

ANALYSIS OF THE REACH OF THE ACT 129 ENERGY EFFICIENCY AND CONSERVATION PROGRAM TO LOW-INCOME MULTIFAMILY HOUSING

Review of Program Year 10, Phase 3; April 27, 2020



Housing Alliance
of Pennsylvania

About the Housing Alliance of Pennsylvania

We are a statewide coalition working to provide leadership and a common voice for policies, practices and resources to ensure that all Pennsylvanians, especially those with low incomes, have access to safe, decent and affordable homes. We promote commonsense solutions to balance Pennsylvania's housing market and increase the supply of safe, decent homes for low-income people.

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Executive Summary

The Housing Alliance of Pennsylvania is the statewide advocacy organization for affordable housing for low-income families. Multifamily housing is a critical part of the housing stock for low-income families – both in the forms of publicly subsidized housing and market rate housing. The purpose of this study was to understand the proportion of the low-income multifamily housing stock that has benefitted from the Act 129 Energy Efficiency and Conservation (EE&C) program during Program Year 10, Phase III.

Low-income households spend a greater portion of their incomes on energy costs, restricting their ability to meet other needs, such as food and education. Across the country,

More than half of all Americans now pay more than 30 percent of their income on rent and utilities, while millions more pay as much as half of their earnings on rent and utilities. Low-income families spend 20% or more of their income on energy alone.¹

Across Pennsylvania, households with incomes below 50 percent of the poverty level spend between 30 to 40 percent of their income on their energy bills. The Housing Alliance supports solutions that reduce housing costs in a responsible manner, so that families may also meet other critical financial needs such as healthcare, education, and food. The EE&C solutions can reduce energy usage and therefore, energy bills, and we want to make sure these valuable benefits are being implemented in low-income multifamily homes.

As an advocacy organization for programs and resources to support low-income families, it is important for us to know:

- What energy efficiency and conservation programs are offered to low-income families?
- If low-income families are accessing these programs and benefits and to what degree?
- If extremely low-income families and those accessing public housing assistance programs are benefitting from those energy efficiency and conservation programs?

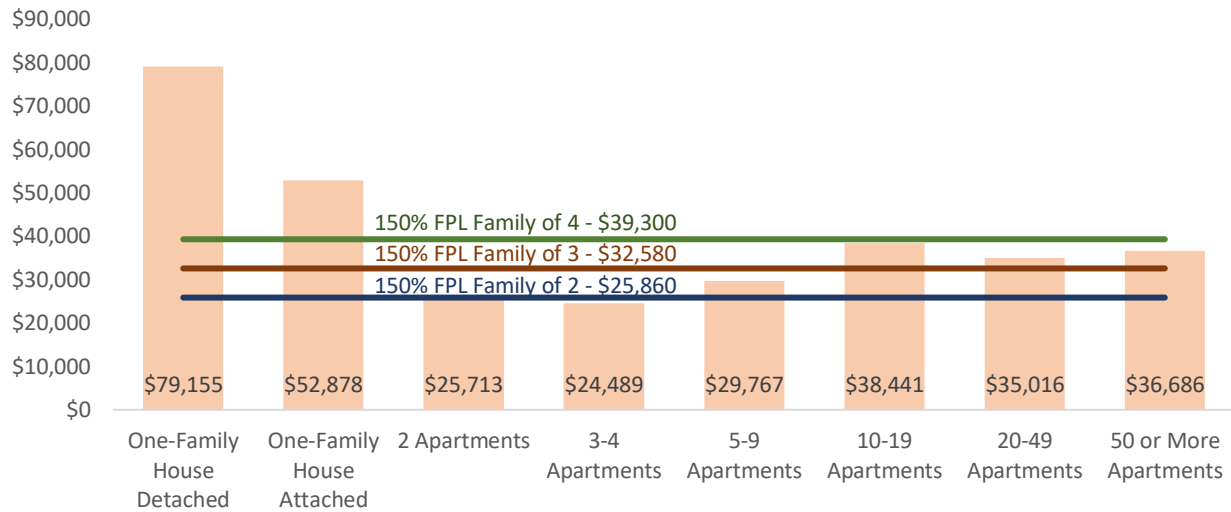
Key Findings and Recommendations

Housing and Demographics in Pennsylvania

There is significant income disparity between those living in multifamily housing and single-family housing. The average household income in a single family, detached home is \$79,155. Depending on the number of units in the building, average household incomes range from \$24,489 to \$38,441 in multifamily buildings. The definition of low-income for the purposes of the Act 129 energy efficiency and conservation program is a household at or below 150% of the federal poverty level. The average income for multifamily units in the state is approximately 150% of the poverty level, family size dependent, which qualifies them for the low-income programs under Act 129.

¹ Source: Energy Efficiency for All

Figure 1: Average Household Income by Number of Units in Building Compared to 150% Federal Poverty Level (FPL) by Family Size



Source: U.S. Census, PUMS Beta Microdata Sets, 2014-2018 American Community Survey Five Year Average; U.S. Department of Health and Human Services (2020)

Low-income households also face a split-incentive problem. They're much more likely to rent compared to wealthier families, and in almost all cases, the renter pays the utility bill. That means, on one hand, renters can't make efficiency upgrades because they don't own the property. Landlords, on the other hand, don't have an incentive to pay for upgrades that would only save their tenants' money.²

Reporting on Multifamily Energy Efficiency and Conservation Programs

We respectfully recommend that the Public Utility Commission (PUC) provide additional direction to the EDCs that will enhance the transparency of their efforts to provide EE&C solutions to affordable multifamily housing in the state. Without standardized reporting, we do not know to what extent those living with the lowest incomes in the state are benefitting from the EE&C solutions. We believe the EE&C programs are valuable, especially to low-income households. We have two specific recommendations regarding the reporting of multifamily solutions.

Along with the targets for low income consumers, a priority for addressing multifamily housing was recommended in Phase III. Each EDC has multifamily programs and across all, appear to have considerably increased the participation in them. However, the EDC's reporting of the solutions implemented at multifamily units varies. In some instances, the number of multifamily dwelling units are not tracked and only the number of buildings are tracked. In other instances, the multifamily participation, by unit or building, is not separated from reporting on other units or buildings in the same building class. Therefore, we cannot comment on the progress made in providing EE&C solutions to low-income families living in multifamily housing.

² Spector, Julian, et al. "Where America's Poor Pay the Most for Electricity." CityLab, 14 Apr. 2016, www.citylab.com/equity/2016/04/electricity-bills-by-city-low-income-costs/478155/.

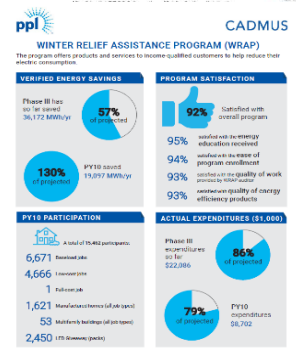


We acknowledge that tracking multifamily solutions is challenging due to their different customer segments, master and individual-metering, the type of ownership, and confirmation of income levels. The independent evaluation contractors that confirm and verify the energy savings reported by each EDC found differences with the reporting of the solutions provided to multifamily units including potential double counting between multifamily and single-family units and lack of data captured on multifamily units where solutions were implemented.

Recommendation 1: Consistent, Standardized Reporting of Multifamily Solutions in the Annual Report

Based on the lack of consistent data capture and reporting of the different solutions provided to multifamily units, the original purpose of this study, to estimate how much of the multifamily market is being reached and how much of those solutions are being provided to housing restricted to low-income families is inconclusive. In the required annual and semi-annual reports, the EDCs provide varying levels of reporting on multifamily units where solutions were implemented. Some EDCs reported by individual unit, others by building, and some do not break out the multifamily units at all within their building classes. We recommend:

- In the participation counts for the low-income and general population programs, report by multifamily unit for in-unit solutions regardless of customer segment
- In the participation counts for the low-income and general population programs, report building counts for in-unit solutions regardless of customer segment
- In the participation counts for the low-income and general population programs, report building counts for common area solutions and/or whole building system solutions



Recommendation 2: Report on Solutions Implemented at Publicly Subsidized Housing

This recommendation has two parts. First, we request that aggregate information on number of units and buildings on solutions implemented in multifamily publicly subsidized housing be reported. This would include, but not be limited to public housing authority owned and managed properties and properties with low income housing tax credits.

Second, where granted permission, we also believe it is important to specifically name the housing authorities and developments where the EE&C solutions were implemented. All of the EDCs hold periodic stakeholder meetings, reporting on their progress, successes and challenges. We believe this specific information, which can be presented as case studies, can be presented at the stakeholder meetings. The main purpose for this is to use this type of reporting to influence more owners and managers of subsidized multifamily housing to seek out the EE&C solutions.

Introduction

There is significant income disparity between those living in multifamily housing and single-family housing. The average Pennsylvania household income in a single family, detached home is \$79,155. Depending on the number of units in the building, average household incomes range from \$24,489 to \$38,441 in multifamily buildings. Put in other words, households in multifamily housing have incomes less than half of the incomes of persons living in single-family detached housing. The definition of low-income for the purposes of the Act 129 energy efficiency and conservation program is a household at or below 150% of the federal poverty level. The average income for multifamily units in the state is approximately 150% of the poverty level, family size dependent, which qualifies them for the low-income programs under Act 129.

In Pennsylvania, electricity distribution companies (EDCs) with at least 100,000 customers must develop and file energy efficiency and conservation (EE&C) plans under PA Act 129 of 2008 with the Public Utility Commission (PUC). The seven EDCs subject to the Act 129 EE&C, have an overall energy savings target they must meet and a portion of that (5.5%) by delivering solutions to low-income housing units. The EDCs report their energy targets, savings, and treatment programs by building class categories. The methods to achieve the savings targets are not overly prescriptive and the reporting measures vary beyond the standard requirements for total and low-income household energy targets and energy savings within each EDCs EE&C programs. The EE&C program has evolved since its implementation in 2009. Now, in Phase III of the program which will end on May 31, 2021 and looking to Phase IV, we are evaluating the program in terms of its penetration into the multifamily housing program, specifically publicly subsidized housing.

The seven EDCs regulated by Act 129 are:

- Duquesne Light Company (Duquesne)
- First Energy: Metropolitan Edison Company (FE: Met-Ed)
- First Energy: Pennsylvania Electric Company (FE: Penelec)
- First Energy: Pennsylvania Power Company (FE: Penn Power)
- First Energy: West Penn Power Company (FE: West Penn)
- PECO Energy Company (PECO)
- PPL Electric Utilities (PPL)

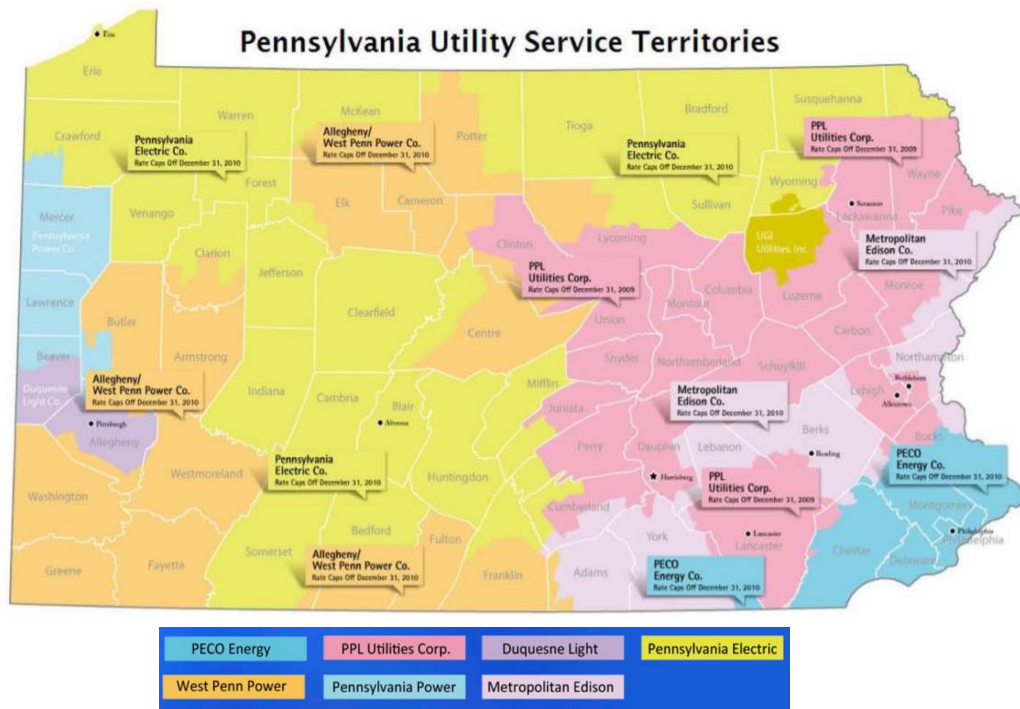
The seven EDCs provide service to most of the state (99% of the state's residential customers).

Figure 2: Number of Pennsylvania Customers

EDC	Residential	Commercial	Industrial	Transportation	Total
Duquesne	537,706	60,927	1,083	1	599,717
FE: Met-Ed	502,110	66,981	891	0	569,982
FE: Penelec	501,456	84,609	826	0	586,891
FE: Penn Power	145,285	20,742	155	0	166,182
FE: West Penn	623,197	102,298	1,149	1	726,645
PECO	1,475,949	161,742	3,118	3	1,640,812
PPL	1,257,082	179,870	3,606	1	1,440,559

Source: U.S. Energy Information Administration, Sales Utility Customers, 2018

Figure 3: Pennsylvania Utility Service Territories³



Source: Avalon Energy Consultants, Liberty Power PA

Method and Purpose

The original purpose of this study was to research the multifamily market penetration by compiling the number of multifamily units treated by each utility and comparing them to the total multifamily units in the state. Since the EDCs are also working with public housing authorities and other subsidized housing developments we also compiled data on the total number of publicly funded affordable units in the state to see if we could calculate the portion of the publicly subsidized multifamily housing market that benefited from EE&C programs.

We focused specifically on Program Year 10, June 1, 2018 – May 31, 2019, in Phase III since that is the most recent complete year of data and there was a push for implementing solutions in multifamily units in Phase III. Based on the participant definitions in the annual reports, Phase III participant numbers, where reported, have the potential of counting the same unit multiple times if energy efficiency and conservation solutions were implemented in different program years of a given phase.

Study Limitations

We experienced limitations in this study, which we believe can mostly be overcome in future iterations with data directly from the EDCs, if it exists. As we will show later in this study, we were unable to find the data needed for this study in the EDCs annual reports to the PUC and in the EDCs regularly-held stakeholder presentations. It is these limitations that formed the basis for the recommendations listed in the executive summary of this study.

³ See the Appendix for the list of counties served by each EDC

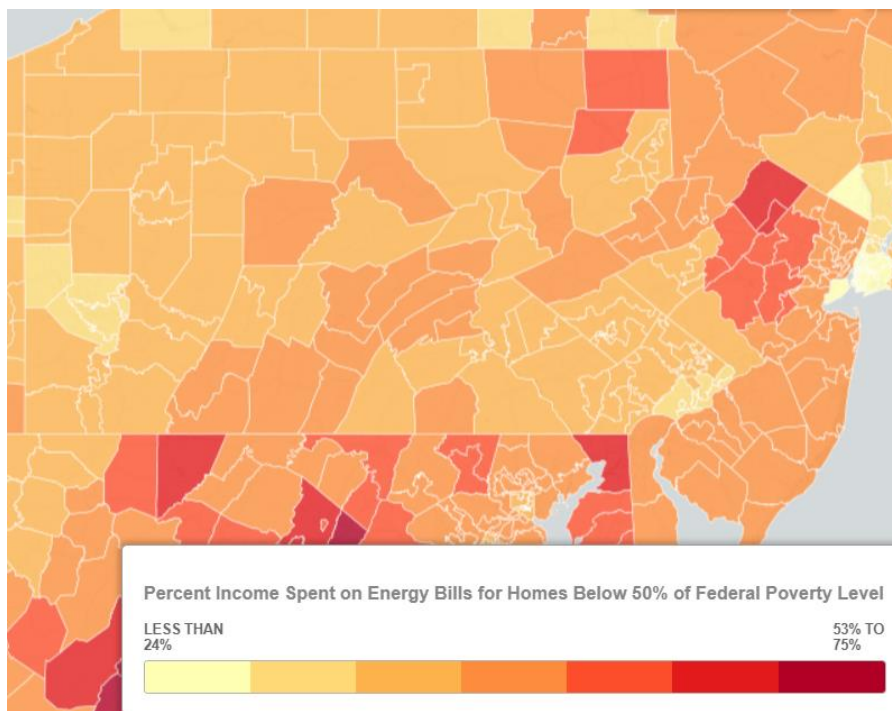
The Importance of Energy Efficiency and Conservation for Low-Income Households

Low-income households spend a greater portion of their incomes on energy costs, restricting their ability to meet other needs, such as food and education. Across the country,

More than half of all Americans now pay more than 30 percent of their income on rent and utilities, while millions more pay as much as half of their earnings on rent and utilities. Low-income families spend 20% or more of their income on energy alone.⁴

Across Pennsylvania, households with incomes below 50 percent of the poverty level spend between 30 to 40 percent of their income on their energy bills.

Figure 4: Percent of Income Spent on Energy Bills by Households at or below 50% of the Federal Poverty Limit



Source: InsideEnergy.org (2016)⁵

The EDCs have explicit low-income targets, which are a portion of the overall energy savings targets. The total energy savings targets are different by each EDC since they each serve a different number of customers with different building types, ages, and energy requirements. For the purpose of their EE&C plans, low-income households are defined as households with incomes at or below 150 percent of the federal poverty level. Regardless of building class/customer segment, the EDCs can count the solutions implemented in low-income multifamily units to their overall low-income compliance targets.

⁴ Source: Energy Efficiency for All

⁵ Boyce, Dan, and Jordan Wirfs-Brock. "High Utility Costs Force Hard Decisions For The Poor." Inside Energy, 28 Dec. 2016, <http://insideenergy.org/2016/05/08/high-utility-costs-force-hard-decisions-for-the-poor/>

Figure 5: 2020 Federal Poverty Limit and 150% of the Federal Poverty Limit

Persons in Household	150% of Federal Poverty Guideline
1	\$19,140
2	\$25,860
3	\$32,580
4	\$39,300
5	\$46,020
6	\$52,740
7	\$59,460
8	\$66,180

Source: U.S Department of Health and Human Services (2020)

Along with the targets for low income consumers, during the development of the Phase III Implementation Order, there was a recommendation to prioritize multifamily units and have a separate carve out for multifamily units similar to the low-income and government, nonprofit, institutional (GNI) carve outs. While the effort to create a multifamily carve-out was unsuccessful, it brought renewed attention to the multifamily sector. According the Phase III Final Implementation Order.

Multifamily housing remains a difficult segment to reach...multifamily housing represented 11.8% of the base achievable savings within the residential sector, when reviewing the base achievable savings by housing type. The [statewide evaluator] SWE did not provide any further analysis of multifamily housing in its [energy efficiency] EE Potential Study, so it was not possible to determine an accurate picture of the true potential across all sectors. Therefore, the Commission did not propose the establishment of specific savings or budgetary carve-outs for multifamily housing for Phase III.

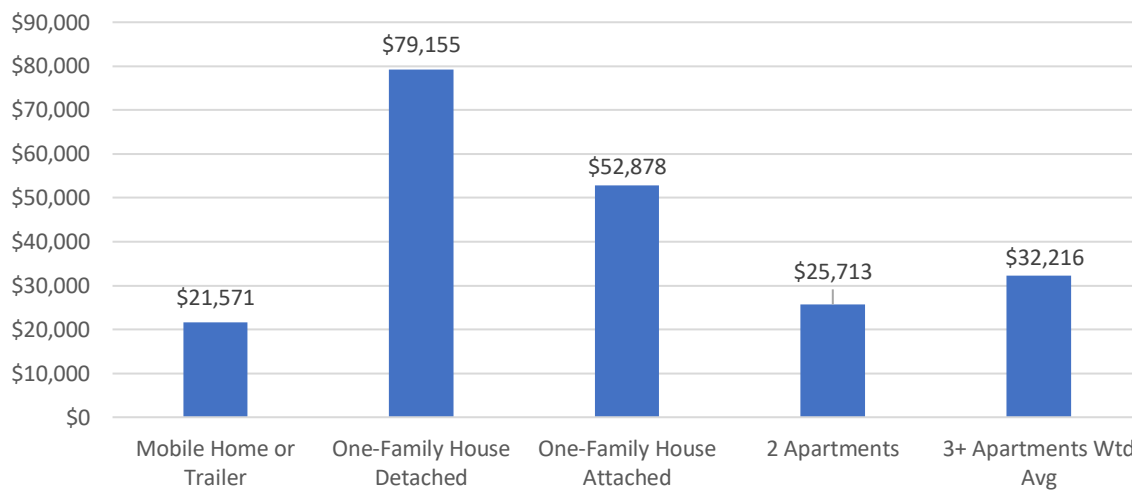
For purposes of the EE&C plans, the PUC defines multifamily as, “having more than one unit, and bigger than a duplex (or 1-family attached unit.)” For the purposes of this analysis, using data from the U.S. Census, we defined multifamily as three or more apartments to avoid capturing duplexes.

The EDCs have multifamily programs and continued them into Phase III. Due to the different customer segments/building classes that multifamily housing falls under, varying ownership structures, and the variety of the types of programs and reporting carried out by the EDCs, their reach into the multifamily market, and in particular, publicly assisted housing units, is difficult to determine from their public reports. The annual reports are not explicit in terms of requirements for reporting on of the multifamily housing solutions and types of multifamily housing in which energy efficiency solutions were made and their stakeholder reports vary in what content is presented.

Multifamily Housing in Pennsylvania

In Pennsylvania, 16 percent of the housing stock (906,859 housing units) is multifamily housing. Of all of the multifamily housing, 80 percent are rentals (721,009).⁶ Families living in in multifamily housing have lower incomes than families living in single family housing – a weighted average across all multifamily units types (3+ units in a building) is \$32,216 compared to \$79,155 in single family detached homes and \$52,878 in single family attached homes. The lowest average household income is in buildings with three to four apartments at \$24,489. These apartments meet the EE&C plans’ low-income definition for families of two or more (\$25,860). All of the multifamily units meet the definition of low-income for families of four or more (\$39,300).

Figure 6: Average Income by Multifamily Units in Structure, Pennsylvania, 2018



Source U.S. Census, 2014-2018 American Community Survey Five Year Average - Public Use Microdata Sample

Subsidized Housing in Pennsylvania

In Pennsylvania, there are 42 affordable and available rental homes per 100 extremely low-income renter households.⁷ Of the 5,673,599 housing units in Pennsylvania, 221,065 or 4% of total units, are U.S. Department of Housing and Urban Development (HUD) supported units, and 119,110 or 2% of all units, are Pennsylvania Housing Finance Agency (PHFA) funded units.⁸ The 119,110 PHFA funded units are across 1,922 properties – or an average building size of 62 units. Data on multifamily units in HUD supported units exists in the American Housing Survey, but we were unable to access it in their online table creator.

⁶ Source: U.S. Census, 2014-2018 American Community Survey Five Year Average - Public Use Microdata Sample

⁷ Source: National Low Income Housing Coalition, The Gap Report, Pennsylvania, 2018

⁸ See Appendix for more information on HUD and PHFA supported units



Due to restricted rents, certain building specifications, and required service offerings, affordable housing developers typically need multiple funding source to achieve an acceptable return on investment to build. They often seek out several different public funding sources and therefore, can have both HUD administered and PHFA administered funding sources in their capital stack. For instance, projects that receive Federal low-income housing tax credits (LIHTC) through PHFA may also apply to the local housing authority for project based vouchers or accept housing choice vouchers. Therefore, there can be overlap between the 221,065 HUD supported units and the 119,010 units, so we do not present them as one combined figure.

Figure 7: Total Housing Units, HUD Supported Units, and PHFA Supported Units, Pennsylvania, 2018, 2019

	2019 HUD Programs	2019 PHFA Units	2018 Total Housing Units
Total Pennsylvania	221,065	119,010	5,673,599
As a portion of all PA housing units	4%	2%	

Source: HUD Programs - HUD User PD&R dataset, Assisted Housing (2019), National and Local (accessed February 2020), PHFA Renter, PHFA Rental Housing Inventory (2019), U.S. Census, 2014-2018 American Community Survey Five Year Average

Estimating Multifamily and Subsidized Housing Units by EDC

The number of multifamily housing units that are served by each EDC are not readily available (we assume this data is publicly available, however we were unable to locate it). However, using U.S. Census Data, we have the number of multifamily units per county. As previously mentioned, 16 percent of the total housing stock in Pennsylvania is multifamily housing. The portion of the housing stock that is multifamily housing varies by county. At either extreme, one percent of the housing stock is multifamily housing in Forest County compared 26 percent of the housing stock in Centre County. See the Appendix for more data on the proportion of housing that is multifamily housing per county.

Since we have the breakdown of the number of multifamily units by county, we estimated the number of multifamily units in each EDC’s service territory. We didn’t have the proportion of customers that each EDC serves in counties where more than one EDC operates. In counties where multiple EDCs operate, we split the customers evenly between each EDCs.

Similarly, we have the breakdown of HUD and PHFA supported housing by county. Again, we didn’t have the proportion of customers that each EDC serves in counties where more than one EDC operates. For ease of analysis, we followed the same method we used for the multifamily housing and in counties where multiple EDCs operate, we split the customers evenly between each EDCs.⁹

⁹ We acknowledge that these seven EDCs serve 99% of all residential customers in the state. Our estimates of multifamily, HUD and PHFA customers have them serving 100% of those customers. Given the relatively small number of customers the other EDCs serve, the assignment of multifamily, HUD and PHFA housing to these EDCs is also relatively small. Therefore, the proportion of these housing types we have assigned to the seven EDCs subject to Act 129 would not be substantially different should we appropriately account for the proportion of those housing types served by non-Act 129 regulated EDCs.



Figure 8: Estimate of Multifamily and Subsidized Housing Units per EDC

EDC	Multifamily Housing Units Estimate	Proportion of Multifamily Units	HUD Units Estimate	Proportion of HUD Units	PHFA Units Estimate	Proportion of PHFA Units
Duquesne	47,873	5%	13,607	6%	7,918	7%
FE: MedEd	120,679	13%	20,252	9%	12,267	10%
FE: Penelec	85,550	9%	25,639	12%	11,879	10%
FE: Penn Power	65,871	7%	20,732	9%	11,650	10%
FE: West Penn	106,232	12%	31,495	14%	17,162	14%
PECO	273,435	30%	61,303	28%	33,412	28%
PPL	203,901	23%	48,036	22%	24,723	21%
Total Units in PA	903,540		221,065		119,010	

Source: U.S. Census, 2014-2018 American Community Survey Five Year Average - Public Use Microdata Sample; HUD Programs - HUD User PD&R dataset, Assisted Housing (2019), National and Local (accessed February 2020), PHFA Renter, PHFA Rental Housing Inventory (2019)

*numbers may not add up exactly due to rounding

Multifamily Solutions Implemented by Each EDC in Program Year 10

For the purposes of this report, we used the participation numbers as reported by the EDCs. We understand that differences were found in the reporting and suggestions were made by the independent evaluation contracts for improved, comprehensive multifamily unit data capture. Without knowing the scale that these findings have on the numbers reported by the EDCs, we are relying on the EDCs reported participation numbers.

This section highlights the need for guidance for clear reporting by the EDCs on participation by low-income multifamily households in the EE&C program. As will be seen, the reporting differs considerably across all seven EDCs in their annual reports to the PUC and in their stakeholder meetings.

Duquesne

Duquesne specifically mentions its plan to partner with public housing authorities in its Phase III Plan. It states, “The program is operated in conjunction with the Public Agency Partnership Program (PAPP) that serves as a conduit to housing authority property inventories.” Like all of the EDCs, in the standardized Act 129 reporting and the stakeholder presentations, the specifics of the public housing authorities the EDC has worked with and has reached out to are not listed.

Duquesne has a multifamily housing retrofit program as part of its Small Commercial and Industrial program. It lists 18 multifamily building participants in Program Year 10 and 25 total multifamily buildings participating in Phase III. Data at the dwelling unit level was not readily available. Duquesne’s Program Year 10 Annual Report acknowledged this in its recommendations from Navigant.

Figure 9: Duquesne – Program Year 10 and Phase III Multifamily EE&C Participants

Reporting Unit	Program Year 10	Phase III
Multifamily Buildings	18	25
Multifamily Units	Not Reported Separately	Not Reported Separately

Source: Navigant, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for: Duquesne Light Company

First Energy Companies

The four EDCs operating under First Energy, in its regular Act 129 reporting, do not break out the multifamily units separately from the other units they treat. Their multifamily solutions fall under their residential low-income solutions. They market to landlords and building owners of master and individually metered buildings with income-qualified tenants and offer dwelling unit and common areas energy efficiency and conservation solutions. The results of these specific efforts are not reported.

Figure 10: First Energy Companies – Program Year 10 and Phase III Multifamily EE&C Participants

Reporting Unit	Program Year 10	Phase III
Multifamily Buildings	Not Reported Separately	Not Reported Separately
Multifamily Units	Not Reported Separately	Not Reported Separately

Source: ADM Associates and Tetra Tech, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for: Metropolitan Edison Company M-2015-2514767, Pennsylvania Electric Company M-2015-2514768, Pennsylvania Power Company M-2015-2514769, West Penn Power Company M-2015-2514772

PECO

Multifamily solutions fall under PECO’s residential, Small Commercial and Industrial (C&I) and Large C&I customer segments. PECO reports dwelling unit numbers under the residential category and building numbers under its Small C&I and Large C&I categories. Therefore, we know a portion of the multifamily units treated, but not all of them. PECO provided more data on its multifamily solutions including its common area solutions in its stakeholder reports.¹⁰

¹⁰ In its November 19, 2019 report, PECO reported, “Large C&I Multifamily Solution - 10,272 units treated, 19 common areas treated, 53 prescriptive/custom incentives...Small C&I Multifamily Solution - 4,497 units treated, 184 common areas treated, 84 prescriptive/custom incentives processed.” PECO also reported, 1,000 Residentially Metered and 30 Commercially Metered Multi-Family Properties with in unit and common space electric EE measures installed including housing authorities in Bucks, Chester, Delaware and Philadelphia counties.” However, since it is not entirely clear what the reporting period is, these numbers are not included in the table.



Figure 11: PECO – Program Year 10 and Phase III Multifamily Participants

Reporting Unit	Program Year 10	Phase III
Multifamily Units - Residential	9,817	20,444
Buildings – Small C&I	117	353
Buildings - Large C&I	48	120

Source: Navigant, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for PECO

PPL

PPL reports its Winter Relief Assistance Program (WRAP) multifamily participants under the GNI and Small C&I customer segments. PECO reports the number of buildings that participated, and in its annual report, the author, Cadmus, reported the number of tenant units that comprised the 53 master metered units treated. PPL also provided energy efficiency kits to multifamily households in individually metered units, but we do not have a breakdown between the single family and multifamily households that received those kits. Similar to PECO, PPL provided more details on its multifamily solutions in its stakeholder reports.¹¹

Figure 12: PPL – Program Year 10 and Phase III Multifamily Participants (in WRAP)

Reporting Unit	Program Year 10	Phase III
Master Metered Building - GNI	41	Not Reported Separately
Master Metered Building – Small C&I	12	Not Reported Separately
Master Metered Units	2,267	Not Reported Separately
Individually Metered Building - GNI	1	Not Reported Separately

Source: Cadmus, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for: PPL Electric Utility

Market Penetration of EE&C Programs to Multifamily Market Segment

The original purpose of this study was to estimate the penetration of the EE&C solutions into the multifamily market, with a focus on publicly subsidized housing. However, with lack of consistent reporting, we were unable to fully conduct our analysis and we only have a glimpse as to the multifamily market penetration of these programs. In their Phase III plans and their stakeholder reports, we know the EDCs planned to and are working with public housing authorities, but we do not know to what extent the EE&C solutions are being delivered to low-income households across Pennsylvania.

We have Program Year 10 multifamily unit data for two of the EDCs, obtained from their Program Year 10 annual report – PECO and PPL. PECO also included Phase III multifamily unit data in their annual report. PPL included all multifamily units treated through the Act 129 program in their January 2020 stakeholder report. Given the need for guidance for definitions and reporting multifamily unit data, we estimate the portion of the multifamily market reached for each of these two EDCs. In regards to

¹¹ In its January 7, 2020 stakeholder report, PPL reported, “Significant increase in MF penetration compared to Phase I - Increased participation; 14,012 units completed; Phase II: 1,400 completed in 3 years, Master meter multi-family housing- Jobs –4,858 units, Total buildings -524 at 87 facilities, Most have been in GNI, but not all (approx. 76/24 split of GNI vs. CI).” However, since it is not entirely clear what the reporting period is, these numbers are not including in the table.

publicly subsidized housing receiving EE&C solutions, we approached this analysis as a potential, what could be, if all of the multifamily units treated were publicly subsidized housing.

Multifamily Market Penetration

For this analysis, we compared the number of multifamily unit solutions delivered in Program Year 10 by PECO and PPL to our estimates of multifamily housing units in each EDC territory. Based on the unit data provided in the Program Year 10 report, PECO delivered multifamily solutions to an estimated four percent of its multifamily customers, and PPL reached one percent of its multifamily customers. Using its reported Phase III unit data, PECO reached seven percent of its multifamily market. Using its reported units in its stakeholder report, which we assume represents the entirety of the Act 129 timeline, coincidentally, PPL reached seven percent of its entire multifamily market so far.

Figure 13: Reported Program Year 10, Phase III, and Total Delivered Solutions To Multifamily Segment

EDC	PY10 Multifamily Unit Solutions	PY10 Multifamily Buildings Solutions	Phase III Multifamily Unit Solutions	Phase III Multifamily Building Solutions	Act 129 Total Multifamily Unit Solutions
PECO	9,817	165	20,444	473	
PPL	2,267	54			14,012

Source: Navigant, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for PECO; Source: Cadmus, Final Annual Report to the Pennsylvania Public Utility Commission, Phase III of Act 129, Program Year 10 (June 1, 2018 – May 31, 2019) Energy Efficiency and Conservation Plan Prepared for: PPL Electric Utility; PPL Energy Efficiency; Update PPL Stakeholder Meeting January 7, 2020

Figure 14: Estimated Multifamily Market Segment Receiving EE&C Solutions

EDC	Estimated Multifamily Units in EDC Territory	PY10 Multifamily Unit Solutions	Portion Treated in PY10	Phase III Multifamily Unit Solutions	Portion of Treated in Phase III	Act 129 Total Multifamily Unit Solutions	Portion Treated Across all Phases
PECO	273,435	9,817	4%	20,444	7%		
PPL	203,901	2,267	1%			14,012	7%



A Hypothetical Scenario

We do not know the portion of multifamily solutions that were delivered to publicly subsidized housing. But what if, all of the units that PECO and PPL treated were HUD or PHFA supported units? What if all the EDCs focused their multifamily outreach first on the publicly subsidized buildings? What would this market penetration look like – even just using PECO and PPL’s reported numbers?

For instance, if the EDCs focused their multifamily efforts on buildings owned and managed by public housing authorities, based on Program Year 10 multifamily unit numbers – 16 percent of the HUD funded units in PECO’s territory and five percent of HUD funded units in PPL’s territory – could be treated in one year. Similarly, if all of the units targeted were PHFA supported units, such as buildings receiving LIHTC, 29 percent of those buildings in PECO’s territory could be treated in one year, and 9 percent in PPL’s territory could be treated in one year.

Publicly subsidized housing is restricted to households at or below 80 percent of the Area Median Income with nearly two-thirds considered extremely low-income (National Housing Law Project, 2016). EE&C solutions at publicly subsidized housing provides multiple benefits to multiple parties, increasing the importance of implementing these solutions at publicly subsidized multifamily properties.

- EE&C solutions are an important part of asset (building) management and maintenance, helping the building remain in good condition and serve more households.
- EE&C solutions can impart cost savings to the building owners so that they may focus their investments on other building maintenance and upgrades.
- EE&C solutions can impart cost savings to the tenants, many who are extremely-low income and have little, if any, funds to spend on other important social determinants of health, including healthcare, education, and food.

It is for these reasons that we believe there should be continued implementation of EE&C solutions at multifamily publicly subsidized housing with explicit reporting on EE&C solution implementation at these properties.

Figure 15: Portion of HUD and PHFA Units that Could be Reached in One Program Year

EDC	HUD Housing Units Estimate	PHFA Housing Units Estimate	PY10		
			Multifamily Unit Solutions	Proportion of HUD Units	Proportion of PHFA Units
PECO	61,303	33,412	9,817	16%	29%
PPL	48,036	24,723	2,267	5%	9%



Appendix A-1: Counties Served by Each EDC

Figure 16: Counties Served by Each EDC

Duquesne	FE: Met-Ed	FE: Penelec	FE: Penn Power	FE: West Penn	PECO	PPL
Allegheny Beaver	Adams Berks Chester Cumberland Dauphin Lancaster Lebanon Lehigh Monroe Montgomery Northampton Pike York	Armstrong Bedford Blair Bradford Cambria Centre Clarion Clearfield Crawford Cumberland Erie Forest Franklin Huntingdon Indiana Jefferson Juniata Lycoming McKean Mifflin Perry Potter Somerset Sullivan Susquehanna Tioga Venango Warren Wayne Westmoreland Wyoming	Allegheny Beaver Butler Crawford Lawrence Mercer Venango	Adams, Allegheny, Armstrong, Bedford, Blair, Butler, Cameron Centre Clarion Clinton Elk Fayette Franklin Fulton Greene Huntington Indiana Jefferson Lycoming McKean Potter Somerset Washington Westmoreland	Bucks Chester Delaware Montgomery, Philadelphia York	Berks Bucks Carbon Chester Clinton Columbia Cumberland Dauphin Juniata Lackawanna Lancaster Lebanon Lehigh Luzerne Lycoming Monroe Montgomery Montour Northampton Northumberland Perry Pike Schuylkill Snyder Susquehanna Union Wayne Wyoming York



Appendix A-2: Housing Included In HUD and PHFA Supported Units

The HUD supported housing units include

- Section 202 housing for seniors,
- Section 811 housing for persons with disabilities,
- housing choice vouchers,
- moderate rehabilitation,
- project-based section 8 units,
- public housing units, and
- Section 236 preservation units.

The PHFA supported housing units include:

- project-based section 8 units (through Section 811),
- PHFA funded units,
- low income housing tax credits (LIHTC),
- PennHomes, and
- state housing trust fund (PHARE) units.

The PHFA units presented herein include existing units only and do not include units under construction.

Appendix A-3: Multifamily, HUD and PHFA Supported Housing by County

