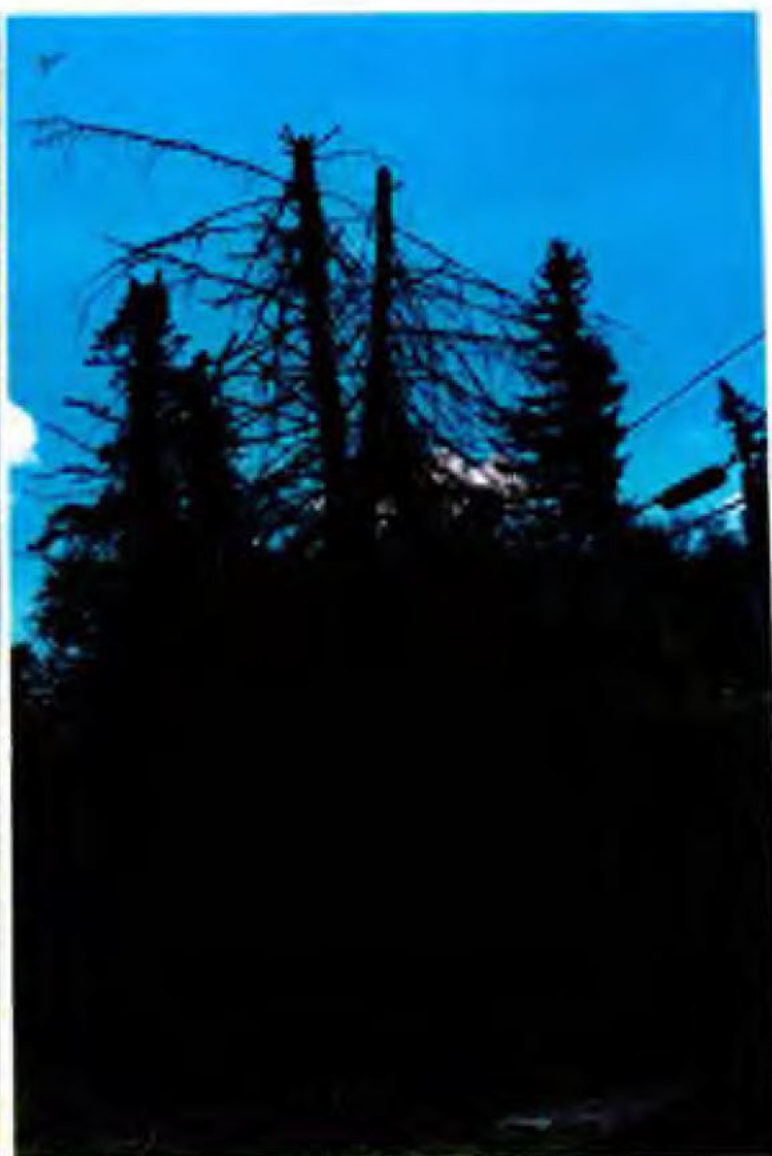
QUESTIONS?

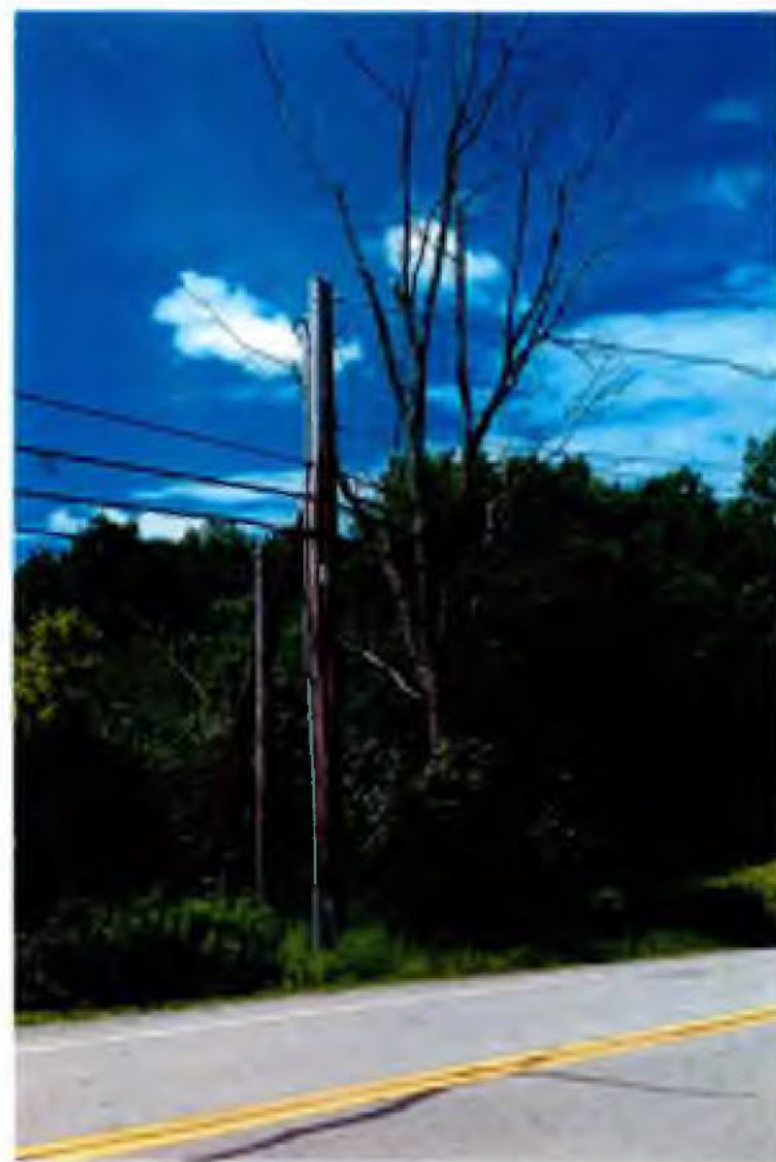
If you have any questions about filling out this form, please contact the **Secretary's Bureau** at **717-772-7777**.

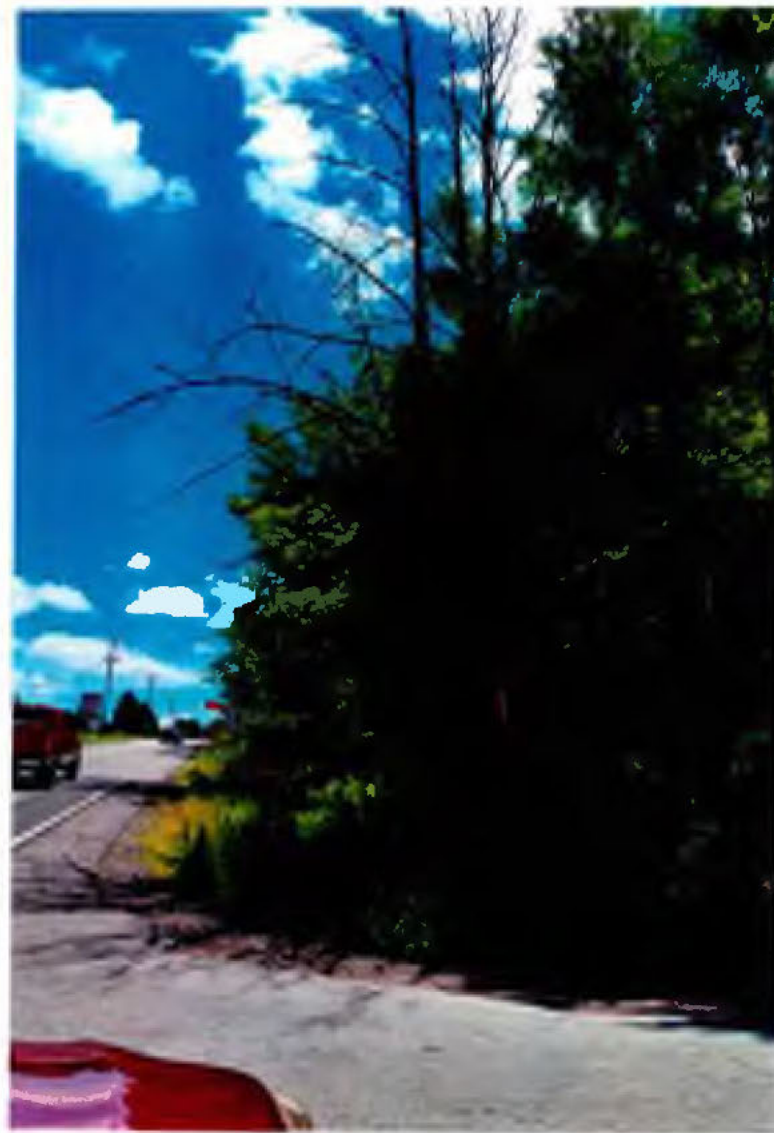
REMINDERS

- Keep a copy of your Formal Complaint for your records.
- If you are electronically filing your Formal Complaint through eFiling, you will need to scan the document and save it as a PDF.
- You may add any additional information, such as copies of bills, as one (1) separate attachment to your complaint.
- To protect your personal information, please know that your complaint form and the utility's answer will not be published to the PUC's website.
- Check the Consumer Complaints Procedures Guide for checklists and tips to help you successfully follow the complaint-filing process.
(<https://www.puc.pa.gov/media/1492/consumer-complaints-procedures-guide-2021.pdf>)
- Once your complaint case moves to the PUC's Office of Administrative Law Judge, any filings you make should be marked **confidential** if you do not want them published to the website.





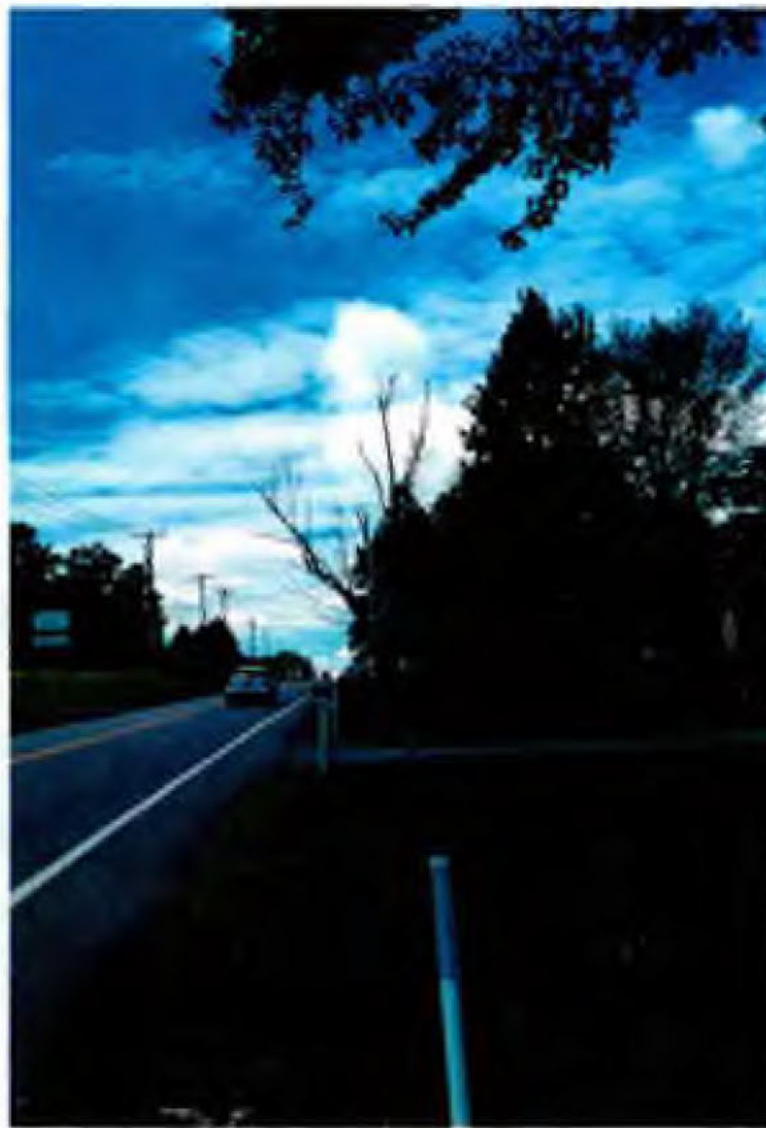








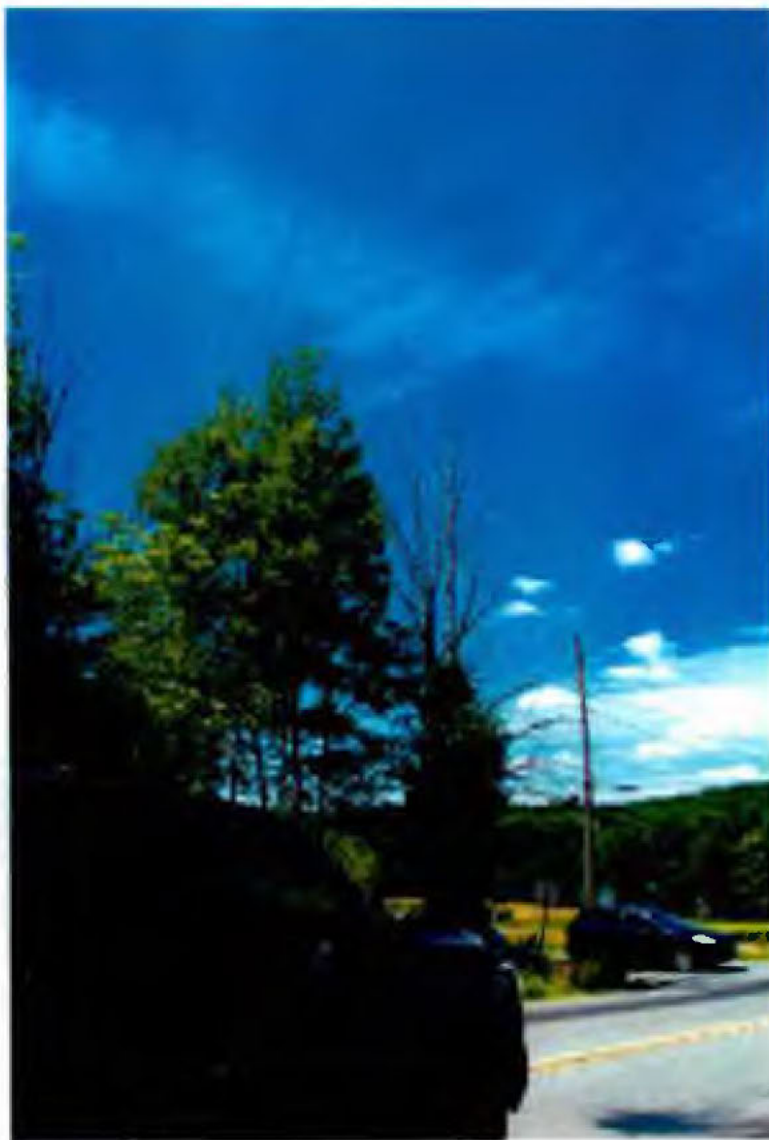


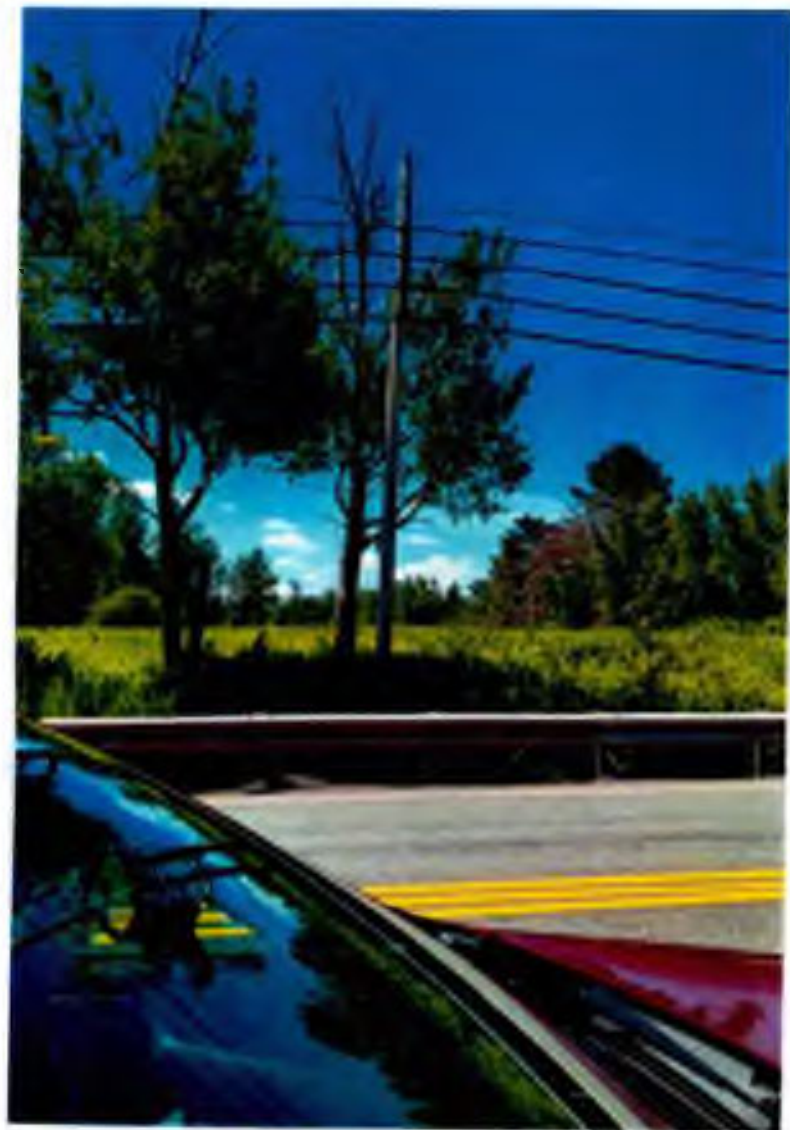


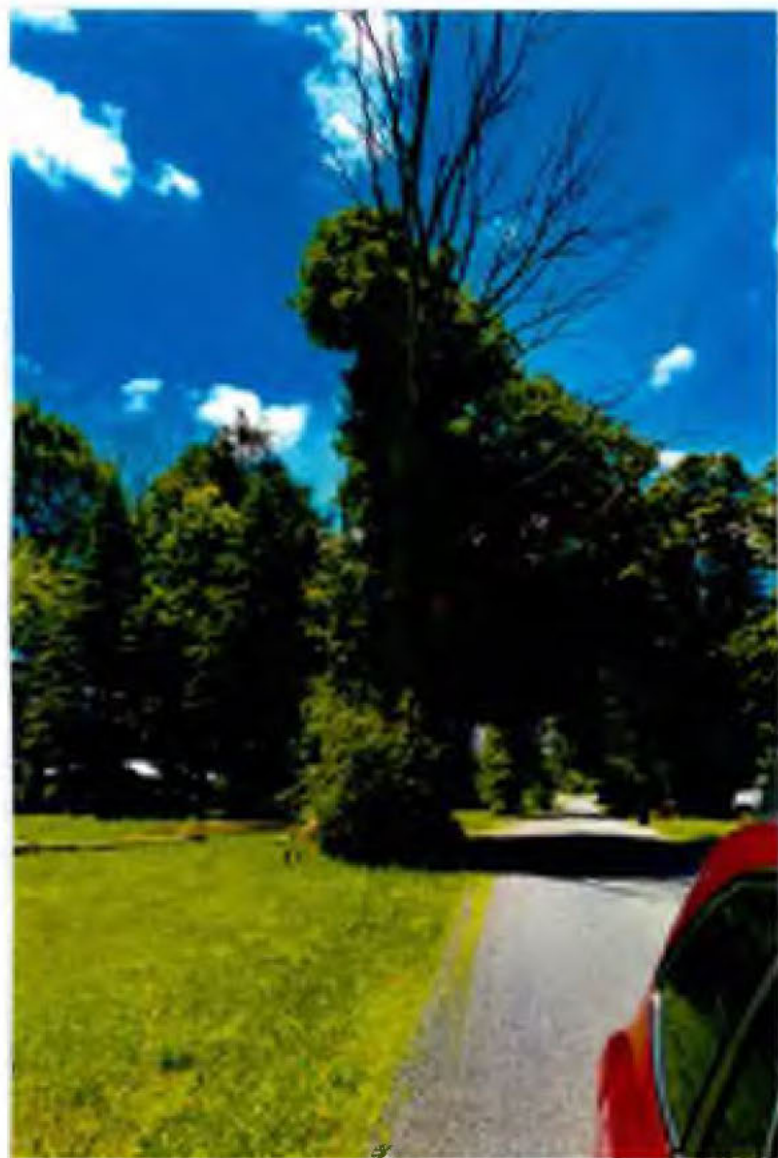


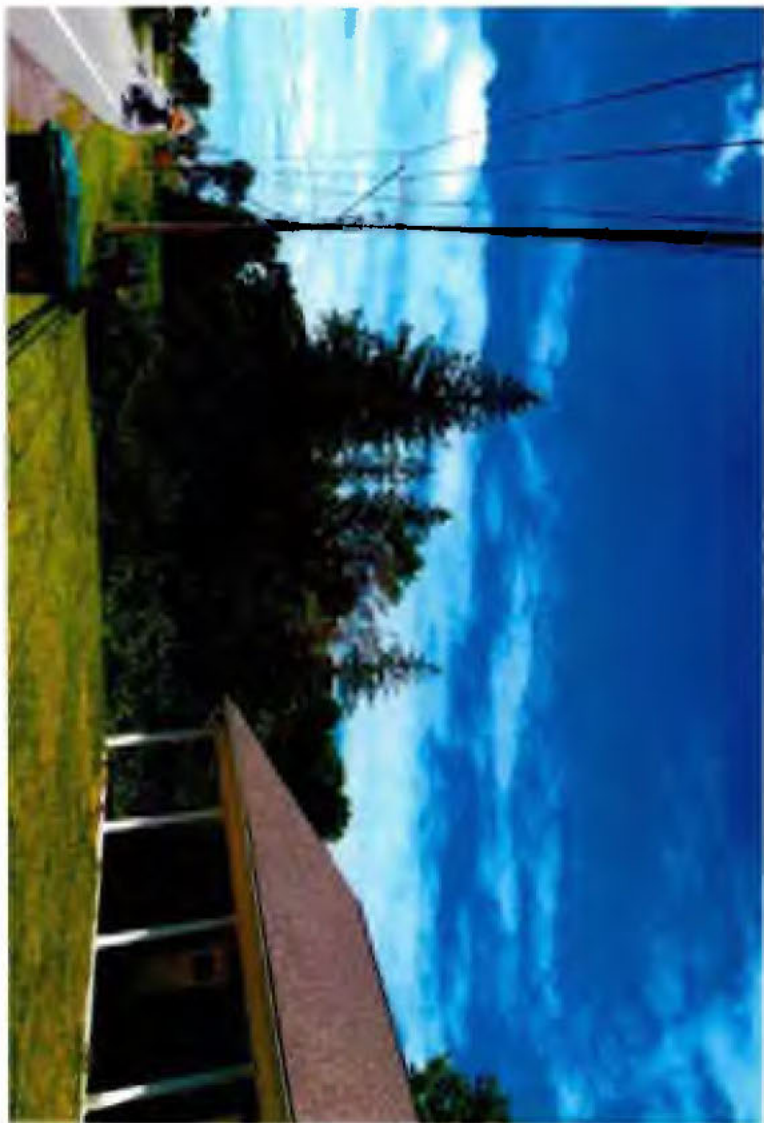


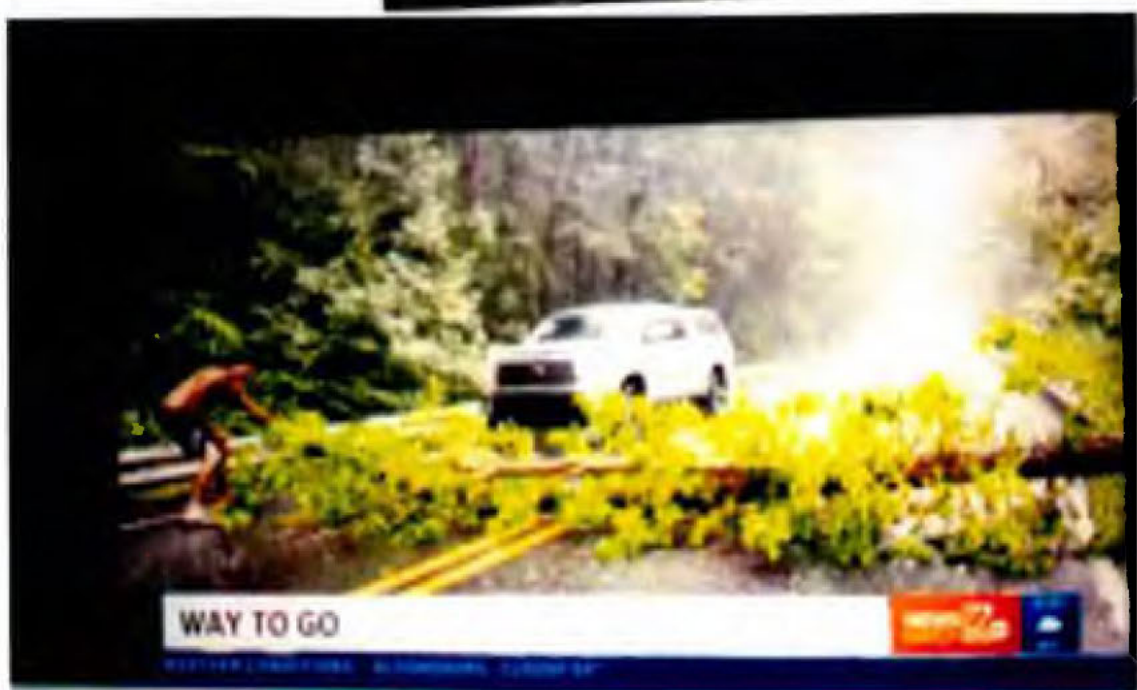




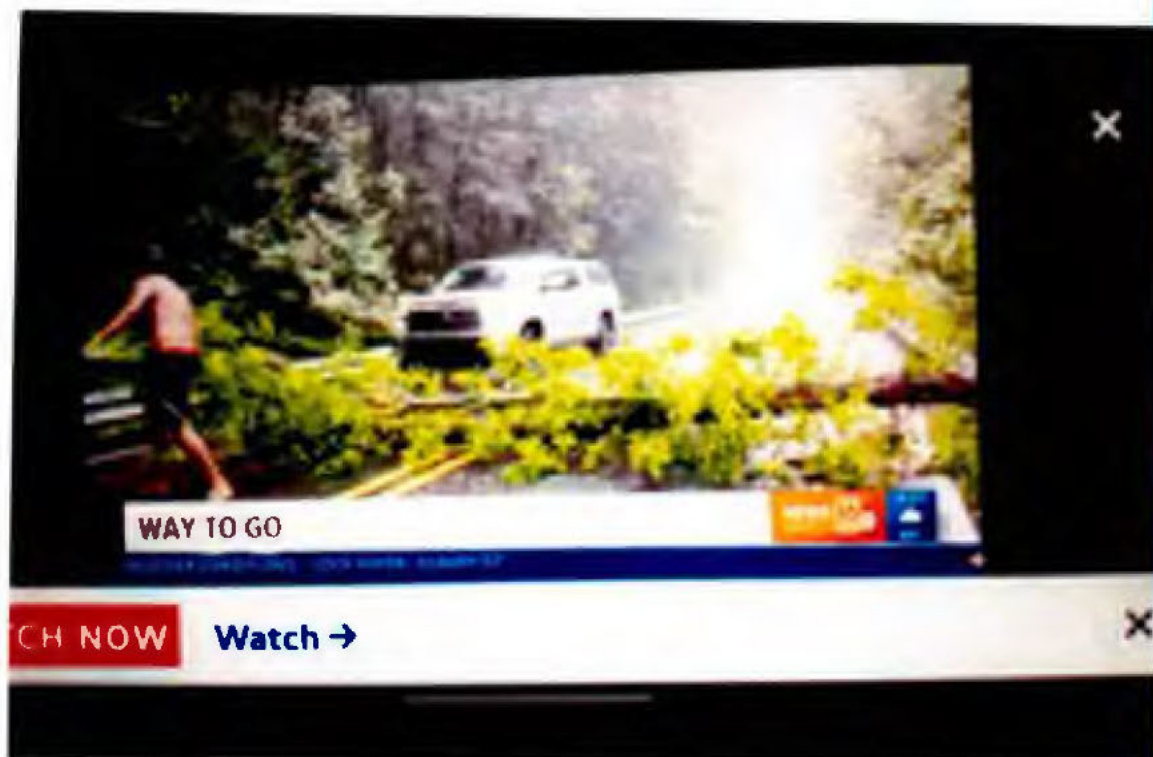


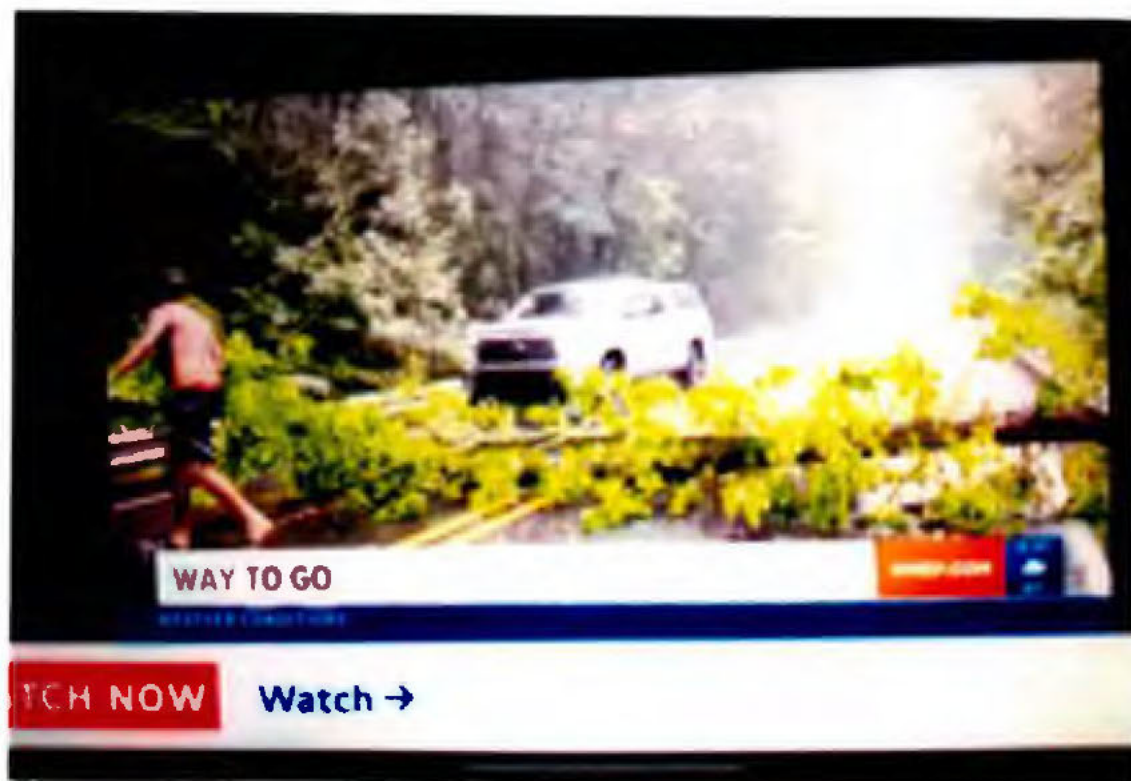






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REQUESTED**

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domestic and many international destinations.

declaration form is required.

regarding claims exclusions see the

form for availability and limitations of coverage.

**RECEIVED RETURN RECEIPT
REQUESTED**

JUL 23 2024

PA PUBLIC UTILITY COMMISSION
THE SECRETARY'S BUREAU

TO:

Secretary
Pa. Public Utility Commission
400 North ST.
HARRISBURG, PA. 17120

To schedule free Package Pickup,
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DPE

D



PHOTOS ENCLOSED PLEASE HAND
STAMP T.Y. 😊

October 2023
9 1/2

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