

July 22, 2024

**VIA E-FILING**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2<sup>nd</sup> Floor North  
Harrisburg, PA 17105-3265

**Re: Petition of FirstEnergy Pennsylvania Electric Company for Approval of its  
Long-Term Infrastructure Improvement Plan;  
Docket No. P-2024-**

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Dear Secretary Chiavetta:

Enclosed for filing is the *Petition of FirstEnergy Pennsylvania Electric Company for Approval of its Long-Term Infrastructure Improvement Plan* (“LTIIIP III”). The proposed LTIIIP III of FirstEnergy Pennsylvania Electric Company (“FE PA”) is for the period beginning January 1, 2025 and ending December 31, 2029. A copy of FE PA’s proposed LTIIIP III accompanies this Petition as FirstEnergy Pennsylvania Electric Company Exhibit No. 1.

FE PA’s current Long-Term Infrastructure Improvement Plans (“LTIIIP II”) were approved by the Pennsylvania Public Utility Commission (“Commission”) for its predecessor companies<sup>1</sup> via Order entered January 16, 2020 at Commission Docket No. P-2019-3012618 *et.al.*

Copies of the enclosed Petition and FirstEnergy Pennsylvania Electric Company Exhibit No. 1 have been served on the persons and in the manner shown on the enclosed Certificate of Service, as required by 52 Pa. Code § 121.1 *et seq.*

Respectfully submitted,



Darsh Singh

Enclosures

cc: Per Certificate of Service  
Dan Searfoorce - PaPUC Bureau of Technical Utility Services (via electronic mail)  
Derek Ruhl - PaPUC Bureau of Technical Utility Services (via electronic mail)  
John Van Zant - PaPUC Bureau of Technical Utility Services (via electronic mail)

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<sup>1</sup> By Order entered on December 7, 2023, the Pennsylvania Public Utility Commission (the “Commission”) granted certain approvals and certificates of public convenience for the unification of the four Companies into one company, FirstEnergy Pennsylvania Electric Company, or “FE PA”. *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*, Docket Nos. A-2023-3038771, et al. (Order entered December 7, 2023).

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Petition of FirstEnergy Pennsylvania  
Electric Company for Approval of its  
Long-Term Infrastructure Improvement  
Plan** : **Docket No. P-2024-**

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**FirstEnergy Pennsylvania Electric Company Petition for Approval of its  
Long-Term Infrastructure Improvement Plan**

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FirstEnergy Pennsylvania Electric Company (“FE PA” or “Company”) files this Petition for Approval of its Long-Term Infrastructure Improvement Plan (“LTIIIP III”) for the five-year period beginning January 1, 2025 and ending December 31, 2029. This Petition is filed pursuant to Section 1352 of the Pennsylvania Public Utility Code (“Code”),<sup>1</sup> pursuant to Commission regulations relating to LTIIIPs,<sup>2</sup> and pursuant to the Pennsylvania Public Utility Commission’s (“PUC” or the “Commission”) Final Implementation Order<sup>3</sup> and Supplemental Implementation Order<sup>4</sup> concerning LTIIIPs.

As explained below, FE PA’s LTIIIP III contains all of the elements required by Section 1352(a)(1)-(6) of the Code and 52 Pa. Code § 121.3 and, therefore, satisfies all of the requirements for Commission approval set forth in Section 1352(a)(7) of the Code and 52 Pa. Code § 121.4(e)(1)-(4). Accordingly, FE PA respectfully requests that the Commission approve the LTIIIP III submitted as FirstEnergy Pennsylvania Electric Company Exhibit No. 1 to this Petition.

**I. INTRODUCTION AND BACKGROUND**

1. FE PA is a “public utility” and “electric distribution company,” as those terms are defined under Sections 102 and 2803 of the Pennsylvania Public Utility Code, that provides electric

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<sup>1</sup> 66 Pa.C.S. § 1352.

<sup>2</sup> 52 Pa. Code § 121.1 *et seq.*

<sup>3</sup> *See Implementation of Act 11 of 2012*, Docket No. M-2012-2293611, entered August 2, 2012.

<sup>4</sup> *Supplemental Implementation Order*, Docket No M-2012-2293611, entered September 15, 2016.

distribution service to customers throughout Pennsylvania. FE PA’s roots are those of several predecessor Pennsylvania electric utilities. On January 1, 2024, Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company (collectively, the “Predecessor Companies”) merged into FE PA pursuant to the Commission’s Order at Docket Nos. A-2023-3038771, et al (“PA Consolidation”). As part of the approvals received in the PA Consolidation, FE PA was certificated as a public utility and authorized to provide public utility service in the territories of the Predecessor Companies.

2. The names and addresses of the Company’s attorneys authorized to receive all notices and communications regarding this filing are as follows:

Darshana Singh, Esquire  
FirstEnergy Service Company  
76 South Main  
Akron, OH 44308  
610-212-8331  
singhd@firstenergycorp.com

Tori L. Giesler, Esquire  
FirstEnergy Service Company  
76 South Main  
Akron, OH 44308  
717-490-3292  
tgiesler@firstenergycorp.com

3. On February 14, 2012, former Governor Corbett signed into law Act 11 of 2012 (“Act 11”), which amended the Public Utility Code in several respects, including the addition of Subchapter B to Chapter 13 (66 Pa.C.S. §§ 1350-1360), which authorizes the Commission to approve petitions to implement a distribution system improvement charge (“DSIC”) filed by EDCs and other types of utilities. Subchapter B sets forth various requirements that must be satisfied by a qualifying utility in order to establish a DSIC and recover the fixed costs of DSIC-eligible property. Section 1351 defines “eligible property” in general as “[p]roperty that

is part of a distribution system and eligible for repair, improvement and replacement of infrastructure under this subchapter” and provides further:

- (1) For electric distribution companies, eligible property shall include:
  - (i) Poles and towers.
  - (ii) Overhead and underground conductors.
  - (iii) Transformers and substation equipment.
  - (iv) Any fixture or device related to eligible property under subparagraphs (i), (ii) and (iii), including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers.
  - (v) Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities.
  - (vi) Other related capitalized costs.

4. Section 1352 of the Code requires that a utility submit an LTIP “in order to be eligible to recover costs under section 1353 (relating to distribution system improvement charge).” In addition, Section 1352 provides that an LTIP should include the following information:

- (1) Identification of the types and age of eligible property owned or operated by the utility for which the utility would seek recovery under this subchapter.
- (2) An initial schedule for the planned repair and replacement of eligible property.
- (3) A general description of the location of the eligible property.
- (4) A reasonable estimate of the quantity of eligible property to be improved.
- (5) Projected annual expenditures to implement the plan and measures taken to ensure that the plan is cost effective.
- (6) The manner in which the replacement of aging infrastructure will be accelerated and how the repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service.

5. On August 2, 2012, the Commission entered the Final Implementation Order to explain how it intended to implement the provisions of Subchapter B. In particular, the Final Implementation Order sets forth the Commission’s expectation with regard to the contents of an LTIP by

reference to the six elements specifically identified in Section 1352(a) of the Code. The Final Implementation Order also provides guidance to utilities for meeting the Commission’s standards for LTIIIP approval and discusses the procedures the Commission would follow in reviewing petitions seeking approval of proposed LTIIIPs. In that regard, the Commission: (a) stated that an LTIIIP would be assigned to the Bureau of Technical Utility Services (“TUS”) for analysis and a recommendation to the Commission<sup>5</sup>; (b) provided that interested parties may file comments within 20 days of the filing of an LTIIIP<sup>6</sup>; and (c) established a period of 120 days for review of each proposed LTIIIP.<sup>7</sup>

6. On May 27, 2014, the Commission entered a Final Order adopting the LTIIIP regulations that are set forth at 52 Pa. Code §§ 121.1-121.8.<sup>8</sup> The LTIIIP regulations adopt and expand upon the requirements set forth in the Final Implementation Order by providing that an LTIIIP should include the following eight major elements, as stated in Section 121.3(a):

- (1) Identification of types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery;
- (2) An initial schedule for planned repair and replacement of eligible property;
- (3) A general description of the location of the eligible property;
- (4) Reasonable estimate of the quantity of eligible property to be improved or repaired;
- (5) Projected annual expenditures and means to finance the expenditures;
- (6) A description of the manner in which infrastructure replacement will be accelerated and how repair, improvement or replacement will maintain adequate, efficient, safe, reliable and reasonable service to customers;

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<sup>5</sup> Final Implementation Order, p. 20.

<sup>6</sup> *Id.* The review period of 20 days stated in the Final Rulemaking Order was subsequently expanded to 30 days in the LTIIIP regulations. See 52 Pa. Code § 121.4(c).

<sup>7</sup> *Id.*

<sup>8</sup> *Review of Long-Term Infrastructure Improvement Plan – Final Rulemaking Order*, Docket No. L-2012-2317274, (May 23, 2014). The LTIIIP regulations became effective upon publication in the *Pennsylvania Bulletin* on December 20, 2014. See 44 Pa.B. 7856.

- (7) 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;
- (8) A description of a utility's outreach and coordination activities with other utilities, Department of Transportation and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIIIP.

7. In Section 121.4(e) of the LTIIIP regulations, the Commission provided the criteria it would use to review LTIIIPs submitted for its approval, as follows:

- (e) The Commission will review the filed LTIIIP and determine if the LTIIIP:
  - (1) Contains measures to ensure that the projected annual expenditures are cost-effective.
  - (2) Specifies the manner in which it accelerates or maintains an accelerated rate of infrastructure repair, improvement or replacement.
  - (3) Is sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service.
  - (4) Meets the requirements of § 121.3 (relating to LTIIIP).

## **II. FE PA's LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN AND DISTRIBUTION SYSTEM IMPROVEMENT CHARGE HISTORY**

### **A. LTIIIP I**

8. On October 19, 2015, each of the Predecessor Companies petitioned the Commission for approval of its first LTIIIPs which were approved by the Commission by Order entered February 11, 2016 ("LTIIIP I").<sup>9</sup> The LTIIIP I began with calendar year 2016 and ended in 2020. The Commission determined that the Predecessor Companies' LTIIIP I met the requirements of Section 1352 of the Code and contained the eight major elements set forth in Section 121.3(a) of the Commission's LTIIIP regulations. The Predecessor Companies requested approval of a modification of their LTIIIPs by Petition dated March 1, 2017, to reflect

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<sup>9</sup> See *Petition of Metropolitan Edison Company for Approval of their Long-Term Infrastructure Improvement Plan, et al*, Order entered February 11, 2016, at Docket Nos. P-2015-2508942, P-2015-2508936, P-2015-2508931, and P-2015-2508948.

changes in the calculation of taxes for ratemaking purposes resulting from Pennsylvania's Act 40, 66 Pa.C.S. § 1301.1, whereby the three out of the four Predecessor Companies proposed to add additional capital expenditures to their LTIIPs. The modifications were approved by Commission Orders entered June 14, 2017 and did not modify the period of the LTIIP I.<sup>10</sup>

9. On February 16, 2016, the Predecessor Companies filed Petitions to establish and implement a DSIC Rider into their tariff with an effective date of July 1, 2016. The filing was made pursuant to 66 Pa.C.S. § 1353 and was docketed at the continuing docket of the LTIIP filing, P-2015-2508942. The DSIC tariff was approved by Order entered June 9, 2016, and the DSIC tariff was implemented effective July 1, 2016.
10. During the periodic review of the LTIIPs, the Commission determined that the Company has substantially adhered to the schedule and expenditures outlined in its Commission-approved LTIIP.<sup>11</sup> The Commission further determined, however, that Predecessor Companies' LTIIPs were not designed adequately to maintain and improve the efficiency, safety, adequacy and reliability of the Predecessor Companies' distribution system. Accordingly, pursuant to 52 Pa. Code § 121.7(d), the Commission directed the Predecessor Companies to file a modified or new LTIIP including expenditures and programs designed to adequately maintain and improve the efficiency, safety, adequacy and reliability of the distribution system. Further, the Commission included a list of proposed methods and actions that the Commission suggested the Predecessor Companies consider when developing its modified or new LTIIP.
11. As direct, on January 18, 2019, the Predecessor Companies filed a Petition for approval of modification of the LTIIP Is. The Predecessor Companies proposed to move expenditures

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<sup>10</sup> See *Petition of Metropolitan Edison Company for Approval of Modification of its Long-Term Infrastructure Improvement Plan, et al*, Order entered June 14, 2017, at Docket Nos. P-2015-2508942, P-2015-2508936, and P-2015-2508931.

<sup>11</sup> See *Periodic Review of Metropolitan Edison Company's Long-Term Infrastructure Improvement Plan, et al*, Docket Nos. M-2018-3000943, M-2018-3000947, M-2018-3000948, and M-2018-3000949.

planned for 2020 into 2019 and to supplement the expenditures with additional capital. The Predecessor Companies also proposed to file a new LTIIIP for the five-year period of 2020 through 2024 (“LTIIIP II”). The Predecessor Companies’ Petition for modification of the LTIIIP Is was approved by the Commission’s Order entered May 23, 2019 at Docket No. P-2015-2508942.

## **B. LTIIIP II**

12. The Predecessor Companies’ LTIIIP II, spanning the years 2020 through 2024, was filed by the Predecessor Companies on August 30, 2019. By order issued January 16, 2020 the Commission found that the Predecessor Companies met their burden of proof to demonstrate that the proposed LTIIIPs and associated expenditures were reasonable, cost effective and designed to ensure and maintain sufficient, safe, adequate, reliable, and reasonable service to customers.<sup>12</sup> Specifically, it was held that the Predecessor Companies demonstrated each of the LTIIIPs contained measures to ensure that the projected annual expenditures were cost-effective, specified the manner in which they accelerate or maintain an accelerated rate of infrastructure repair, improvement, or replacement, were sufficient to ensure and maintain adequate, safe, reliable, and reasonable service, and met the requirements of 52 Pa. Code §121.3(a). Accordingly, each of the Predecessor Companies’ LTIIIP IIs were approved.

## **III. DESCRIPTION OF LTIIIP III**

13. FE PA’s LTIIIP III, for the five-year period starting January 1, 2025 and ending December 31, 2029, was formulated by a team of reliability engineers from the Met-Ed Rate District, Penelec Rate District, Penn Power Rate district and West Penn Rate District (“Rate Districts”). Augmenting the existing, ongoing internal review of the Company’s LTIIIP projects, expenditures, and reliability performance, the Companies developed strategies for long-term

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<sup>12</sup> *Petition of Metropolitan Edison Company for Approval of its Long-Term Infrastructure Improvement Plan, et. al.* Opinion and Order entered January 16, 2020, at Docket No. P-2019-3012618 et.al.

reliability maintenance and improvement. The Companies also engaged an independent consultant, 1898 and Company (“1898”), to help assess the FE PA system and provide support and analysis for improvement opportunities.

14. To maintain and improve reliability of its distribution system and to minimize customer impact due to outages, FE PA’s reliability strategies include vegetation management, grid modernization and system resiliency.<sup>13</sup> Vegetation management practices are employed to reduce the frequency of tree-related outages which continue to be largest contributor to outages. These practices may include but are not limited to on-cycle tree trimming, enhanced trimming to remove healthy limbs overhanging primary conductors, and removing ash trees impacted by the Emerald Ash Borer. With regard to grid modernization, the LTIP III focuses on leveraging modern technology to increase operational flexibility and enhance reliability. Grid modernization includes initiatives such as remote sectionalizing, substation equipment replacement and circuit protection. Regarding system resiliency, which is focused on hardening the electrical distribution system to minimize the impact of outage events on customers, the LTIP III focuses on overhead circuit rehab, pole replacements and the replacement of underground conductor.
15. The annual expenditures of the proposed LTIP III are shown in Appendix A.
16. Programs targeted for accelerated capital investment are those designed to have the greatest impact on reliability per dollar spent. The projected reliability benefit of the LTIP III is illustrated in Table 15 of the LTIP III. Table 15 projects anticipated benefits of improvements for each of the Company’s LTIP initiatives. Programs will be prioritized to maximize the reliability and operating benefits to the Company’s customers. The effectiveness of the

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<sup>13</sup> While programs related grid modernization and system resiliency are included in the LTIP III, programs related to vegetation management are not included, per the definition of “eligible property” in 66 Pa.C.S. § 1351.

projects and programs that compose the LTIIIP will be reviewed periodically to ensure that they remain prudent and cost-effective. Reliability and equipment failure trends will be analyzed on an ongoing basis as well to assess the impact of future investments. The Company may re-prioritize, alter completion dates, and add or remove projects based on engineering analyses to maximize the reliability and operating benefits to the affected circuits, while taking into consideration the overall impact to reliability and operational improvement and the costs and benefits to customers.

17. The Company's LTIIIP III covers thirteen categories of infrastructure improvements. The categories of distribution-related equipment and facilities and costs are described in Appendix A of the LTIIIP III. The program categories are as follow:

Customers Experiencing Multiple Interruptions ("CEMI")

Circuit Improvement

Network and Underground Ducted Systems

Overhead Circuit Replacement/Rehabilitation

Pole Replacement

Substation Equipment Replacement

Underground Cable and Equipment Replacement

Distribution Circuit Protection and Sectionalizing

New Sources

Remote Sectionalizing Distribution Automation ("DA") Preparation

Voltage Conversion

Unreimbursed Highway Relocation

Battery Storage

18. For each of the asset categories, to the extent applicable, FE PA provides estimates of the number of replacements, conversions or other improvements that will be made over the five-year span of the LTIIIP III. FE PA also provides the following:

- A description of the program and its purpose.
- A description of the scope of each program in terms of its overall goal and its expected effect on reliability and/or safety, including a reasonable estimate of the amount of property to be improved, where such a quantification is applicable.
- A description how the program accelerates or maintains an accelerated rate of infrastructure repair, improvement or replacement.
- A description of how the program is identified and prioritized.
- A description of the basis for measuring success of the program, such as SAIFI and SAIDI improvements as compared to preceding periods.
- A description of the age of the infrastructure affected by the program to the extent applicable.
- A schedule of performance of the program.
- A projection of planned expenditures of the program annually and over the life of LTIIIP III.

19. Individual elements of the proposed initiatives that will be implemented in each asset category will be subject to some degree of change as contemporaneous analysis and planning takes place and better estimates of the cost and time to complete each project are developed. Additionally, some projects included in the LTIIIP III depend upon third-party actions or decisions, such as permitting, access to public rights-of-way, contractor or equipment availability or, in the case of highway relocations, construction plans by state, county and municipal governments that may not yet be developed or are subject to change. These factors may affect the allocation of investment funds within or between the stated asset categories and may affect the timing or prioritization of investments within the remaining term of the LTIIIP III.

**A. Identification of Types and Age of Property to be Improved, Repaired and Replaced**

20. Section 121.3(a)(1) of the LTIP regulations calls for the identification of the types and ages of the eligible property covered by the Plan. The descriptions in each asset category in Appendix A identify the type and age of the eligible property in that category to the extent that age is a relevant or identifiable factor.

**B. Schedule for Planned Repair and Replacement of Eligible Property**

21. In accordance with Section 121.3(a)(2) of the LTIP regulations, FE PA's LTIP III includes schedules of the timing of planned repairs and replacements of eligible property. The schedules are described on an individual program basis in Appendix A.

**C. General Description of the Location of Eligible Property**

22. The individual program or project descriptions identify the location of the affected eligible property by its location within an operating area demarcated by the applicable Rate District.

**D. Estimate of Quantity of Eligible Property**

23. The individual program or project descriptions also identify the quantity of the affected eligible property, with the degree of specificity that is possible and practical for the nature of the work involved, by each operating area, demarcated by its respective Rate District.

**E. Projected Annual Expenditures**

24. Appendix A to FE PA's LTIP III contains a table of "Cost Summary by Year" showing the projected annual expenditures over the remaining term of the LTIP III. The table shows cumulative projected annual and total expenditures for all eligible distribution property. Information about expenditures for individual programs is also included in the sections describing those programs.

**F. Acceleration of Infrastructure Improvement and Maintenance of Customer Service**

25. Section 121.3(6) of the LTIIIP regulations provides that an LTIIIP should describe “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 to customers.” The LTIIIP III explains why projects are being undertaken in terms of possible improvements in customer service and reliability.

**G. Workforce Management and Training Plan for Performance of Work in Cost Effective, Safe and Reliable Manner**

26. Section 121.3(a)(7) of the LTIIIP regulations requires utilities to include a workforce management and training plan as a part of an LTIIIP. A comprehensive description of FE PA’s programs for ensuring a qualified workforce is set forth in LTIIIP III. For purposes of providing the information required for its LTIIIP III, FE PA’s workforce is considered to include employees of FE PA and employees of various contractors that will be retained to work on LTIIIP projects.

**H. Description of the Utility’s Outreach and Coordination Activities with Third Parties**

27. In accordance with Section 121.3(a)(8) of the regulations, LTIIIP III describes how the Company plans to reach out to, and coordinate with, other utilities, the Pennsylvania Department of Transportation and local governments with respect to work to be performed pursuant to the LTIIIP III that might affect or implicate those entities’ roadways or other property and their construction and maintenance schedules.

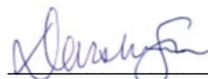
**I. Implementation of Company’s DSIC**

28. Upon approval of its LTIIIP III, FE PA will recover the fixed costs of eligible property placed in-service through the Company’s DSIC. FE PA’s current DSIC was approved by the Commission in an Opinion and Order entered June 9, 2016 at Docket No. P-2015-2508942.

#### IV. CONCLUSION

WHEREFORE, for the reasons set forth above, FirstEnergy Pennsylvania Electric Company requests that the Commission enter an order by the end of the 120-day review period finding and determining that its LTIP III: (1) satisfies all of the criteria set forth at 52 Pa. Code § 121.4(e)(1)-(4); (2) meets the legal standard set forth in Section 1352(a)(7) for approval of an LTIP; and, therefore (3) should be approved without revision and without the need to refer this matter to the Office of Administrative Law Judge. Additionally, if the Commission were to determine that comments, if any, submitted with respect to FE PA's LTIP III present material factual issues that merit assigning this case to the Office of Administrative Law Judge pursuant to the procedure outlined in the Final Implementation Order, the Company further requests that the Commission, at the time of such assignment, authorize FE PA to file written direct testimony to address such issues and other matters deemed relevant, and further, that the Commission direct that FE PA's DSIC as approved remain in operation during the period of such review.

Respectfully submitted,



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Darshana Singh  
(Attorney I.D No. 330971)  
Tori L. Giesler  
(Attorney I.D. No. 207742)  
FirstEnergy Service Company  
76 South Main  
Akron, OH 44308  
610-212-8331  
[singhd@firstenergycorp.com](mailto:singhd@firstenergycorp.com)

Counsel for FirstEnergy Pennsylvania Electric  
Company

Dated: July 22, 2024



Met-Ed • Penelec • Penn Power • West Penn Power

# **FirstEnergy Pennsylvania Electric Company**

## **Exhibit No. 1**

# **Long-Term Infrastructure Improvement Plan**

**Docket No. P-2024-**

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## Introduction

Pursuant to the requirements of Subchapter B, Distribution Systems, of the Pennsylvania Public Utility Code, 66 Pa.C.S. §§ 1350-1360, and the Pennsylvania Public Utility Commission's ("PUC" or the "Commission") Final Implementation Order for Implementation of Act 11 of 2012, entered August 2, 2012, at Docket No. M-2012-2293611, and the Commission's regulations at 52 Pa. Code §§ 121.1-121.8, FirstEnergy Pennsylvania Electric Company ("FE PA" or the "Company")<sup>1</sup> respectfully submits for approval by the Commission its Long-Term Infrastructure Improvement Plan ("LTIIIP") for the five-year period beginning January 1, 2025 and ending December 31, 2029 ("LTIIIP III").

A team comprised of reliability engineers from the Met-Ed Rate District, Penelec Rate District, Penn Power Rate District, and West Penn Rate District ("Rate Districts") was formed to augment the ongoing internal review of the Company's LTIIIP projects, expenditures, reliability performance, and to develop an overarching strategy for long-term reliability and more consistent benchmark performance for the Company. Additionally, in an effort to further supplement the review process and strategy development, the services of an independent consultant, 1898 and Company ("1898"), were utilized as an additional resource to analyze the FE PA system and assess opportunities for potential reliability improvements.

Between 2016 and 2019, the Company's predecessor companies (Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company (hereafter, the "Predecessor Companies") invested \$343M in capital improvements through LTIIIP I. LTIIIP I allowed the Predecessor Companies to accelerate projects to replace aging infrastructure, accelerate line rehabilitation work, and accelerate the modernization and automation of the distribution system in order to enhance system resiliency and reliability. The projects included in LTIIIP I covered a broad spectrum of distribution-related equipment and facilities with the major focus being line rehabilitation and asset health.

More recently, the Predecessor Companies received approval for their LTIIIP II programs, which began in 2020 and will be completed by the end of 2024. LTIIIP II projects were designed to maintain and improve reliability of the distribution system and to minimize customer impact due to outages. LTIIIP II projects focus on sectionalizing, remote control devices, increased capacity, and remote sectionalizing technologies to automatically detect and locate outages. Between January 2020 and December 2023, the Predecessor Companies invested \$549M in LTIIIP II projects. The Company expects to invest an additional \$137M in 2024 through the completion of LTIIIP II.

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<sup>1</sup> By Order entered on December 7, 2023, the Commission granted certain approvals and certificates of public convenience for the unification of the four Companies into one company, FirstEnergy Pennsylvania Electric Company, or "FE PA" effective January 1, 2024. *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*, Docket Nos. A-2023-3038771, et al. (Order entered December 7, 2023).

The Company continues investing in the distribution system through its baseline capital projects aside from LTIIIP programs. These capital expenditures fall into five major categories:

Reliability capital expenditures includes work identified by the Company's Engineering Department to improve reliability in targeted areas of the system. This includes adding sectionalizing devices such as reclosers, fuses, TripSavers, and switches, as well as other miscellaneous equipment. These installations improve the ability to avoid outages and, when an outage occurs, to reduce the impact, and in some cases, duration of the outage.

Condition-based expenditures includes work associated with engineering or construction field assessments, inspections, and testing that indicates an increased potential for premature or near-term equipment failure. Once identified, replacement is then planned before the equipment becomes non-functional.

Storm-related capital repairs and forced line and substation work includes installation of new plant to resolve equipment-related issues. Plant may include items such as poles, transformers, switches, and reclosers that are replaced on an emergency basis after being damaged during a storm or due to an incipient condition which requires immediate line or substation remediation.

New capacity includes work identified by the Company's Distribution Planning Engineers necessary to prevent potential system overloads. Analysis performed includes the identification of forecasted load growth and potential thermal overloads. Actions can include circuit re-conductoring, new feeders, or new distribution substations.

New business-related capital expenditures include investments to connect new residential, commercial, and industrial customers to the distribution system and significant investments related to upgrading existing service connections for increased load.

In addition to these programs, vegetation management continues to be a heavy focus of the Company, with a strong effort towards the removal of off-corridor trees, which are the leading driver of tree-caused outages on FE PA's system. In 2019, FirstEnergy Corp. funded an infusion project for FE PA based on tree-related system average interruption frequency index ("SAIFI") and system average interruption duration index ("SAIDI") performance. This project targeted removal of additional off-corridor trees. Throughout the project, additional priority trees were removed (more than that required to meet regulatory minimums) on the targeted circuits. The results of the project showed SAIFI improvement on those targeted circuits over the two-year monitoring schedule.

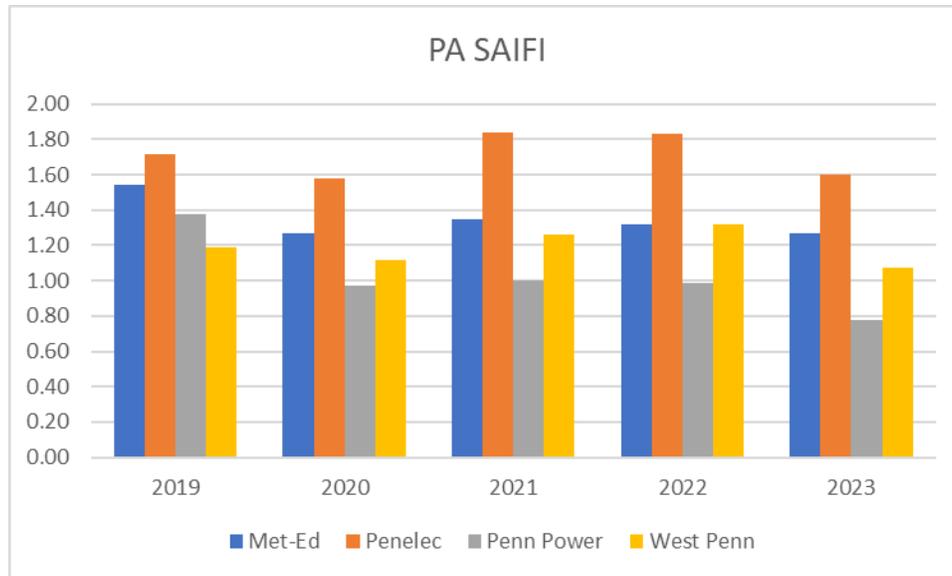
Additionally, FE PA initiated development of the advanced vegetation analytics tool ("AVAT") in 2021. AVAT is a machine learning model trained to identify and quantify vegetation system condition metrics and to calculate the risk and probability of tree-caused outages along the Company's distribution corridors to help improve system performance and reliability.

The Company is seeking to expand its investment in its distribution system through LTIIIP III. FE PA intends to make an approximately \$1.422 billion investment between 2025 and 2029. The increased investment looks to build upon the previous LTIIIP plans with an increased focus on reducing outage durations and customer minutes interrupted through reductions of customer average interruption duration index (“CAIDI”) and SAIDI.

## Reliability Experience

Over the past 5 years, FE PA’s overall SAIFI has seen a 14% improvement, with each of the four Rate Districts showing an improvement over that timeframe as indicated in Table 1.

**Table 1**

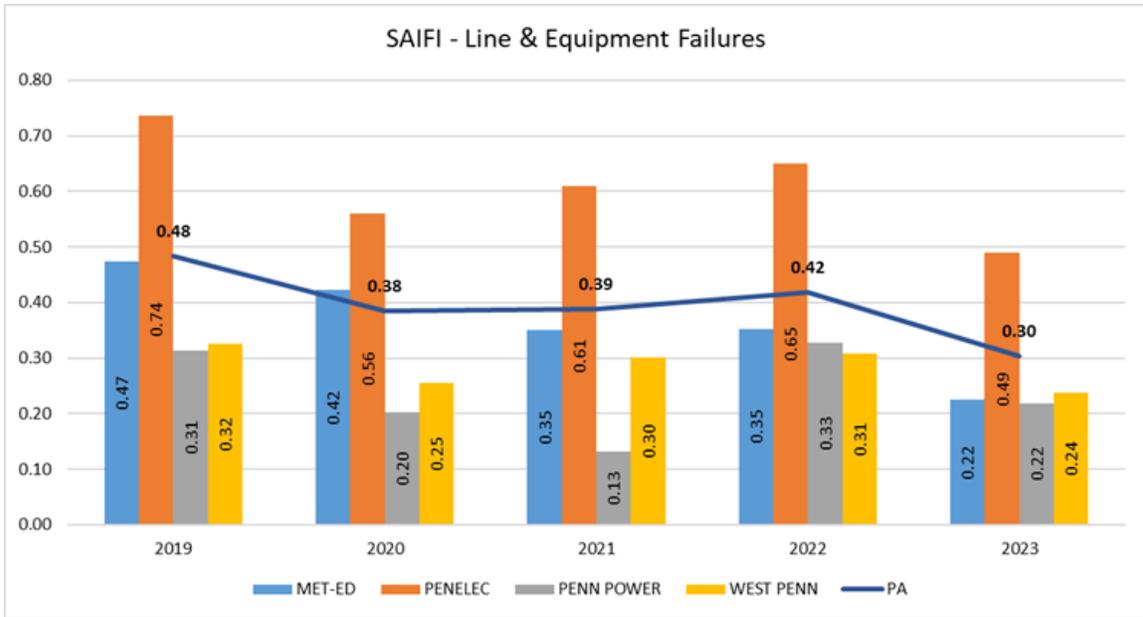


The two outage causes contributing to this improvement have been line and equipment failure-related outages and tree-related outages. Line and equipment failure-related SAIFI has decreased by 38% since 2019 as indicated in Table 2. Line and equipment failure-related outages were a focal point for LTIIIP I and LTIIIP II and will continue to be a focus in this LTIIIP III plan. Table 3 illustrates tree-related SAIFI has decreased by 14% in the same period. These improvements are largely attributable to the Predecessor Companies’ vegetation management practices.

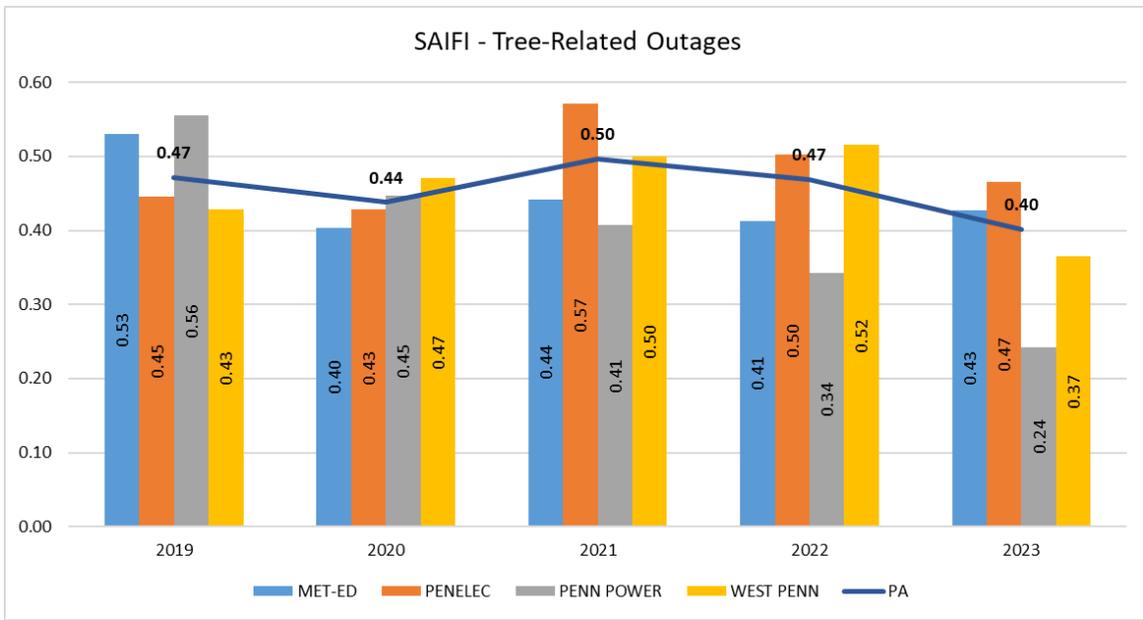
FE PA is very confident that the enhanced vegetation management program described in its pending base rate increase request<sup>2</sup> will deliver on reliability improvements in addition to controlling the long term spend. Removing off-corridor priority trees that our trained professional arborists believe will impact the system before the next scheduled maintenance (leading cause of outages), removing additional overhang (second leading cause of outages), and removing trees and controlling brush on the corridor will most certainly control long term costs and reduce exposures to workers and the public. Indeed, funding beyond the minimum regulatory requirements is necessary to increase the likelihood of future performance that meets or exceeds reliability benchmarks.

<sup>2</sup> See generally, *FirstEnergy Pennsylvania Electric Company Supplement No. 3 Tariff – Electric Pa. P.U.C. No. 1*, Docket No. R-2024-3047068 (filed April 2, 2024).

**Table 2**



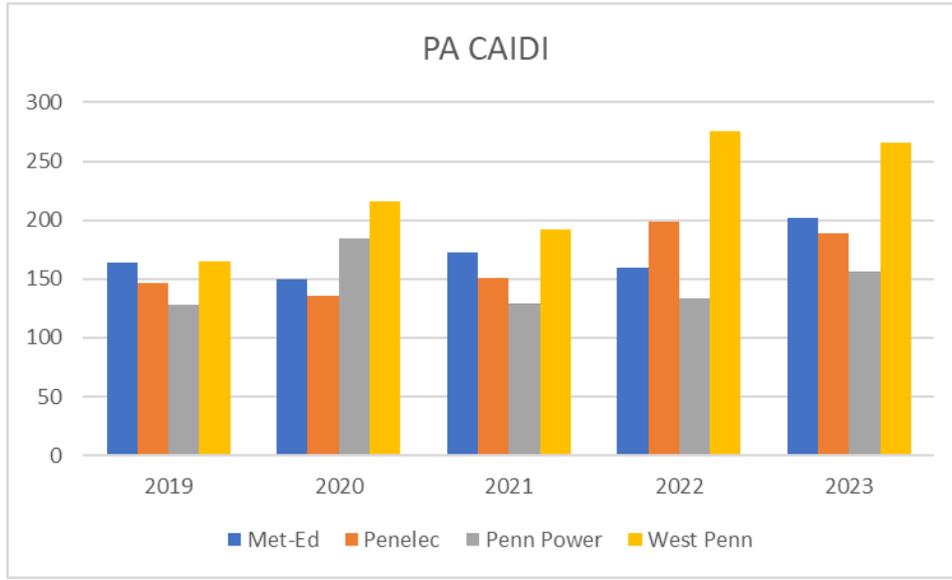
**Table 3**



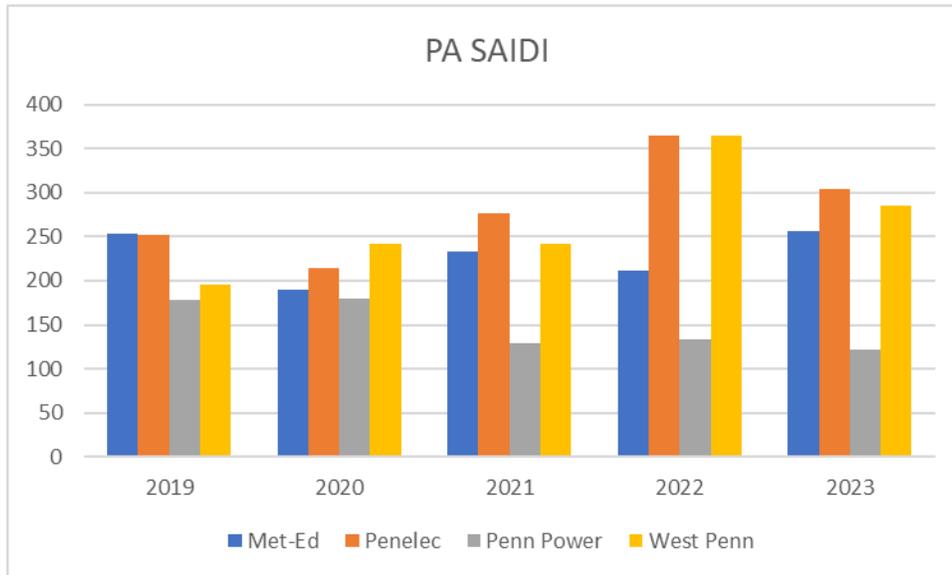
CAIDI over that same 5-year period has seen a significant increase as shown in Table 4, which, despite the improvements experienced in SAIFI, has driven SAIDI to increase across this period in all of the Rate Districts except Penn Power (as seen in Table 5). In addition to the capital

investments within this LTIIIP III plan, the Company will continue to focus on operational process improvements to reduce CAIDI.

**Table 4**



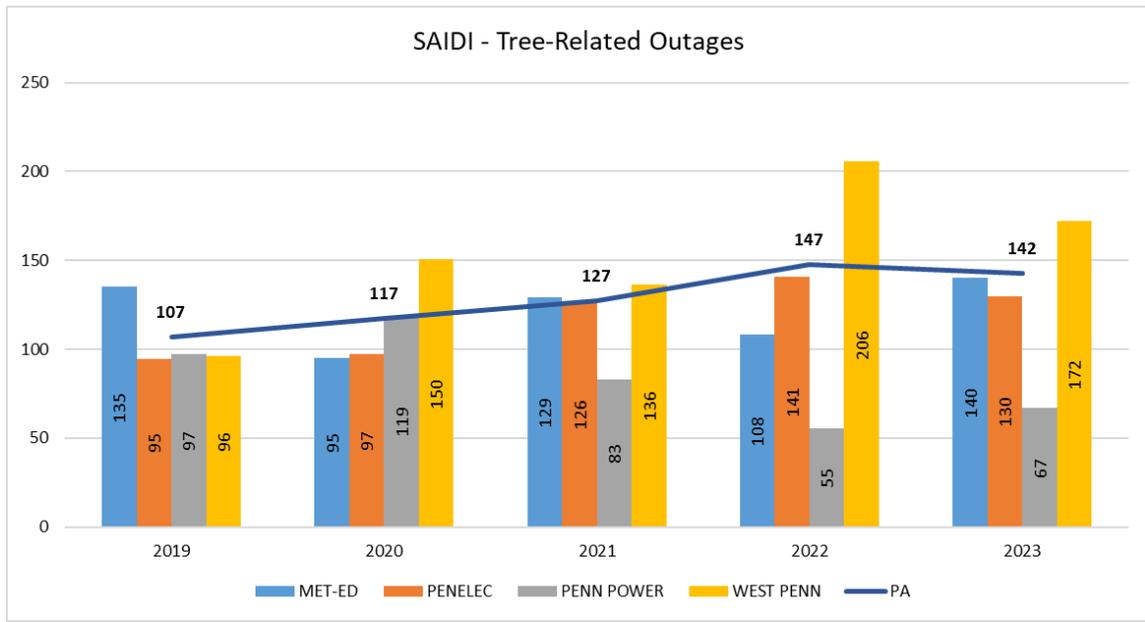
**Table 5**



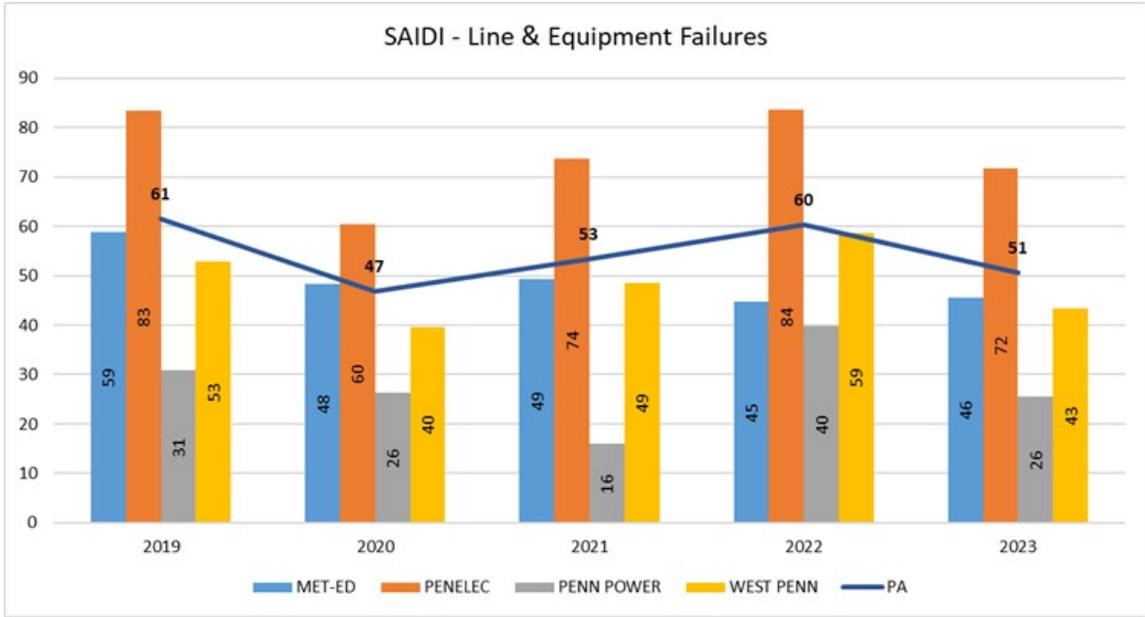
Tree-related SAIDI, as shown in Table 6, has been increasing across three of the four rate districts with the exception being Penn Power. This increase in SAIDI over the 5-year period indicates that the CAIDI is offsetting the improvement FE PA has seen in tree-related SAIFI. The line and

equipment failure SAIDI shown in Table 7 indicates trending slightly downward, but with the 38% decrease in line and equipment failure SAIFI, SAIDI should be trending further down. This again points to increases in CAIDI driving SAIDI and offsetting any gains made in SAIFI, and highlights the intent of the FE PA LTIP III plan to target both SAIFI and CAIDI by reducing the customers impacted by outages as well as reducing the impact that outages have on customers.

**Table 6**

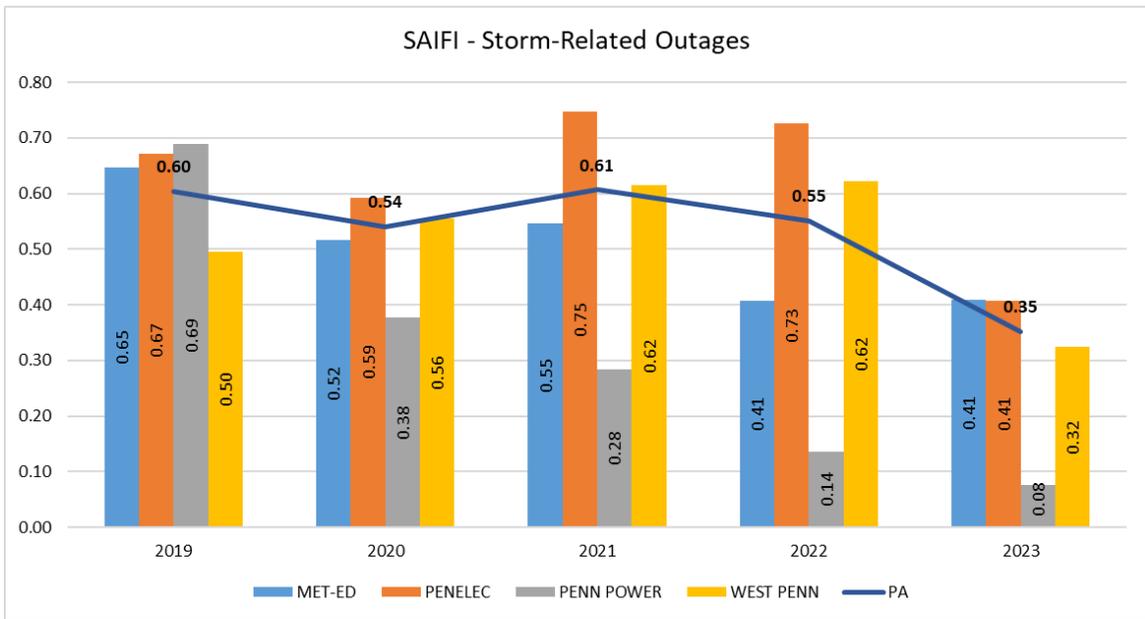


**Table 7**



The Company has made significant capital investments through LTIIIP I and LTIIIP II. Those capital investments targeted hardening the distribution system, reducing outage exposure on worst performing circuits, as well as other trouble spots on non-worst performing circuits. As a result, the number of customers affected during weather events has been reduced, as shown in Table 8.

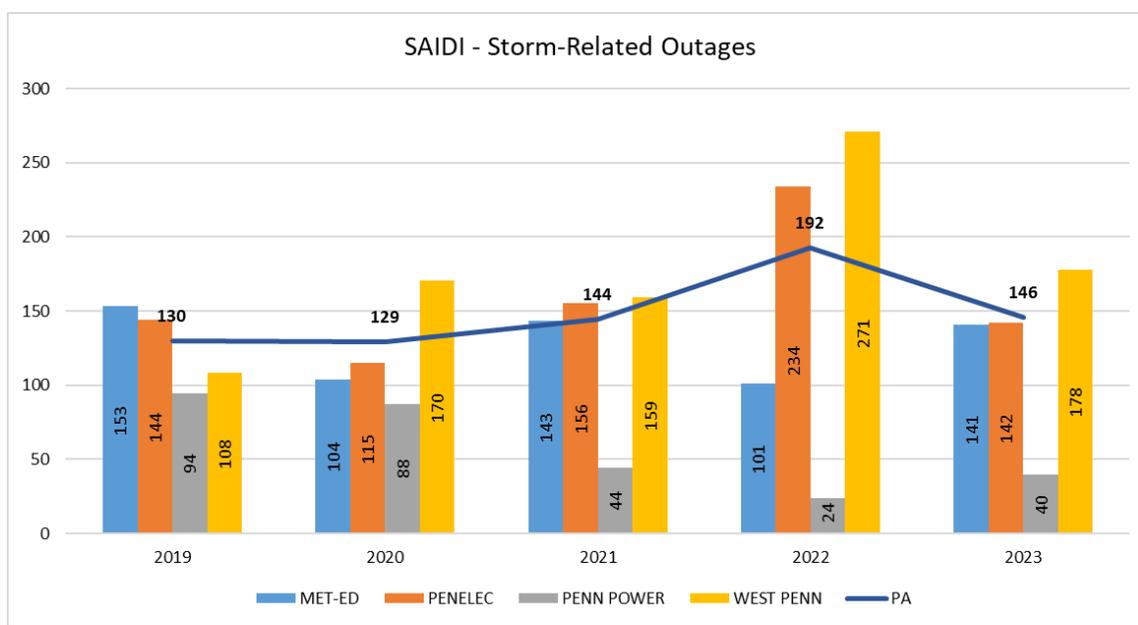
**Table 8**



The Company’s storm-related SAIDI performance reflected in Table 9 indicates that SAIDI has increased slightly at the state level, although the Rate Districts of Met-Ed and Penn Power show a downward trend. This indicates a rise in storm-related CAIDI performance and highlights the need for a continued focus on operational process improvements in storm-related situations.

For storm-related outages, off-corridor trees are the largest contributor to CAIDI and SAIDI reliability, followed by line and equipment failures. The Company’s Vegetation Management Program specifications include the removal of targeted off-corridor trees as part of maintenance. However, under the existing program, the Company only removes priority trees that are identified in the field as an immediate threat to the safety of the public or facilities. The Company has requested funding through its pending base rate increase request<sup>3</sup> that will greatly expand its ability to address off-corridor trees, which have historically caused over 95% of its tree-related outages.

**Table 9**



When looking at the overall customer experience and taking into account major (excluded) events, blue-sky SAIFI has seen a slight increase over the past 5-years, and the improvements in storm-related SAIFI have offset that increase. Overall, FE PA customers are experiencing fewer outages over the course of the past five years, which is detailed in Table 10 as an average across FE PA. One interesting pattern that emerges from this table is from 2019-2022, the Company saw a downward trend in major events, but a similar upward trend in storm-related (minor weather) SAIFI. This reflects that the past capital investments into hardening the distribution system and reducing outage exposure have kept events, that in the past would have met the 10% exclusion

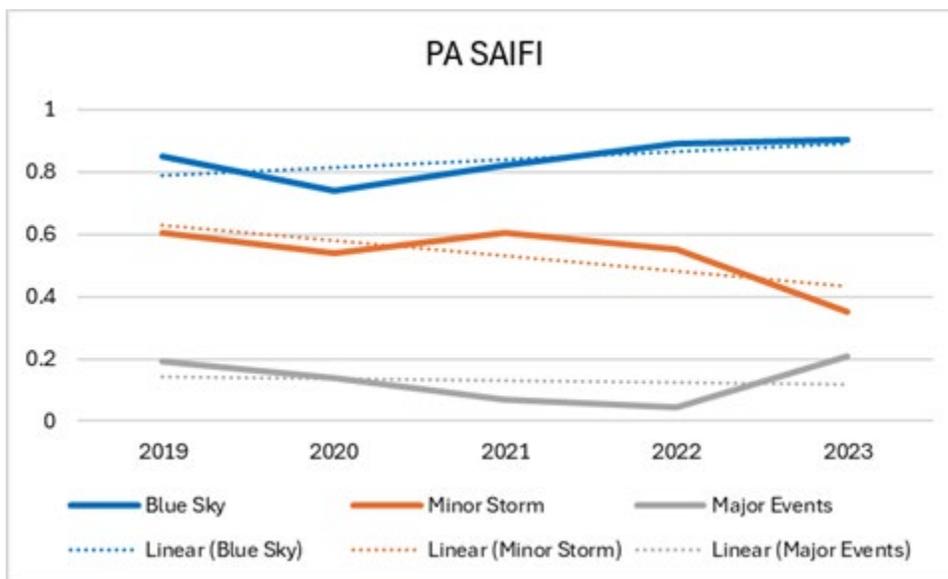
<sup>3</sup> *Id.*

criteria, from meeting that threshold. 2023 was the anomaly and reflective of an event that significantly affected all of the Rate Districts across the state, and is described below.

The main driver of the upward trend in CAIDI and SAIDI during major events in 2023 was the April 1, 2023 weather event which impacted the majority of Pennsylvania. This storm produced damaging wind gusts of up to 76 mph in some areas with high winds continuing into the following day in many areas. These high winds hampered restoration activities due to material handling and equipment use restrictions when winds exceed 30 mph and 40 mph respectively, contributing to high CAIDI and SAIDI. Excluding that one weather event, major event metrics are down (favorable), indicating past improvements have had a positive impact on the distribution system. See Tables 10, 11 and 12 below, showing aggregate data for the four FE PA Rate Districts.

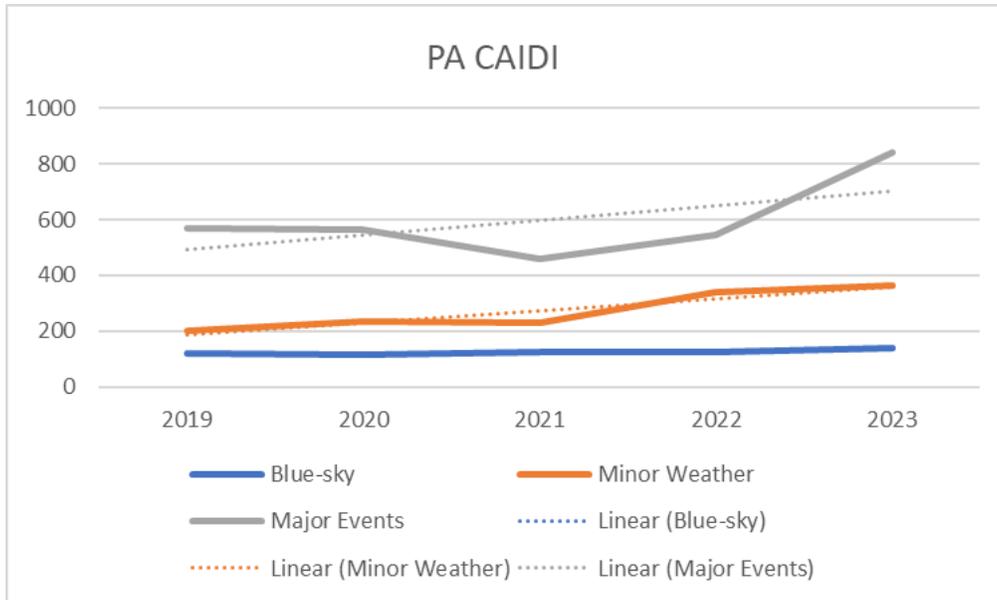
Blue sky<sup>4</sup>, minor weather, and major weather CAIDI are trending up and are resulting in SAIDI trending upward and offsetting gains made by SAIFI trending down. The Company’s LTIIP III plan is one area of focus that will drive the company toward benchmark performance. Strategic vegetation management spend, and continuous improvements to operational processes are two key areas of focus to drive CAIDI improvement.

**Table 10**

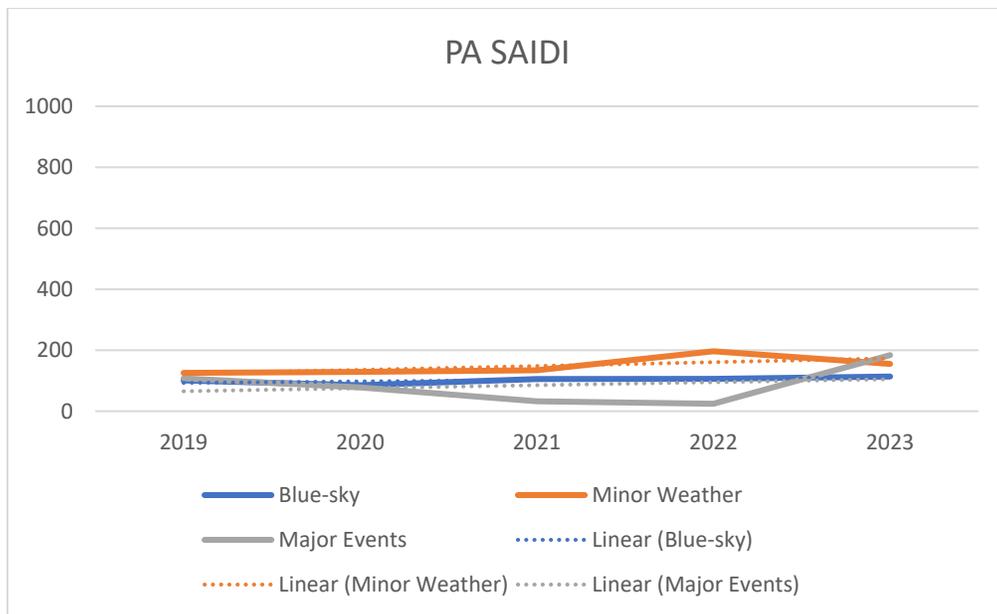


<sup>4</sup> The concept of minor weather days is used to distinguish between a blue-sky day, days that do not meet minor weather or major event criteria, and a major event, which is defined in 52 Pa. Code § 57.192 and which is excluded from the calculation of SAIFI and CAIDI.

**Table 11**



**Table 12**



Below are completed LTIP II projects that have successfully improved reliability:

Remote Sectionalizing Warrendale Circuit D-622 - This project was a remote sectionalizing job that was completed in June of 2022. The project involved installing/upgrading five supervisory control and data acquisition (“SCADA”) commissioned line reclosers, two sets of line regulators

and rebuilding two sections of the circuit. The rebuild also included replacing poles and upgrading overhead wire that was in poor condition. A tie was made between circuits D-625 and D-622 which now allows load transfer during outages and reduces the amount of time to get customers back in power while repairs are made. In 2021, the combined customer minutes interrupted (“CMI” of the Warrendale D-622 and D-625 circuits was 518,235 with 34 events and in 2023 the combined CMI was 148,153 with 24 events. The additions of SCADA reclosers and repairing the OH line in 2022 reduced the CMI by 370,082.

New Source SR-Helen Mills Brockport - The Helen Mills substation is a single feed substation at the southern border of the St. Mary’s District without any viable possibilities of constructing a second feed from West Penn facilities. The substation is very close to a Penelec 34.5kV line that could serve the Helen Mills substation in cases of an outage on the primary feed. This new line was constructed and a step-down transformer was utilized to provide a backup feed to Helen Mills substation. This project was completed in early 2023.

Circuit Improvement Carsonia 764-1 circuit tie - This was a circuit improvement project that constructed a new tie to a radial section of the Carsonia 764-1 circuit in Reading, benefitting 1012 customers. The project involved installing six new SCADA line reclosers, upgrading a regulator bank, and linking the radial ends of the circuit. The completed tie allows load transfers during outages reducing the amount of time to restore service while repairs are made. Through 2019 and 2021, the CMI of this radial branch of the circuit was 1,018,773 from five events. The project was completed on January 31, 2023. It has been utilized to restore customers five times since it was completed for a CMI savings of 219,859.

Circuit Rehab Northwood 643-3 spacer cable replacement - This was a circuit rehab project which addressed spacer cable failures on a circuit in the Easton district of Met-Ed. Northwood 643-3 experienced three spacer cable failures between 2016-2018, with 3 failures contributing 255,032 CMI and ranking as the top circuit for spacer cable CMI across Met-Ed. This project rebuilt and reconnected 2,500 feet of the circuit eliminating the issue. The project was completed October 15, 2019, since which there have been no lockouts of this circuit due to conductor issues.

### **LTIIIP III Development**

To maintain and improve the reliability of its distribution system and to minimize customer impact due to outages, FE PA defined two reliability focus areas: grid modernization and system resiliency. These two focus areas build on the foundation laid through LTIIIP II.

#### Grid Modernization

Grid modernization efforts focus on updating the system with modern technology to increase flexibility and enhance reliability. Distribution system components have operational lives measured in decades but the advent of smart devices provide opportunity for significant operational improvements as compared to legacy components and systems. Legacy systems and multiple distribution voltages result in constraints and limit flexibility during outage events. Infrastructure improvement programs such as LTIIIP offer an opportunity to address investment

backlog and retire legacy systems on an accelerated basis, allowing for implementation of advanced technology faster than traditional replacement might allow. Investment in grid modernization cannot practically occur in the short term but are a multi-step, multi-year journey. FE PA's grid modernization efforts (30% of LTIIIP III) are largely focused on updating underground ducted systems, replacing substation equipment, distribution circuit protection, remote sectionalizing, voltage conversions, and battery storage.

Legacy substation equipment such as oil filled circuit breakers and electromechanical relays are inspected on a cyclical basis and their replacement is dependent on various factors. These breakers often have significant ongoing maintenance needs. Electromechanical relays are limited in the engineering data they can provide and may not maintain calibration as they age resulting in protection coordination issues. Replacement of these components will be accelerated and they will be replaced with modern vacuum breakers and electronic relays. Modernizing substation equipment eliminates the continued maintenance needs associated with aging equipment while simultaneously providing improved remote monitoring and operational capability.

Initiatives such as Distribution Circuit Protection and Sectionalizing will accelerate improved distribution system coordination and sectionalization by installing protective devices such as reclosers and fuses on the distribution system along with investments to create radial loops and install ties between circuits. By segmenting circuits, the impact of outages can be isolated so that fewer customers experience an outage. Remote Sectionalizing enhances operational flexibility by providing dispatchers with remote SCADA control of sectionalizing devices. SCADA controls allow distribution system operators to remotely isolate a fault and restore service to a portion of affected customers by transferring them to unaffected parts of the system in a matter of seconds or minutes. Frequently, sectionalization and remote control may be pursued in conjunction with one another.

Legacy systems operating below 15kV remain across sections of the FE PA service territory. The substations serving these circuits are reaching the end of their useful life. The transformers are small and many lack voltage regulation. These systems are often islanded with limited tie capability surrounded by 15kV class circuits. Accelerating the conversion of the sub-15kV systems to a standard distribution voltage will increase operational flexibility, improve tie capability, voltage regulation, and reduce customer outage duration. Rebuilding the circuits with new transformers, fuses, insulators, and other associated hardware during the conversion process will continue to reduce equipment failures, improving outage frequency.

Continuing the success of LTIIIP II, the following LTIIIP III projects are expected to improve reliability:

Voltage Conversion Ingomar D-620 and D-619 Project. Ingomar D-620 and D-619 was chosen for the 2025 Voltage Conversion initiative. The two circuits are currently a 4.8kV island in the Cranberry district of Penn Power. These circuits were chosen because the substation has dual voltage transformers already due to a transformer failure back in 2018 that resulted in a 20.5 hour outage with 1,547,580 CMI because there were no ties available. The project is estimated to cost

around \$3M to complete and will replace all 4.8kV transformers with dual voltage transformers, reconductor wire in poor condition and update line equipment, as necessary. The large benefit will come from adding viable ties to the surrounding 7.2kV circuits for load transfer during outages. SCADA will be added to the ties to decrease time for restoration and field exposure.

Covington Sub Voltage Conversion Project. The objectives of this project are to: (1) upgrade both Covington Sub Circuits (00727-63 & 00729-63) to 12kv to eliminate 4.8kv Delta; (2) unload aged (1959) Substation Transformer at Covington Sub which is currently unable to support existing load; (3) remove an existing island by creating a tie point to South Mansfield circuit (00619-63) and upgrade conductor to enable back feeding all of Covington Sub, benefiting 1045 customers; and (4) eliminate low voltage problems during peak seasons, improving customer satisfaction. To benefit the customers immediately, a three-stage approach will be implemented. The first stage will involve upgrading two sections of the circuit to support 12kv (transformers, insulators, cutouts). The second stage will involve installing two step-down 34/12kv transformers, and transferring customers to them. The third stage will involve converting the remaining part of the circuit to 12kv and installing a new 34/12kv station transformer (and potentially replacing it with a stepdown bank).

Glendon 820-3 Voltage Conversion Project. This project will convert an existing 4.8kV sections of circuit to a mainline 34.5kV. The project will also extend a circuit to provide tie capacity to nearby radial circuit sections which experience frequent, long duration outages.

### System Resiliency

System resiliency efforts focus on maintaining the system in a state of good repair and minimizing the impact of events on customers. The programs under this area create a system that responds to events more effectively reducing both the frequency and duration of outages experienced by customers. Distribution system components have operational lives measured in decades but maintaining the system in good health requires a level of capital investment that focuses on replacing components that are reaching the end of their useful life before they actually fail. Practices such as robust inspection and maintenance programs can reduce the level of investment necessary to support asset health. However, as the system continues to age over time, it results in an investment backlog and more frequent outages as equipment and line failure rates rise. Infrastructure improvement programs such as LTIIP offer an opportunity to address investment backlog and to achieve an overall better state of repair by accelerating investments that may be protracted otherwise. Investments in system resiliency cannot practically occur in the short term but are a multi-step, multi-year journey. FE PA's system resiliency efforts (68% of LTIIP III) are largely focused on improving circuits or replacing and rehabilitating circuits, poles, distribution switches, porcelain terminators, underground cable, and the addition of new sources.

The circuit improvement and circuit rehabilitation programs provide an opportunity to reconfigure and rehabilitate existing circuits replacing conductor that is reaching end of life, retiring spacer cable construction, relocating circuits to accessible roadside locations, constructing new ties and improving flexibility. Selective undergrounding of facilities will be considered during these programs where conditions are feasible from both geographic and future load perspectives. The

combination of these programs will reduce equipment failure rates improving outage frequency (SAIFI), while additional ties and the relocation of lines to accessible areas will reduce outage duration improving CAIDI.

Existing distribution switches allow for the sectionalization and restoration of circuit sections during an outage. Failures of these switches during an outage result in increased CAIDI due to the inability for field crews to isolate the outage. Replacing the switches will maintain the sectionalizing capability that currently exists on the system. Where appropriate, locations may also be considered for the remote sectionalizing initiative under grid modernization.

Porcelain cable terminators were installed during the 1960's and 1970's on distribution cables in substations, on circuit feeder exits and on underground mainline cable risers. These terminators have experienced a high failure rate and with many installations in substations the failures tend to affect multiple circuits and many customers. Replacing these will reduce the potential of a high SAIFI multiple circuit outage occurring.

New Sources address N-1<sup>5</sup> source issues and enhance operational flexibility by initially providing system operators with increased options to source the distribution circuits in an area, reducing outage duration and improving CAIDI.

FE PA's initiatives by reliability focus area are provided in Table 13. See Appendix A for details of FE PA's LTIIP III.

Below are three System Resiliency projects which are expected to improve reliability:

New Source Project Alternate Hyndman Sub-T-Construct-Corriganville To Hyndman Project. This project includes construction of a new 34.5kV alternate SubT line to feed the Hyndman substation. The current feed is radial and is entirely off-road and through heavily wooded areas. This substation has experienced a complete outage 2.67 times per year since 2020, affecting 1,632 customers. Due to a difficult access and the need for specialty equipment, the average down time is 299 minutes. The new ten-mile line will be placed along Route 96 (Hyndman Road).

Circuit Improvement Project North Bangor 826-3 outer loop Project. This project will consist of converting several miles of existing single-phase loop to a three-phase remote controlled tie that affects 3,200 customers. When complete, the project will provide back feed capability to 1,500 customers.

Circuit Improvement Project Lynnville. This project consists of relocating an off-road section of the circuit from a heavily wooded corridor adjacent to the road. Several sections will be converted from 4.8kV to 13.2kV to provide further flexibility. This project will benefit 49 customers and will address an area of the circuit that has experienced multiple customer complaints.

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<sup>5</sup> N-1 means a lack of available contingency options and a loss of the source would impact the ability to provide reliable service.

**Table 13.** Initiatives by Reliability Focus Area

Reliability Focus Area	Initiatives
Grid Modernization (30%)	Distribution Circuit Protection and Sectionalizing
	Network and Underground Ducted Systems
	Remote Sectionalizing (Distribution Automation Preparation)
	Substation Equipment Replacement
	Voltage Conversion
	Battery Storage
System Resiliency (68%)	Customers Experiencing Multiple Interruptions (“CEMI”)
	Circuit Improvement
	New Sources
	Overhead Circuit Replacement/Rehabilitation
	Pole Replacement
	Underground Cable and Equipment Replacement
Other (2%)	Unreimbursed Highway Relocation

FE PA selected the appropriate LTIP III initiatives based on their potential to achieve the greatest reliability impact in a cost-effective manner that is, dollar per SAIDI; high SAIDI and/or SAIFI benefits; customer satisfaction improvement; system degradation mitigation; or a combination of these methodologies. The Company’s planned capital investment for the LTIP III is shown in Table 14. This investment demonstrates a commitment by FE PA to make targeted accelerations in its investments with an eye towards improving overall reliability performance and the PA customer experience.

**Table 14.** FE PA’s Planned LTIP III Capital Investment

Planned Capital Investment (In Millions)					
2025	2026	2027	2028	2029	Total
\$278.29	\$297.71	\$288.50	\$296.71	\$261.09	\$1,422.30

The table at the front of Appendix A, captioned “Capital Investment Summary by Year,” summarizes the planned capital investment for the period beginning January 1, 2025, and ending December 31, 2029, for each of the initiatives discussed in Appendix A.

The success metric for each LTIP III initiative is the improvement of reliability. The estimated SAIDI and SAIFI benefits were calculated by 1898 and are an estimate of what 1898 expects FE PA will experience.

The initiatives will also have the following qualitative benefits:

**Safety** – Deployment of remote technology and new equipment will help to protect our line workers, customers, and the public through reduced exposure to potentially hazardous conditions, safer operations of the systems, and a reduction of miles driven.

**Customer Satisfaction** – With better reliability, fewer businesses will have to close when there are power outages, and residential customers who work from home will be inconvenienced less.

**Technology** – Deploying new technology onto our system and leveraging distribution analytics tools will enable the Company to improve the customer experience by responding more effectively to outages, and more effectively and efficiently addressing customer concerns.

The methodology used to calculate SAIFI and SAIDI benefit projections was reviewed during the development of this LTIIIP III and found to be sound and reasonable. The methodology utilizes findings from completed LTIIIP projects and other, similar work. The calculations consider the customers that benefit directly from LTIIIP III, the types of outages addressed by the proposed projects, and the ability of FE PA to respond to outages given the system's planned circuit configurations. Estimated SAIFI and SAIDI benefits are shown in Table 15.

**Table 15.** FE PA’s Estimated SAIFI and SAIDI Benefit<sup>6</sup>

Category	Initiative	Total In-service Cost (Nominal \$M)	SAIFI	SAIDI
Grid Modernization	Distribution Circuit Protection and Sectionalizing	\$76.79	0.013	3.29
	Network and Underground Ducted Systems*	\$45.01	0.000	0.00
	Remote Sectionalizing (Distribution Automation Prep)*	\$208.60	0.050	13.54
	Substation Equipment Replacement	\$30.00	0.001	0.10
	Voltage Conversion*	\$43.75	0.003	0.43
	Battery Storage*	\$17.00	0.001	0.23
System Resiliency	CEMI	\$19.60	0.000	0.01
	Circuit Improvement	\$397.99	0.053	8.47
	New Sources	\$73.00	0.000	0.01
	Overhead Circuit Replacement/Rehab	\$399.08	0.016	2.47
	Pole Replacement	\$20.11	0.004	0.84
	Underground Cable and Equipment Replacement	\$58.76	0.002	0.33
Other	Unreimbursed Highway Relocation	\$32.61	0.000	0.00
	<b>Total</b>	<b>\$1,422.30</b>	<b>0.144</b>	<b>29.72</b>

\*These initiatives were included in FE PA's DOE GRIP application.

The Company will continue to review the effectiveness of its investment due to changing business needs and may re-prioritize, alter completion dates, and add or remove projects based on

<sup>6</sup> These are the benefits FE PA expects to receive without any intervening issues. There are multiple variables that contribute to reliability metrics, and this estimated reduction in benefits due to the planned LTIIIP III work is only one variable.

engineering analyses to maximize the reliability and operating benefits to the affected circuits, while taking into consideration the overall impact to reliability and operational improvement and the costs and benefits to customers.

### **Requirements of the LTIIIP**

Pursuant to 52 Pa. Code § 121.3(a), a utility seeking to implement a distribution system improvement charge (“DSIC”) mechanism or to continue a previously approved DSIC mechanism must file an LTIIIP. The LTIIIP must include the eight elements listed in that regulation. The required elements and the locations within FE PA’s LTIIIP III where they are addressed are set forth below:

(1): The descriptions of the initiatives set forth in Appendix A identify the types and ages of DSIC-eligible property in subsections captioned “Description.”

(2): The table at the front of Appendix A, captioned “Capital Investment Summary by Year,” shows the planned investment for the period of 2025-2029, for each of the initiatives discussed in Appendix A.

(3): The descriptions of each initiative in Appendix A set forth the general location of eligible property relating to each initiative in subsections titled “Schedule of Planned Projects.”

(4): Reasonable estimates of the quantity of eligible property to be improved or repaired are provided in the subsection titled “Schedule of Planned Projects” in the description of each initiative in Appendix A.

(5): FE PA plans to finance the necessary capital by utilizing the timely recovery of invested funds through the DSIC mechanism. Additional detail concerning the capital investment by year is provided in Appendix A within the description of each initiative.

(6): A description of the manner in which the infrastructure repair, improvement or replacement will be accelerated and how repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service to customers are provided in the “Acceleration” subsection in the description of each initiative in Appendix A.

(7): The workforce management and training programs in place for FE PA that are designed to ensure that it will have access to a qualified workforce to perform work under its LTIIIP III in a cost-effective, safe and reliable manner is described in the section below titled “Access to a Qualified Workforce”.

(8): A description of how FE PA expects to reach out to, and coordinate with, other utilities, the Pennsylvania Department of Transportation (“PennDOT”) and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIIIP III is provided in the section below titled “Outreach and Coordination with Other Entities”.

## **Outreach and Coordination with Other Entities**

FE PA communicates and coordinates with PennDOT, local governments, local municipalities, and other utilities and entities with regard to work that is scheduled to be performed that may affect the operations of those entities. Examples of communication and coordination efforts include press releases, public meetings, contact with local officials, and communication to customers who will experience a planned outage due to construction in their service area. However, most of the work that will be performed under FE PA's LTIIIP III is expected to have minimal impact on these entities' work schedules, and project-specific outreach plans are not expected to be required.

## **Access to a Qualified Workforce**

### *FE PA Workforce*

The FirstEnergy Apprenticeship Program will ensure our line worker and substation electrician workforce is able to meet the electric needs of our customers. This training program replaces the previous Power Systems Institute ("PSI") and provides apprentice employees with internal classroom learning led by veteran instructors as well as hands-on field training. Qualified applicants will be offered apprentice positions with the Company subject to the Company's standard hiring process. The Apprenticeship Program is scheduled to begin recruiting apprentices during the third quarter of 2024.

It is the Company's practice to size its workforce resources to maintain a steady state workload that includes day-to-day activity and a reasonable level of storm response as projected from historical averages. For those times when workload increases above steady-state levels, FE PA is able to supplement its own resources by accessing a portfolio of affiliated resources<sup>7</sup> that may be able to move into the area to assist on a temporary basis. The Company also employs contractors to supplement the workforce, particularly during construction of large capital projects. For contractor resources, participation in the Contractor of Choice program, described in the section titled "Contractor Workforce" below, facilitates competitive pricing and the ability to maintain a qualified and available contractor workforce in the most cost-effective manner possible.

The Company's training for qualified electrical workers adheres to the Occupational Safety and Health Administration OSHA Regulation, 29 CFR 1910.269 - Electrical power generation, transmission, and distribution; American National Standards Institute; American Society for Testing Materials; and Institute of Electrical and Electronics Engineers standards. Training material leverages FirstEnergy work practices, procedures, construction standards, and the Accident Prevention Handbook. Formal training is provided by the Workforce Development

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<sup>7</sup> FirstEnergy Corp.'s ("FirstEnergy") affiliated companies include the FirstEnergy Pennsylvania Electric Company ("FE PA") on behalf of its four Pennsylvania Rate Districts (Met-Ed Rate District, West Penn Rate District, Penelec Rate District, Penn Power Rate District), located within the Commonwealth of Pennsylvania, and additional companies in other jurisdictions. The consistency in standards and work practices employed across all companies enables streamlined resource sharing in a way that promotes both safety and cost efficiency for those companies under this umbrella.

(“WFD”) team. This group consists of full-time instructors supplemented by contracted instructors who are generally retired craft workers. WFD develops, conducts, and evaluates knowledge and skills training for apprentices and incumbents.

### *Contractor Workforce*

In the event that resources are necessary to supplement the Company’s workforce, FirstEnergy’s Supply Chain Department follows an Enterprise Sourcing Procedure to conduct competitive bidding where required to ensure the Company secures a skilled labor force and specialized equipment in order to complete projects on schedule and at competitive market pricing. FirstEnergy Supply Chain Department will issue a request for proposal (“RFP”) to a list of contractors who have a history of successfully completing projects safely, on schedule and at competitive market pricing. FirstEnergy Supply Chain makes every effort to include diverse suppliers for all competitive bid events which will include bids for LTIIP projects. After a thorough bid clarification process with the contractors, the responses to the RFP are evaluated by Engineering, Project Management and Supply Chain. A contractor is selected based on available manpower and equipment resources, understanding of project scope, constructability, management, Tier I and Tier 2 diverse supplier spend, safety oversight and pricing. A contractor is required to:

- Employ only persons known by the contractor to be experienced, qualified, reliable and trustworthy; and
- Have in writing a series of safe work practices, procedures and programs pertinent to the work being done.

Upon completion of the work, a designated representative of the Company will evaluate the work performed by the contractor for compliance with project specifications.

### **Summary**

In summary, FE PA’s LTIIP III will invest \$1.422 billion into its distribution infrastructure and technology during the five-year period beginning January 1, 2025, and ending December 31, 2029. The LTIIP III is designed with the goals of being cost-effective, achievable, and in full compliance with the requirements set forth in 66 Pa.C.S. § 1352(a), the Final Implementation Order, the LTIIP Review Order, and the LTIIP Modification Order. Further, LTIIP III is consistent with guidance provided by 1898 relative to operational focus and approach to and level of investment.

The capital investment for these initiatives constitute a prudent and reasonable investment for accelerating the repair and replacement of the Company’s aging distribution infrastructure in a meaningful way by allowing FE PA to continue to provide safe and reliable service to customers. The LTIIP III plan, along with strategic vegetation spend requested within FE PA’s pending base rate proceeding and other continued operational process improvements, is designed to significantly improve current reliability performance. This plan is the next step in a multi-LTIIP approach to achieve consistent benchmark performance. The thirteen initiatives identified in Appendix A will



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successfully achieve one or more of the following benefits for customers: maintenance of public and employee safety; minimization of outages to customers; minimization of the impact, or duration, of customer outages; and improved performance during storms.

FE PA respectfully requests that the Commission find, pursuant to 66 Pa.C.S. § 1342(a)(7), that the Company's LTIIIP III is "adequate and sufficient to ensure and maintain adequate, efficient, safe, reliability and reasonable service".

**Appendix A**

**Capital Investment Summary by Year**

Initiative	Planned Capital Investment (In Millions)					
	2025	2026	2027	2028	2029	Total
CEMI	\$3.77	\$3.84	\$3.90	\$4.00	\$4.09	\$19.60
Circuit Improvement	\$77.40	\$79.62	\$75.90	\$84.39	\$80.68	\$397.99
Network and Underground Ducted Systems	\$9.63	\$8.97	\$8.38	\$8.80	\$9.23	\$45.01
Overhead Circuit Replacement/Rehab	\$59.70	\$81.77	\$85.83	\$87.60	\$84.18	\$399.08
Pole Replacement	\$4.48	\$4.48	\$4.48	\$4.48	\$2.19	\$20.11
Substation Equipment Replacement	\$6.00	\$5.10	\$6.90	\$6.00	\$6.00	\$30.00
Underground Cable and Equipment Replacement	\$8.95	\$14.23	\$12.33	\$12.33	\$10.92	\$58.76
Distribution Circuit Protection and Sectionalizing	\$30.99	\$20.89	\$13.27	\$11.64	\$0.00	\$76.79
New Sources	\$12.62	\$12.83	\$14.12	\$17.12	\$16.31	\$73.00
Remote Sectionalizing (Distribution Automation Prep)	\$42.80	\$47.64	\$42.40	\$41.16	\$34.60	\$208.60
Voltage Conversion*	\$15.75	\$9.00	\$6.00	\$7.00	\$6.00	\$43.75
Unreimbursed Highway Relocation	\$6.20	\$6.34	\$6.49	\$6.69	\$6.89	\$32.61
Battery Storage*	\$0.00	\$3.00	\$8.50	\$5.50	\$0.00	\$17.00
<b>Total</b>	<b>\$278.29</b>	<b>\$297.71</b>	<b>\$288.50</b>	<b>\$296.71</b>	<b>\$261.09</b>	<b>\$1,422.30</b>

\* These projects are new beginning in 2025.



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*Initiatives by Rate District*

<b>MetEd Initiatives</b>	<b>2025 Spend</b>	<b>2026 Spend</b>	<b>2027 Spend</b>	<b>2028 Spend</b>	<b>2029 Spend</b>	<b>Total Spend</b>	<b>2025 Planned Projects</b>	<b>2026 Planned Projects</b>	<b>2027 Planned Projects</b>	<b>2028 Planned Projects</b>	<b>2029 Planned Projects</b>	<b>Total Planned Projects</b>
CEMI	\$0.87	\$0.89	\$0.91	\$0.93	\$0.96	\$4.56	42	28	28	28	28	154
Circuit Improvement	\$21.60	\$27.60	\$27.60	\$31.90	\$31.10	\$139.80	30	37	36	41	38	182
Network and Underground Ducted Systems	\$4.75	\$3.92	\$4.04	\$4.19	\$4.34	\$21.24	40	32	32	32	33	169
Overhead Circuit Replacement/ Rehab	\$16.80	\$27.07	\$24.53	\$28.30	\$25.38	\$122.08	40	62	55	61	53	271
Pole Replacement	\$0.28	\$0.28	\$0.28	\$0.28	\$0.28	\$1.40	107	104	101	98	95	505
Substation Equipment Replacement	\$1.75	\$1.45	\$1.75	\$1.75	\$1.75	\$8.45	8	7	8	8	8	39
Underground Cable and Equipment Replacement	\$2.16	\$4.25	\$3.95	\$3.95	\$3.05	\$17.36	50,130	95,724	86,341	83,792	62,791	378,778
Distribution Circuit Protection and Sectionalizing	\$5.27	\$1.40	\$0.00	\$0.00	\$0.00	\$6.67	56	14	0	0	0	70
New Sources	\$2.16	\$2.20	\$3.26	\$4.47	\$2.39	\$14.48	1	1	1	1	1	5



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Remote Sectionalizing (Distribution Automation Prep)	\$4.00	\$5.10	\$3.30	\$3.30	\$0.00	\$15.70	40	51	33	33	0	157
Voltage Conversion	\$5.00	\$4.00	\$4.00	\$4.50	\$4.00	\$21.50	4	3	3	3	3	16
Battery Storage	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0
Unreimbursed Highway Relocation	\$1.72	\$1.76	\$1.80	\$1.86	\$1.92	\$9.06	25	25	24	24	25	123
<b>Total</b>	<b>\$66.36</b>	<b>\$79.92</b>	<b>\$75.42</b>	<b>\$85.43</b>	<b>\$75.17</b>	<b>\$382.30</b>	-----	-----	-----	-----	-----	-----
<b>Penelec Initiatives</b>	<b>2025 Spend</b>	<b>2026 Spend</b>	<b>2027 Spend</b>	<b>2028 Spend</b>	<b>2029 Spend</b>	<b>Total Spend</b>	<b>2025 Planned Projects</b>	<b>2026 Planned Projects</b>	<b>2027 Planned Projects</b>	<b>2028 Planned Projects</b>	<b>2029 Planned Projects</b>	<b>Total Planned Projects</b>
CEMI	\$0.74	\$0.76	\$0.77	\$0.80	\$0.82	\$3.89	55	58	59	61	63	296
Circuit Improvement	\$34.26	\$43.64	\$40.70	\$44.70	\$44.20	\$207.50	27	37	33	34	33	164
Network and Underground Ducted Systems	\$4.88	\$5.05	\$4.34	\$4.61	\$4.89	\$23.77	17	17	14	14	15	77
Overhead Circuit Replacement/Rehab	\$16.80	\$29.30	\$30.80	\$31.30	\$24.80	\$133.00	24	40	33	35	33	165
Pole Replacement	\$0.20	\$0.20	\$0.20	\$0.20	\$0.19	\$0.99	35	34	33	32	29	163
Substation Equipment Replacement	\$1.75	\$1.45	\$1.75	\$1.75	\$1.75	\$8.45	5	4	5	5	5	24



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Underground Cable and Equipment Replacement	\$2.25	\$2.56	\$2.26	\$2.26	\$1.75	\$11.08	24,305	26,837	22,993	22,314	16,769	113,218
Distribution Circuit Protection and Sectionalizing	\$8.45	\$5.45	\$0.00	\$0.00	\$0.00	\$13.90	89	56	0	0	0	145
New Sources	\$4.74	\$4.80	\$4.88	\$4.49	\$5.58	\$24.49	1	1	1	1	1	5
Remote Sectionalizing (Distribution Automation Prep)	\$15.60	\$15.60	\$15.60	\$15.60	\$15.60	\$78.00	156	156	156	156	156	780
Voltage Conversion	\$5.50	\$2.00	\$2.00	\$2.50	\$2.00	\$14.00	8	2	1	2	1	14
Battery Storage	\$0.00	\$3.00	\$4.00	\$0.00	\$0.00	\$7.00	0	0	1	0	0	1
Unreimbursed Highway Relocation	\$2.28	\$2.33	\$2.39	\$2.46	\$2.53	\$11.99	57	57	56	56	56	282
<b>Total</b>	<b>\$97.45</b>	<b>\$116.14</b>	<b>\$109.69</b>	<b>\$110.67</b>	<b>\$104.11</b>	<b>\$538.06</b>	-----	-----	-----	-----	-----	-----
<b>Penn Power Initiatives</b>	<b>2025 Spend</b>	<b>2026 Spend</b>	<b>2027 Spend</b>	<b>2028 Spend</b>	<b>2029 Spend</b>	<b>Total Spend</b>	<b>2025 Planned Projects</b>	<b>2026 Planned Projects</b>	<b>2027 Planned Projects</b>	<b>2028 Planned Projects</b>	<b>2029 Planned Projects</b>	<b>Total Planned Projects</b>
CEMI	\$0.83	\$0.83	\$0.83	\$0.83	\$0.83	\$4.15	49	47	46	45	43	230
Circuit Improvement	\$4.50	\$2.00	\$2.00	\$2.00	\$2.00	\$12.50	6	3	2	2	2	15
Network and Underground Ducted Systems	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0



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Overhead Circuit Replacement/ Rehab	\$12.30	\$8.10	\$10.70	\$5.70	\$9.20	\$46.00	27	21	24	17	21	110
Pole Replacement	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0
Substation Equipment Replacement	\$1.50	\$1.20	\$1.50	\$1.50	\$1.50	\$7.20	5	4	5	5	5	24
Underground Cable and Equipment Replacement	\$2.92	\$4.40	\$3.10	\$3.10	\$3.10	\$16.62	37,844	55,342	37,840	36,723	35,639	203,388
Distribution Circuit Protection and Sectionalizing	\$4.40	\$0.00	\$0.00	\$0.00	\$0.00	\$4.40	47	0	0	0	0	47
New Sources	\$2.84	\$2.90	\$2.97	\$5.06	\$3.15	\$16.92	1	1	1	1	1	5
Remote Sectionalizing (Distribution Automation Prep)	\$4.00	\$3.30	\$3.30	\$3.30	\$0.00	\$13.90	40	33	33	33	0	139
Voltage Conversion	\$5.25	\$3.00	\$0.00	\$0.00	\$0.00	\$8.25	2	1	0	0	0	3
Battery Storage	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0
Unreimbursed Highway Relocation	\$0.61	\$0.63	\$0.64	\$0.66	\$0.68	\$3.22	23	23	23	23	23	115
<b>Total</b>	<b>\$39.15</b>	<b>\$26.36</b>	<b>\$25.04</b>	<b>\$22.15</b>	<b>\$20.46</b>	<b>\$133.16</b>	-----	-----	-----	-----	-----	-----
<b>West Penn Initiatives</b>	<b>2025 Spend</b>	<b>2026 Spend</b>	<b>2027 Spend</b>	<b>2028 Spend</b>	<b>2029 Spend</b>	<b>Total Spend</b>	<b>2025 Planned Projects</b>	<b>2026 Planned Projects</b>	<b>2027 Planned Projects</b>	<b>2028 Planned Projects</b>	<b>2029 Planned Projects</b>	<b>Total Planned Projects</b>



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CEMI	\$1.33	\$1.36	\$1.39	\$1.44	\$1.48	\$7.00	34	35	35	37	38	179
Circuit Improvement	\$17.04	\$6.38	\$5.60	\$5.79	\$3.38	\$38.19	24	9	7	7	4	51
Network and Underground Ducted Systems	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0
Overhead Circuit Replacement/Rehab	\$13.80	\$17.30	\$19.80	\$22.30	\$24.80	\$98.00	24	29	33	36	39	161
Pole Replacement	\$4.00	\$4.00	\$4.00	\$4.00	\$1.72	\$17.72	483	483	483	483	208	2,140
Substation Equipment Replacement	\$1.00	\$1.00	\$1.90	\$1.00	\$1.00	\$5.90	41	41	78	41	41	242
Underground Cable and Equipment Replacement	\$1.62	\$3.02	\$3.02	\$3.02	\$3.02	\$13.70	16,908	30,589	29,686	28,810	27,959	133,952
Distribution Circuit Protection and Sectionalizing	\$12.87	\$14.04	\$13.27	\$11.64	\$0.00	\$51.82	136	144	132	112	0	524
New Sources	\$2.88	\$2.93	\$3.01	\$3.10	\$5.19	\$17.11	1	1	1	1	2	6
Remote Sectionalizing (Distribution Automation Prep)	\$19.20	\$23.64	\$20.20	\$18.96	\$19.00	\$101.00	192	236	202	189	190	1,009
Voltage Conversion	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0	0	0	0	0
Battery Storage	\$0.00	\$0.00	\$4.50	\$5.50	\$0.00	\$10.00	0	0	0	1	0	1



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Unreimbursed Highway Relocation	\$1.59	\$1.62	\$1.66	\$1.71	\$1.76	\$8.34	48	47	47	47	47	236
<b>Total</b>	<b>\$75.33</b>	<b>\$75.29</b>	<b>\$78.35</b>	<b>\$78.46</b>	<b>\$61.35</b>	<b>\$368.78</b>	-----	-----	-----	-----	-----	-----
<b>FE PA Total</b>	<b>\$278.29</b>	<b>\$297.71</b>	<b>\$288.50</b>	<b>\$296.71</b>	<b>\$261.09</b>	<b>\$1,422.30</b>	-----	-----	-----	-----	-----	-----

### ***Customers Experiencing Multiple Interruptions (“CEMI”)***

#### **Description**

This initiative provides for distribution line equipment projects focused on addressing individual or small clusters of customers that have experienced frequent outages.

#### **Scope**

This initiative focuses on reducing the number of outages per customer and the number of customers affected by frequent outages. This initiative is designed to improve customer satisfaction and will improve SAIDI, SAIFI, and CAIDI. Examples of projects that may be completed include replacing overhead conductor; constructing tie lines; replacing or installing reclosers, cutouts, and transformers; and installing fuses and animal guards. Consideration will be given to selective undergrounding, use of more resilient aerial cable, and relocating lines to more accessible locations.

#### **Acceleration**

This LTIIP III initiative is currently beyond the scope of baseline reliability-driven work. This initiative allows for completion of customer-focused projects to proactively reduce the number of customers experiencing eight or more outages in a rolling twelve month period.

#### **Schedule of Planned Projects (Unit of Measure: Project)<sup>8</sup>**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	42	28	28	28	28	154
Penelec	55	58	59	61	63	296
Penn Power	49	47	46	45	43	230
West Penn	34	35	35	37	38	179

#### **Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$0.87	\$0.89	\$0.91	\$0.93	\$0.96	\$4.56
Penelec	\$0.74	\$0.76	\$0.77	\$0.80	\$0.82	\$3.89
Penn Power	\$0.83	\$0.83	\$0.83	\$0.83	\$0.83	\$4.15
West Penn	\$1.33	\$1.36	\$1.39	\$1.44	\$1.48	\$7.00

<sup>8</sup> As a result of the consolidation from four separate operating companies to the consolidated FE PA, the Anticipated Locations Table has been combined with the Schedule of Planned Projects Table.

### ***Circuit Improvement***

#### **Description**

This initiative provides for the comprehensive improvement or upgrade of selected circuit sections that may include replacing aging equipment such as transformers, poles, wire, crossarms, cutouts, insulators arresters and cable; installing animal guards, and additional protective devices; creating loops and ties; splitting large circuits; relocating circuits and reconductoring.

#### **Scope**

This initiative is designed to impact SAIDI, SAIFI, and CAIDI by addressing multiple outage types that drive performance and affect outage size and outage occurrence depending on the solution implemented. Consideration will be given to selective undergrounding, use of more resilient aerial cable, and relocating lines to more accessible locations.

#### **Acceleration**

The baseline circuit improvement work is limited to repairs that maintain the system and are reactive in nature whereas this LTIIIP III initiative allows for the proactive replacement and upgrade of equipment on poor performing circuits.

#### **Schedule of Planned Projects (Unit of Measure: Circuit)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	30	37	36	41	38	182
Penelec	27	37	33	34	33	164
Penn Power	6	3	2	2	2	15
West Penn	24	9	7	7	4	51

#### **Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$21.60	\$27.60	\$27.60	\$31.90	\$31.10	\$139.80
Penelec	\$34.26	\$43.64	\$40.70	\$44.70	\$44.20	\$207.50
Penn Power	\$4.50	\$2.00	\$2.00	\$2.00	\$2.00	\$12.50
West Penn	\$17.04	\$6.38	\$5.60	\$5.79	\$3.38	\$38.19

## *Network and Underground Ducted Systems*

### **Description**

This initiative provides for the proactive repair or replacement of aged capital asset infrastructure such as conduits, duct banks, vaults, manholes, handholes, primary cable, network transformers, network protectors, switches, secondary cable, cable limiters, and neutral conductors.

### **Scope**

Underground network systems are designed to service dense urban central business districts and can present challenges such as aging infrastructure and high construction and maintenance costs. The Company operates and maintains underground networks where some of the equipment is nearing the end of its effective life. Growth on the network is controlled by serving new customers from non-network circuits whenever possible. This initiative provides for the replacement and modernization of aging network equipment and infrastructure to help ensure the integrity of the networks, and is aimed at enhancing safety, operational flexibility, reliability, and customer service.

### **Acceleration**

The baseline network and underground system work is directed at addressing failures and operational performance. This LTIIP III initiative builds upon the existing work and allows for the acceleration of network infrastructure upgrades by proactively replacing equipment prior to failure.

### **Schedule of Planned Projects (Unit of Measure: Capital Asset)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	40	32	32	32	33	169
Penelec	17	17	14	14	15	77
Penn Power	0	0	0	0	0	0
West Penn	0	0	0	0	0	0

### **Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$4.75	\$3.92	\$4.04	\$4.19	\$4.34	\$21.24
Penelec	\$4.88	\$5.05	\$4.34	\$4.61	\$4.89	\$23.77
Penn Power	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
West Penn	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

### ***Overhead Circuit Replacement/Rehabilitation***

#### **Description**

This initiative provides for the targeted rehabilitation or replacement of aged overhead infrastructure. Typical work performed includes replacing crossarms and braces, insulators, cutouts, poles, conductor, switches, transformers, capacitor banks, voltage regulators, and other miscellaneous equipment; and installing animal guarding.

#### **Scope**

This initiative primarily has impact on SAIDI, SAIFI, and CAIDI and is designed to reduce equipment and line failures, and to support outage avoidance. Infrastructure improvements are also aimed at offsetting degradation and modernizing aging electric system components. As a result of aging infrastructure, equipment and line failures continue to be a top outage cause. To prevent these faults, circuit inspections and reviews will identify any equipment deficiencies and other opportunities to prevent outages. The number of items identified for replacement will vary based on circuit size and condition.

#### **Acceleration**

The baseline work is directed at addressing failures and poor operational performance. This LTIP III initiative builds upon the existing work and allows for the accelerated and proactive replacement of equipment prior to failure.

#### **Schedule of Planned Projects (Unit of Measure: Circuit)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	40	62	55	61	53	271
Penelec	24	40	33	35	33	165
Penn Power	27	21	24	17	21	110
West Penn	24	29	33	36	39	161

#### **Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$16.80	\$27.07	\$24.53	\$28.30	\$25.38	\$122.08
Penelec	\$16.80	\$29.30	\$30.80	\$31.30	\$24.80	\$133.00
Penn Power	\$12.30	\$8.10	\$10.70	\$5.70	\$9.20	\$46.00
West Penn	\$13.80	\$17.30	\$19.80	\$22.30	\$24.80	\$98.00

## Pole Replacement

### Description

At the end of 2024, FE PA will no longer have a backlog of failed poles greater than 2 years. Therefore, this initiative will pivot from addressing poles that have failed inspection to the proactive replacement of the Company’s pole plant. This initiative provides for the accelerated replacement of wood poles. Work includes the proactive replacement of poles identified using advanced data analytics, which selects poles to be replaced based on a number of factors such as age and customer count in the protective zone where the pole is located.

### Scope

This initiative has impact on SAIFI, SAIDI, and CAIDI through outage avoidance. As a result of increasing age, equipment failures continue to be a top outage cause. An analytics tool will be utilized to proactively predict poles at risk of failure. The program ultimately contributes to storm hardening efforts and aims to improve public and employee safety as well as contribute to service reliability.

### Acceleration

This program will focus on proactive pole replacements to decrease the overall age of the Company’s pole population. The data analytics tool will attempt to predict poles that are most likely to fail prior to them failing a wood pole inspection.

### Schedule of Planned Projects (Unit of Measure: Pole)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	107	104	101	98	95	505
Penelec	35	34	33	32	29	163
Penn Power	0	0	0	0	0	0
West Penn	483	483	483	483	208	2,140

### Planned Annual Expenditures (in millions)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	\$0.28	\$0.28	\$0.28	\$0.28	\$0.28	\$1.40
Penelec	\$0.20	\$0.20	\$0.20	\$0.20	\$0.19	\$0.99
Penn Power	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
West Penn	\$4.00	\$4.00	\$4.00	\$4.00	\$1.72	\$17.72

## ***Substation Equipment Replacement/Rehabilitation***

### **Description**

This initiative provides for the proactive and accelerated replacement of legacy substation equipment, materials, and infrastructure within the confines of the substation fence. Work may include replacement of capital assets such as reclosers, breakers, voltage regulators, switches, relays, cables, batteries, instrument transformers, insulators, and lightning arresters, conversion of degraded substations to modular substations; ground grid repair; and substation infrastructure rehabilitation of wood pole structures, buses, and other substation infrastructure components.

### **Scope**

This initiative is designed to improve SAIDI, SAIFI, and CAIDI by preventing an in-service equipment failure, which could result in a long duration outage. This initiative also addresses substation infrastructure degradation. Substation outages have the potential to affect large numbers of customers and multiple circuits. Upgrading substation equipment is beneficial as replacement part availability is limited. Further, material lead times can be long and equipment installation times can also be extended. Therefore, should a piece of equipment fail, it may result in an extended outage. Opportunities to upgrade and modernize the technology will be investigated and implemented, as appropriate. For example, electromechanical, line, overcurrent, directional, and differential relays will be replaced with new microprocessor-based platforms that employ fault recording capabilities.

### **Acceleration**

The baseline substation work is directed at addressing failures and poor operational performance. This LTIP III initiative builds upon the existing work and allows for the proactive infrastructure improvement and replacement of equipment prior to failure.

### **Schedule of Planned Projects (Unit of Measure: Capital Asset)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	8	7	8	8	8	39
Penelec	5	4	5	5	5	24
Penn Power	5	4	5	5	5	24
West Penn	41	41	78	41	41	242



Met-Ed • Penelec • Penn Power • West Penn Power

## Long-Term Infrastructure Improvement Plan

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### Planned Annual Expenditures (in millions)

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$1.75	\$1.45	\$1.75	\$1.75	\$1.75	\$8.45
Penelec	\$1.75	\$1.45	\$1.75	\$1.75	\$1.75	\$8.45
Penn Power	\$1.50	\$1.20	\$1.50	\$1.50	\$1.50	\$7.20
West Penn	\$1.00	\$1.00	\$1.90	\$1.00	\$1.00	\$5.90

***Underground Cable Replacement/Rejuvenation and Equipment Replacement***

**Description**

This initiative provides for the targeted and proactive replacement of underground cable and associated equipment. Work may include replacing or upgrading cable; cable treatment; and installation or replacement of transformers, switchgear, fused elbows, and other-related equipment. Work may also involve creating loops and ties.

**Scope**

This initiative will positively impact SAIDI, SAIFI, and CAIDI by reducing the frequency and length of customer outages by replacing and/or rejuvenating underground cable. Underground residential distribution (“URD”) cable is characterized by solid-dielectric cable typically installed in direct-buried applications with widespread applications in residential, commercial, and even industrial distribution feeder applications. The primary type of cable to be targeted is bare concentric neutral (“BCN”), manufactured without an insulating jacket around the concentric neutral wires that are on the outside perimeter of the cable. The neutral conductor is copper and is in direct contact with the ground, exposing it to deterioration mechanisms which makes it more prone to failure. Failures continue to increase as the cable ages, placing additional strain on reliability. URD cable failures typically cause longer duration outages, and repairs are costly and time consuming. Cable rejuvenation through injection is possible where adequate neutral remains. This initiative also provides for the replacement of associated equipment and the creation of loops and ties.

**Acceleration**

The baseline work is directed at replacing failed URD cable after multiple failures. This LTIIP III initiative builds upon the existing work and allows for the proactive and accelerated replacement of URD cable and underground infrastructure that are approaching end of life. These locations will be determined using an advanced analytics model to identify highest impact projects.

**Schedule of Planned Projects (Unit of Measure: Cable Feet)**

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	50,130	95,724	86,341	83,792	62,791	378,778
Penelec	24,305	26,837	22,993	22,314	16,769	113,218
Penn Power	37,844	55,342	37,840	36,723	35,639	203,388
West Penn	16,908	30,589	29,686	28,810	27,959	133,952



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Long-Term Infrastructure Improvement Plan

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**Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$2.16	\$4.25	\$3.95	\$3.95	\$3.05	\$17.36
Penelec	\$2.25	\$2.56	\$2.26	\$2.26	\$1.75	\$11.08
Penn Power	\$2.92	\$4.40	\$3.10	\$3.10	\$3.10	\$16.62
West Penn	\$1.62	\$3.02	\$3.02	\$3.02	\$3.02	\$13.70

### ***Distribution Circuit Protection and Sectionalizing***

#### **Description**

This initiative provides for the technical review of the reliability, capacity, and operating performance of the existing distribution circuits. It is aimed at identifying and correcting or improving coordination between protective devices; and isolating smaller segments of the circuit. The potential need for the addition, or removal, upgrade, and replacement of the existing over current protection, sectionalizing and voltage regulation equipment on the circuit will be addressed. Work to be completed typically includes the installation or upgrade of existing reclosers, fuses and TripSavers. Work may also include other minor items such as installing regulators, switches, or capacitors, or performing load balancing.

#### **Scope**

This initiative addresses outage size and primarily has an impact on SAIDI, SAIFI, and CAIDI. This initiative accelerates improvements in distribution system coordination and sectionalization to provide improved reliability to customers. Targeted circuits will be selected based on customer load growth, customer count, past reliability performance, and average customers per protective device. This initiative aims to achieve three goals including ensuring safety and security to the public and employees; maximizing service reliability to customers by reducing the number of customers impacted and the frequency and duration of outages; and minimizing damage to distribution equipment due to overcurrent events.

#### **Acceleration**

This LTIIP III initiative is currently beyond the scope of baseline reliability-driven work. This initiative allows for the accelerated and proactive installation of circuit protection and sectionalizing equipment.

#### **Schedule of Planned Projects (Unit of Measure: Device)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	56	14	0	0	0	70
Penelec	89	56	0	0	0	145
Penn Power	47	0	0	0	0	47
West Penn	136	144	132	112	0	524

**Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$5.27	\$1.40	\$0.00	\$0.00	\$0.00	\$6.67
Penelec	\$8.45	\$5.45	\$0.00	\$0.00	\$0.00	\$13.90
Penn Power	\$4.40	\$0.00	\$0.00	\$0.00	\$0.00	\$4.40
West Penn	\$12.87	\$14.04	\$13.27	\$11.64	\$0.00	\$51.82

***New Sources***

**Description**

This initiative provides for the proactive construction of new distribution substations or sources to add capacity to support remote sectionalizing and address N-1 source issues. Projects include creation of new circuit and substation sources, and installation of substation power transformers.

**Scope**

This initiative is designed to reduce long duration outages and has an impact on SAIDI, SAIFI, and CAIDI. It is designed to provide redundancy in a loss of source event and minimize the number of customers impacted by outages. These loss of source events are typically large, sustained outages that cannot be quickly restored and may require the installation of a mobile substation to restore service to customers. The initiative addresses high impact – low probability vulnerabilities in areas of the system where there is no opportunity or alternative to serve the load in the event of a single failure and serves to reduce the risk associated with long duration outages. This initiative is applicable to areas that have identified N-1 source issues including load centers where back-up capacity is not available, and remote circuits with capacity constraints. New sources and conversions will address areas operating as voltage islands to align them with common operating voltages, and areas where older portions of the system are bound by differing voltages thereby limiting the opportunity for ties, transfers, and the leveraging of distribution automation investments.

**Acceleration**

This LTIIP III initiative is currently beyond the scope of baseline reliability-driven work. This initiative allows for the proactive installation of new sources to improve customer satisfaction and reliability.

**Schedule of Planned Projects (Unit of Measure: Project)**

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	1	1	1	1	1	5
Penelec	1	1	1	1	1	5
Penn Power	1	1	1	1	1	5
West Penn	1	1	1	1	2	6

**Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$2.16	\$2.20	\$3.26	\$4.47	\$2.39	\$14.48
Penelec	\$4.74	\$4.80	\$4.88	\$4.49	\$5.58	\$24.49
Penn Power	\$2.84	\$2.90	\$2.97	\$5.06	\$3.15	\$16.92
West Penn	\$2.88	\$2.93	\$3.01	\$3.10	\$5.19	\$17.11

***Remote Sectionalizing (Distribution Automation Preparation)***

**Description**

This initiative provides for the upgrade of distribution circuits and associated substation equipment to allow for remote sectionalizing using SCADA. This includes the installation or replacement of existing breakers, reclosers, and switches with units having communication capabilities for remote operation. Circuit work to strengthen transfer capacity such as conductor, pole, regulator, and associated hardware upgrades and installations may also be performed on each targeted circuit and associated tie circuits. Selective undergrounding and resilient aerial cable installation may be considered as conditions warrant.

**Scope**

Installation of SCADA-ready devices will allow for quicker isolation and restoration and will improve SAIDI, SAIFI, and CAIDI. This initiative complements infrastructure improvements and enhances operational flexibility by initially providing dispatchers remote control of sectionalizing devices until an automated system becomes available. This work is also considered preparatory work for distribution automation. The remote-controlled SCADA devices will eventually be integrated into an advanced distribution management system (“ADMS”). Once implemented, distribution automation will further improve reliability and outage management through remote fault isolation and diagnostics, automated feeder switching, outage status monitoring and notification, and optimized restoration operations, thereby reducing outage duration and frequency. FE PA is investigating bringing a small number of circuits onto the FE ADMS system during the timeframe of LTIIIP III.

**Acceleration**

This LTIIIP III initiative is currently beyond the scope of baseline reliability-driven work. This initiative will continue to prepare the FE PA distribution system for grid modernization and automation.

**Schedule of Planned Projects (Unit of Measure: Device)**

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	40	51	33	33	0	157
Penelec	156	156	156	156	156	780
Penn Power	40	33	33	33	0	139
West Penn	192	236	202	189	190	1,009



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Long-Term Infrastructure Improvement Plan

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**Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$4.00	\$5.10	\$3.30	\$3.30	\$0.00	\$15.70
Penelec	\$15.60	\$15.60	\$15.60	\$15.60	\$15.60	\$78.00
Penn Power	\$4.00	\$3.30	\$3.30	\$3.30	\$0.00	\$13.90
West Penn	\$19.20	\$23.64	\$20.20	\$18.96	\$19.00	\$101.00

## Voltage Conversion

### Description

This initiative provides for the proactive conversion of circuits operating at 8kV and below to the standard distribution voltage in the area it is serving. Typical work performed includes the replacement of insulators, distribution transformers, fuses, reconductoring, and/or installation of additional conductors.

### Scope

This program is designed to impact SAIDI, SAIFI, and CAIDI by reducing equipment failure of aging components, creating new ties to adjacent circuits, and improved protective device performance. It is designed to convert circuits operating at sub-15kV levels to the modern standard grounded wye distribution voltage in the area. As distribution systems evolved, the lower voltage circuits have become islanded with limited ties to adjacent circuits. The sub-15kV circuits have limited capacity and poor voltage regulation. The substations serving these circuits are typically some of the oldest on the system.

### Acceleration

The baseline work is typically limited to performing conversions where required due to capacity limitations when serving new customers. This LTIP III initiative allows for the acceleration of voltage conversions to proactively eliminate voltage islands improving system flexibility, reliability, and customer satisfaction.

### Schedule of Planned Projects (Unit of Measure: Project)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	4	3	3	3	3	16
Penelec	8	2	1	2	1	14
Penn Power	2	1	0	0	0	3
West Penn	0	0	0	0	0	0

### Planned Annual Expenditures (in millions)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	\$5.00	\$4.00	\$4.00	\$4.50	\$4.00	\$21.50
Penelec	\$5.50	\$2.00	\$2.00	\$2.50	\$2.00	\$14.00
Penn Power	\$5.25	\$3.00	\$0.00	\$0.00	\$0.00	\$8.25
West Penn	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

### ***Unreimbursed Highway Relocation***

#### **Description**

This initiative provides for recovery of the unreimbursed costs of distribution facility relocations in support of highway and bridge construction projects.

#### **Scope**

Highway and bridge relocation and construction projects occur throughout the year and across the Company’s service territory. These projects are sponsored by PennDOT, as well as individual counties and municipalities. Reimbursement amounts are calculated based on PennDOT DM-5 manual guidelines.<sup>9</sup>

#### **Acceleration**

N/A

#### **Schedule of Planned Projects (Unit of Measure: Project)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	25	25	24	24	25	123
Penelec	57	57	56	56	56	282
Penn Power	23	23	23	23	23	115
West Penn	48	47	47	47	47	236

#### **Planned Annual Expenditures (in millions)**

<b>Rate District</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>Total</b>
Met-Ed	\$1.72	\$1.76	\$1.80	\$1.86	\$1.92	\$9.06
Penelec	\$2.28	\$2.33	\$2.39	\$2.46	\$2.53	\$11.99
Penn Power	\$0.61	\$0.63	\$0.64	\$0.66	\$0.68	\$3.22
West Penn	\$1.59	\$1.62	\$1.66	\$1.71	\$1.76	\$8.34

<sup>9</sup> Pennsylvania Department of Transportation; Publication 16; Design Manual Part 5, Utility Relocation.

## Battery Storage

### Description

This initiative will be to install battery energy storage systems (“BESS”) in select locations within the FE PA service territory. These systems would serve as a backup feed in case of an outage to a particular circuit or partial circuit where a traditional lines solution is not viable.

### Scope

Much of the FE PA territory is very rural and in certain cases constructing circuit ties or other reliability improvement is not feasible. BESS solutions will be deployed in specific areas to serve as a backup feed in the event of a loss of normal source. The deployment of BESS is anticipated to decrease SAIFI, CAIDI, and SAIDI for customers in these, aligning their outage durations more closely with other local areas and thereby reducing inconveniences, economic losses, and safety hazards. Implementing this technology will also provide FE PA the opportunity to explore other benefits and areas of use of BESS on the FE PA system.

### Acceleration

Work within this category would be implementing newer technology that FE PA has not deployed within its footprint in the past and would anticipate expanding the use of BESS systems where practical.

### Schedule of Planned Projects (Unit of Measure: Project)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	0	0	0	0	0	0
Penelec	0	0	1	0	0	1
Penn Power	0	0	0	0	0	0
West Penn	0	0	0	1	0	1

### Planned Annual Expenditures (in millions)

Rate District	2025	2026	2027	2028	2029	Total
Met-Ed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Penelec	\$0.00	\$3.00	\$4.00	\$0.00	\$0.00	\$7.00
Penn Power	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
West Penn	\$0.00	\$0.00	\$4.50	\$5.50	\$0.00	\$10.00

**RE: Petition of FirstEnergy Pennsylvania Electric Company's Long-Term Infrastructure Improvement Plan; PaPUC Docket No. P-2024-**

**CERTIFICATE OF SERVICE**

I hereby certify and affirm that I have this day served copies of FirstEnergy Pennsylvania Electric Company's Petition for Approval of its Long-Term Infrastructure Improvement Plan on the following persons in the manner specified below, in accordance with the requirements of 52 Pa. Code § 1.54:

**VIA ELECTRONIC MAIL**

Patrick M. Cicero, Esquire  
Darryl A. Lawrence, Esquire  
Emily A. Farren, Esquire  
Harrison W. Breitman  
Office of Consumer Advocate  
555 Walnut Street  
5th Floor, Forum Place  
Harrisburg, PA 17101-1923  
[pcicero@paoca.org](mailto:pcicero@paoca.org)  
[dlawrence@paoca.org](mailto:dlawrence@paoca.org)  
[effaren@paoca.org](mailto:effaren@paoca.org)  
[hbreitman@paoca.org](mailto:hbreitman@paoca.org)

Allison C. Kaster  
Scott B. Granger, Esquire  
Bureau of Investigation & Enforcement  
Pennsylvania Public Utility Commission  
Commerce Keystone Building  
400 North Street, 2nd Floor  
Harrisburg, PA 17105-3265  
[akaster@pa.gov](mailto:akaster@pa.gov)  
[sgranger@pa.gov](mailto:sgranger@pa.gov)

NazAarah Sabree  
Office of Small Business Advocate  
Commerce Tower, Suite 202  
300 North Second Street  
Harrisburg, PA 17101  
[Ra-sha@pa.gov](mailto:Ra-sha@pa.gov)

Joseph Pass, Esquire  
Jubelirer, Pass and Intriери P.C.  
219 Ft. Pitt Blvd.  
Pittsburgh, PA 15222  
[jsp@jpilaw.com](mailto:jsp@jpilaw.com)

Barry A. Naum, Esquire  
Derrick Price Williamson, Esquire  
Steven W. Lee  
Spilman Thomas & Battle PLLC  
1100 Bent Creek Blvd., Suite 101  
Mechanicsburg, PA 17050  
[bnaum@spilmanlaw.com](mailto:bnaum@spilmanlaw.com)  
[dwilliamson@spilmanlaw.com](mailto:dwilliamson@spilmanlaw.com)  
[slee@spilmanlaw.com](mailto:slee@spilmanlaw.com)

Elizabeth R. Marx, Esquire  
John Sweet, Legal Counsel  
Ria Pereira, Esquire  
PA Utility Law Project  
118 Locust Street  
Harrisburg, PA 17101  
[emarx@pautilitylawproject.org](mailto:emarx@pautilitylawproject.org)  
[jsweet@pautilitylawproject.org](mailto:jsweet@pautilitylawproject.org)  
[rpereira@pautilitylawproject.org](mailto:rpereira@pautilitylawproject.org)

Brian T. Kadlubek, Esquire  
112 Hollywood Drive, Suite 101  
Butler, PA 16001  
[btkadlubek@lawgol.com](mailto:btkadlubek@lawgol.com)

Charis Mincavage, Esquire  
Harrison Ryan Block, Esquire  
Kenneth R. Stark, Esquire  
Susan E. Bruce, Esquire  
McNees Wallace & Nurick  
100 Pine Street  
PO Box 1166  
Harrisburg, PA 17108  
[cmincavage@mwn.com](mailto:cmincavage@mwn.com)  
[rblock@mcneeslaw.com](mailto:rblock@mcneeslaw.com)  
[kstart@mcneeslaw.com](mailto:kstart@mcneeslaw.com)  
[sbruce@mcneeslaw.com](mailto:sbruce@mcneeslaw.com)

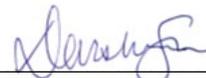
Thomas J. Sniscak, Esquire  
Whitney E. Snyder, Esquire  
Hawke McKekon and Sniscak LLP  
100 N. Tenth Street  
Harrisburg, PA 17101  
[tjsniscak@hmslegal.com](mailto:tjsniscak@hmslegal.com)  
[wesnyder@hmslegal.com](mailto:wesnyder@hmslegal.com)

Mark E. Belland, Esquire  
O'Brien, Belland & Buchinsky, LLC  
1526 Berline Road  
Cherry Hill, NJ 08003  
[mbelland@obbblaw.com](mailto:mbelland@obbblaw.com)

Nicholas J. Enoch, Esquire  
Lubin & Enoch, PC  
349 North Fourth Avenue  
Phoenix, AZ 85003  
[nick@lubinandenoch.com](mailto:nick@lubinandenoch.com)

Rebecca Lyttle  
Sharron E. Webb, Esquire  
Office of Small Business Advocate  
555 Walnut Street, 1<sup>st</sup> Floor  
Forum Place  
Harrisburg, PA 17101  
[relyttle@pa.gov](mailto:relyttle@pa.gov)  
[swebb@pa.gov](mailto:swebb@pa.gov)

Date: July 22, 2024

  
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Darsh Singh