Northeast Energy Efficiency Partnerships

ENERGY EFFICIENCY ALLIANCE
PENNSYLVANIA NEW JERSEY

Path to Affordability

Trends and Solutions for Pennsylvania Electric Bills

SEPTEMBER 2026

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About NEEP

NEEP was founded in 1996 as a non-profit whose mission is to serve the Northeast and Mid-Atlantic to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities. Our vision is that the region's homes, buildings, and communities are transformed into efficient, affordable, low-carbon, resilient places to live, work, and play.

Disclaimer: NEEP verified the data used for this white paper to the best of our ability. This paper reflects the opinion and judgments of the NEEP staff and does not necessarily reflect those of NEEP Board members, NEEP Sponsors, or project participants and funders.

About EEA

The Energy Efficiency Alliance (EEA) is a 501(c)(3) non-profit that advances energy efficiency in Pennsylvania and New Jersey. EEA engages and educates stakeholders and decision-makers to drive programs, policies, and funding that accelerate energy efficiency. Our work grows the market for EE businesses, flexible solutions, and technologies that lower energy use in buildings, foster affordability, and reduce pressure on the grid.

EEA works closely with an affiliated 501(c)(6) trade association serving Pennsylvania and New Jersey's energy efficiency industry as the Keystone Energy Efficiency Alliance (KEEA) and the Energy Efficiency Alliance of New Jersey (EEA-NJ).

Acronyms

ACEEE: American Council for an Energy Efficient Economy
Act 129 EE&C: Act 129 Energy Efficiency and Conservation Programs
BESS: battery energy storage system
C&I: large commercial and industrial
CAP customer assistance program
COE: cost of equity
CTC: competitive transition charge
DERA: distributed energy resource aggregator
DERs: distributed energy resources
EDC: electric distribution companies
EE&C: energy efficiency and conservation (rider)
EEA: Energy Efficiency Alliance
EGS: electric generation supplier
EIA: U.S. Energy Information Administration
EV: electric vehicle
FERC: Federal Energy Regulatory Commission
FPIG: Federal Poverty Income Guidelines
GNI: governments, non-profits, and institutions
GW: gigawatt
GWh: gigawatt-hour
IOU: investor-owned utility
kW: kilowatt
kWh: kilowatt-hour
LCOE: levelized cost of energy
LIHEAP: Low Income Home Energy Assistance Program
MFC: merchant function charge
MW: megawatt
MWh: megawatt-hour
NEEP: Northeast Energy Efficiency Partnerships
PA PUC: Pennsylvania Public Utility Commission
PJM: Pennsylvania-New Jersey-Maryland Interconnection
PTR: peak time rebate
PY: program year
ROE: return on equity
T&D: transmission and distribution
TOU: time of use (rate)
USC: universal service charge
VPP: virtual power plant

Utilities

Citizens (Citizens' Electric Company)
Duquesne (Duquesne Light Company)
Met-Ed (FirstEnergy Pennsylvania Electric Company's Metropolitan Edison)[1]
PECO (Philadelphia Electric Power Company and Gas Division)
Penelec (FirstEnergy Pennsylvania Electric Company's Pennsylvania Electric Company)[1]
Penelec Ekland (Pennsylvania Electric Company, Ekland Service Territory)
Penn Power (FirstEnergy Pennsylvania Electric Company's Pennsylvania Power Company)[1]
Pike (Pike County Light & Power Company)
PPL (PPL Electric Utilities Corporation)
UGI Electric (UGI Utilities, Inc., Electric Division)
Wellsboro (Wellsboro Electric Company)
West Penn Power (FirstEnergy Pennsylvania Electric Company's West Penn Power Company)[1]

[1] The following utilities are consolidated under FirstEnergy Pennsylvania Electric Company but remain separate rate districts: Met-Ed, Penelec, Penn Power, and West Penn Power.

Executive Summary

Concerns are mounting in Pennsylvania over rising electric bills. Increased transmission and distribution investments, PJM capacity auction price spikes, and rapid data-center-driven load growth are among the many factors discussed as contributing to rising electric costs. As households across the state confront escalating bills, record-high nonpayment-related shutoff rates, and worsening energy insecurity, leaders across the state are seeking clear information to understand these trends and identify strategies to improve energy affordability. Now more than ever, the Commonwealth must prioritize affordable and accessible electric utility service for its ratepayers.

This paper examines Pennsylvania electric utility rates and bills over the past five-year and 20-year periods and analyzes which bill components have contributed most significantly to rising changes in customer costs. It focuses on residential customers—both those with and without electric service heating service—and small and medium commercial customers. It also evaluates the savings, benefits, and costs associated with Pennsylvania's Act 129 Energy Efficiency and Conservation (Act 129 EE&C) Programs to show their impact on monthly bills, the benefits delivered to ratepayers, and how they compare to supply-side solutions. Finally, the paper outlines practical rate design and policy options that emphasize improved affordability, reliable service, and future grid investments.

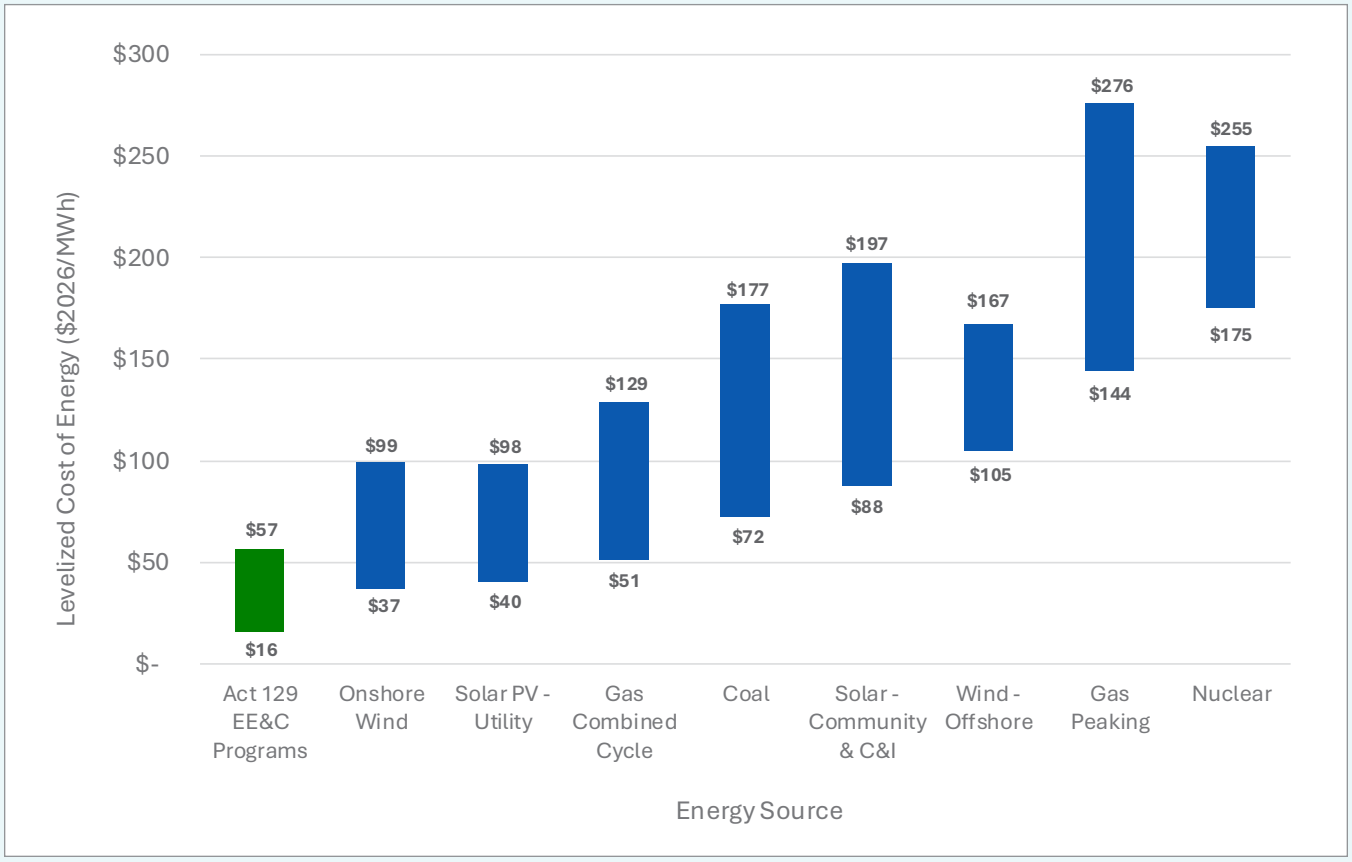
Key Analysis Findings

- **Nominal Monthly Bills Are Climbing.** Since 2021, nominal monthly bills for residential and commercial customers have increased significantly. Residential customers saw bills increase by 39 percent, and residential heating customers saw bills increase by 49 percent. Bill increases for commercial customers were even steeper, at 51-59 percent. These increases translate into significant impacts for customers. For example, a residential heating customer in 2025 saw an average increase of $117 per month, or $1,406 per year, in electricity bills.
- **Bills Rising Faster Than Inflation, Despite Usage Declining.** Electric bills have risen even as usage has declined. Adjusted for inflation, bills from 2006 to 2025 increased by 24 percent for residential customers and 53 percent for residential heating customers. Meanwhile, from 2006 to 2024, average annual residential electric usage decreased by nearly 4 percent.
- **Generation Charges Drive Recent Increases**. Since 2021, increases in residential bills have been largely driven by electricity generation charges, which, after adjusting for inflation, rose by 45 percent for both residential customers ($14.73 per month, or $176.76 per year) and residential heating customers ($58.93 monthly, or $707.16 per year).
- **Transmission and Distribution Charges Increased Steadily.** Inflation-adjusted transmission and distribution (T&D) charges have steadily increased from 2006 to 2025. For residential customers, T&D charges rose by $15.61 per month ($187.32 per year) growing from 30 percent of the total monthly

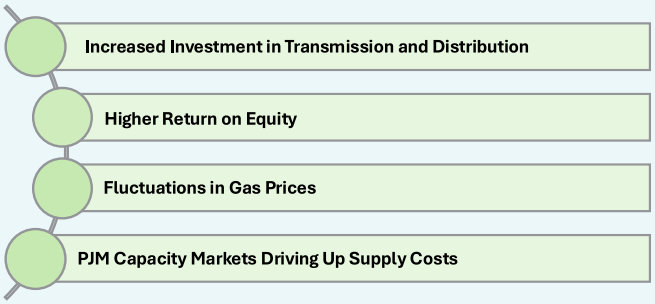
bill in 2006 to 39 percent in 2025. For residential heating customers, T&D charges increased from 32 percent to 39 percent of monthly bills, a rise of $70.85 per month ($850.20 per year).

- **Energy Efficiency Programs Are Less Than 2 Percent of Bills.** Act 129 Energy Efficiency and Conservation (Act 129 EE&C) Program charges account for less than 2 percent of residential and commercial electricity bills. A representative residential customer paid less than $1 per month in 2025—doubling program investment would still cost under $2 per month while delivering additional savings for all customers. Over the last eight years, programs have installed measures that are leading to lifetime savings of 96,288 GWh—enough to power all homes in Pennsylvania for more than 1.4 years. These are meaningful savings and yet represent only a fraction of the cost-effective potential.
- **Energy Efficiency Is a Least-Cost Resource.** Energy efficiency is a least-cost resource in Pennsylvania. At an average levelized cost of saved energy (LCSE) of $16-$57 per MWh, efficiency programs cost a fraction of new generation sources such as gas and coal, which range from $51 to $177 per MWh (see Figure ES-1).

Figure ES-1. ***Levelized Cost of Saved Energy of Pennsylvania's Act 129 EE&C Programs (PY9-PY16) and Levelized Cost of Energy From Lazard 2026 LCOE+ Report ($2026/MWh)***

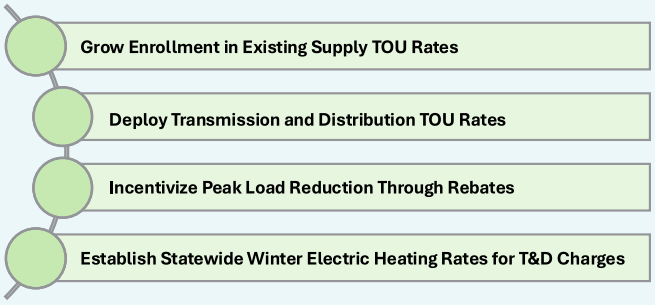


Drivers of Rising Electric Costs



Several factors are contributing to the rise in electric rates. Electric transmission and distribution (T&D) costs in Pennsylvania follow a national trend of rising prices driven by deferred maintenance. Utility return on equity is another factor likely driving up costs though it is difficult to examine through bill trends alone. National literature indicates that many utilities earn more than what is needed on their investments. Additionally, electric supply costs have risen due to the recent multi-year pause in the PJM Interconnection queue, which prevented new resources from coming online. Finally, an influx of proposed data centers across the PJM territory in recent years has driven up costs of supply.

Modernizing Rates to Lower Costs



To combat rising electric bills, Pennsylvania can modernize rate structures to better align prices with costs to serve customers. Modern rate design can achieve key objectives like encouraging efficient energy consumption, reducing peak demand, and prioritizing affordability. Rate design reforms such as time of use (TOU) rates and peak time rebates (PTRs) send market-based price signals that encourage customers to use energy more efficiently and shift usage away from times of high demand. Seasonal electric heating rates can lower winter heating costs for customers using heat pumps or electric resistance heating and better align rate structures with cost causation.

Solutions to Combat Rising Electric Costs

Pennsylvania can implement a suite of policies that prioritize affordable energy and cost-effective grid solutions, including investing more in energy efficiency, deploying virtual power plants, and advocating for PJM market reforms. Energy efficiency remains one of the most cost-effective tools for managing energy costs and improving system affordability. Increased investment in Act 129 EE&C programs can unlock additional savings

for homes and the grid while supporting a local workforce. Virtual power plants can provide reliable load reduction during peak periods, reducing the need for new grid infrastructure and helping control long-term system costs. Policies that improve demand forecasting and limit supply cost growth in PJM can help reduce volatility and prevent additional rate increases for customers. Additionally, Pennsylvania can consider updates to existing bill assistance programs to ensure those with the highest energy burden can afford their bills. Finally, policies that protect ratepayers from increased costs due to data center growth can strike a balance between accommodating these large loads and protecting ratepayers.

Introduction

Energy bills are rising in Pennsylvania, driven by several factors, including increased investments in transmission and distribution, rising PJM capacity auction costs, and growth of data centers. These trends are placing upward pressure on electricity prices for all ratepayers while disproportionately affecting low-income households, which already struggle with energy affordability. In 2025, Pennsylvania experienced a record 387,000 household gas and electric utility shutoffs for nonpayment, underscoring the growing financial burden of rising energy costs (PULP 2026). Now more than ever, the Commonwealth must prioritize affordable and accessible electric utility service for its ratepayers.

To prioritize affordability, Pennsylvania has the opportunity to modernize rate design so that prices better align with the cost of serving customers, strengthen its grid planning process, and limit the impact of data centers on customer bills. Additionally, increased funding for Act 129 EE&C programs can unlock further savings for both homes and the grid, while sustaining a local workforce. Homes and businesses can now contribute to grid reliability through distributed energy resources and flexible demand rather than solely consuming energy. As the Commonwealth charts its energy future, rates and policies can prioritize affordability and system reliability.

This paper examines Pennsylvania electric utility rates and bills over the past five-year and 20-year spans and analyzes which bill components have contributed most significantly to changes in customer costs. It focuses on residential customers—both those without electric service for heating and those with—and small and medium commercial customers. It also evaluates the savings, benefits, and costs of Pennsylvania's Act 129 Energy Efficiency and Conservation (Act 129 EE&C) Programs to demonstrate how much energy efficiency programs cost on monthly bills, their benefits to ratepayers, and how they compare to supply-side solutions. Finally, the paper outlines tangible options that emphasize improved affordability, reliable service, and future grid investments. The paper provides recommendations to tackle these rising costs in two ways: rate design and policies to reduce grid costs. Among the solutions, energy efficiency remains one of the most effective and least-cost strategies for reducing customers' bills while lowering overall system costs for all customers.

Section 1: Methodology

Electricity Standardized Bill Analysis

To conduct this analysis, we gathered customer data for all electric investor-owned utilities in Pennsylvania through 2025. We collected basic electricity standardized monthly billing data from the PA PUC Rate Comparison Reports for the following utilities: Citizens, Duquesne, Met-Ed, PECO, Penelec, Penelec-Ekland (listed for 2006 and 2007 only), Penn Power, Pike, PPL, UGI Electric, Wellsboro, and West Penn Power. This analysis looks at customers of electric distribution companies only and may not reflect the experience of all customers.[2] Our analysis examined data for 2006-2025 where possible. Due to notable trends from 2021-2025, we conducted a deeper analysis of these years.

Our analysis examines the following customer classes: residential, residential heating, and small and medium commercial. Whether a home is considered residential or residential heating by the PA PUC depends on what energy source they use for heating. Homes with delivered fuels or gas heating are classified as residential. Homes that use electricity for heating are classified as residential heating. Small commercial customers and medium commercial customers are defined based on usage amounts as shown in Table 1 below.

Large commercial and industrial customers were excluded from this analysis. The most recent Retail Electricity Choice Activity Report noted that in 2024, 85 percent of large non-residential customer accounts used an electric generation supplier, so we determined that the trends reflected in the Rate Comparison Reports would not be reflective of the reality of the large commercial and industrial customer experience (TUS 2025b).

The PA PUC's Rate Comparison Reports utilize standardized monthly usage amounts for electric bill comparisons as shown in Table 1. Each customer class has an assigned standard usage amount. The PA PUC uses these standardized usage amounts and base rates to calculate the bill sum attributable to each charge. Using a standard usage amount is advantageous for the comparative analysis in this paper because it provides a uniform way to look at how all charges are changing over time individually and how that change compares to trends in other charges. The standard usage amounts are used in this bill analysis to compare trends in bills with usage held constant.

Table 1. ***Monthly Standardized Electric Usage Amounts***

Monthly Standardized Electric Usage Amounts	
Residential	500 kWh
Residential Heating	2,000 kWh
Small Commercial	5 kW Demand; 1,000 kWh
Medium Commercial	25 kW Demand; 10,000 kWh

Source: 2006-2025b. "Rate Comparison Reports." Pennsylvania Public Utility Commission. Accessed May 20, 2026. https://www.puc.pa.gov/filing-resources/reports/rate-comparison-reports/.

[2] The most recent Retail Electricity Choice Activity Report noted that in 2024, 24 percent of residential customer accounts, 37 percent of small non-residential customer accounts, and 52 percent of medium non-residential customer accounts used an electric generation supplier (TUS 2025b).

We also looked at the impact that actual electricity usage patterns have on bills using data from the PA PUC's 2007 and 2025 Electric Power Outlook Reports (see Table 2). While the Rate Comparison Reports disaggregate residential and commercial customer classes into further sub-classes, data in the Outlook Reports is only available at the residential and commercial class level. As a result, the analysis of usage values skews toward the middle of residential and commercial standard usage values, respectively. The years used in Table 2 represent the earliest and latest usage data available from the Outlook Reports. To compare bills, we converted all nominal rates to real 2025 dollars using the Bureau of Labor Statistics Consumer Price Index.

Table 2. ***Monthly Electric Usage Amounts by Utility***

Monthly Energy Usage per Residential Customer (kWh)								
	Duquesne	**Met-Ed**	**Penelec**	**Penn Power**	**PECO**	**PPL**	**UGI**	**West Penn**
2006	631.1	949.6	786.8	973.0	761.7	952.4	808.2	980.8
2024	615.7	928.3	706.4	900.6	760.5	919.1	836.5	921.6

Monthly Energy Usage per Commercial Customer (kWh)								
	Duquesne	**Met-Ed**	**Penelec**	**Penn Power**	**PECO**	**PPL**	**UGI**	**West Penn**
2006	10178.5	6478.2	5300.1	5959.7	4758.8	6843.8	3922.7	5297.6
2024	9089.7	3429.8	3165.2	3657.5	4034.1	6219.0	3541.5	3112.3

Source: 2008b. "Electric Power Outlook for Pennsylvania 2007-2012." Pennsylvania Public Utility Commission. August. Accessed June 16, 2026. https://www.puc.pa.gov/general/publications_reports/pdf/EPO_2008.pdf; 2025e. "Electric Power Outlook for Pennsylvania 2024-2029." Pennsylvania Public Utility Commission. August. Accessed June 16, 2026. https://www.puc.pa.gov/media/3586/final-draft-2025-epo-2024-2029-8-2025.pdf.

We collected information about the gas and electricity markets, such as litigation decisions and market factors, from the PA PUC Annual Reports.

Electric Bill Data

The following charge types on an electricity bill inform the Section 2 analyses:

- *Customer Charge:* Flat fee for each billing period to cover direct, non-variable operational costs for customers such as billing, meter reading, and equipment.
- *Distribution Charge:* Volumetric charge covering delivery costs from local utility providers to customers, such as infrastructure buildout and replacement for local wires, transformers, substations, and other equipment to deliver electricity to consumers.
- *Transmission Charge:* Volumetric charge covering transmission of electricity from power plants over high-voltage transmission lines to distribution lines of local utility providers. Based on federally regulated charges.
- *Generation Charge:* Volumetric charge covering the production of electricity at power plants.
- *Energy Efficiency Charge:* Often called the energy efficiency and conservation rider (EE&C), this volumetric charge recovers costs associated with carrying out the company's Energy Efficiency and

Conservation Plan as required by Act 129.[3]

- *Smart Meter Charge:* A customer charge to recover costs associated with implementing the company's Smart Meter Procurement and Implementation Plan.
- *Competitive Transition Charge (CTC):* A recovery mechanism for deregulation costs.
- *Universal Service Charge (USC):* A volumetric charge to recover costs associated with programs that help low-income households maintain access to utility service.
- *Total Bill:* All charges added together based on the specified usage amount representing a standardized total monthly bill amount.

Energy Efficiency and Conservation Program Data Analysis

Pennsylvania enacted statewide energy efficiency and demand response programs for customers of electric utilities in 2008 through Act 129. We analyzed the Act 129 Energy Efficiency and Conservation Program data for program years 9 (June 2017-May 2018) through 16 (June 2024-May 2025) to examine the costs and benefits associated with the program (PA PUC 2011-2026). We excluded program years 1 through 8 due to differences between the data sets between earlier and later reports. While program year 17 is part of Phase IV, the data was not yet available at the time of this analysis. We gathered Act 129 EE&C program data from the Act 129 Annual Reports hosted on the PA PUC website. We gathered the following parameters for each program year: 1) total lifetime savings (MWh); 2) total annual savings (MWh/year); 3) total peak demand savings (MW/year); and 4) total spending (in $1,000/year).

According to Act 129 Implementation Order § 2806.1(A)(4), annual consumption reductions are measured using the Technical Reference Manual's "deemed savings" approach. This approach accounts for extreme weather outcomes and extraordinary load conditions, negating the need for further weather normalization (PA PUC 2009b; Cawley 2010).

Each category was disaggregated by constituent customer classes as appropriate. The customer classes for Act 129 EE&C programs are slightly different than those in the electric bill analysis: residential, low-income residential, small commercial, large commercial, government, non-profits, and institutions (GNI), and municipal lighting.

Levelized Cost of Saved Energy Analysis

To consider how the benefits and costs of Pennsylvania's Act 129 EE&C programs compare to other types of energy resources and other energy efficiency programs, we calculated the levelized cost of saved energy (LCSE) in 2026 dollars for Phase III and IV programs. Converting figures to 2026 dollars allows us to compare the results to recent analyses of supply-side costs. We calculated the effective useful lifetime (EUL) for each utility and year by dividing the total lifetime benefits by the annual lifetime benefits. Consistent with other

[3] Act 129 only applies to electric utilities with greater than 100,000 customers (Duquesne, Met-Ed, PECO, PPL, Penelec, Penn Power, and West Penn Power). While other electric utilities in the state are taking energy efficiency actions, they are not required to under Act 129.

calculations related to the Act 129 EE&C program, we used the line loss factors presented in Table 1-5 of the Technical Reference Manual Volume 1 (PA PUC 2024c). As noted in the PA PUC's Phase IV Implementation Order, all Act 129 EE&C expenditure data utilized for this analysis includes incentive and administrative costs (PA PUC 2020b). Administrative costs capture the majority of EDC's non-incentive, recoverable Act 129 EE&C program implementation and management expenses (e.g., program development, delivery, reporting, and capital and operating costs). In addition to strict reporting procedures, an EDC's Act 129 EE&C expenditures may not exceed 2 percent of its total annual revenue for 2006 (PA PUC 2020b).

TOU Enrollment Analysis

To consider the impact of TOU rates among customers in the Commonwealth, we looked at TOU rate adoption and rate structure. Customer TOU information is from annual Retail Choice Activity Reports published by the PUC (PA PUC 2010-2024). Reports are available from 2010 through 2024. Data is reported at the electric distribution company (EDC) level for all years but is only reported at the electric generation supplier (EGS) level for 2022 through 2024. TOU rate information was pulled from each individual utility's rate tariffs. Details on TOU rate design in Pennsylvania are included in Appendix A. The reported data and a table showing how participants in TOU programs compare to the total customer base are included in Appendix B.

Caveats

There are some key caveats to identify as part of this analysis. For Section 2, the standardized bills presented are examples of bill trends, but not reflective of the distribution of customer bills within customer classes, either by utility or statewide. Additionally, the average is not weighted by customer population in each utility territory. We examined a weighted average approach for some data sets, which did not draw out notable differences in the results.

The bill analysis for Section 2 also does not examine impacts of changes in return on equity (ROE) and utility profit on bills. While we discuss the general impact of increased ROE and profit on Pennsylvanians' bills in Section 3, utility profit is not disaggregated as a line item on the bill in the PA PUC Rate Comparison Reports like the USC or the EE&C charge. Thus, the impacts of changes in ROE year-to-year are not included in the Section 2 discussion. Further research is needed to isolate the impact of ROE on bills.

Additionally, the analysis does not examine energy burden, or the percentage of household income that goes to paying energy bills. An analysis of energy burdens would provide additional, important information to demonstrate the extent to which high bills impact households differently based on household income. For example, energy burdens analysis demonstrates the severity of high energy bills among low- and moderate-income customers.

Finally, recommendations concerning rate design do not include estimated bill savings. Further research could also quantify potential bill savings from modern rate design and expanded investment in cost-effective demand-side resources. Such analysis could be used to deploy more targeted policies and programs that can lower bills for all customers and identify how to most efficiently and effectively serve low- and moderate-income customers.

Section 2: Electric Bill Data

This section examines electric bills relative to inflation, identifies how electric bills and bill components have changed over time, and examines electric usage trends. We looked at nominal price increases over the 2021-2025 period relative to inflation because inflationary impacts have been pronounced in recent years. Electric bills were also analyzed over a 20-year period (2006-2025) to look at long-term trends in bills and a more recent five-year period (2021-2025), which allows us to examine the post-COVID era, including the emergence of data centers. Finally, the section ends with an analysis of rates in Duquesne and Met-Ed territories to examine how these trends affect customers in these areas as examples. We chose these two utilities because they represent different parts of the electric customer base in Pennsylvania. Duquesne serves southwestern Pennsylvania with customers in and around Pittsburgh representing an urban, concentrated utility. Met-Ed serves the more rural parts of southeastern Pennsylvania and has a large customer base.

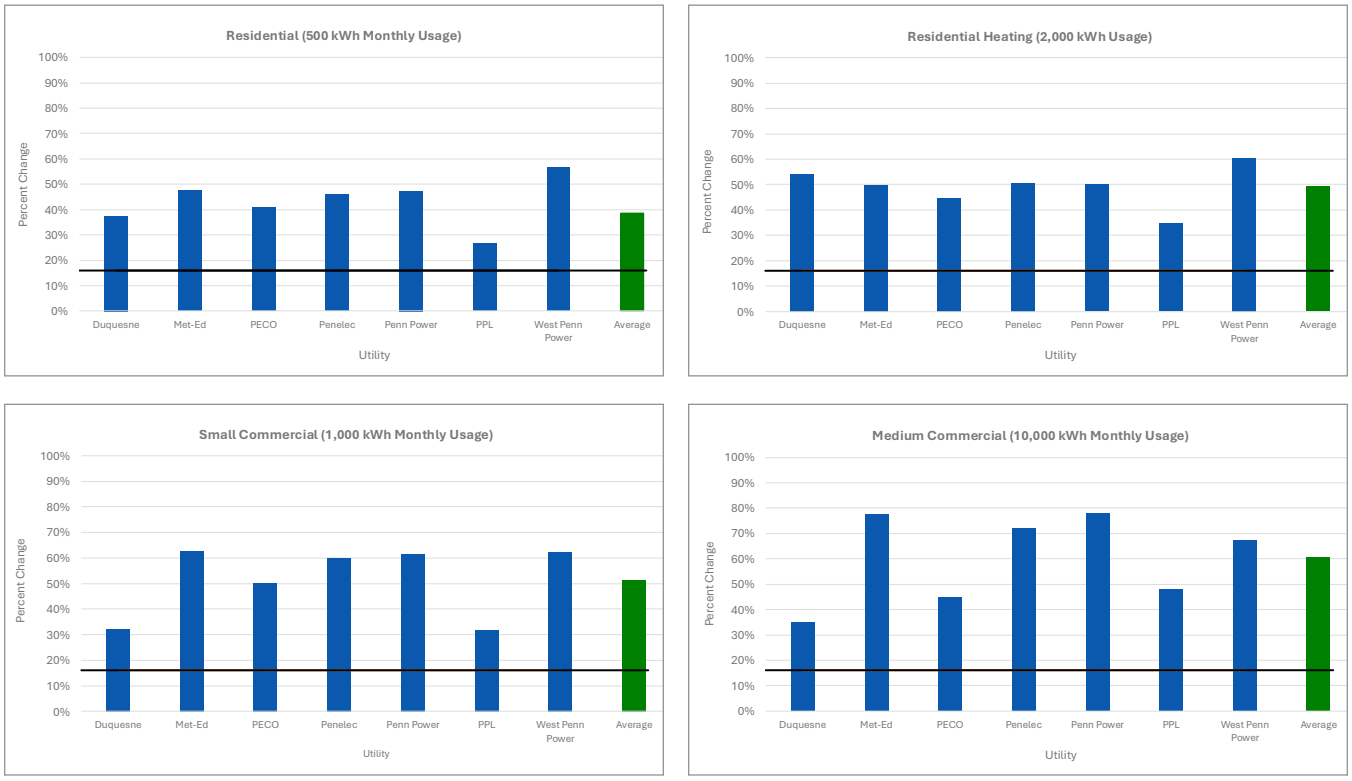
Key Takeaways from Electric Bill Data Analysis:

- Since 2021, nominal monthly bills for residential and commercial customers have increased significantly. Residential customers saw bills increase by 39 percent, and residential heating customers saw bills increase by 49 percent. Bill increases for commercial customers were even steeper, at 51-59 percent.
- The different components of electric bills changed at different rates between 2006 and 2025. Since 2021, increases in residential bills have been largely driven by generation charges. Meanwhile, transmission and distribution (T&D) charges have steadily increased from 2006 to 2025.
- Electric bills have risen even as usage has declined. After adjusting for inflation, bills increased by 24 percent for residential customers and 53 percent for residential heating customers since 2006. Meanwhile, average annual residential and commercial electric usage decreased from 2006 to 2024.

Electricity Prices Compared to Inflation 2021-2025

Figure 1 shows the change in total bills compared to inflation from 2021-2025.[4] Consistent with the Bureau of Labor Statistics, we used an inflation rate of 16 percent (U.S. BLS). These findings show that while inflation is one factor in rising electricity bills, it is not the only reason electric bills are rising.

Figure 1. ***Percent Change in Bills From 2021 to 2025 as Compared to Inflation (16%, black horizontal line), Across Customer Classes***



Between 2021 and 2025, electricity bills largely outpaced inflation, which averaged 16 percent over the same period. Residential customers saw bills increase 39 percent ($30.07 monthly, or $360.84 annually), or an average of 23 percent above inflation for standard monthly usage, while bills for residential heating customers increased by nearly 50 percent ($117.20 monthly, or $1,406.40 annually), or 33 percent more than inflation. Individual utility-level results vary. For residential customer bills, Met-Ed and West Penn Power recorded the greatest average percent change, with bills rising to 32 percent and 41 percent above inflation, respectively, while PPL's customers saw prices increase by just 11 percent higher than the rate of inflation. West Penn Power and Duquesne Power and Light had the highest increase from 2021-2025 of 61 percent and 54 percent respectively for residential heat customers.

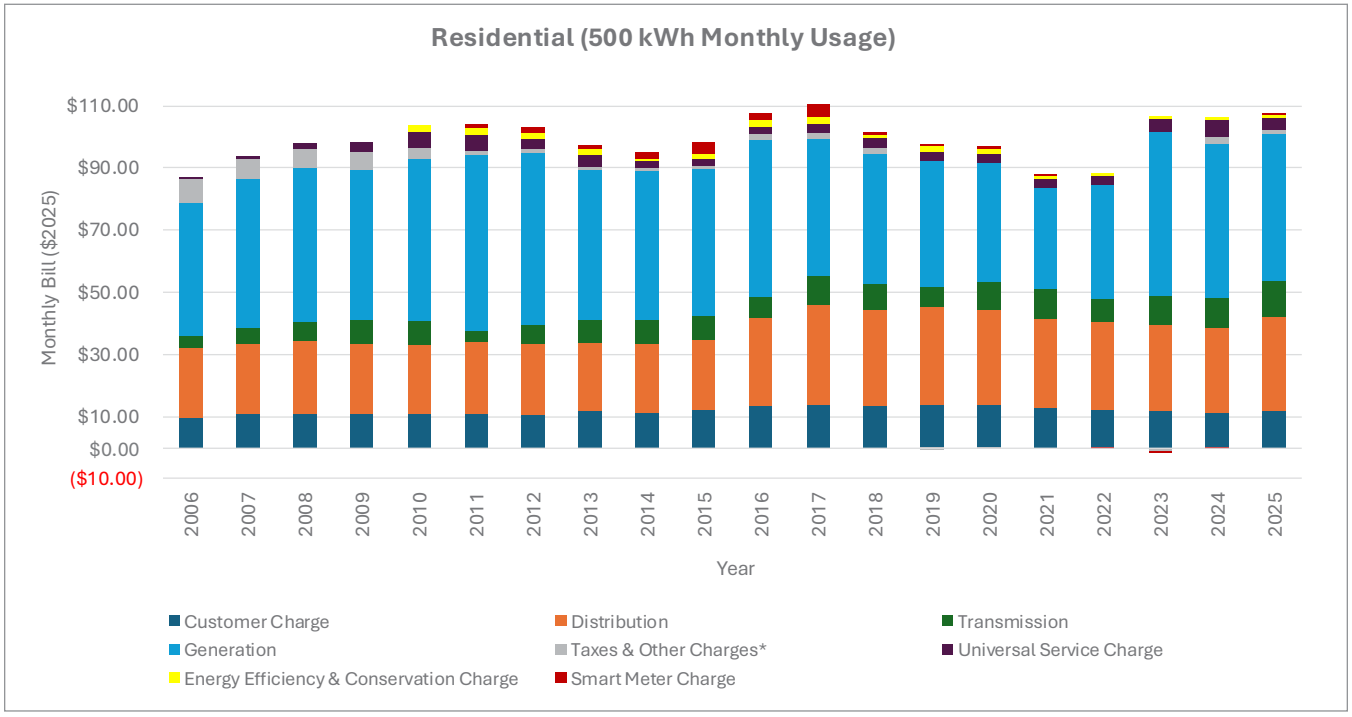
[4] This data set includes all electric utilities that were operational throughout the study period.

Small and medium-sized commercial customers' electricity bills followed a similar trend, with small commercial customers seeing an average increase of 51 percent ($60.97 monthly, or $731.64 annually), or 30 percent above inflation and medium commercial customers seeing an increase of 59 percent ($482.61 monthly, or $5,791.32 annually), or 36 percent above inflation. For small commercial customer bills, Met-Ed and West Penn customers saw the largest increases at 47 percent and 46 percent above inflation respectively. PPL's small commercial customers saw the smallest increases with just 16 percent higher than inflation. Medium commercial customers saw the largest increases, with Penn Power rising 62 percent and Met-Ed rising 61 percent more than inflation.

Trends in Residential Electric Bills 2006-2025

This section presents average monthly electricity bills for residential customer classes in real 2025 dollars from 2006 through 2025 based on a standardized level of monthly usage as defined by the PA PUC Rate Comparison Reports. The analysis highlights how bills have changed over the past 20 years and identifies key trends driving those changes.

Figure 2. ***Monthly Standardized Electric Bills Averaged Across All Utilities for Residential Customer Classes in Real 2025 Dollars ($2025/month)***



**Note*: The Taxes & Other Charges bar (gray shading) represents the average value of the remaining taxes and charges outside of those that we tracked individually. Taxes and other small charges vary widely based on year and utility. Some examples of other small charges include a solar charge, distribution system improvement charge, nuclear decommissioning charge, and storm damage expense rider. Charges can be positive or negative—charging or refunding a customer—depending on the year.

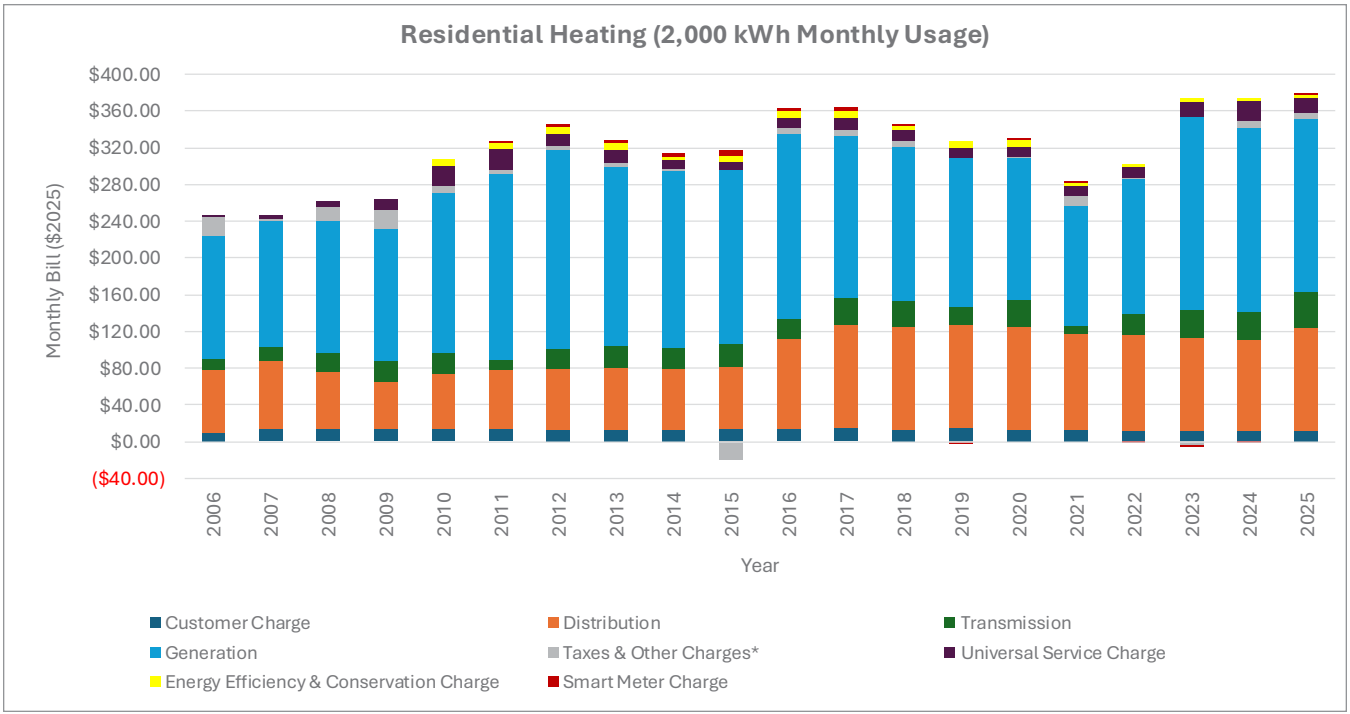


Figure 2 demonstrates a 20-year look at average monthly residential electric bills for residential and residential heating customers for a standard amount of usage. This data shows that after accounting for inflation, bills for residential customers increased from 2006 to 2025, with the most pronounced short-term increase from 2021 to 2025. Generation had the most volatility and contributed the most to the rising and lowering of bills. T&D charges saw a steady increase.

Residential customers (500 kWh/month) saw monthly bills increase by 24 percent over the 2006 to 2025 study period. Bills rose from $87.01 in 2006 to an average of $107.55 per month by 2025 ($2025). This is an increase of $246.48 per year. Similarly, residential heating customers (2,000 kWh/month) saw bills increase by 53 percent from 2006 to 2025, rising from $247.36 in 2006 to $378.04 at their peak in 2025 ($2025). This resulted in an annual increase in bills of $1,568.16.

When looking at the different components of bills, patterns emerge. Generation charges remained the largest component of both residential and residential heating bills, which means increases in generation charges generally coincide with increases in total bills. For residential customers, generation charges on average were 47 percent of the total bill over the study period or $46.59 per month and $559.08 per year in real 2025 dollars. Residential heating customers saw generation charges comprise a larger share of the total bill, averaging 54 percent of the total bill or $173.40 per month and $2,080.80 per year on average over the study period in real 2025 dollars.

Transmission and distribution charges (T&D) increased consistently over the study period. Transmission charges make up about 7 percent of the bill over the study period and doubled in real dollars from 2006 to

2025. For residential customers, transmission charges increased from 4 to 11 percent of bills, an increase of $7.87 per month or $94.44 dollars per year over the study period. For residential heating customers, transmission charges increased from 5 to 10 percent of bills, or an increase of $24.78 per month or $297.36 per year. Distribution charges also increased in real dollars over the study period, $7.75 per month ($93 per year) for residential customers and $46.07 per month ($552.84 per year) for residential heating customers. Distribution charges accounted for between 25 to 30 percent of the bill for both residential and residential heating for the majority of the study period.

Customer charges, or fixed charges, remained relatively stable throughout the study period as a percentage of the bill but increased slightly in real 2025 dollars. Customer charges for the residential class averaged 12 percent of the bill over the study period—changing from $9.46 in 2006 to $11.55 in 2025, representing an increase of $25.08 in annual bills. Customer charges for residential heating customers showed a similar trend but comprised a smaller share. For this class, customer charges changed from 4.4 percent of the bill to 3 percent, or from $10.81 to $11.55, an annual increase of $8.88. This demonstrates that even as portions of the bill (like the customer charge) become relatively less compared to other bill components, the overall bill continues to become more expensive.

Additional charges for Act 129 EE&C and assistance programs comprise much smaller portions of customer bills. EE&C charges made up 0.91 percent of both residential and residential heating customers' average monthly bill in 2025—or $0.97 and $3.45, respectively. The universal service charge (USC) made up 3.7 percent of residential, and 4.2 percent of residential heating customers' average monthly bills in 2025—or $4 and $16, respectively. Met-Ed, Penelec, Penn Power, PPL, and West Penn Power fund the entirety of their assistance programs through the USC, while Duquesne and PECO recover assistance program costs through both a USC and a portion of residential customers' volumetric base rates (PA PUC 2019b; 2026c). As a result, Duquesne and PECO's USC charges only show a portion of how much residential customers are paying toward assistance programs as these charges are also incorporated into other components of a customer's bill.

Trends in Residential Electric Bills 2021-2025

This section presents average monthly electricity bills for residential customer classes in real 2025 dollars (inflation-adjusted) based on a standardized level of monthly usage as defined by the PA PUC Rate Comparison Reports. Covering 2021 through 2025, the analysis examines more closely how bills have changed over the past five years and identifies key trends driving those changes.

Figure 3. ***Monthly Standardized Electric Bills Averaged Across All Utilities for Residential and Residential Heating Customer Classes in Real 2025 Dollars ($2025/month)***

**Note*: The Taxes & Other Charges bar (gray shading) represents the average value of the remaining taxes and charges outside of those that we tracked individually. Taxes and other small charges vary widely based on year and utility. Some examples of other small charges include a solar charge, distribution system improvement charge, nuclear decommissioning charge, and storm damage expense rider. Charges can be positive or negative—charging or refunding a customer—depending on the year.

Figure 3 demonstrates that from 2021 to 2025, monthly electric bills rose considerably for all residential customers. Standard residential customers (500 kWh/month) saw monthly bills rise from $87.82 in 2021 to $107.55 in 2025 in real 2025 dollars, a 22 percent increase. Residential heating customers (2,000 kWh/month) saw even steeper increases. Average monthly bills grew from $283.45 in 2021 to $378.04 in 2025 in real 2025 dollars, a 33 percent increase.

From 2021 to 2025, rising generation charges drove bill increases for both residential and residential heating customers, with the most significant increase in 2023 when generation charges rose by 44 percent from the previous year. For residential customers, generation charges increased from 37 percent to 44 percent of total bills from 2021 to 2025—$14.73 monthly or $176.76 annually. For residential heating customers, generation charges rose from 46 percent to 50 percent of total bill cost—$58.93 monthly or $707.16 annually—for the same period.

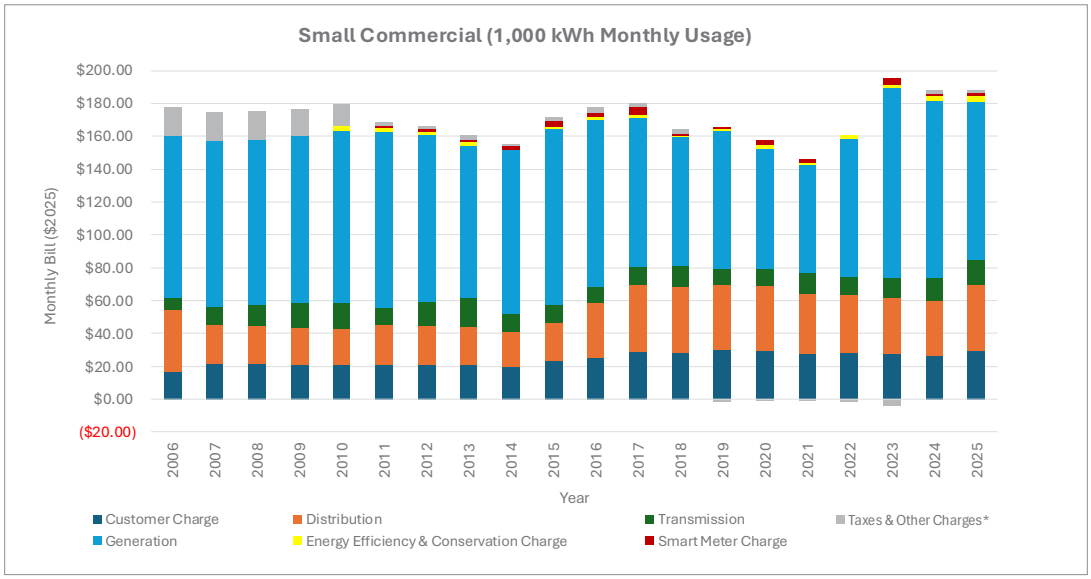
For residential customers, transmission and distribution (T&D) charges lowered as a portion of bills from 44 percent of residential bills in 2021 to 39 percent of bills in 2025. However, the dollar amount charged increased, demonstrating rising costs of overall bills. Distribution charges rose by $2.03 monthly or $24.36 annually and transmission charges rose by $1.75 monthly or $21.00 annually, in real dollars. For residential heating customers, distribution charges rose by $9.67 monthly or $116.04 annually, and transmission charges rose by $27.83 monthly or $333.96 annually between 2021 and 2025.

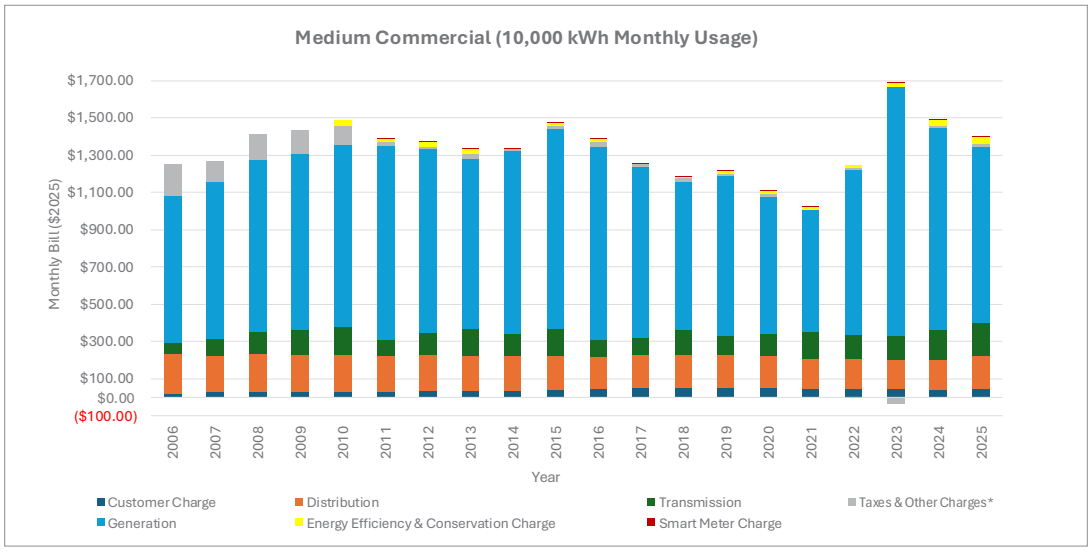
Finally, the EE&C charge is about 1 percent of bills for both residential and residential heating customers and did not change significantly from 2021 to 2025. The USC is about 4 percent of bills for both residential and residential heating and did not change significantly from 2021 to 2025.

Trends in Commercial Electric Bills 2006-2025

This section presents average monthly electricity bills for commercial customer classes in real 2025 dollars based on a standardized level of monthly usage as defined by the PA PUC Rate Comparison Reports. Covering 2006 through 2025, the analysis highlights how bills have changed over the past 20 years and identifies key trends driving those changes.

Figure 4. ***Monthly Standardized Electric Bills Averaged Across All Utilities for Commercial Customer Classes ($2025/month)***





*Note: The Taxes & Other Charges bar (gray shading) represents the average value of the remaining taxes and charges outside of those that we tracked individually. Taxes and other small charges vary widely based on year and utility. Some examples of other small charges include a solar charge, distribution system improvement charge, nuclear decommissioning charge, and storm damage expense rider. Charges can be positive or negative—charging or refunding a customer—depending on the year.

Commercial customers experienced similar average bill impacts from 2006 to 2025, as evidenced in Figure 4. Small commercial customers (1,000 kWh/month) saw monthly bills increase by 5.7 percent from $177.63 to $187.78 in real 2025 dollars, or $121.80 annually. Medium commercial customers (10,000 kWh/month) experienced an 11 percent increase in monthly bills—from $1,255.40 in 2006 to $1,400.42 in 2025 in real 2025 dollars, or an annual increase of $1,740.24.

Like residential bills, generation charges make up the largest component of bills and drive most of the year-to-year bill variation. For small commercial customers, generation charges represent an average of 56 percent of bills over the study period. While they rose to $115.51 in 2023, average generation charges slightly decreased from $98.83 in 2006 to $95.77 in 2025 in real 2025 dollars. For medium commercial customers from 2006 to 2025, generation charges represented 70 percent of bills, averaging $936.21. In 2023, generation charges made up 81 percent of medium commercial bills, totaling $1,337.90 and pushing bills to their peak during our study period. By 2025, generation charges dropped closer to the study period average at 67 percent of the average medium commercial bill, or $944.03 in real 2025 dollars.

Transmission and distribution charges tell a different story. For small commercial customers, distribution charges grew by 5 percent, from an average monthly cost of $38.21 to $40.21, or an annual increase of about 22 percent of bills in 2025. In real 2025 dollars, small commercial transmission charges more than doubled during the study period, from an average monthly charge of $7.17 in 2006 to $15.07 in 2025, or $94.80 annually. Transmission costs for small commercial customer bills made up 4 percent of the total bill in 2006, and 8 percent of the bill in 2025. For medium commercial customers, distribution charges made up 17 percent of total bills in 2006 or $212.40 per month. In 2025, distribution charges made up 13 percent of medium commercial bills, or $176.92 monthly and $437.76 annually. By contrast, transmission charges grew 172 percent, rising from monthly charges of $65.40 in 2006 to $177.77 in 2025, or $1,348.44 annually.

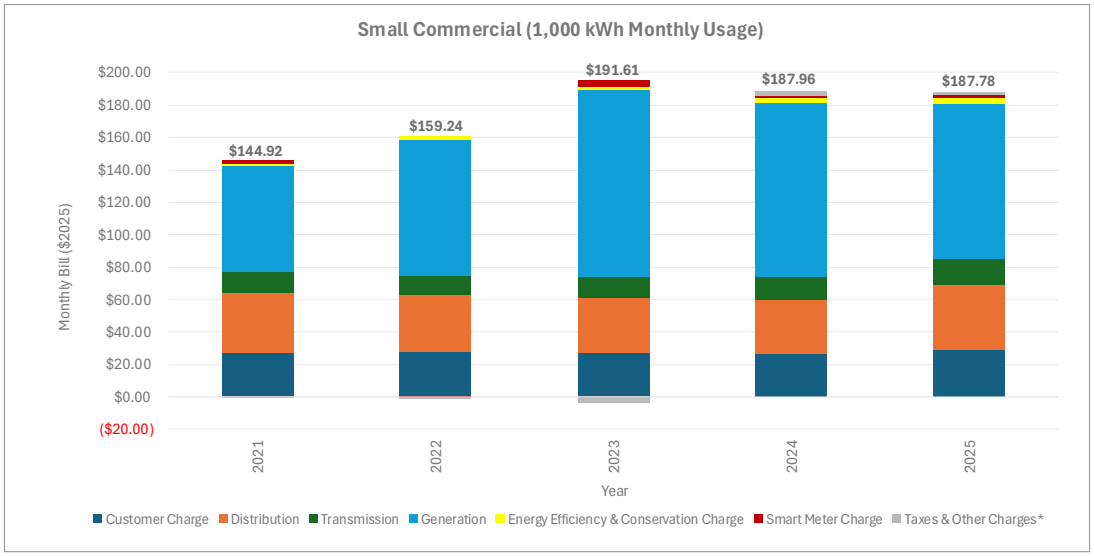
Monthly customer charges increased for both classes. Small commercial customers saw charges increase $13.32 monthly or $159.84 annually. Medium commercial customers saw customer charges increase $29.58 monthly or $354.96 annually. In 2025, customer charges were 14 percent of total bills for small commercial customers and 3 percent for medium commercial customers.

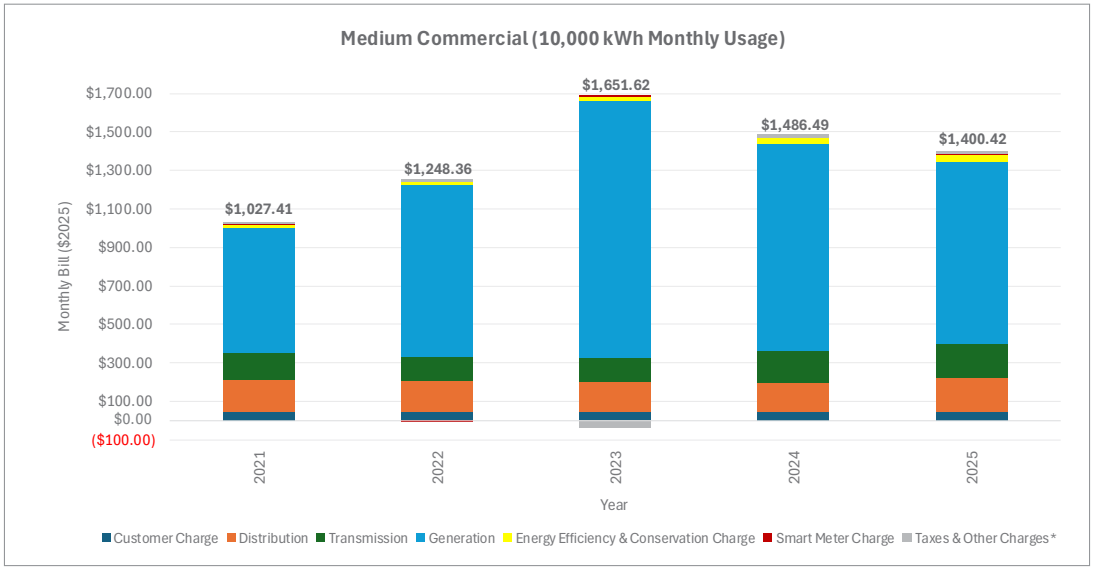
Finally, EE&C charges accounted for 2.1 percent of monthly bills for small commercial customers and 2.9 percent of monthly bills for medium commercial customers in 2025. Commercial customers are not charged the USC.

Trends in Commercial Electric Bills 2021-2025

This section presents average monthly electricity bills for commercial customer classes in real 2025 dollars based on a standardized level of monthly usage as defined by the PA PUC Rate Comparison Reports. Covering 2021 through 2025, the analysis highlights how bills have changed over the past five years and identifies key trends driving those changes.

Figure 5. ***Monthly Standardized Electric Bills Averaged Across All Utilities for Commercial Customer Classes in Real 2025 Dollars ($2025/month)***





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As illustrated in Figure 5, average bills for small and medium commercial customers increased from 2021 to 2025 by 30 percent and 36 percent, respectively. Increases in generation charges largely drove increases in overall bills over the study period.

For small commercial customers (1,000 kWh/month), monthly bills rose from $144.92 in 2021 to $187.78 in 2025, or $514.32 annually. By 2025, generation charges grew by $30.44 per month ($365.28 per year) to make up 53 percent of monthly bills. On average, transmission charges contributed 7.5 percent to total bills from 2021 to 2025, and distribution costs averaged 21 percent of average bills over the five years. Customer charges increased negligibly from $27.44 to $29.61, (an increase of $26.04 per year) comprising only 16 percent of bills over the five-year span. EE&C charges averaged $2.44, making up 1.4 percent of customers' monthly bills on average from 2021 to 2025.

Similarly, medium commercial customers (10,000 kWh/month) saw bills rise by 33 percent in real 2025 dollars, from $1,027.41 in 2021 to $1,400.42 in 2025. This represents a monthly increase of $373.01 and an annual increase of $4,476.12. Generation charges, as a share of the total bill, increased from 64 percent in 2021 to 67 percent of the medium commercial customer bill in 2025, increasing by $291.50 per month or $3,498 per year. Transmission charges also increased considerably from $139.46 in 2021 to $177.77 in 2025, or an increase of 27 percent. This is an annual bill increase of $459.72. Transmission charges represented 11 percent, or $145.35, of an average medium commercial customer's bill. Distribution charges averaged 12 percent, or $165.32, of monthly bills over this term and increased by 6 percent—$9.95 monthly or $119.40 annually. Customer charges made up just over 3 percent or $45.44 in 2025, while EE&C charges were 1.8 percent of customers' bills and remained $24.33 on average from 2021 to 2025. Commercial customers are not charged the USC.

Electric Usage Trends 2006-2024

This section looks at trends in electric usage from 2006 to 2024. Data on usage was only available up to 2024, so the study period differs slightly from the previous section. Available usage data was not broken out further into residential and commercial sub-classes. Figure 6 provides average electric usage data for residential and commercial customers across Pennsylvania's major electric utilities for a comparison (PA PUC 2026a).[5]

[5] Reported consumption trends should be interpreted in the context of both EE&C program impacts and annual weather variability, as the underlying data, drawn from PA PUC's *Electric Power Outlook Reports*, have not been adjusted for weather driven usage shifts.

Figure 6. *Change in Electric Usage (MWh) From 2006 to 2024 for Residential and Commercial Customers*

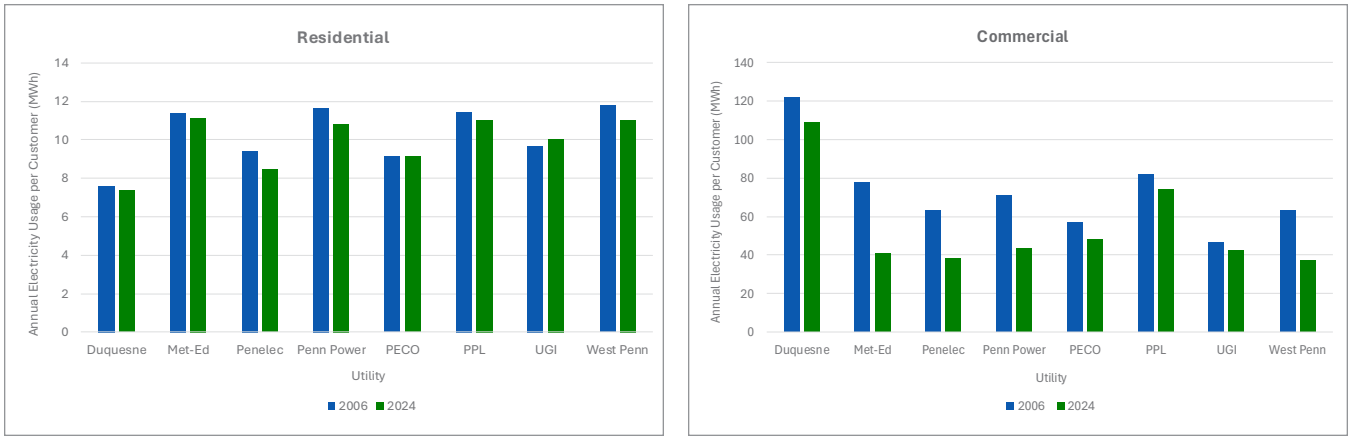


Figure 6 shows the average annual electricity usage data by utility for residential and commercial customers for 2006 and 2024 (PA PUC 2008b; 2025e). On average, annual residential electric usage decreased 382 kWh or 3.7 percent overall, and commercial electric usage decreased 1,561 kWh or 25.6 percent. For residential customers, there is a decrease in usage for all utilities except PECO and UGI Electric, which had flat or slightly higher usage. For commercial customers, average annual electricity usage decreased for all utilities, with roughly half seeing slight decreases and the other half experiencing more substantial reductions. Commercial customers' average usage for Met-Ed, Penelec, West Penn Power, and Penn Power each declined by more than 20,000 kWh.

Electric Bill Comparison for Duquesne and Met-Ed Based on Actual Average Usage

This section shows monthly bills in real 2025 dollars adjusted to reflect *actual average customer usage*[6] in 2006 and 2024 for Duquesne and Met-Ed to show what bills for customers looked like for both years.[7] This helps examine whether and to what extent lower electricity use has helped to offset the increase in electricity rates.

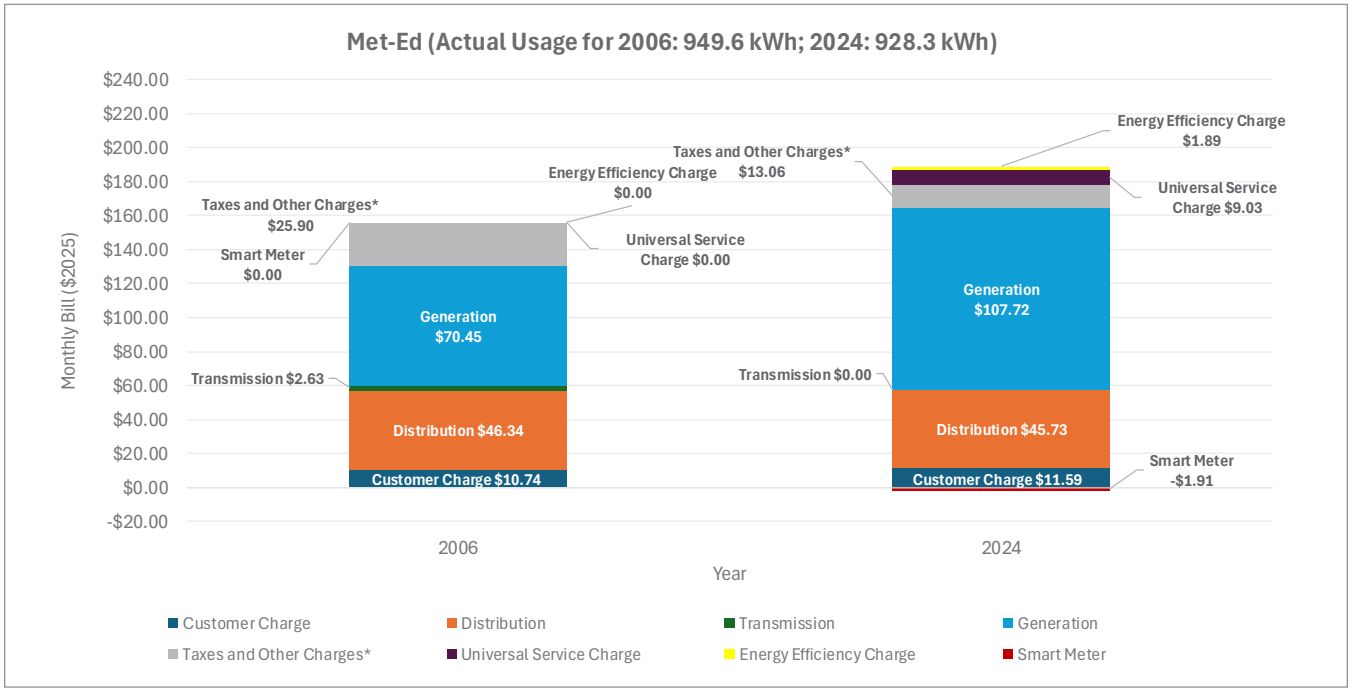
These two utilities represent different parts of the electric customer base in Pennsylvania. Duquesne serves southwestern Pennsylvania with customers in and around Pittsburgh representing an urban, concentrated utility. Met-Ed serves the more rural parts of southeastern Pennsylvania and has a large customer base.

The actual average monthly residential bill was calculated using the rate data for the residential customer class derived from the bill information presented in the PA PUC Rate Comparison Reports. The commercial bill was calculated using the medium commercial customer class rate information. All values are presented in real 2025 dollars.

6 In contrast to the previous section, which focused on bills for a standard usage amount, monthly bills based on actual average customer usage reflect changes in usage over time.

7 These years represent the earliest and latest available usage data within our study period of 2006-2025.

Figure 7. ***Residential Bill Components in 2025 Dollars ($2025/customer) as a Portion of Monthly Bill for Duquesne and Met-Ed Customers Based on Actual Usage***



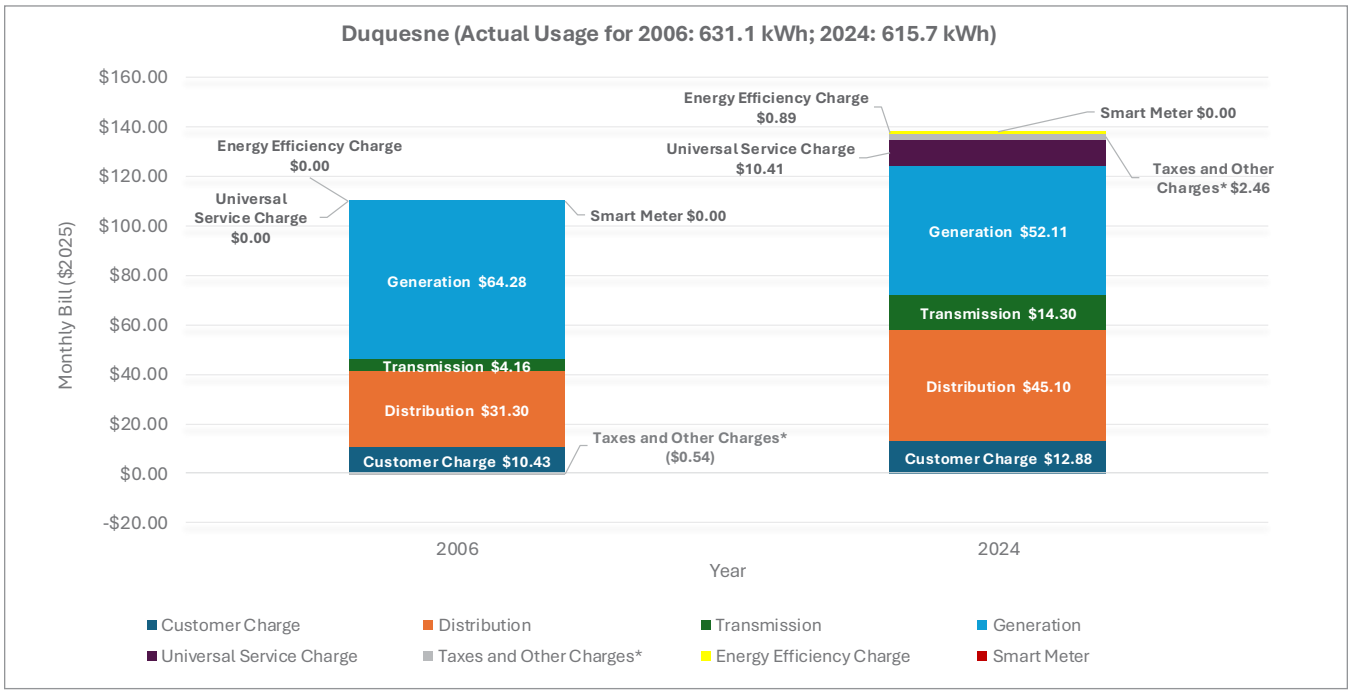


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Figure 7 shows that from 2006-2024, the actual average annual residential for Met-Ed residential users declined by 21.3 kWh. Similarly, Duquesne usage declined by 15.4 kWh. Despite this decline in usage, real residential bills significantly increased for customers served by both utilities. Met-Ed's average bill increased 26 percent from $144.23 in 2006 to $181.12 in 2024 in real dollars. For Duquesne, average electric bills increased 21 percent from $112.12 in 2006 to $135.18 in 2024.

The source of these increases differed by utility. For Met-Ed, the increase was driven primarily by the generation charge, which rose $37.27 on customers' monthly bill. While distribution, charges fell by less than a dollar. Beginning in 2011, the PA PUC's Rate Comparison Reports no longer displayed Met-Ed's transmission charges as an individual breakout. Instead, transmission charges were incorporated into the generation charge. This change coincided with Pennsylvania's transition to competitively procured default service when Met-Ed adopted the price-to-compare as its default service rate benchmark (PA PUC 2011a).

For Duquesne, residential customers' monthly transmission and distribution charges rose $23.94, while generation charges decreased $12.17 after adjusting for inflation. Although generation charges increased in nominal dollars over this period, those increases did not keep pace with inflation, resulting in a decline in real terms.

In 2024, the EE&C charge was $1.89 for Met-Ed customers (1.1 percent of the bill) and $0.89 for Duquesne customers (0.7 percent of the bill) on the actual average monthly residential bill.

Section 3: Energy Efficiency and Conservation Program Benefits and Costs Data

Energy efficiency programs are designed to benefit both the customers receiving the measures and the broader customer base because they lower overall energy usage, which lowers costs to supply, transmit, and distribute electricity. In 2008, Pennsylvania enacted Act 129, which established statewide energy efficiency and conservation programs for electric companies serving more than 100,000 customers (General Assembly of Pennsylvania 2008). While Act 129 established energy efficiency programs, it capped spending at 2 percent of each electric utility's 2006 revenue.

This section examines the total savings and spending attributable to Act 129 EE&C programs, spending per customer, and the cost of energy efficiency compared to supply-side resources. The analysis excludes years prior to 2017 as the published Act 129 Statewide Evaluator (SWE) Annual Reports are not consistent with the more recent data sets. Another important consideration for this data is the impact of the COVID-19 pandemic, which started during PY11 (2019-2020) and, according to SWE Annual Reports, continued through PY14 (2022-2023). The effects of COVID-19 included: inflation, supply chain issues, labor shortages, and lingering impacts of social distancing home access (PA PUC 2021b; 2022c; 2022b; 2023b).

Table 3. ***Act 129 EE&C Phase Timeline***

Phase	Program Year	Year
Phase I	1	June 2009-May 2010
Phase I	2	June 2010-May 2011
Phase I	3	June 2011-May 2012
Phase I	4	June 2012-May 2013
Phase II	5	June 2013-May 2014
Phase II	6	June 2014-May 2015
Phase II	7	June 2015-May 2016
Phase III	8	June 2016-May 2017
Phase III	9	June 2017-May 2018
Phase III	10	June 2018-May 2019
Phase III	11	June 2019-May 2020
Phase III	12	June 2020-May 2021
Phase IV	13	June 2021-May 2022
Phase IV	14	June 2022-May 2023
Phase IV	15	June 2023-May 2024
Phase IV	16	June 2024-May 2025
Phase IV	17	June 2025-May 2026

Source: PA PUC. 2019c.; PA PUC. 2020d.; PA PUC. 2021b.; PA PUC. 2022b.; PA PUC. 2023b.; PA PUC. 2024d.; PA PUC. 2025d.

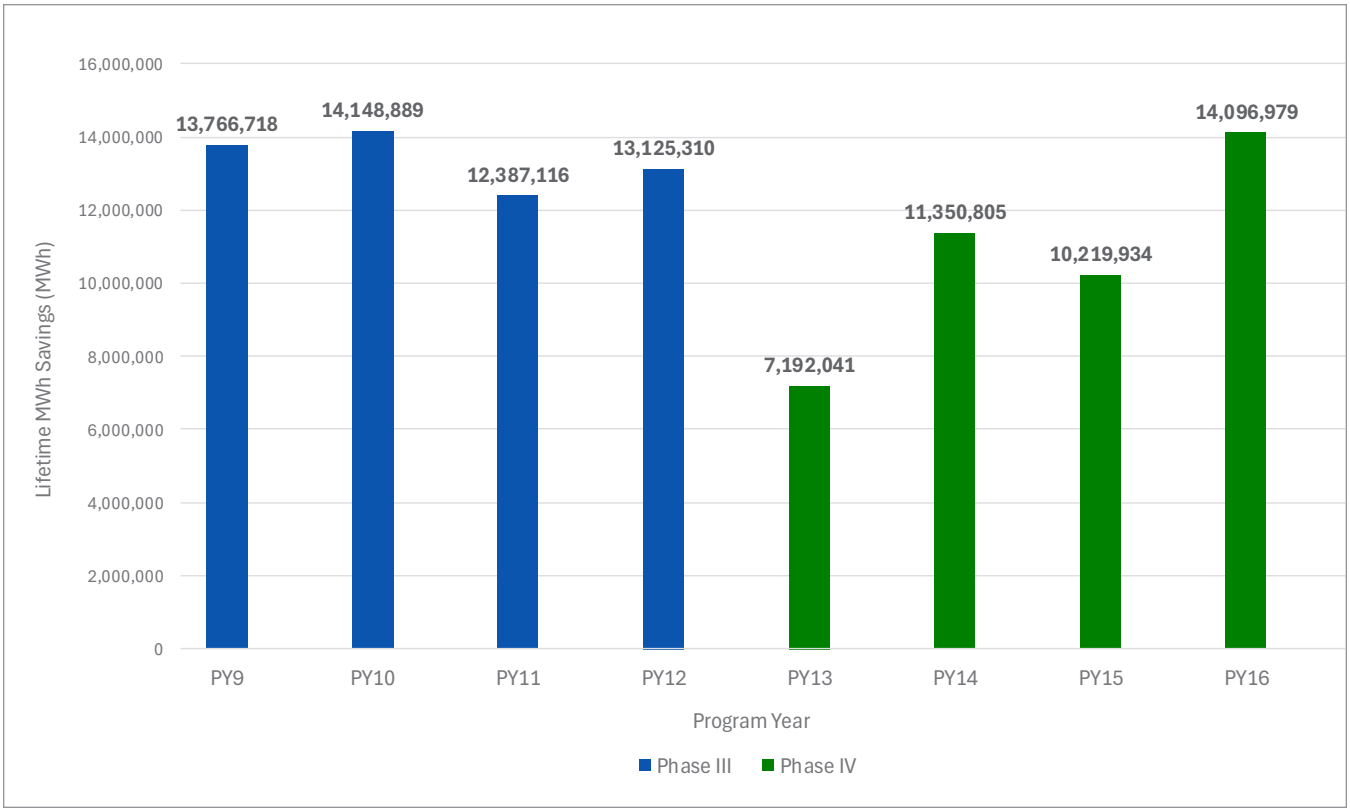
Insights from Act 129 Energy Efficiency and Conservation Program Analysis:

- From 2017 to 2025, Act 129 EE&C programs implemented measures that generated a cumulative 96,288 GWh of lifetime energy savings. This is the equivalent of 1.4 years of residential electricity usage in Pennsylvania.
- Energy efficiency is a least cost resource, with an average levelized cost of saved energy of $16-$57 per MWh. This is a fraction of supply-side resources such as gas or coal, which range from $51 to $177 per MWh.

Total Lifetime Energy Efficiency Savings for Program Years 9 Through 16

Figure 8 shows the lifetime energy savings attributable to each program year from 2017-2025 (PY9-PY16). Lifetime savings are the total energy savings over the life of a measure and show the long-term benefits that efficiency provides. During these eight program years, Act 129 EE&C programs implemented measures that will generate 96,288 GWh of lifetime energy savings over the life of the measures, which is equivalent to 1.4 years of residential electricity use.

Figure 8. ***Lifetime Energy Savings From Measures Installed During the Specified Program Year Across All Participating Utilities and Customer Classes (MWh)***

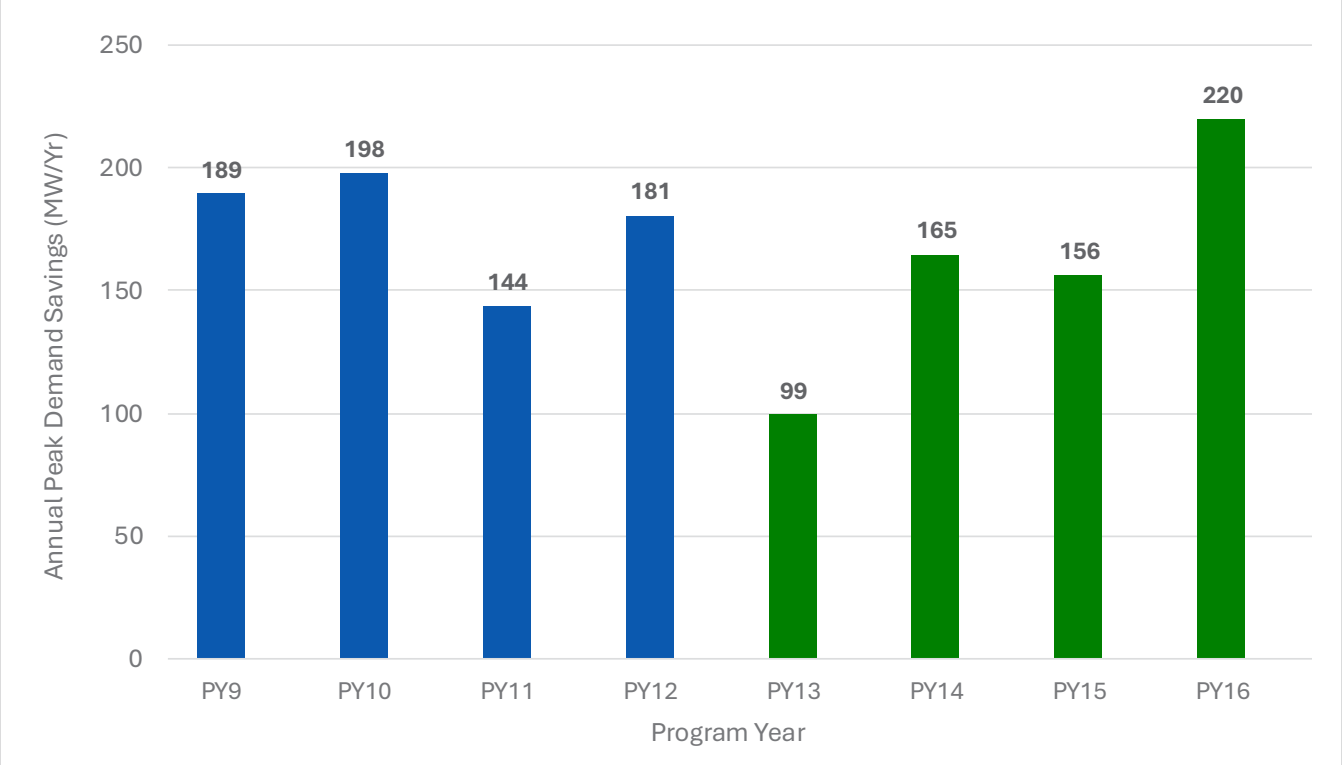


Act 129 EE&C programs have produced relatively consistent annual lifetime savings from measures installed each year, with the exception of PY13 (2021-2022), when savings dipped. According to the SWE Annual Report, this slow start mirrored the pattern observed at the beginning of Phase III (PY8) and reflected lingering impacts from COVID-19. Average annual lifetime savings were also higher during PY9-PY12 (2017-2021), at 1,908 GWh, than during PY13-PY16 (2021-2025), at 1,531 GWh.

Total Peak Demand Savings

From Phase III to Phase IV, requirements for peak demand savings shifted because of evolving methods used to account for demand reduction. For Phase III (PY8-PY12), Act 129 EE&C program goals counted peak demand only when it was achieved through dispatchable demand response programs (PA PUC 2020c). For Phase III, the PUC treated peak demand as a separate category with its own designated programs. Additionally, programs could participate in the PJM capacity market. For Phase IV (PY13-PY16), the PUC changed this approach, counting only the coincident peak demand reductions from energy efficiency measures. This did not require dispatchable events like Phase III. Figure 9 includes both phases to allow for comparison of the two approaches.

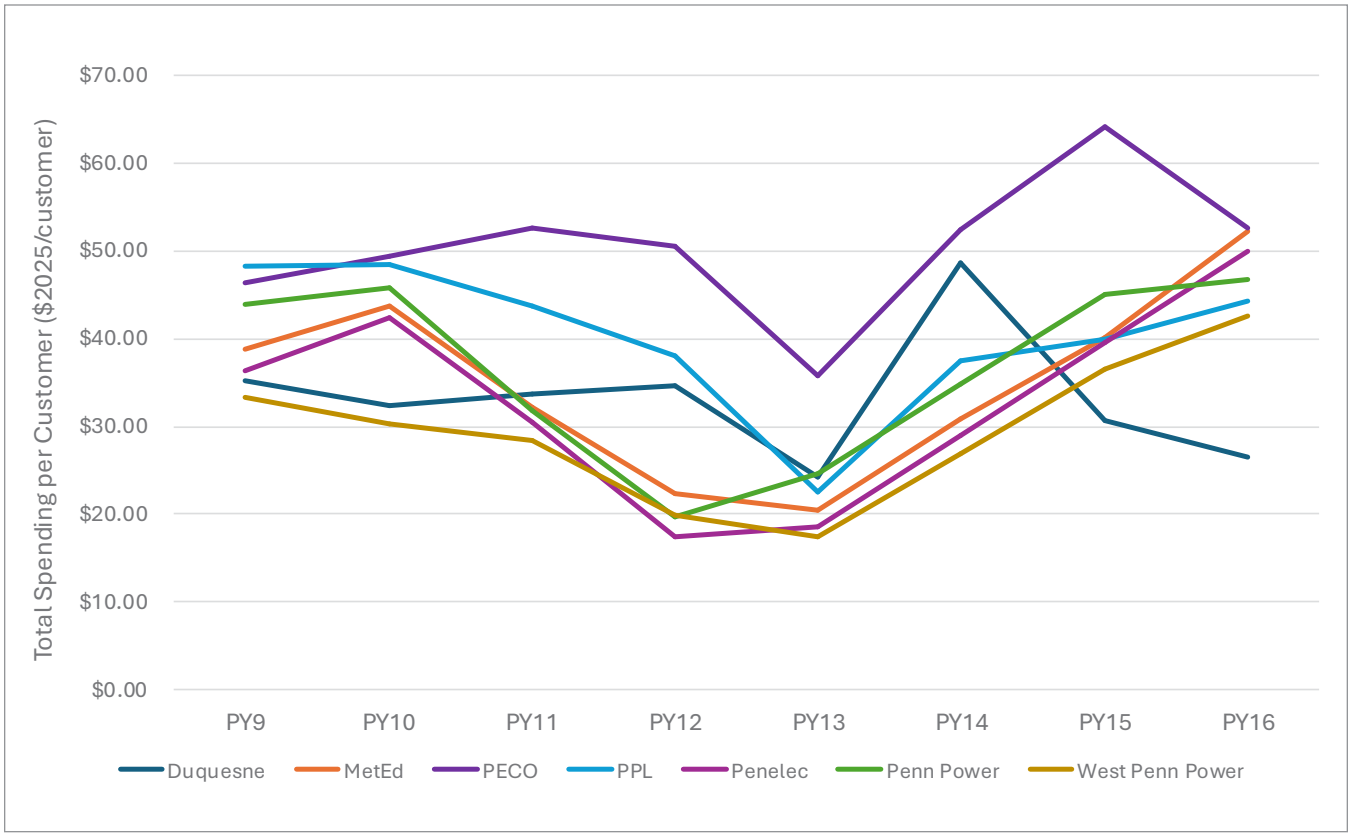
Figure 9. ***Annual Peak Demand Savings Across All Participating Utilities and Customer Classes (MW/year)***



Total Spending per Customer

This analysis considers trends in utility spending on Act 129 EE&C programs on a per-customer basis to provide a consistent measure of program investment across utilities of different sizes. We conducted the analysis based on the total Act 129 EE&C program spending and total customer base for each utility. Overall, spending has remained relatively steady due to being constrained by a cost cap. However, all utilities show a dip around PY11 and PY13 (2020-2022), the transition period between Phase III and Phase IV and start of the COVID-19 pandemic (Figure 10).

Figure 10. *Spending per Customer by Utility in Real 2025 Dollars ($2025/customer)*



As shown in Figure 10, PECO spent the most on a per-customer basis for a majority of program years in this analysis, averaging $50.45 per year. Met-Ed, Penelec, Penn Power, and West Penn Power (all owned by FirstEnergy) show a close correlation with one another with average spending per customer ranging from an average low of $19.83 in PY12 (2020-2021) to an average high of $47.89 in PY16 (2024-2025) over the study period.

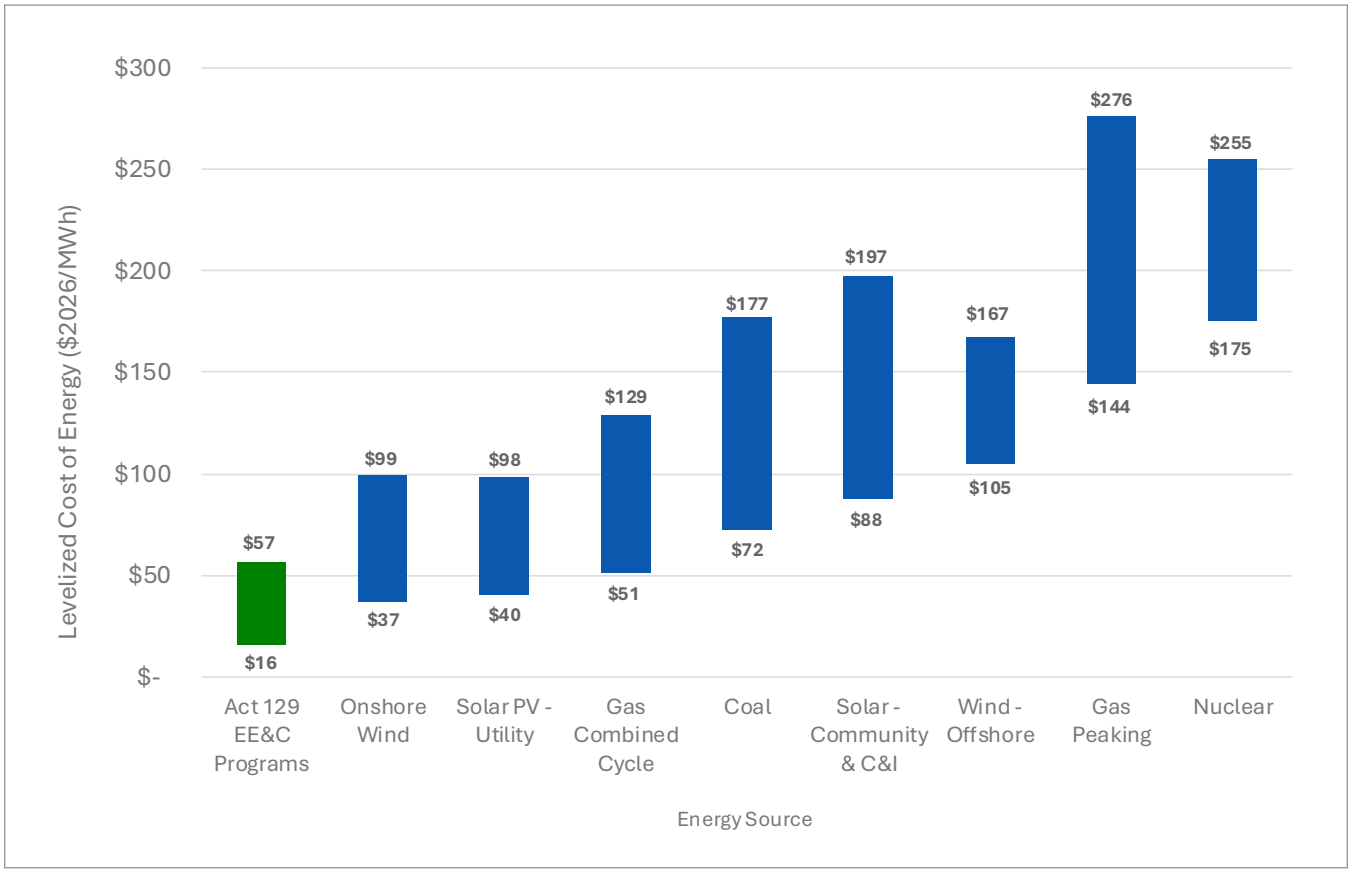
Levelized Costs of Saved Energy

The levelized cost of energy provides a common metric for comparing the costs of different energy resources. Energy efficiency can be evaluated alongside supply-side resources by quantifying the cost of the reductions in energy usage attributable to efficiency programs over the life of the measures.

To identify the cost effectiveness of energy efficiency for Pennsylvania's Act 129 EE&C program, we analyzed the levelized cost of saved energy (LCSE) for all utilities across program years. All LCSE values were converted to real 2026 dollars to allow for a direct comparison with the supply-side levelized costs reported in Lazard's 2026 LCOE+ analysis, as shown in Figure 11.

Across Program Years 9-16, the average LCSE for Pennsylvania's Act 129 EE&C programs was $24.96/MWh, with values ranging from $15.52/MWh to $56.80/MWh in real 2026 dollars. These findings are in line with Lawrence Berkeley National Laboratory's study of 64 energy efficiency programs from 21 states, which found that most energy savings and demand reductions cost less than $0.035/kWh[20] in 2022 dollars or $0.039/kWh (or $39/MWh) in 2026 dollars (Awuah et al. 2024). Overall, these findings demonstrate that energy efficiency remains a least-cost resource when compared to the levelized cost of saved energy for other supply-side resources (Lazard 2025; ACEEE 2021). Figure 11 shows the LCSE for Pennsylvania's Act 129 EE&C programs for PY9-PY16 (2017-2025) as compared to a recent analysis of electricity generation resources including renewable energy, gas combined cycle and peaking units, coal, and nuclear (Lazard 2026).

Figure 11. ***Levelized Cost of Saved Energy of Pennsylvania's Act 129 EE&C Programs (PY9-PY16) and Levelized Cost of Energy From Lazard 2026 LCOE+ Report ($2026/MWh)***



Section 4: Examining the Drivers of Electric Costs

As shown in Section 2, customer bills have risen significantly higher than inflation. This section examines the factors driving these higher costs for electric consumers. Our analysis, together with a review of the relevant literature, identified four key factors that warrant examination: fluctuations in natural gas prices, rising transmission and distribution costs, high return on equity, and rising capacity costs in the PJM wholesale electricity market.

Increased Investment in Transmission and Distribution Costs

In recent years, utilities across the country have significantly increased investment in transmission and distribution infrastructure. Utility investment in transmission infrastructure is rising due to increased electricity usage, largely driven by growing data center demand, and aging infrastructure (U.S. EIA 2026c). Utility investment in distribution infrastructure has also increased, driven by replacement of aging infrastructure, weatherproofing, and storm cost recovery (U.S. EIA 2024). An EIA analysis of national data shows that from 2003 to 2023, utility spending on transmission nearly tripled, increasing 11 percent from 2022 to 2023 alone (U.S. EIA 2024). Additionally, utility investment in distribution infrastructure was the key driver of utility spending increases from 2003 to 2023, growing 160 percent.

Our analysis shows how some of these national trends are playing out for customers in Pennsylvania. Inflation-adjusted transmission and distribution (T&D) charges have steadily increased from 2006 to 2025. For residential customers, T&D charges rose by $15.61 per month, or $187.32 per year, growing from 30 percent of the total monthly bill in 2006 to 39 percent in 2025. For residential heating customers, T&D charges increased from 32 percent to 39 percent of monthly bills, a rise of $70.85 per month ($850.20 per year).

Higher Profits Through Return on Equity (ROE)

Nationally, high utility profits driven by high return on equity have translated to increased costs for customers (Green, Sturgis, and Tait 2026). Because return on equity is built into T&D rates and not billed separately, these costs do not appear on customer bills, making this increase harder for customers to see. An analysis of 110 investor-owned utilities (IOUs) nationwide for the years 2021-2025 found that Pennsylvania customers pay a higher proportion of their bills to utility profits compared to the national average, 15.5 percent in Pennsylvania compared to the 12.8 percent national average (Green, Sturgis, and Tait 2026). This translates to at least $10.3 billion of Pennsylvania customers' dollars going to electric utility profits from 2021-2025 (Green, Sturgis, and Tait 2026).

Higher utility profits are derived from higher than necessary authorized return on equity (ROE). As part of utility regulation, utilities are permitted to earn a specified return on their infrastructure investments, known as return on equity (ROE) (Daniel, Foelske, and Kihm 2025). Regulatory commissions set a utility's authorized ROE at a "just and reasonable rate" (U.S. Supreme Court 1944). While there is no standard for how to set ROE,

researchers have posed that cost of equity (COE), or the price required to attract capital based on the risk to the investor, serves as a benchmark for authorized ROE. A common estimate for COE is 7.5 percent, while average authorized ROE in Pennsylvania was 10.5 percent during 2005-2020 and 9.7 percent nationally in 2024 (Synapse Energy 2026). Additionally, while utilities are authorized to make a certain maximum amount of profit from infrastructure investments, their actual ROE, or realized ROE, often differs. This gap exists because the authorized ROE is based on predicted sales and expenses. If sales are higher than anticipated or if expenses are lower than anticipated, actual ROE can be different from authorized ROE (Ernst and Hlinka 2023). Realized ROE and associated utility profits are monitored by the PA PUC. If realized ROE is higher than authorized ROE, the PUC and advocates can use this as a point of argument in the utility's next rate case. HB 2224, which was recently passed through the Pennsylvania House, would address concerns around ROE through creating a process to set ROE using a market-based cap (General Assembly of Pennsylvania 2026).

Table 4. ***Authorized ROE and Realized ROE for 2005-2020***

Utility	Average Authorized ROE	Average Realized ROE	Difference Between Average Authorized ROE and Estimated COE (7.5%)
Duquesne	10.67%	9.35%	3.17%
Met-Ed	10.12%	8.66%	3.23%
PECO	10.73%	16.82%	2.62%
Penn Power	10.28%	11.91%	2.69%
Penelec	10.19%	7.01%	3.59%
PPL	10.53%	8.33%	2.78%
West Penn Power	11.09%	8.85%	3.03%

Source: RMI. n.d. "Utility Transition Hub: Charting a Path to Decarbonization." Utility Transition Hub. Accessed May 20, 2026. https://utilitytransitionhub.rmi.org/. We pulled this information from the ROE_actual column of the debt_equity_returns downloadable data set. RMI calculated these values using FERC Form 1 data; Ibid. We pulled this information from the ROE column of the debt_equity_returns downloadable data set. RMI used ROE from the most recent completed rate case when available and filled in with the national median ROE when rate case data was not available; Daniel, Joe, Ryan Foelske, and Steve Kihm. 2025. "Rebalancing 'Return on Equity' to Accelerate an Affordable Clean Energy Future." RMI. February 21. Accessed May 18, 2026. https://rmi.org/rebalancing-return-on-equity-to-accelerate-an-affordable-clean-energy-future/.

As shown in Table 4, average authorized ROE for Pennsylvania electric utilities ranged from 10.12 to 11.09 percent between 2005 and 2020, all above the benchmark of 7.5 percent COE. Over the same period, utilities realized average ROEs ranging from 7.01 to 16.82 percent. All utilities except for Penelec had an average realized ROE that was higher than the estimated benchmark COE of 7.5 percent.

Another study that looked at PPL shows that reforms to lower utility ROE could lower annual bills 1.3-3.9 percent (Synapse Energy 2026). These results are reproduced in Table 5 below. For a typical customer, these savings could be $29-$87 each year in real 2024 dollars. These potential savings illustrate how ROE reform could reduce utility costs while maintaining returns sufficient to attract capital.

Table 5. *Residential Savings Achievable in 2030 by Reducing ROE ($2024)*

	1% reduction	2% reduction	3% reduction
Million $ savings for all residential customers	$38	$76	$114
Annual savings per household	$29	$58	$87
% impact to annual bills	-1.3%	-2.6%	-3.9%

Source: Table sourced from Synapse Energy. 2026. "Making Energy More Affordable in Pennsylvania." Synapse Energy Economics Inc. June. Accessed June 18, 2026. https://www.synapse-energy.com/sites/default/files/Synapse%20-%20Making%20Energy%20More%20Affordable%20in%20Pennyslvania%2025-082_0.pdf.

Fluctuations in Gas Prices

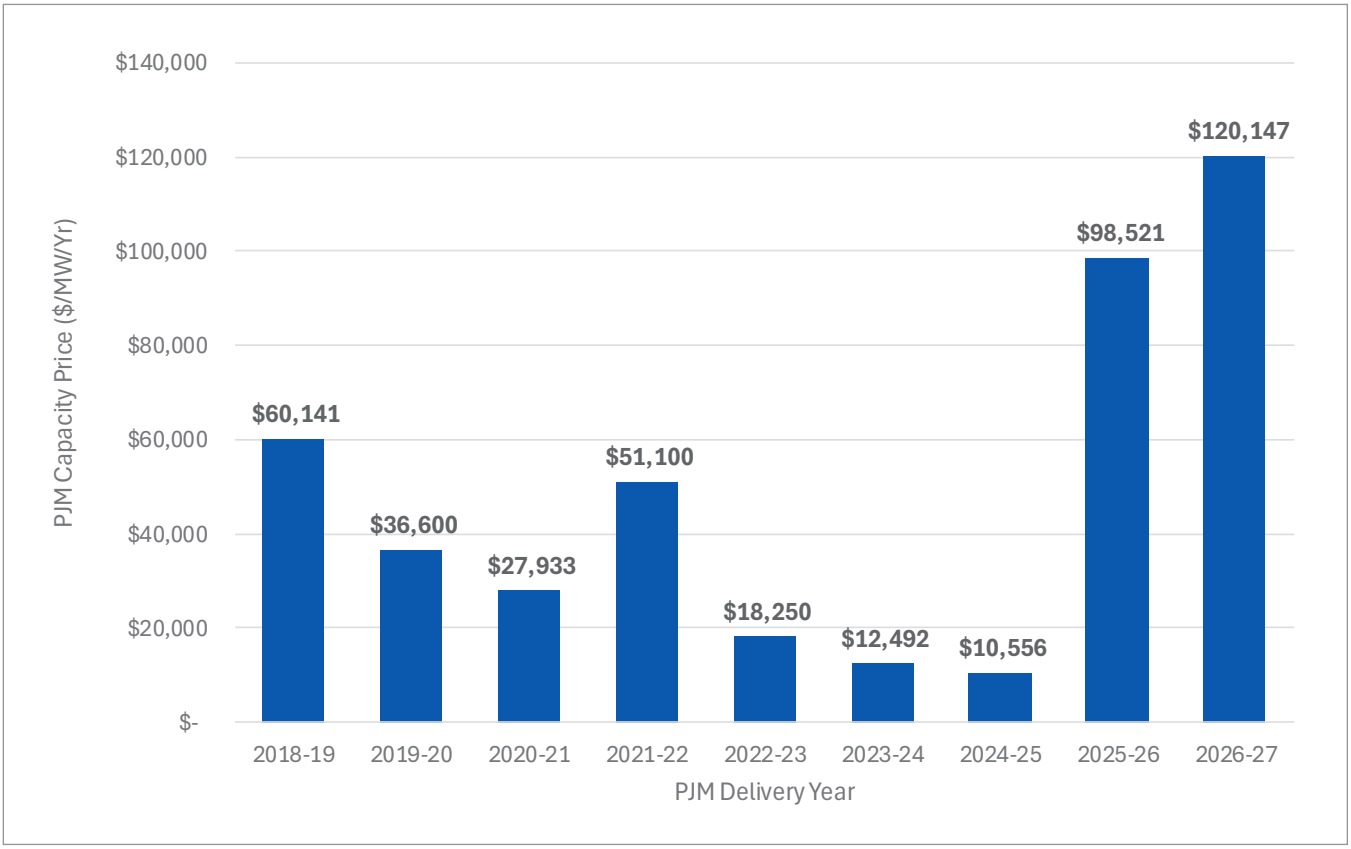
Currently, natural gas generates more electricity than any other energy source, making fluctuations in gas prices an important driver of electricity costs as increases in gas prices directly affect the cost of generating electricity (Green, Sturgis, and Tait n.d.). Pennsylvania is particularly exposed to these price changes, as 59 percent of the state's power plants are gas fired. This connection can be seen in the generation component of customers' bills, which fluctuated following gas prices. From 2013-2015, generation charges reached a record low, which state reports attribute to lower prices and greater availability of gas (PA PUC 2012-13; 2013-14; 2014-15). A cold winter in 2017 saw generation charges increase for all customers reflecting higher costs of gas (PA PUC 2017-18). Prices peaked again in 2023, when gas prices rose due to the start of the Russia-Ukraine War (Isidore 2022). Prices of gas also tend to go up with extreme weather; the polar vortex in November and December of 2025 saw prices rise temporarily (Iraola 2026).

Analyses have shown that demand for gas, both domestically and abroad, is expected to grow, leading to increased prices through 2050 (U.S. DOE 2024; U.S. EIA 2026d). In 2025, the national average price of gas for electric generators increased 36 percent, driving up generation costs and wholesale electricity prices (Barbose et al. 2026b).

PJM Capacity Markets Driving Up Supply Costs

In recent years, costs in PJM Interconnection, the regional wholesale electricity market serving Pennsylvania, have increased significantly. PJM's capacity auction secures power resources for Pennsylvania residents and businesses by paying generators for their ability to produce electricity (FERC 2026). Auction prices directly affect customer bills through supply charges, which appear as volumetric generation charges on customers' bills—currently the largest portion of the bill. However, utilities and state regulators have little impact on these rates because once an auction is complete, there are limited options to reduce its impact on ratepayers or reverse the resulting costs (PJM 2026a).

Figure 12. *PJM Capacity Pricing 2018-2027*



As shown in Figure 12, PJM capacity prices jumped sharply in 2025 and 2026, resulting in higher generation charges for both residential and commercial customers. A Maryland study found these auctions resulted in monthly bill increases of $4-$15 for residential customers and $18-$172 for commercial (OPC Maryland 2024). In New Jersey, the jump in prices led directly to a $25 a month increase in bills (Lawson 2025). Two factors have led to this recent surge in supply prices: a slowdown in connecting new generation resources to the grid because of PJM's interconnection queue backlog and rapidly growing electricity demand projections, particularly from large data centers. Together, these factors have tightened the supply-demand balance in the capacity market and pushed auction clearing prices substantially higher.

Pause in the Interconnection Queue

In 2022, PJM closed its interconnection queue—the process for energy projects seeking approval for grid connection (Kumar 2025; Edelen and Sun 2025). The stated goal of the pause was to clear the backlog of applications, mostly from an influx of renewable energy projects, through streamlining their review and approval processes. The pause lasted four years and resulted in a continued backlog of projects. This backlog prevented new suppliers from coming online, constraining supply and increasing costs for ratepayers (OPC Maryland 2024; Kotwis et al. 2025).

The backlog is particularly significant given the large share of renewable resources waiting to connect. A report from October 2025 found that of the 130 GW of proposed power in the interconnection queue, 107 GW were land-based renewables (solar—54 GW, storage—31 GW, hybrid—17 GW, on-shore wind—6 GW). Researchers estimated that if 10 percent of the land-based renewables in the interconnection queue were brought online in a timely manner, prices in the PJM 2026/2027 Base Residual Auction (BRA) would have cleared at a lower rate that would have saved customers $3.2 billion (Kumar 2025; Edelen and Sun 2025).

As of May 5, 2026, PJM reopened its interconnection queue (Azhar 2026). However, new projects will not come online for years as the approval process will still take a year or two and then additional time will be needed for construction and grid connection (Kumar 2025). Thus, the benefits of the reopened queue are unlikely to be realized for several years.

Rapid Growth in Data Centers

Rapid growth in electricity demand from data centers and projections for future demand have become major drivers of higher capacity prices in PJM. In 2025, PJM increased its forecast for additional electric load by 2037 from 5,700 MW to approximately 20,000 MW, with the increase attributed almost entirely to existing and anticipated data center development (Kunkel 2025). Monitoring Analytics, the independent market monitor for PJM, found that 63 percent of this price increase, or $9.3 billion, in the 2025/2026 auction was due to data centers (Kunkel 2025). Adding further complexity, it is difficult to forecast data center load growth. Some experts estimate that only 10-20 percent of proposed data centers will be built (Nadel 2025). As a result, PJM is looking to potentially adjust its load forecasting procedures to more accurately predict data center growth in the region. While near-term data center growth is easier to project, long-term growth of the industry is less certain. Some projections for the PJM territory have data centers increasing U.S. electric generation costs by 8 percent to 25 percent by 2030 (Nadel 2025).

Section 5: Enacting Modernized Rates to Encourage Affordability

ACCURATE	Reflects the cost of the grid and pays consumers for lowering demand
AFFORDABLE	Looks to ensure rates are equitable and do not exacerbate energy burden
ACCESSIBLE	Available to all customers and easy to participate in

Pennsylvania's energy landscape is changing rapidly. The growth of data centers, increasing electrification of heating and other end uses, and advancements in demand response technologies and programs have unlocked new potential for the Commonwealth. At the same time, these trends are driving a period of rapidly increasing electricity demand, underscoring the need for energy policy to evolve. Modernizing electricity rates can help Pennsylvania meet these challenges while keeping energy affordable for ratepayers. New technologies and programs are giving residential and commercial consumers the ability to shift when and how they use electricity, creating opportunities to reduce peak demand and manage system costs more efficiently. Modernizing rates can ensure costs for ratepayers are fair and unlock potential to lower peak demand. It is important that rates reflect the cost to serve the customer in a manner that is accurate, affordable, and accessible.

As shown in Table 3, supply time of use (TOU) rates are available statewide, while electric heating rates and peak time rebates (PTR) are offered by select utilities.[8] TOU rates change volumetric prices by time of day to encourage customers to shift electricity use from high demand periods to low demand periods. Electric heating rates provide a lower volumetric rate in the winter for customers using electric heating systems. These rates better reflect actual cost to serve these customers. PTRs provide rebates to customers for limiting use during peak periods of the year. Together, TOU rates and PTRs can encourage customers to shift or reduce demand when the electric system is most constrained—TOU rates primarily targeting daily peaks and PTRs targeting annual system peaks. By reducing peak demand, these programs can improve utilization of transmission and distribution infrastructure, reduce reliance on higher-cost supply resources, and ultimately lower overall system costs. Table 6 summarizes the rates offered by large EDCs in Pennsylvania.

[8] Additional information on the details of the TOU rates offered by Pennsylvania's IOUs is included in Appendix A.

Table 6. ***Alternative Residential Electric Rate Options Available in Pennsylvania***

Utility	Daily Time Varying Rates	Technology Specific Rates	Rebates (CPP, OPR, PTR)
Duquesne	Supply-Side TOU	EV TOU Distribution Rate Pilot	PTR
		Heating With Add-On Heat Pump (No New Customers)	EV PTR
		Seasonal Electric Heating	
First Energy Utilities: Met-Ed, Penelec, Penn Power, West Penn Power	Supply-Side TOU	None	None
PECO	Supply-Side TOU	Seasonal Electric Heating	None
PPL	Supply-Side TOU w/ Seasonal Peak Shift	None	None

Source: Brown, Abigail, Erin Cosgrove, and Luke Miller. 2025. "Modern Rate Design in the Northeast: Unlocking Efficiency, Affordability, and Electrification." December. Accessed May 18, 2026. https://neep.org/sites/default/files/media-files/neep_modern_rate_design.pdf.

Pulling from NEEP's most recent paper Modern Rate Design in the Northeast: Unlocking Efficiency, Affordability, and Electrification, this section explores ways Pennsylvania PUC and utilities can deploy modernized rates to lower residential electric bills and better align customer costs with the actual cost of serving demand on the grid.

To advance these goals, the state should consider five key rate reforms:

- **Grow Enrollment in Existing Supply TOU Rates**
- **Deploy T&D TOU Rates That Encourage Enrollment**
- **Incentivize Peak Load Reduction Through Rebates**
- **Establish Statewide Winter Electric Heating Rates for T&D Charges**
- **Expand Assistance Programs to Better Serve Vulnerable Customers**

Grow Enrollment in Existing Supply TOU Rates

Pennsylvania's Act 129 required electric distribution companies (EDCs) to offer opt-in supply TOU rates[9] as part of its broader market reforms to lower peak energy usage. Supply TOU rates can reduce demand during peak periods, lowering the need for costlier power plants to come online. While these optional TOU rates are available across the state, enrollment has remained low, limiting their overall impact on load shifting and bill savings.

Figure 13. ***Enrollment in Opt-In Supply TOU Rates***

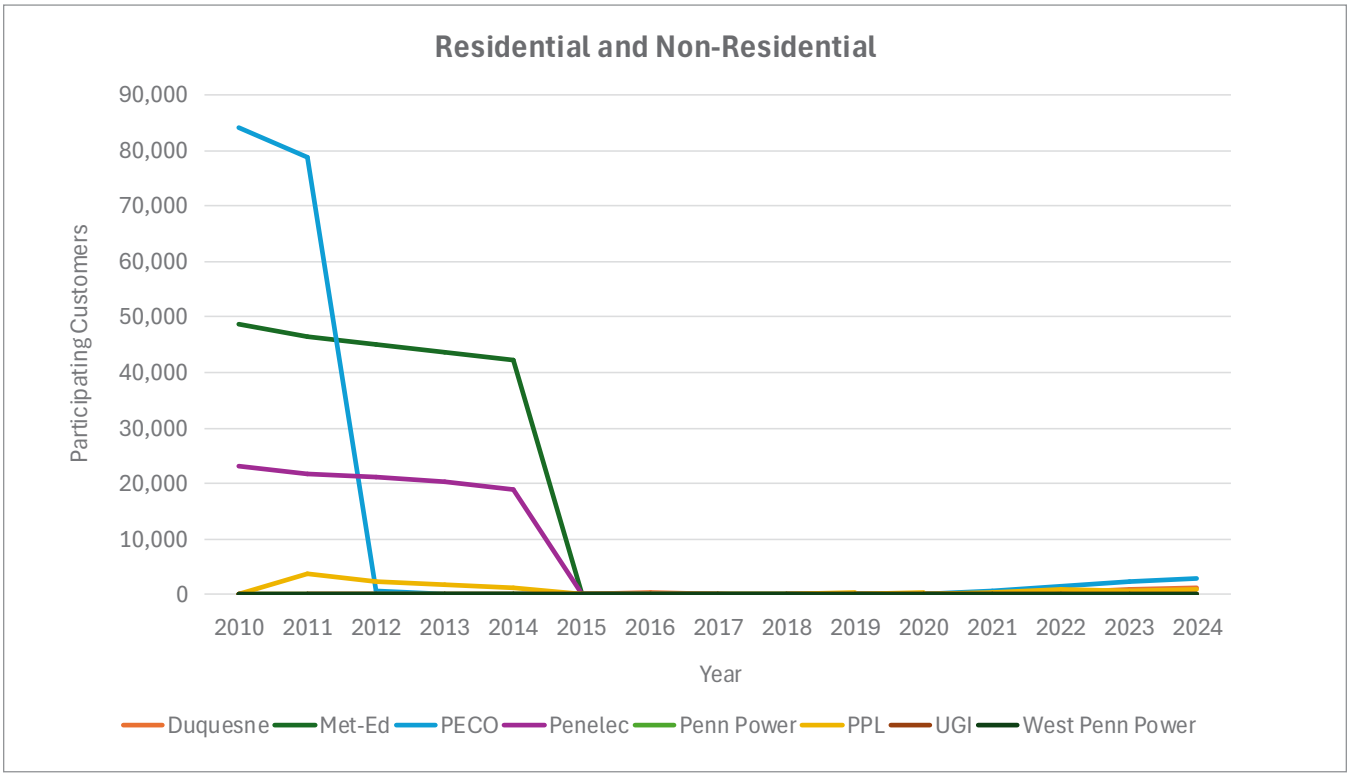


Figure 13 shows that TOU enrollment has dropped since the initial years of the rates. Met-Ed, PECO, Penelec, and PPL initially experienced more robust enrollment, but it dropped to zero between 2012 and 2015 (PA PUC 2010-24). This is part of a national trend of extremely low customer adoption of opt-in rates (Brown, Cosgrove, and Miller 2025). Since 2019, participation has been increasing, but only for Duquesne, PECO, and PPL. Both Penn Power and West Penn Power have had no participants in their TOU rates since their inception. UGI Electric had a maximum of six participants but currently has none (PA PUC 2010-24). Table 7 summarizes the customer participation data. See Appendix B for full enrollment details.

[9] There are three components to pricing on utility bills: supply/generation, transmission, and distribution. TOU rates can be designed for each component individually and coordinated to send a stronger price signal during daily peak periods.

Table 7. *2024 Participation in Opt-In Supply TOU Rates as a Percent of Customer Base*

Utility	Duquesne	PPL	UGI	PECO	Met-Ed	Penelec	West Penn Power	Penn Power	Average
Residential Participation (%)	0.2%	0.08%	0%	0.02%	0%	0%	0%	0%	0.04%
Non-Residential Participation (%)	0.01%	0.02%	0%	0.01%	0%	0%	0%	0%	0.01%

Source: 2025b. "Retail Electricity Report: Activity Report 2024." Pennsylvania Public Utility Commission—Technical Utility Services Policy and Planning Section. December. Accessed May 20, 2026. https://www.puc.pa.gov/media/3747/retail-elec-choice-report-2024-final.pdf.

Utilities can take steps to increase enrollment through designing rates with better price signals, creating stronger programs around engagement and education, and offering bill protection. Research shows that a peak-to-off-peak ratio of 4-to-6 can provide a strong incentive for customers to shift load (Sergici et al. 2020). Currently, only Duquesne and PECO meet this threshold. Additionally, Duquesne offers a super off-peak period lowering volumetric rates even more for customers at times of minimal demand. This could be particularly beneficial for shiftable loads such as EVs, dishwashers, and laundry machines. While Met-Ed, Penelec, Penn Power, and West Penn Power have a peak-to-off-peak ratio of less than 2-to-1. Without these price signals there is little incentive for customers to enroll in the rates and shift their load. See Appendix C for more details on existing TOU rates in Pennsylvania.

Stronger customer engagement and education can also grow adoption. Opt-in TOU rates depend on customers choosing to enroll and changing usage patterns in response to the new price signals. It is important that utilities provide clear, consistent, and easy-to-understand communications on the benefits of TOU rates and when and how to shift energy usage (Brown, Cosgrove, and Miller 2025). These materials should frame the benefits in ways that are easy for customers to understand, such as savings in dollars per bill rather than cents per kilowatt-hour. Other tools, such as shadow billing can show customers what they would have paid under a TOU rate compared with their current rate, helping them understand the potential financial benefits before making a permanent switch. An example of shadow billing is shown in Figure 14. Finally, bill protections can provide security for customers that may be weary of rates or at risk of having higher bills.

Figure 14. *Example of Shadow Billing for a Supply-Side TOU Rate*

Sample Duquesne RS Customer Electric Bill		
Supply		**Total**
Generation service charge:		$ 55.14
Transmission and Distribution		
Customer Charge:	$13 / month	$ 13.00
Energy Charge:	500 kWh x 0.082479	$ 41.24
Energy Efficiency & Conservation Charge:	500 kWh x 0.0019	$ 0.95
Distribution System Improvement Charge:	500 kWh x 0.00062	$ 0.31
Universal Service Charge:	500 kWh x 0.016	$ 8.00
State Tax Adjustment Surcharge:	500 kWh x -0.00012	$ (0.06)
TOTAL:		**$ 118.58**

Shadow Bill – Your Bill on the TOU Electric Supply Rate		
Supply		**Total**
Generation service charge:		
On-peak (weekdays,3 PM – 9 PM):	50 kWh x 0.317565	$ 15.88
Off-peak (9 PM – 11PM; 6 AM – 3 PM):	350 kWh x 0.058450	$ 20.46
Super off-peak (11 PM – 6 AM):	100 kWh x 0.043015	$ 4.30
Transmission and Distribution		
Customer Charge:	$13 / month	$ 13.00
Energy Charge:	500 kWh x 0.082479	$ 41.24
Energy Efficiency & Conservation Charge:	500 kWh x 0.0019	$ 0.95
Distribution System Improvement Charge:	500 kWh x 0.00062	$ 0.31
Universal Service Charge:	500 kWh x 0.016	$ 8.00
State Tax Adjustment Surcharge:	500 kWh x -0.00012	$ (0.06)
TOTAL:		**$ 104.08**

Deploy Transmission and Distribution TOU Rates

The PA PUC can implement TOU rates for transmission and distribution charges to complement supply-side TOU rates and lower transmission and distribution costs. Studies have shown that TOU rates can reduce peak demand and lower the need for new infrastructure buildout (Baatz 2021). These rates could apply to all electric customers or target specific technologies, such as EV-specific rates that aim to shift EV charging to off-peak windows.

TOU transmission and distribution rates can also align with existing supply rates, creating a more consistent price signal that may simplify enrollment and encourage customer participation. Duquesne, for example, has added an EV-only whole-home opt-in distribution TOU rate and designed it to align with its supply TOU peak periods. Additionally, regulators and utilities can layer other rate design aspects into TOU rates, such as seasonal rates and peak time rebates to reduce demand during annual peak periods (Brown, Cosgrove, and Miller 2025).

TOU rates can be deployed through either opt-in or opt-out enrollment. Opt-out or default TOU rates automatically enroll customers in the rate when they sign up for service. This enrollment strategy can increase participation but requires safeguards to protect ratepayers that cannot shift their load or may experience an increase in bills. Opt-in rates need significant education and enrollment campaigns to be successful and ensure high enough participation levels. The Sacramento Municipal Utility District's (SMUD) Consumer Behavior Study saw 98 percent of customers in the opt-out test group participated, compared with just 19.5 percent in the opt-in group (Baylis et al. 2016).

As Pennsylvania considers deploying TOU rates, regulators and utilities can learn from other jurisdictions to deploy these rates in a way that works best for the state, including a phased approach for enrollment, initiating a proceeding at the PUC, and exclusions for vulnerable customers. This would allow regulators and utilities to build on demonstrated successes in other jurisdictions while monitoring customer impacts and adjusting program design as needed. One enrollment example is PSEG Long Island, which phased deployment of its opt-out TOU rates across its territory (Jacobson 2026). It first offered opt-in TOU rates in 2021, and after seeing savings from the pilot, implemented opt-out TOU rates with bill protections. So far, the PSEG has seen customers shift 1.3 percent of their electricity load (Jacobson 2026).

Incentivize Peak Load Reduction Through Rebates

Peak time rebates (PTR) are another tool to incentivize load-shifting behavior. PTRs lower annual peak demand by rewarding customers who reduce their energy usage during annual peak periods. These can be implemented on their own or stacked with TOU as they both target different peak events (TOU targets daily peaks; PTR targets annual peaks). Combined, TOU plus PTR have been shown to achieve 18 percent savings during peak demand and 7.4 percent savings in overall consumption (Baatz 2021).

PTR programs prioritize affordability because there is no financial penalty for non-participation in a peak event. Customers that opt not to participate simply miss a reward. Because there is no penalty, regulators

and utilities can consider offering this program as opt-out, which enables higher participation. In 2025, BG&E reported that of the 1.1 million customers enrolled in their PTR program, 63 percent participated, which resulted in $3.2 million paid out in bill credits (BG&E n.d.). Duquesne currently offers PTR but excludes TOU customers from participating in the rate (Duquesne Light Company n.d. a; n.d. b). If layering, it will be important to provide a proper incentive for PTRs so that customers do shift their load and other rates do not counteract the impact of the PTR. An example of a bill with PTR is shown below.

Figure 15. ***Example of Bill With Peak Time Rebate***

Sample Duquesne RS Customer with Peak Saver Rewards Electric Bill		
Supply		**Total**
Generation Service Charge:	500 kWh x 0.110275	$ 55.14
Transmission and Distribution		
Customer Charge:	$13 / month	$ 13.00
Energy Charge:	500 kWh x 0.082479	$ 41.24
Energy Efficiency & Conservation Charge	500 kWh x 0.0019	$ 0.95
Distribution System Improvement Charge	500 kWh x 0.00062	$ 0.31
Universal Service Charge	500 kWh x 0.016	$ 8.00
State Tax Adjustment Surcharge	500 kWh x -0.00012	$ (0.06)
Peak Saver Rewards		
Jul 7 Event	6 kWh x 1.00	$ (6.00)
Jul 13 Event	7 kWh x 1.00	$ (7.00)
Jul 30 Event	6 kWh x 1.00	$ (6.00)
TOTAL:		**$ 99.58**

Establish Statewide Winter Electric Heating Rates for T&D Charges

Up to a quarter of residential customers in Pennsylvania heat with electricity (U.S. EIA 2020). Heating with electric heat as a main and secondary source drastically increases customers' electricity usage in the winter and electricity bills as a result. As shown in the data from 2006 to 2025, residential heating customers follow a similar pattern to standard residential customers but experience steeper increases. Electric heating rates can be seasonal rates and/or declining block rates that lower electricity costs in the winter to better align bills with the actual cost to serve those customers. As most households with electric resistance are low-income customers, a lower winter electricity rate can serve dual purposes of driving adoption of efficient heating technology and helping households with electric resistance, who experience high energy burdens (Lee et al. 2026).

Most Pennsylvania electric utilities are summer peaking.[10] Since grids are built to serve the annual peak load, there is extra grid capacity in the winter, and electricity is cheaper to use. Yet, standard rates for transmission and distribution are flat year-round volumetric charges, which do not reflect this seasonal cost difference. Therefore, despite electricity being cheaper in the winter, customers pay the same rate, resulting in electric

[10] According to the 2025 PJM Long-Term Load Forecast Report, Penelec's 2023 winter peak came within approximately 250 MW of the summer peak, and PPL and UGI Electric had roughly equivalent summer and winter peaks. All other Pennsylvania utilities are still summer peaking.

heating customers being overcharged. This impacts electric heating customers (both heat pumps and electric resistance) hardest resulting in these homes paying more than is needed to serve them (Murray and Velez 2025). Electric heating rates correct this by lowering winter volumetric rates to ensure all customers pay their true cost of service (NYSERDA 2019).

PECO and Duquesne both currently offer opt-in seasonal electric heating rates for homes using electric resistance or heat pumps. Duquesne's winter rate provides a reduction of 8.9 percent on transmission and distribution costs, while PECO's winter rate provides a 23 percent reduction (Duquesne Light Company 2026; PECO Energy Company 2026). Eligibility differs between the two. PECO's rate allows homes with a heat pump and a supplemental non-electric source (e.g., a heat pump with oil back up) but excludes homes using electric resistance with a supplemental source, while Duquesne requires electric heat to be the sole primary heating method, with supplemental heat from only renewable sources, defined as solar, wind, wood, or hydro. Until January 2025, Duquesne offered a heat pump specific rate, which reduced transmission and distribution charges by 58 percent for heat pumps used as either the primary or supplemental heating source. Supplemental systems need to have integrated controls that switch to back up heat below 40 degrees, and customers have to demonstrate that the heat pump cannot provide total heating requirements.

While PECO and Duquesne's rates offer different levels of discounts, both show that seasonal rates can be implemented in the state for electric resistance and heat pump users alike. Applying these rates statewide, through regulatory mandate or legislation, could improve affordability for both groups, whether the device provides full or supplemental heat. An example of a bill with Duquesne's heat pump specific rate is shown below in Figure 16.

Figure 16. ***Sample Bill for Electric Heating Rate Compared to Standard Rate***

Sample Duquesne RH Customer Winter Electric Bill		
Supply		**Total**
Generation service charge:	500 kWh x 0.110275	$ 55.14
Transmission and Distribution		
Customer Charge:	$13 / month	$ 13.00
Energy Charge:	500 kWh x 0.07592	$ 37.96
Energy Efficiency & Conservation Charge:	500 kWh x 0.0019	$ 0.95
Distribution System Improvement Charge:	500 kWh x 0.00062	$ 0.31
Universal Service Charge:	500 kWh x 0.016	$ 8.00
State Tax Adjustment Surcharge:	500 kWh x -0.00012	$ (0.06)
TOTAL:		**$ 115.30**

Sample Duquesne RA Add-On Heat Pump Customer Winter Bill		
Supply		**Total**
Generation service charge:	500 kWh x 0.110275	$ 55.14
Transmission and Distribution		
Customer Charge:	$13 / month	$ 13.00
Energy Charge:	500 kWh x 0.034662	$ 17.33
Energy Efficiency & Conservation Charge:	500 kWh x 0.0019	$ 0.95
Distribution System Improvement Charge:	500 kWh x 0.00062	$ 0.31
Universal Service Charge:	500 kWh x 0.016	$ 8.00
State Tax Adjustment Surcharge:	500 kWh x -0.00012	$ (0.06)
TOTAL:		**$ 94.67**

Section 6: Policies and Programs to Combat Rising Electric Energy Costs

Pennsylvania residents and businesses are paying more for less energy, with bills expected to continue rising unless policies are implemented to address the underlying drivers of these costs. While the previous section outlined rate design options, the recommendations in this section focus on five ways the state can contain these costs through deploying demand-side solutions, improvements to utility planning processes, reforms at PJM, improvements to customer assistance programs, and new mandates on data centers to ensure ratepayer protections and community benefits. It is important to recognize that these solutions are not just for the PUC, as lowering bills will require action at the state and regional level. Together, these reforms can defer or avoid more costly investments in infrastructure and prioritize least-cost resources to meet Pennsylvania's growing electricity needs.

Policies and Programs to Lower Electric Bills:

- **Increase Investments in Energy Efficiency Programs**
- **Invest in Virtual Power Plants to Lower Costs**
- **Update Distribution Planning Processes to Prioritize Affordable Resources**
- **Implement State and Regional Policies to Manage Supply Costs From PJM**
- **Align Data Center Buildout With State Priorities**

Increase Investments in Energy Efficiency Programs

The Pennsylvania Legislature enacted Act 129 in response to high energy prices in 2008, establishing statewide Energy Efficiency and Conservation (Act 129 EE&C) programs (General Assembly of Pennsylvania 2008). While Act 129 established energy efficiency programs, it capped spending at 2 percent of each electric utility's 2006 revenue. Nationally, Pennsylvania's Act 129 EE&C programs rank in the top half of energy efficiency programs, coming in 22nd place on the ACEEE State Scorecard (Bradley-Wright et al. 2025). These are meaningful savings and yet represent only a fraction of the cost-effective potential for the state (NREL 2017). Additionally, the programs' total annual savings of 0.49 percent remain below the national average of 0.60 percent. Expanding energy efficiency could produce substantial additional economic and energy benefits. One study found that a ramp up to 1.2 percent a year could result in the creation of 30,000 jobs, save over 90,000 GWh and provide an additional $6.4 billion over the life of the installed measures (Barrett and Gilleo 2019).

As highlighted in Section 4, energy efficiency remains a least-cost resource. The average levelized cost of saved energy for Pennsylvania's Act 129 EE&C programs was $24.96/MWh, with values ranging from $15.52/MWh to $56.80/MWh in real 2026 dollars. At the same time, the costs of these programs represent a relatively small share of customer bills, accounting for less than 1.5 percent of monthly electricity bills for both residential and commercial bills. Sample bills from 2024 for Met-Ed and Duquesne customers show these residential charges

to be even lower when actual usage levels were taken into account: $1.89 in real 2025 dollars for Met-Ed customers (1.1 percent of the bill) and $0.89 for Duquesne customers (0.7 percent of the bill). Since 2009, Act 129 EE&C programs have generated an estimated $6.4 billion in savings across Pennsylvania (PA PUC 2018-25; PA DEP n.d.). Participants also experience numerous benefits beyond monthly bills, like improved health, comfort, and safety. Despite these benefits, awareness remains a significant challenge. One survey found that 80 percent of customers were unaware of Act 129 EE&C programs (Clean Air Council 2026).

While Act 129 legislation established energy efficiency programs, it also capped spending at 2006 levels. This spending cap limits customer and grid benefits that flow from the program and inhibits workforce growth. Given its relatively small impact on customer bills and substantial immediate and long-term benefits, now is the time for Pennsylvania to adjust or remove the cap on Act 129 EE&C programs. Doing so would expand access to energy efficiency programs, help lower customer bills, reduce peak demand, and grow the local workforce. Legislation to remove the cap is currently being considered (General Assembly of Pennsylvania 2025b). To minimize the impact on ratepayers of increasing payments to Act 129 EE&C programs, the PUC could consider shifting the EE&C charge from a volumetric charge to a fixed customer charge with adjustments for income levels. Alternatively, the state could also require utilities to evaluate and file energy efficiency investments as grid resources, shifting their funding framework and formally recognizing energy efficiency as a component of grid infrastructure and resource planning.

Invest in Virtual Power Plants to Lower Costs

While energy efficiency can reduce both base and peak load, virtual power plants are another tool that can be used to lower costs through reduction of peak load. Virtual power plants coordinate thousands of existing smaller resources (e.g., batteries, EVs, thermostats) to lower demand at peak times (D'Agostino 2026), reducing peak load and making the grid more resilient (Culler et al. 2026). This curtails the need for infrastructure buildout and lowers supply costs at times when it is highest. VPPs also provide resiliency in the face of major weather events (Culler et al. 2026). During extreme heat in Texas and California, VPPs prevented power outages and delivered energy at times when other resources were exhausted. In North Carolina, a microgrid provided power for over 140 hours after Hurricane Helene knocked out transmission and distribution infrastructure.

Because Pennsylvania's electric market is deregulated, VPP deployment can be deployed to lower supply costs through PJM and transmission and distribution costs at the utility level. Utilities can deploy virtual power plants as an alternative to building out local infrastructure to ensure reliability during extreme weather events. Through PJM, distributed energy resources can be bid into PJM's supply market as implemented by FERC Order No. 2222 (FERC 2020). Although full implementation is not going to start until 2028 (CUS 2024), the state can start to deploy programs that can be integrated into PJM now.

Pennsylvania could start with pilots that demonstrate the benefits of VPPs and use cases for the state. These could include enrolling customers into smart thermostat programs using rebates from energy efficiency programs and piloting battery storage in areas that experience frequent outages or are known for extreme weather events, which increase demand. The state could lead by example through enrolling state buildings in

VPP programs. New Jersey, for example, is looking to have state government buildings participate in demand response events in PJM to help offset rising electric prices (Molis 2026).

To create statewide mandates, action could also occur through legislation, executive orders, or PUC action. The Pennsylvania Legislature recently introduced a bill that would establish a statewide VPP program that includes enhanced incentives for low-income customers and customers in historically disadvantaged communities (Davidson, Fielder, and Rivera 2025). In New Jersey, Governor Sherrill issued an executive order mandating the Board of Public Utilities to create a virtual power plant program open to utilities and third-party suppliers to drive down demand. New Jersey estimates these programs can reduce peak demand by 10 to 20 percent statewide (New Jersey Government 2026). Regardless of technology, VPP program structure should include clear compensation tied to validated load shifting. This can be through a rebate or bill credit or TOU rates that lower rates during off-peak windows to compensate customers for shifting their load.

Update Distribution Planning Processes to Prioritize Affordable Resources

Distribution planning plays an important role in maintaining grid reliability and identifying needed infrastructure upgrades (Mims Frick et al. 2024). Pennsylvania's current distribution planning framework is based on utility-submitted Long-Term Infrastructure Improvement Plans. The plans primarily focus on maintaining and replacing existing infrastructure. Rather than focusing narrowly on infrastructure and needed upgrades, these plans could be expanded to incorporate a broader grid modernization strategy that could look to more affordable investments, such as energy efficiency and demand response or VPP programs.

Grid modernization goes beyond basic reliability and upgrade goals to incorporate the opportunities presented by a more flexible, distributed electric system. Non-wires alternatives, such as energy efficiency and VPPs, can be deployed as a resource and provide alternatives to grid buildout at a lower price than poles and wires infrastructure. In New York, the Brooklyn Queens Demand Management project helped delay the construction of a new substation well beyond the initially estimated timeline (Adolf et al. 2018). Through combining energy efficiency, demand response, distributed generation, and energy storage technologies, the project deferred a substation upgrade that was estimated to cost $1.2 billion.

An evaluation of case studies from across the nation found that regulatory mandates that challenged the traditional utility business model and looked for ways to prioritize investments in distributed energy resources played a large role in successful on the ground projects (Adolf et al. 2018). To prioritize affordable and reliable alternatives to poles and wires infrastructure, the PUC can require that infrastructure plans include evaluation of non-wires alternatives or establish an integrated distribution system plan, which includes mandates for non-wire alternatives.

Implement State and Regional Policies to Manage Supply Costs From PJM

Wholesale electricity costs in PJM Interconnection have a direct and persistent impact on retail electricity prices in Pennsylvania. To prevent future drastic impacts on bills, regulators and the executive branch can continue to work with states and PJM to ensure accurate load forecasts and provide consumer protections as data center

speculation grows. A recent report found households in Pennsylvania could save up to $83 annually in 2027 and up to $492 in 2030 through reforms to PJM that require data centers to self-supply energy and resolve delays in the interconnection queue (Synapse Energy 2026). Pennsylvania can build on existing efforts to lower costs from PJM through auction reforms and ensuring transparency in load forecasts at the state and regional level.

Deploying PJM Auction Reforms

Pennsylvania can work with other states to enact auction reforms through price caps and establishment of a separate auction for data centers. Pennsylvania has already taken steps on price caps. Governor Josh Shapiro and PJM reached an agreement establishing price floors and caps for capacity auctions, helping limit extreme price outcomes in the 2026/2027 auction (Howland 2025; Donohue 2025). Marketing Analytics predicted that without this cap, the auction price would have been 20 percent higher (Howland 2025). PJM region governors can also work with operators to continue the market price cap while data center demand projections are still unknown and volatile. Pennsylvania could also join other governors to encourage PJM to hold a separate capacity auction for data centers, to minimize the impact on ratepayers.

Verifying Load Forecasts at the State and Regional Level

In addition to working with PJM, Pennsylvania has established processes to ensure accountability in utility load forecasts through the Load Forecast Accountability Act. This law remedies speculation around large load requests inflating forecasts and artificially driving up capacity costs (General Assembly of Pennsylvania 2025). Passed in July 2026, it gives the PA PUC authority to review utility load forecasts before submission to PJM, coordinate with other states to prevent double counting of data centers, and access materials needed to properly carry out this oversight. This ensures a transparent process between the utilities and the PUC in estimating load forecasts used to establish PJM's supply needs (Press Office of Governor Shapiro 2026b).

Expand Assistance Programs to Better Serve Vulnerable Customers

While electric bill assistance programs for low-income Pennsylvanians exist across all large EDCs, their impact is limited. With electric bills on the rise, Pennsylvania can take additional steps to protect customers who are most vulnerable through considering reforms to current assistance programs that remove the cap on available assistance and collect funds from commercial customers.

Caps on assistance programs limit the amount of financial assistance available to customers and currently range from $1,000 to $3,200 per customer.[11] Once a customer hits the cap, they are moved back to the standard rate. Customers can hit the usage cap due to circumstances that are mostly out of their control, such as an unusually cold winter or inefficient equipment in a rental unit. See Appendix C for more details on assistance programs offered by the large EDCs and the limits associated with these programs.

Assistance programs are funded through the universal service charge (USC) and a portion of volumetric rates on residential customer bills only (PA PUC 2019b). In a 2019 policy statement, the PUC recognized that that

[11] See Appendix C for details on individual programs.

energy burden is not solely a "residential class" problem, and that recovering these costs from all rate classes is appropriate. New Jersey, New York, and Maryland all recover costs for low-income energy assistance programs from both residential and commercial customer classes (DSIRE 2021a; DSIRE 2021b; LIHEAP Clearinghouse 2017).

Align Data Center Buildout With the State's Priorities

Wholesale electricity costs in PJM Interconnection have a direct impact on retail electricity prices in Pennsylvania. PJM is anticipated to see the highest load growth from data centers in the nation, with data centers projected to drive 28 percent of annual energy usage and 20 percent of peak load growth (Aquino and Specian 2026). While this poses a risk of higher utility bills, there are steps that the state can take to mitigate the impact while ensuring data centers provide benefits to local communities. Pennsylvania specifically can look to protect existing ratepayers in three ways: protecting ratepayers from paying for increased load from data centers, directing data centers to invest in programs that benefit those with the highest energy burdens, and investing in residential efficiency and demand response programs to offset impacts (Kane 2026).

Cost Allocations Protections

In May 2026, the PUC issued a model large-load tariff. While nonbinding, this model recommends that utilities charge large-load customers for any system upgrades that would not have been necessary "but for" the customer's new load, and for contributions to utility-administered hardship funds (Hagen-Frideriksen 2026). Pennsylvania lawmakers have proposed legislation that would build on this by directing the PUC to draft regulations protecting ratepayers from increasing energy costs due to data centers, requiring that 25 percent of electricity supplied to data centers comes from renewable sources, and that data centers curtail usage during grid emergencies (General Assembly of Pennsylvania 2026). Governor Shapiro also signed Executive Order 2026-05 requiring new data centers meet the Governor's Responsible Infrastructure Development (GRID) Requirements, including that "developers must pay the full cost of new electricity generation, transmission, distribution, and other infrastructure needed to power their project" (Press Office of Governor Shapiro 2026a). These efforts may curb the capacity price increases going forward.

Protections are also emerging at the utility level. In PPL's most recent rate case, they established a dedicated rate class for data centers, ensuring that costs associated with new data center load are allocated to those customers rather than spread across the broader customer base (PPL Electric Utilities Corporation 2026; Ryan 2026). The settlement also requires data centers to commit to operating for at least 10 years, which protects ratepayers from being left with stranded infrastructure costs if a facility closes earlier than anticipated, and additionally includes a voluntary interruptible service option.

Funding Low-Income Assistance Programs

Beyond cost allocation, both the state law and PPL rate case have proposed that data centers contribute to low-income energy assistance programs (Kane 2026). PPL's most recent rate case includes a provision requiring a large-load rate class to fund energy assistance programs (Phillips 2026). Similarly, legislation introduced by Pennsylvania lawmakers would require data centers to contribute to the Low Income Home Energy Assistance Program (LIHEAP) (Read 2025; General Assembly of Pennsylvania 2025a). This proposed legislation would mandate that data centers contribute to assistance programs. In the interim, rate cases like

PPL's can be a space to include similar provisions while something is enacted at the state level. Pennsylvania is not the only state looking to allocate funding to assistance programs. Minnesota enacted legislation requiring that data centers pay an annual fee of $2-5 million, scaled to the facilities' peak demand, to fund programs for low-income households (Minnesota Legislature 2025).

Investing in Residential Energy Efficiency and Demand Response Programs

Data center growth can also be a vehicle to invest in energy efficiency and demand response programs, treating households as grid resources (Rewiring America n.d.). Research has found that data centers could meet a third of their capacity needs and reduce generation costs by installing heat pumps in households that use inefficient electric heating, cooling, and water heating (Saul Rinaldi and Presley 2025; Rewiring America n.d.). In Pennsylvania specifically, 1.3 GW of the 3 GW of anticipated load from data centers could be met through converting homes with inefficient electric resistance to efficient heat pumps. Requiring data centers to invest in efficiency measures could reduce the strain their new load places on the grid while providing benefits to existing customers.

Conclusion

Electric bills for Pennsylvania residents and businesses have risen faster than inflation, despite usage decreasing. This means customers are using less energy but paying more for it. As shown through the analysis in this paper, different components are driving the increase in bills. From 2006 to 2025, T&D charges have steadily increased. From 2021 to 2025, generation was the largest bill component causing bills to rise. Increased T&D investments, generation and PJM capacity auction price spikes, and rapid data center-driven load growth are among the many factors contributing to rising electric costs.

Since 2008, energy efficiency programs have been a cost-effective resource for Pennsylvania ratepayers and an underutilized strategy to lower bills for more customers. Act 129 EE&C programs continue to deliver cost-effective energy efficiency savings and provide multiple benefits to residents of the state, with minimal impact on customer bills. However, Act 129 programs have been constrained by regulatory caps despite additional cost-effective potential available.

As the Commonwealth charts its energy future with affordability at the center, many strategies are available to help lower bills and enhance system reliability. Modern rate design, such as time of use rates, peak time rebates, and seasonal electric heating rates, help to align bills with the cost of serving customers. When designed well and paired with effective utility outreach and enrollment, modern rate design reform can lower rates for customers. Additionally, sustained investments in least-cost resources, including expanded energy efficiency and conservation programs, statewide deployment of demand response, and virtual power plants, can lower grid costs for all. The Commonwealth can also continue pressing for PJM market reforms and adopt data center protections that ensure new large loads do not shift their costs onto existing ratepayers and that their growth contributes to broader energy affordability. Taken together, these strategies offer a path toward an electric system that is more affordable, efficient, and resilient.

Appendix A—TOU Enrollment Data by Utility

EGS stands for electric generation supplier and EDC stands for electric distribution company. Table A-1 shows aggregated EGS participants in the TOU rates in years where EGS data was provided (2022-2024). Table A-2 shows the EDC data from 2010 through 2024.

Table A-1. ***Aggregate EGS Data for Years Available***

Year	Residential Accounts	Non-Residential Accounts	Total Accounts
2022	6,380	1,203	7,583
2023	1,409	581	1,990
2024	1,280	256	1,536

Source: In 2022 the reporting format changed to include TOU enrollment data from EGSs in addition to by EDC territory. EGS data is only required to be reported in aggregate (TUS 2023b); *TUS 2023b; PA PUC 2025c; TUS 2025a; TUS 2025b.*

Table A-2. ***Total Residential and Non-Residential Customers Enrollment in Opt-In Supply TOU Rates Since 2010***

Year	Duquesne	Met-Ed	PECO	Penelec	Penn Power	PPL	UGI	West Penn Power
2010	0	48,678	84,176	23,011	0	0	7	0
2011	0	46,389	78,823	21,585	0	3,825	6	0
2012	0	45,014	763	21,275	0	2,275	6	0
2013	0	43,585	0	20,215	0	1,682	6	0
2014	0	42,336	0	19,039	0	1,230	6	0
2015	0	0	0	0	0	0	6	0
2016	322	0	0	0	0	0	6	0
2017	0	0	0	0	0	0	6	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	280	0	0
2020	0	0	0	0	0	432	0	0
2021	155	0	544	0	0	508	0	0
2022	474	0	1,373	0	0	898	0	0
2023	847	0	2,264	0	0	869	0	0
2024	1,224	0	2,923	0	0	1,031	0	0

Source: PA PUC 2010-2024.

Table A-3. ***Total Residential and Non-Residential Customers Enrolled in Opt-in Supply TOU Rates Since 2010 as Percentage of Customer Base***

Year	Duquesne	Met-Ed	PECO	Penelec	Penn Power	PPL	UGI	West Penn Power
2010	0%	8.90%	5.36%	3.93%	0%	0%	0.01%	0%
2011	0%	8.45%	5.06%	3.68%	0%	0.27%	0.01%	0%
2012	0%	8.18%	0.05%	3.62%	0%	0.16%	0.01%	0%
2013	0%	7.88%	0%	3.46%	0%	0.12%	0.01%	0%
2014	0%	7.67%	0%	3.26%	0%	0.09%	0.01%	0%
2015	0%	0%	0%	0%	0%	0%	0.01%	0%
2016	0.06%	0%	0%	0%	0%	0%	0.01%	0%
2017	0%	0%	0%	0%	0%	0%	0.01%	0%
2018	0%	0%	0%	0%	0%	0%	0%	0%
2019	0%	0%	0%	0%	0%	0.02%	0%	0%
2020	0%	0%	0%	0%	0%	0.03%	0%	0%
2021	0.03%	0%	0.03%	0%	0%	0.04%	0%	0%
2022	0.08%	0%	0.08%	0%	0%	0.06%	0%	0%
2023	0.14%	0%	0.14%	0%	0%	0.06%	0%	0%
2024	0.20%	0%	0.17%	0%	0%	0.07%	0%	0%

Source: PA PUC, 2010-2024

Appendix B—TOU Rate Details

Utility	Rate Name	Supply or Distribution?	Seasonal?	Tech-Specific?	Peak Period	Super Off-Peak Period	Peak-to-Off-Peak Ratio	Peak-to-Super-Off-Peak Ratio	*Notes*
Duquesne	Duquesne TOU Supply Rate – Default Service	Supply	No	No	3-9 PM on weekends, excluding holidays	11 PM-6 AM every day	RS – 4.028 RH – 4.497 RA – 4.203	RS – 4.912 RH – 5.686 RA – 5.191	
Duquesne	EV TOU Distribution Rate Pilot Rider/ WholeHome EV TOU Distribution Rate	Distribution	RS – No; RH and RA – Yes	Must have an EV, but applies to whole home electricity usage	3-9 PM on weekdays, excluding holidays	None	RS – 1.249 RH Winter – 1.250 RH Summer – 1.251 RA Winter – 1.249 RA Summer – 1.251	None	*Available for up to 1,500 customers*
Met-Ed	Met-Ed TOU Default Service Rider	Supply	No	No	2-9 PM, weekdays	11 PM-6 AM every day	2.032	2.745	*Non-CAP residential and small commercial customers only*
Penelec	Penelec TOU Default Service Rider	Supply	No	No	2-9 PM, weekdays	11 PM-6 AM every day	1.980	2.580	
Penn Power	Penn Power TOU Default Service Rider	Supply	No	No	2-9 PM, weekdays	11 PM-6 AM every day	1.835	2.464	
West Penn Power	West Penn Power TOU Default Service Rider	Supply	No	No	2-9 PM, weekdays	11 PM-6 AM every day	1.949	2.644	
PECO	PECO Time of Use Pricing	Supply	No	No	2-6 PM weekdays, excluding holidays	12 AM-6 AM every day	4.208	6.060	
PPL	PPL Time of Use Plan	Supply	June 1 to November 30	No	2-6 PM weekdays, excluding holidays	None	1.167	None	
			December 1 to May 31		4-8 PM weekdays, excluding holidays		1.167		

RS = Residential Service RH = Residential Heating RA = Residential Service With Add-On Heat Pump

Source: Peak-to-Off-Peak-Ratio: The ratio of the peak volumetric rate over the off-peak volumetric rate. When designing rates to encourage customers to shift their energy usage, research shows that a peak-to-off-peak ratio of 4-to-6 times higher for peak versus off-peak usage can provide a strong incentive for customers to shift load (Sergici et al. 2020); Duquesne Light Company. n.d. b. "Time of Use Supply Rate - Default Service." Duquesne Light. Accessed May 19, 2026. https://www.duquesnelight.com/energy-money-savings/electric-vehicles/charge-smart-and-save/time-of-use-supply-rate#undefined; Duquesne Light Company. 2026. "Schedule of Rates for Electric Service in Allegheny and Beaver Counties." March 20. Accessed May 19, 2026. https://duquesnelight.com/service-reliability/service-map/rates/tariff-resources ; FirstEnergy. n.d. "PA Time-Of-Use Pricing." First Energy Corp. Accessed May 19, 2026. https://www.firstenergycorp.com/help/pa-time-of-use-pricing.html; PECO Energy Company. n.d. "Time-Of-Use Pricing." PECO. Accessed May 19, 2026. https://www.peco.com/smart-energy/innovation-technology/time-of-use-pricing?linkId=232118657.

Appendix C—Customer Relief Programs From Large EDCs in Pennsylvania and Maximum Annual Credit Limits on Assistance Programs

Table C-1. ***Customer Electricity Bill Assistance Programs Available in Pennsylvania***

Implementer	Percentage of Income Payment Plans	Budget Billing	Arrearage Management Program	Customer Relief/ Hardship Fund Programs
Duquesne	Customer Assistance Program	Budget Billing	Customer Assistance Program	Dollar Energy Fund
First Energy Utilities: Met-Ed, Penelec, Penn Power, West Penn Power	Customer Assistance Program	Equal Payment Plan	Customer Assistance Program	Dollar Energy Fund
PPL	Customer Assistance Program (OnTrack)	Budget Billing	Customer Assistance Program (OnTrack)	Operation HELP
PECO	Customer Assistance Program	Budget Billing	Customer Assistance Program	Matching Energy Assistance Fund

Source: Brown, Abigail, Erin Cosgrove, and Luke Miller. 2025. "Modern Rate Design in the Northeast: Unlocking Efficiency, Affordability, and Electrification." Northeast Energy Efficiency Partnerships. December. Accessed May 18, 2026. https://neep.org/sites/default/files/media-files/neep_modern_rate_design.pdf.

Table C-2. ***Maximum Annual Credit Amounts for CAP Programs Offered by Electric Utilities in Pennsylvania***

Non-Heating Customers			
Utility	**Max CAP (0-50% FPIG)**	**Max CAP (51-100% FPIG)**	**Max CAP (101-150% FPIG)**
Duquesne	$1,700	$1,500	$1,000
First Energy	$2,345	$1,719	$1,355
PECO	$3,016	$2,125	$1,925
PPL	$1,950	$1,500	$1,250

Heating Customers			
Utility	**Max CAP (0-50% FPIG)**	**Max CAP (51-100% FPIG)**	**Max CAP (101-150% FPIG)**
Duquesne	$2,500	$2,000	$1,400
First Energy	$3,282	$2,449	$1,771
PECO	$4,284	$2,845	$2,541
PPL	$3,150	$2,500	$2,150

FPIG = Federal Poverty Income Guidance CAP = Customer Assistance Program

Source: Commonwealth of Pennsylvania. n.d. "Title 52, Chapter 69, 52 Pa. Code § 69.265. CAP design elements." Pennsylvania Code. Accessed May 19, 2026. https://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/052/chapter69/s69.265.html; Duquesne Light Company. 2022c. "Universal Services and Energy Conservation Plan 2020-2025." PA PUC. June 28. Accessed May 19, 2026. https://www.puc.pa.gov/media/2014/duquesne_usecp_2020-2025.pdf; First Energy. 2025. "Fifth Amended Joint Universal Service & Energy Conservation Plan: Program Year 2024-2028." PA PUC. April 30. Accessed May 19, 2026. https://www.puc.pa.gov/media/3481/fe_usecp_2024-28_rev050125.pdf; PECO Energy Company. 2025. "PECO Energy Company Universal Service and Energy Conservation Plan 2019 to 2028 Universal Service and Energy." PA PUC. May 1. Accessed August 26, 2026. https://www.puc.pa.gov/pcdocs/1877425.pdf; PPL Electric Utilities. 2023b. "PPL Electric Utilities Corporation Universal Service and Energy Conservation Plan (USECP) 2023-2027." PA PUC. March 13. Accessed May 19, 2026. https://www.puc.pa.gov/media/2407/ppl_further_revised_2023-27_usecp.pdf.

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