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JUN 28 2019

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

June 28, 2019

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

Re: PECO Energy Company Universal Service and Energy Conservation Plan for 2013-2015, Docket No. M-2012-2290911; PECO Energy Company Universal Service and Energy Conservation Plan for 2016-2018 Docket No. M-2015-2507139; PECO Energy Company Universal Services Program Six-Year Evaluation Report

Dear Secretary Chiavetta:

Enclosed please find PECO Energy Company's ("PECO") Universal Services Program Six-Year Evaluation Report.

On March 30, 2015, PECO and other stakeholders filed a Joint Petition for Settlement agreement in Docket No. 2012-2290911 (2013-2015 Three-Year Plan) to revise PECO's Customer Assistance Program ("CAP") and certain other programs that provide assistance to PECO's low-income customers. In the Joint Petition for Settlement, the parties proposed that PECO would implement a new Fixed Credit Option ("FCO") design for its CAP in October 2016.

In the Joint Petition for Settlement (p. 9, ¶A.5) the parties also proposed that PECO would complete an expert external evaluation¹ of the new FCO program after it collected two full calendar years of operational data, with a six-month period for data analysis and evaluation by its external evaluator. With an FCO program start date of October 2016, this timeline required until December 2018 for operational data collection, and until June 30, 2019 for the external evaluator to complete data analysis and evaluation. As part of

¹ PECO's external evaluator is the Applied Public Policy Research Institute for Study and Evaluation, or "APPRISE."

the Joint Petition for Settlement filing, the parties therefore requested that PECO's six-year evaluation be rescheduled for filing on June 30, 2019.²

By Recommended Decision dated June 11, 2015, Administrative Law Judge Cynthia Williams Fordham recommended adopting the Joint Petition for Settlement without modification. On July 8, 2015, the Commission issued an Order adopting the Recommended Decision and approving the Joint Petition for Settlement without modification.

Consequently, in PECO's 2016-2018 Three-Year Plan it included the FCO program and revised date for submitting its six-year evaluation. On February 25, 2016, the Commission issued a Tentative Order in Docket No. M-2015-2507139 in which it tentatively approved the 2016-18 Three-Year Plan and invited comments; on August 11, 2016, the Commission issued a Final Order in which it approved the 2016-18 Three-Year Plan.³

The new FCO design for the CAP program was designed to improve affordability to PECO's CAP customers and, in particular, to improve affordability to customers whose income is 50% or less of the Federal Poverty Level. The six-year evaluation of the PECO FCO program reveals that additional work needs to be done to accomplish that goal. In the first two operational years of the FCO program (calendar years 2017 and 2018), unaffordability in the 50% group remained high. Approximately 80% of that group still received unaffordable bills, with an average "depth" of unaffordability of approximately \$800 per year. See Tables VIII-8F (pp 131) and VIII-8I (pp. 133) of the attached evaluation.

PECO has been working with its external evaluator to obtain a deeper understanding of the drivers that caused this level of unaffordability in 2017 and 2018. Unfavorable weather during those years appears to be one dominant driver of this outcome. PECO and its external evaluator are also assessing whether other programmatic, design, or structural issues in the FCO contributed to this result and, if so, what scope and types of changes are available and appropriate to address the continued unaffordability of service received by this group. Based on its analysis to date, PECO believes that it will take several additional months of data analysis to fully understand the drivers of this outcome.

PECO therefore proposes the following next steps:

- Now until September 30, 2019: PECO will complete its analysis of the FCO data to determine the underlying drivers of unaffordability in the 50% group and to develop preliminary recommendations for improvement to the FCO CAP program;

² The six-year evaluation is required by 52 Pa. Code §54.76.

³ PECO's 2019-2021 Three-Year Plan was filed with the Commission on November 1, 2018, but has not yet been assigned a docket number.

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- October 1, 2019 to January 31, 2020: PECO will engage in briefings and discussions, including face-to-face meetings as necessary, with the other signatories to the Joint Petition for Settlement to inform them of the outcome of PECO's analysis and preliminary recommendations, to obtain input from the stakeholders on those issues, and to determine whether the parties can agree to proposed programmatic changes; and
- By March 31, 2020, PECO will file with the Commission a proposal to revise the FCO to further improve affordability for its CAP customers with incomes of 50% or less of the Federal Poverty Level. In that filing, PECO will state whether its proposal has the concurrence of the other signatories to the Joint Petition for Settlement.

If you have any questions, please contact me at 215-841-5777.

Sincerely,

A handwritten signature in black ink, appearing to read "RW", followed by a horizontal line extending to the right.

Richard G. Webster, Jr.
Vice President
Regulatory Policy and Strategy

Cc: Certificate of Service
Bureau of Consumer Services

Applied Public Policy Research
APPRISE
Institute for Study and Evaluation

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PECO Energy
Universal Services Program
Final Evaluation Report

June 2019

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Executive Summary

PECO implemented Universal Service Programs to help low-income customers maintain energy services and protect customers' health and safety. The programs include CAP which provides reduced payments and arrearage forgiveness, LIURP which provides energy efficiency and energy education services, CARES which provides outreach and referral services, and MEAF which provides emergency financial assistance for overdue energy bills. PECO also provides outreach on their Universal Service Programs and LIHEAP.

PECO is required to conduct an evaluation of the performance of these programs and to assess the integration among the different programs. This report provides a description of the evaluation research that was undertaken and information on the findings and recommendations from the research. One key aspect of this evaluation is that it is the first assessment of PECO's revised CAP since the change from a discount to a Fixed Credit Option (FCO) effective November 1, 2016.

Universal Services Program Descriptions

PECO has six components to its Universal Services Program.

- Customer Assistance Program (CAP) – Fixed Credit Option (FCO)
- Low-Income Usage Reduction Program (LIURP)
- Matching Energy Assistance Fund (MEAF)
- Customer Assistance and Referral Evaluation Services (CARES)
- Education-Outreach Programs
- External Grant Programs (e.g., LIHEAP)

Customer Assistance Program (CAP)

CAP provides assistance to low-income, residential customers with total household income at or below 150 percent of the Federal Poverty Level (FPL).

The CAP was a tiered discount approach from 1998 until 2016. Under this program, customers received a discount on their electric and gas bills based on their poverty level.

Following meetings with stakeholders in 2014 and 2015, PECO agreed to implement a Fixed Credit Option (FCO) CAP beginning in October 2016. The goal of the FCO is to provide a fixed credit for the year that results in an affordable utility bill. The credit is based upon household income, number of household members, and utility usage in the prior year, and is structured to reach a specific energy burden.

CAP participation and costs declined following the implementation of the FCO at the end of 2016. Participation declined in 2017 following implementation of the FCO program. While there were over 160,000 average monthly participants in 2016, there were about 148,000 average monthly participants in 2017.

Low-Income Usage Reduction Program (LIURP)

LIURP is a usage reduction program for high-usage low-income residential customers with household gross income at or below 200 percent of the FPL. LIURP provides direct weatherization and conservation measures and in-home education that promotes usage reduction.

LIURP is required for high-usage CAP customers. CAP participants who refuse a LIURP audit will be removed from CAP following a series of letters and phone calls. Customers removed from CAP can be reinstated as soon as they allow PECO to conduct a LIURP audit in their home and install measures.

Matching Energy Assistance Fund (MEAF)

The Matching Energy Assistance Fund (MEAF) is PECO's hardship fund. The program is partially funded through customer donations that can be one-time or recurring on the customer's monthly bill. PECO solicits grants with bill inserts and a check-off box on the bill stub. They also receive contributions through their website and hold an annual golf tournament fundraiser.

Customers who are in danger of service termination or have their services terminated are eligible for a MEAF grant of up to \$500 per fuel. The grant must eliminate the total amount due excluding the pre-program arrearage.

Customer Assistance and Referral Evaluation Services Program (CARES)

The Customer Assistance and Referral Evaluation Services Program (CARES) provides referrals and information services to assist customers with special needs and/or extenuating circumstances that negatively impact their ability to pay their utility bill. Eligible customers may receive temporary protection from service termination and specific education and referrals for energy and non-energy related assistance.

The goal of CARES is to educate and inform customers about available resources, including energy and non-energy assistance, budget counseling, and housing assistance, to maximize their ability to pay their energy bills.

Research Conducted

The following research activities were undertaken as part of the evaluation.

- 1. Background Research:** We reviewed all documents related to PECO's Universal Service Programs – CAP, LIURP, MEAF, and CARES. We conducted in-depth interviews with PECO managers and staff and PECO's contractors who implement the Universal Service Programs to completely understand and document how their programs are currently designed and implemented.
- 2. Needs Assessment:** We analyzed American Community Survey data to provide information on the number, characteristics, and needs of households in PECO's service territory that are eligible for the Universal Service Programs.

3. **Call Center Interviews:** We conducted interviews with call center staff to understand their experience with the FCO program to date, and the types of questions and concerns that customers have expressed.
4. **Program Data Analysis:** We requested information from program databases from PECO and analyzed these databases to develop statistics on program participation, participant demographics, and services delivered. CAP data for the year prior to the transition (11/2015-10/2016) to the FCO and two years following the transition (2017 and 2018) were analyzed.
5. **In-Depth CAP Participant Telephone Interviews:** We conducted in-depth telephone interviews with 25 CAP participants to explore their program understanding, questions, concerns, and satisfaction.
6. **Participant Survey:** We interviewed a sample of 428 current CAP participants. The participants reported on their experiences in all aspects of the program, including enrollment, re-certification, their understanding of CAP, the impact of CAP on the household, other assistance received, and their satisfaction with the program.
7. **Payment and Collections Impact Analysis:** We analyzed data on program participants under the previous and current CAP structure as well as data for a comparison group of nonparticipants. We analyzed the program's impact on affordability, bill payment, arrearage forgiveness, collections actions, and collections costs.
8. **Usage Impact Analysis:** We examined how electric and gas usage changed from the old CAP to the new CAP and from pre-CAP participant to CAP participation by conducting a weather-normalized analysis of energy usage.

Needs Assessment

The Needs Assessment provided a profile of income-eligible households in the PECO service territory using data from the American Community Survey (ACS). Key findings from the analysis are provided below.

- There are approximately 1,683,831 households in the PECO service territory and about 1,599,172 have direct PECO bill payment.
- While 18 percent of all households with PECO residential service are income-eligible for CAP, 26 percent are income-eligible for LIURP.
- The number of CAP income-eligible households declined from 312,391 in the 2012-2014 analysis to 301,838 in the 2013-2015 analysis, and to 292,913 in the 2014-2016 analysis. The percentage of households who were income-eligible for CAP declined from 20 percent to 19 percent to 18 percent.
- An estimated 56 percent of the income-eligible population participated in CAP during Program Year 2015.

Participant Survey

We conducted a telephone survey with 428 current and recent PECO CAP participants to understand their views on program participation, enrollment and recertification, CAP's impact on affordability, and satisfaction with the program overall. This section provides a summary of the survey results.

Unemployment and Assistance

- **Unemployment:** Twenty-eight percent of respondents reported that at least one member of their household was unemployed and looking for work in the past year.
- **Assistance:** Sixty-nine percent of respondents reported that their households had received benefits from Temporary Assistance for Needy Families, Supplemental Security Income, Food Stamps, or general assistance or public assistance in the past year.

CAP Participation

- **CAP Participation:** While 93 percent of respondents reported that they were currently participating in CAP, seven percent reported that they had participated in CAP in the past year.
- **CAP Participation Length:** While 65 percent of respondents reported that they began participating in CAP two or more years ago, 12 percent reported that they began participating one year ago, and two percent reported that they began participating this year (2018). Twenty percent did not know when they began participating.

Enrollment and Recertification

- **CAP Information Source:** Thirty-nine percent of respondents stated that they found out about CAP from a PECO representative, 16 percent from friends or relatives, 12 percent from agencies or elected officials, and eight percent from PECO mailings.
- **CAP Application Reason:** Most respondents reported that they applied for CAP because they wanted to lower their bills, needed help, or had low or fixed income or finances. Others reported that they applied because they were disabled or unemployed.
- **CAP Application Difficulty:** While 74 percent of respondents reported that it was not at all difficult to apply for CAP, 13 percent reported that it was not too difficult, seven percent reported that it was somewhat difficult, and two percent said it was very difficult. Respondents were most likely to state that providing proof of income and filling out the application were the most challenging parts of the CAP application.
- **CAP Recertification:** Seventy-three percent of respondents reported that they had previously re-certified for CAP. The majority of respondents reported that it was not at all difficult to recertify for CAP. Providing proof of income and sending in the application were the parts of recertification that were identified as challenging.

CAP Understanding

- **Understanding of CAP Benefits:** Eighty-one percent of respondents reported that they had a good understanding of the benefits of CAP. When asked what they felt the benefits were, 58 percent reported lower bills, 21 percent reported help for their family or low-income households, and 11 percent reported saving money.
- **Prompted CAP Benefits:** When asked specifically about lower bills, 94 percent agreed that they were a benefit of CAP. When asked specifically about a reduction in money owed to PECO, 75 percent agreed that arrearage reduction was a benefit.
- **Most Important CAP Benefit:** While 39 percent viewed lower bills as the most important CAP benefit, others identified help for their families or low-income people, saving money, and keeping utility service on as the most important benefit.
- **CAP Participant Responsibilities:** When asked about their responsibility in CAP, 76 percent reported that it was to keep up with payments. Others reported that their responsibilities included reporting changes in household income, reducing energy usage, participating in energy conservation, and re-certifying.

CAP Impact

- **Difficulty of Bill Payment:** While 53 percent of respondents reported that it was very difficult to pay their PECO bills prior to CAP, only ten percent reported that it was very difficult to pay their PECO bills while participating in CAP.
- **Challenges with Other Bills:** While 75 percent of respondents reported that they delayed or skipped paying other bills before participating in CAP, only 41 percent reported that they did so while in CAP.
- **Problems with Home Heating:** Twenty-nine percent of respondents reported that before participating in CAP there was a time they wanted to use their heat but could not because their heating system was broken and too costly to repair or replace. Only 16 percent reported that they experienced this problem while in CAP.
- **CAP Impact on Energy Bill:** While 60 percent of respondents reported that their bills were lower since joining CAP, 12 percent reported that their bills were higher, and 15 percent reported that their bills had not changed. Seventy percent of participants below 50 percent of the poverty level reported that their bills were lower on CAP.
- **CAP Importance:** Seventy-five percent of respondents reported that CAP was very important in helping them to make ends meet, and 17 percent reported that CAP was somewhat important. Eighty-two percent of respondents below 50 percent of the poverty level reported that CAP was very important.

CAP Credits

- **CAP Credit Receipt:** When asked whether they received monthly credits from CAP, 30 percent reported that they did.
- **Seasonal Difficulty of Bill Payment:** While some respondents stated that their PECO bills were harder to pay in the winter and summer, some stated that they were easier to pay in the winter and summer.

Other Assistance

- **Other Benefit Receipt or Program Participation:** While a majority of respondents reported that they did not receive other benefits or participate in other programs as a result of participating in CAP, 22 percent reported that they received LIHEAP benefits, and six percent reported that they received benefits from energy efficiency services.
- **LIHEAP Benefits:** When specifically asked whether they received benefits from LIHEAP, nearly three-quarters of respondents reported that they did receive LIHEAP benefits. Thirty-nine percent of respondents reported that they found out about LIHEAP from CAP.

CAP Satisfaction

- **Overall Satisfaction with CAP:** While 69 percent of respondents reported that they were very satisfied with CAP, 24 percent reported that they were somewhat satisfied.
 - While 77 percent of those who said they had a good understanding of CAP benefits reported that they were very satisfied, 26 percent of those who said they did not have a good understanding of CAP benefits reported that they were very satisfied.
 - While 81 percent of respondents who said that their bills were lower on CAP reported that they were very satisfied with CAP, 38 percent of those who said their bills were higher on CAP reported that they were very satisfied.
- **CAP Dissatisfaction:** While the majority of respondents reported that there were no parts of CAP with which they were unsatisfied, some respondents expressed dissatisfaction with CAP credits/benefits toward their bill and CAP communication/transparency.
- **Continued CAP Participation:** Eighty-four percent of respondents reported that they were very likely to continue to participate in CAP and 11 percent reported that they were somewhat likely to continue.
 - While 87 percent of those who said they had a good understanding of CAP benefits reported that they were very likely to continue to participate, 70 percent of those who said they did not have a good understanding of CAP benefits reported that they were very likely to continue to participate.

- While 60 percent of those who said their bills were higher on CAP reported that they were very likely to continue to participate, 91 percent of those who said their bills were lower on CAP reported that they were very likely to continue to participate.

Impact Analysis

APPRISE conducted in-depth analysis of PECO's customer, CAP, billing, payment, arrearages, collections, and usage data to assess the impact of CAP on energy affordability, bill payment, arrearage forgiveness, collections actions, and energy usage.

There were several goals for the analysis.

- Characterize the CAP participants.
- Analyze CAP retention rates.
- Assess the impact of the CAP on energy affordability.
- Determine whether the CAP improves participants' bill payment compliance.
- Ascertain the impact of CAP participation on LIHEAP receipt.
- Evaluate whether the CAP impacts collections actions.
- Assess whether the CAP impacts the amount of energy used by program participants.

Evaluation Treatment Group

Customers who enrolled in CAP in 2017 and did not participate in the CAP in the year prior to enrollment were included as potential members of the treatment analysis group. This group was chosen for the analysis, as one full year of post-program data is required for an analysis of program impacts. We compared the characteristics and payment behavior of these customers in the year prior to CAP enrollment to these in the year following CAP enrollment.

In addition to analyzing characteristics and behavior for this select group of recent CAP enrollees, we analyzed data for all customers who participated in the CAP in the year prior to the implementation of the FCO (November 1, 2015 – October 31, 2016), all customers who participated in CAP in 2017, and all customers who participated in CAP in 2018.

We developed a comparison group using a sample of low-income nonparticipants, comprised of 2017 LIHEAP recipients.

For the CAP program impact analysis, we examined pre- and post-treatment statistics. The difference between the pre- and post-treatment statistics for the treatment group is considered the gross change. The net change is the difference between the change for the treatment group and the change for the comparison group, and represents the actual impact of the program, controlling for other exogenous changes.

Customer Demographics

Key findings from the customer demographics analysis are summarized below.

- **Poverty Level:** About one quarter of the CAP participants had income at or below 50 percent of the poverty level, about 40 percent had income between 50 and 100 percent, and about 30 percent had income above 100 percent of the poverty level.

- **Income Source:** The most common source of income for the CAP participants was employment, followed by SSI, and then retirement income.
- **Income:** About 40 percent of electric only customers and 30 percent of electric and gas customers had annual household income below \$10,000. Mean annual income was about \$13,000 for the electric only participants and about \$16,000 for the electric and gas participants.
- **Total Amount Due:** About half of the participants had no amount owed (not including pre-program arrearages) at the time the data were downloaded, and one quarter to one third had less than \$250 owed. The mean amount owed was about \$200 for electric only customers and about \$300 for electric and gas customers.

CAP Participant Characteristics

Key findings from the customer demographics analysis are summarized below.

- **Length of CAP Participation:** Customers participated in CAP for an average of about four years. About 20 percent participated between five and ten years and ten percent participated for more than ten years.
- **Full CAP Analysis Year:** We analyzed data for each group of customers for one year. We found that 97 percent of the 2017 enrollee treatment group was on CAP for the full year following enrollment; and between 79 and 87 percent of the groups of all CAP participants in 2016, 2017, and 2018 were on CAP for the full year.
- **CAP Removal Reason:** The most common reason that customers were removed from CAP was that they did not return their income verification. Other common reasons were that the account was transferred and that the customer was not eligible.
- **CAP Recertification:** About 60 percent of the CAP participants have re-certified for CAP. Households at or below 50 percent of the poverty level were less likely than the other groups to have re-certified.
- **Calculated Annual Credit:** The mean calculated annual electric credit was approximately \$500 for the electric only participants and \$400 for the electric and gas participants. The mean calculated annual gas credit was approximately \$100. While about 35 percent of the electric only customers had no calculated electric credit, about 40 percent of the electric and gas customers had no calculated electric credit, and about 80 percent of the electric and gas customers had no calculated gas credit.
- **Maximum Annual Credit:** Three percent of the 2017 electric only heating participants, four percent of the 2017 electric only baseload participants, and three percent of the 2017 electric and gas participants received a credit equal to or greater than the specified maximum annual credit.
- **Minimum Monthly Bill:** Six percent of the 2017 and 2018 electric only heating participants had a bill less than or equal to the minimum monthly amount. Four percent

of the 2017 and 2018 electric only baseload participants had a bill less than or equal to the minimum monthly amount. Three percent of the 2017 and 2018 electric and gas CAP participants had a bill less than or equal to the minimum monthly amount.

Affordability

This section summarizes the findings with respect to CAP's impact on energy affordability. Results were developed for the 2017 CAP enrollees as well as all 2016, 2017, and 2018 CAP participants. The 2017 CAP enrollees' findings were from the year prior to and the year following CAP enrollment. The 2016 participants' results were from November 2015 through October 2016, before the FCO went into effect. The 2017 and 2018 participants' results were for the calendar year, and represent the first and second full years of the implementation of the FCO.

- **CAP Discounts:** The mean annual discount for the 2017 electric only CAP enrollees and the 2017 and 2018 electric only CAP participants under the new FCO ranged from \$417 to \$478. This compares to a mean discount of \$700 in 2016 under the previous CAP discount program.

The mean annual discount for the 2017 electric and gas enrollees and the 2017 and 2018 electric and gas CAP participants under the new FCO ranged from \$440 to \$469. This compares to a mean discount of \$766 in 2016 under the previous CAP discount program.

- **Bill Impact:** The full bill for the 2017 electric only CAP enrollees declined by an average of \$609 from the pre-enrollment to the post-enrollment period. The full bill for the 2017 electric and gas CAP enrollees declined by an average of \$570 from the pre-enrollment to the post-enrollment period.
- **Energy Burden:** The energy burden for the 2017 electric only heating enrollees declined from an average of 27 percent before CAP enrollment to 21 percent after enrollment. Energy burden for the 2017 electric only baseload enrollees declined by seven percentage points, from an average of 21 percent in the year before enrollment to 14 percent in the year after enrollment. Energy burden for the 2017 electric and gas CAP enrollees declined by five percentage points, from an average of 25 percent in the year before enrollment to 20 percent in the year after enrollment.
- **Energy Burden Compared to PUC Target:** The 2017 CAP enrollees had a large reduction in the percentage above the energy burden target after enrolling in CAP. While 44 percent of the electric only heating customers had an electric burden above the target prior to enrolling in CAP, only 25 percent had a burden above the target following enrollment. While 71 percent of the electric only baseload customers had an electric burden above the target prior to enrolling in CAP, only 37 percent had a burden above the target following enrollment. While 23 percent of the electric and gas customers had a gas burden above the target prior to enrolling in CAP, only 19 percent had a gas burden above the target following enrollment. While 61 percent of the electric and gas

customers had an electric burden above the target prior to enrolling in CAP, only 29 percent had a burden above the target following enrollment.

Following removal of customers who had estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, 28 percent of the 2018 electric only heating participants had an electric burden above the target, 40 percent of the 2018 electric only baseload participants had an electric burden above the target, 21 percent of the 2018 electric and gas participants had a gas burden above the target, and 38 percent of the electric and gas accounts had an electric burden above the target. Most of the CAP participants who were above the target burden were at or below 50 percent of the poverty level.

Bill Payment

This section summarizes the findings with respect to CAP's impact on bill payment.

- **Payments:** Mean customer payments for the 2017 electric only CAP enrollees declined by \$316 and assistance payments remained at approximately the same level. Mean customer payments for the 2017 electric and gas CAP enrollees declined by \$457 and assistance payments remained at approximately the same level.
- **Coverage Rates:** Total coverage rates, defined as total payments divided by electric charges, increased from 84 percent prior to enrollment to 118 percent following enrollment for the 2017 electric only CAP enrollees, a net increase of 38 percentage points. The total coverage rates exceed 100 percent, because there may be additional charges, and customers may receive LIHEAP credits that more than cover their bills.

Total coverage rates for the 2017 electric and gas CAP enrollees increased from 84 percent prior to enrollment to 102 percent following enrollment, with a net increase of 19 percentage points.

While 32 percent of the 2017 enrollee treatment group (electric only and electric and gas customers) paid 100 percent or more of their bill in the year prior to enrollment, about 50 percent paid the full bill in the year following enrollment. While about 40 percent paid less than 80 percent of the bill in the year prior to enrollment, about 20 percent paid less than 80 percent of the bill in the year following enrollment.

- **Missed Payments:** The 2017 enrollees reduced their number of missed payments after enrolling in CAP. The mean number of missed payments went from about three missed payments to two missed payments. The percent of enrollees that missed no payments went from about 40 percent to about 60 percent.

Energy Assistance

This section summarizes the findings with respect to CAP's impact on energy assistance.

- **LIHEAP Assistance Receipt:** The percent of 2017 CAP electric only enrollees who received LIHEAP increased from 11 percent in the year prior to enrollment to 17 percent in the year following enrollment, and had a net increase of two percentage points. The percent of 2017 CAP electric and gas enrollees who received LIHEAP increased from 23 percent in the year prior to enrollment to 32 percent in the year following enrollment, and had a net increase of 17 percentage points.

While about 20 percent of the electric only CAP participants received LIHEAP, 43 percent of the 2016 electric and gas participants, 38 percent of the 2017 electric and gas participants, and 47 percent of the 2018 electric and gas participants received LIHEAP.

- **LIHEAP Assistance Amount:** The mean LIHEAP grant received by the 2017 CAP electric only enrollees declined from \$409 in the year prior to enrollment to \$353 in the year following enrollment. The mean LIHEAP grant received by the 2017 CAP electric and gas enrollees declined from \$378 in the year prior to enrollment to \$337 in the year following enrollment.
- **MEAF Assistance:** Less than one percent of 2017 electric only CAP enrollees received MEAF in the pre-enrollment period and none received MEAF in the post-enrollment period. The mean MEAF grant for those who received assistance was \$238.

Arrearage Forgiveness

This section provides information on the pre-program (PPA) and in-program (InPA) arrearage forgiveness received by CAP participants.

- **Pre-Program Arrearages:** While the 2017 CAP enrollees had average arrearages of about \$700 when they enrolled, the 2016, 2017, and 2018 participants had arrearages of about \$550 to \$600 when they enrolled. The monthly arrearage forgiveness amount was approximately \$100. The 2017 enrollees received an average of \$500 in arrearage forgiveness, compared to about \$120 received by the 2017 and 2018 participants.

Of those who received arrearage forgiveness, the mean amount forgiven was about \$500 for the 2017 CAP enrollees and approximately \$275 for the 2016, 2017, and 2018 participants.

- **In-Program Arrearages:** The 2017 and 2018 participants had an InPA amount of about \$475. The monthly arrearage forgiveness amount was approximately three to six dollars. The 2018 participants received an average of \$47 of InPA forgiveness.

Collections Actions and Costs

This section provided an analysis of the impact of CAP on collections actions and costs.

- **Collections Actions:** The 2017 electric only and electric and gas CAP enrollees had a reduction in all types of collection actions, including calls, notices, office work, field notifications, and terminations, except for “other notices”. The 2017 electric only CAP

enrollees had their total number of collections actions decline by an average of 5.9 actions, and had a net decline of 6.9 actions. The 2017 electric and gas CAP enrollees had their total number of collections actions decline by an average of 2.8 actions, and their net change was a decline of 5.8 actions.

- **Collections Costs:** PECO provided average costs for each type of action, and the average net reduction in costs for the 2017 electric only CAP enrollees was a \$76 reduction. The average net reduction in costs for the 2017 electric and gas CAP enrollees was a \$68 reduction.
- **Shutoffs:** The percent of 2017 electric only CAP enrollees who received shutoffs declined from 23 percent in the year prior to enrollment to 12 percent in the year following enrollment, and the net change was a reduction of 12 percentage points. The 2017 electric and gas CAP enrollees who received shutoffs declined from 21 percent in the year prior to enrollment to 16 percent in the year following enrollment, and the net change was a reduction of seven percentage points.

Energy Usage

This section summarizes key findings from the energy usage analysis.

- **2017 CAP Enrollees:** The weather-normalized electric usage for the 2017 electric only CAP enrollees and the weather-normalized electric and gas usage for the 2017 electric and gas CAP enrollees remained at the same level, with no estimate showing more than a two percent change in usage.
- **All CAP Participants:** While the raw usage for the CAP participants increased from 2016 to 2017 and then again in 2018 (due to changes in the weather), the weather-normalized natural gas usage and electric usage remained approximately the same for participants in the three years analyzed.
- **Nonparticipants:** Natural gas usage remained approximately the same for nonparticipants in 2016 and 2017, but the electric usage increased from 2016 to 2017 for the non-heating customers.

Key Findings and Recommendations

This section provides a summary of the key findings and recommendations from all of the analyses in this report.

CAP Design and Procedures

The CAP program procedures appear to be working well.

- **CAP Participation and Costs:** Following the implementation of the FCO at the end of 2016, participation and costs declined significantly. While there were over 160,000 average monthly CAP participants in 2016, there were about 148,000 average monthly CAP participants in 2017.

- **CAP Information Source:** Customers learn about CAP from a variety of sources. The CAP participant survey found that 39 percent of respondents found out about CAP from a PECO representative, 16 percent from friends or relatives, 12 percent from agencies or elected officials, and eight percent from PECO mailings. Others found out about the program from online materials, from previous CAP participation, and from PGW. *Recommendation: PECO should continue to use a wide variety of outreach to inform customers about CAP.*
- **CAP Application:** While 74 percent of CAP survey respondents reported that it was not at all difficult to apply for CAP, 13 percent reported that it was not too difficult, seven percent reported that it was somewhat difficult, and two percent said it was very difficult. Respondents were most likely to state that providing proof of income and filling out the application were the most challenging parts of the CAP application. *It appears that the application process is working well and no changes are recommended.*
- **Recertification:** Seventy-three percent of CAP survey respondents reported that they had previously re-certified for CAP. The majority of respondents reported that it was not at all difficult to recertify for CAP. Providing proof of income and sending in the application were the parts of recertification that were identified as challenging. *The recertification process appears to work well.*
- **CAP Understanding:** When asked specifically about lower bills during the CAP survey, 94 percent agreed that they were a benefit of CAP. When asked specifically about a reduction in money owed to PECO, 75 percent agreed that arrearage reduction was a benefit. When asked about their responsibility in CAP, 76 percent reported that it was to keep up with payments. Others reported that their responsibilities included reporting changes in household income, reducing energy usage, participating in energy conservation, and re-certifying. *Customers appear to have a good understanding of CAP.*
- **CAP Discount:** The mean annual discount for the 2017 electric only CAP enrollees and the 2017 and 2018 electric only CAP participants under the new FCO ranged from \$417 to \$478. This compares to a mean discount of \$700 in 2016 under the previous CAP discount program. While six percent of the 2017 electric only participants received no credit, 31 percent of the 2018 electric only participants received no credit, after the Phase-Out period ended. This compares to three percent of the 2016 electric only participants who received no discount.

The mean annual discount for the 2017 electric and gas enrollees and the 2017 and 2018 electric and gas CAP participants under the new FCO ranged from \$440 to \$469. This compares to a mean discount of \$766 in 2016 under the previous CAP discount program. While eight percent of the 2017 electric and gas participants received no annual credit, 37 percent of the 2018 electric and gas participants received no annual credit.

CAP Impact

CAP increases affordability, improves bill payment, increases LIHEAP receipt, reduces arrearages, and reduces collections costs.

- **Affordability Impact:** While 53 percent of CAP survey respondents reported that it was very difficult to pay their PECO bills prior to CAP, only ten percent reported that it was very difficult to pay their PECO bills while participating in CAP. While 75 percent of respondents reported that they delayed or skipped paying other bills before participating in CAP, only 41 percent reported that they did so while in CAP.
- **Energy Burden Impact:** CAP participation resulted in a large reduction in energy burden for program participants, but the mean burden was still above the target level for the lowest poverty level group. Similarly, CAP resulted in a large reduction in the percent of participants with an energy burden above the targeted level, but there was still a significant percentage of the lowest poverty level group with a burden above the targeted level. *Recommendation: PECO should re-assess the calculation of the annual credit for the lowest poverty level group. Because it is based on weather-normalized usage (and bills are based on actual usage), it is recalculated quarterly, and discounts vary across the year, this may result in a less accurate provision of the credit needed to reach an affordable burden. PECO should consider increasing the credit for the lowest income group to ensure that these customers are closer to the targeted burden.*
- **LIHEAP Impact:** While a majority of CAP survey respondents reported that they did not receive other benefits or participate in other programs as a result of participating in CAP, 22 percent reported that they received LIHEAP benefits, and six percent reported that they received benefits from energy efficiency services. Thirty-nine percent of respondents reported that they found out about LIHEAP from CAP. The data analysis also showed that customers were significantly more likely to receive LIHEAP in the year following enrollment.
- **Bill Payment Impact:** Total coverage rates, defined as total payments divided by electric (and gas) charges, increased significantly following enrollment in CAP and averaged at or above 100 percent for most groups and only slightly below 100 percent for the electric and gas CAP participants.
- **Missed Payments:** Participants reduced the number of missed payments following CAP enrollment. The mean number of missed payments went from about three missed payments to about two missed payments. The percent of enrollees that missed no payments went from about 40 percent to about 60 percent.
- **Arrearage Forgiveness:** Participants received a significant amount of arrearage forgiveness for their pre-program arrears, and many also received in-program arrearage forgiveness.
- **Collections Actions and Costs:** Customers had fewer collections actions and a lower cost for collections following enrollment in CAP.

- **Energy Usage:** Participation in CAP does not appear to increase energy usage.
- **CAP Importance:** Seventy-five percent of CAP survey respondents reported that CAP was very important in helping them to make ends meet, and 17 percent reported that CAP was somewhat important. Eighty-two percent of respondents below 50 percent of the poverty level reported that CAP was very important.

CAP Satisfaction

Participants are generally highly satisfied with CAP.

- **CAP Satisfaction:** While 69 percent of respondents reported that they were very satisfied with CAP, 24 percent reported that they were somewhat satisfied. While 77 percent of those who said they had a good understanding of CAP benefits reported that they were very satisfied, 26 percent of those who said they did not have a good understanding of CAP benefits reported that they were very satisfied.

LIURP

The LIURP Impact evaluation found room for improvement in the level of energy savings achieved.

- *We made several recommendations in the most recent (2017) LIURP Evaluation Report to improve energy savings for the program. These include improved outreach to high-usage customers, improved audits and quality control, and increased penetration of major energy-saving measures.*

MEAF

- The MEAF program appears to be working well and providing important benefits for customers who need assistance. We do not have any recommendations for this program.

CARES

- The CARES program appears to be working well and providing important services and referrals for customers who need assistance. We do not have any recommendations for this program.

I. Introduction

PECO implemented Universal Service Programs to help low-income customers maintain energy services and protect customers' health and safety. The programs include CAP which provides reduced payments and arrearage forgiveness, LIURP which provides energy efficiency and energy education services, CARES which provides outreach and referral services, and MEAF which provides emergency financial assistance for overdue energy bills. PECO also provides outreach on their Universal Service Programs and LIHEAP.

PECO is required to conduct an evaluation of the performance of these programs and to assess the integration among the different programs. This report provides a description of the evaluation research that was undertaken and information on the findings and recommendations from the research. One key aspect of this evaluation is that it is the first assessment of PECO's revised CAP since the change from a discount to a Fixed Credit Option (FCO) effective November 1, 2016.

A. *Evaluation Activities*

The following research activities were undertaken as part of the evaluation.

- 1. Background Research:** We reviewed all documents related to PECO's Universal Service Programs – CAP, LIURP, MEAF, and CARES. We conducted in-depth interviews with PECO managers and staff and PECO's contractors who implement the Universal Service Programs to completely understand and document how their programs are currently designed and implemented.
- 2. Needs Assessment:** We analyzed American Community Survey data to provide information on the number, characteristics, and needs of households in PECO's service territory that are eligible for the Universal Service Programs.
- 3. Call Center Interviews:** We conducted interviews with call center staff to understand their experience with the FCO program to date, and the types of questions and concerns that customers have expressed.
- 4. Program Data Analysis:** We requested information from program databases from PECO and analyzed these databases to develop statistics on program participation, participant demographics, and services delivered. CAP data for the year prior to the transition (11/2015-10/2016) to the FCO and two years following the transition (2017 and 2018) were analyzed.
- 5. In-Depth CAP Participant Telephone Interviews:** We conducted in-depth telephone interviews with 25 CAP participants to explore their program understanding, questions, concerns, and satisfaction. This in-depth research provided an overview of customer issues and helped to inform the questions and phrasing for the quantitative customer survey.

6. **Participant Survey:** We interviewed a sample of 428 current CAP participants. The participants reported on their experiences in all aspects of the program, including enrollment, re-certification, their understanding of CAP, the impact of CAP on the household, other assistance received, and their satisfaction with the program.
7. **Payment and Collections Impact Analysis:** We analyzed data on program participants under the previous and current CAP structure as well as data for a comparison group of nonparticipants. We analyzed the program's impact on affordability, bill payment, arrearage forgiveness, collections actions, and collections costs.
8. **Usage Impact Analysis:** One of the concerns about moving to a revised CAP structure was how that would impact customer usage. In task, we examined how electric and gas usage changed from the old CAP to the new CAP by conducting a weather-normalized analysis of energy usage.

B. Organization of the Report

Eleven sections follow this introduction.

- **Section II – Universal Service Program Description:** This section provides a detailed description of each of PECO's Universal Service Programs based on review of program documents, interviews with PECO managers and staff, interviews with PECO's contractors, and interviews with call center representatives.
- **Section III – Needs Assessment:** This section provides a profile of low-income households in PECO's service territory using data from the American Community Survey.
- **Section IV – Participant In-Depth Interviews:** This section provides a summary of the methodology and findings from in-depth telephone interviews with 30 current or recent CAP participants.
- **Section V – Participant Survey:** This section provides findings from a quantitative survey with 428 current and recent CAP participants.
- **Section VI – Impact Analysis Approach:** This section describes the data and methodology used to analyze PECO program, billing, payment, arrearage, and collections data.
- **Section VII – CAP Participant Demographics and Program Characteristics:** This section provides an analysis of the demographic characteristics of CAP participants and a comparison group as well as the CAP characteristics for the 2016, 2017, and 2018 participants.
- **Section VIII – Affordability, Billing and Payments, and Energy Assistance:** This section provides an analysis of the impact of CAP on affordability, energy burden, bills, payments, and energy assistance.

- Section IX – Arrearage Forgiveness: This section provides an analysis of the arrearage forgiveness received by CAP participants.
- Section X – Collections Actions and Costs: This section provides an analysis of the impact of CAP on collections actions and costs.
- Section XI – Energy Usage: This section provides an analysis of the impact of CAP on energy usage.
- Section XII – Key Findings and Recommendations: This section provides a summary of key findings and recommendations based on the analyses in this report.

APPRISE prepared this report for PECO Energy. PECO facilitated this research by furnishing data to APPRISE. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and do not necessarily reflect the views of PECO.

II. Universal Services Program Descriptions

This section provides detailed descriptions of PECO's Universal Services Programs.

A. *General Policies*

PECO has six components to its Universal Services Program.

- Customer Assistance Program (CAP) – Fixed Credit Option (FCO)
- Low-Income Usage Reduction Program (LIURP)
- Matching Energy Assistance Fund (MEAF)
- Customer Assistance and Referral Evaluation Services (CARES)
- Education-Outreach Programs
- External Grant Programs (e.g., LIHEAP)

PECO Universal Services Management

PECO has ten full-time employees in their Universal Services Department and three outsourced vendors that provide support work for LIURP, CAP, LIHEAP, and MEAF.

- The LIURP Vendor serves as a LIURP call center, schedules LIURP appointments, and provides follow-up administrative services for customers following the LIURP audit.
- The LIHEAP/MEAF vendor provides call center capabilities and general program support.
- The CAP Call Center provides call center support and back office support enrolling customers in CAP.

2016-2018 Universal Service Plan Changes

PECO made the following changes to its medical certificate and service policies in their 2016-2018 Universal Services Plan.

- Customers are permitted to renew medical certificates indefinitely if they pay their current bills or budget bills in full by the due date.
- Medical Certificate Non-Renewal (MCNR) coded CAP customers may use valid medical certificates if they pay their current bills in full immediately after enrollment into the In Program Arrearage Forgiveness Program (InPA).
- PECO will educate customers about the availability of temporary service post-petition without a security deposit.

B. *Customer Assistance Program (CAP)*

CAP provides assistance to low-income, residential customers with total household income at or below 150 percent of the Federal Poverty Level (FPL).

The CAP was a tiered discount approach from 1998 until 2016. Under this program, customers received a discount on their electric and gas bills based on their poverty level.

Following meetings with stakeholders in 2014 and 2015, PECO agreed to implement a Fixed Credit Option (FCO) CAP beginning in October 2016. The goal of the FCO is to provide a fixed credit for the year that results in an affordable utility bill. The credit is based

upon household income, number of household members, and utility usage in the prior year, and is structured to reach a specific energy burden.

CAP Resources

Table II-1 displays the CAP budget for 2016 through 2018, comprised of CAP operations, CAP credits, and arrearage set-aside. The total CAP budget was \$100.7 million in 2016, \$97.8 million in 2017, and \$98 million in 2018.

**Table II-1
CAP Budget, 2016-2018**

	2016	2017	2018
CAP Operations	\$3,386,196	\$3,463,881	\$3,556,251
CAP Credits	\$84,200,000	\$81,800,000	\$82,500,000
Arrearage Set-Aside	\$13,100,000	\$12,500,000	\$11,900,000
Total CAP Budget	\$100,686,196	\$97,763,881	\$97,956,251

Table II-2 displays CAP expenses from 2014 through 2017. The table showed that CAP expenses declined significantly in 2017 following the implementation of the FCO program. The analyses in this report show that many customers who received a discount under the previous CAP structure did not receive a credit under the FCO.

**Table II-2
CAP Expenses, 2014-2017**

	Electric CAP Expenses				Gas CAP Expenses			
	2014	2015	2016	2017	2014	2015	2016	2017
CAP Operations	\$3,097,811	\$2,961,524	\$3,107,243	\$3,135,400	\$500,111	\$482,108	\$505,830	\$510,414
CAP Credits	\$79,336,717	\$83,392,157	\$80,445,779	\$62,119,796	\$4,053,059	\$3,729,753	\$1,868,223	\$1,556,807
Arrears	\$12,377,994	\$10,321,622	\$8,816,555	\$5,398,082	\$741,789	\$693,295	\$483,607	\$290,615
Total Expenses	\$94,812,522	\$96,675,303	\$92,369,577	\$70,653,278	\$5,294,959	\$4,905,156	\$2,857,660	\$2,357,836

	Electric & Gas CAP Expenses			
	2014	2015	2016	2017
CAP Operations	\$3,597,922	\$3,443,632	\$3,613,073	\$3,645,814
CAP Credits	\$83,389,776	\$87,121,910	\$82,314,002	\$63,676,603
Arrearage Forgiveness	\$13,119,783	\$11,014,917	\$9,300,162	\$5,688,697
Total CAP Expenses	\$100,107,481	\$101,580,459	\$95,227,237	\$73,011,114

CAP Eligibility

Customers must have verified, total household gross income at or below 150 percent of the FPL to be eligible for CAP. There is no enrollment limit for CAP.

CAP Participation

PECO’s CAP enrollment has been about 140,000 customers since September 2010. Enrollment may decline for the following reasons.

- CAP enrollment may decline when customers are asked to recertify in 2017 and 2018. Customers can no longer have their CAP benefit determined based on a LIHEAP application, as the actual income and household size must be available to calculate the customer’s annual credit.
- Customers may not receive a credit under the new FCO program, and they may decide not to remain in CAP, although they are still eligible to remain in the program even if they do not have a credit.

Table II-3 displays CAP participation from 2014 through 2017. Participation declined in 2017 following implementation of the FCO program. While there were over 160,000 average monthly participants in 2016, there were about 148,000 average monthly participants in 2017.

**Table II-3
CAP Participation, 2014-2017**

Federal Poverty Level	Average Monthly CAP Participation							
	Electric & Combination				Gas Only			
	2014	2015	2016	2017	2014	2015	2016	2017
≤50%	30,767	31,002	30,399	28,556	5,122	5,333	5,278	5,114
51% - 100%	66,119	65,942	64,441	60,672	9,826	9,962	9,593	9,066
101% - 150%	44,411	43,525	42,001	37,172	9,720	9,519	9,044	7,718
Total	141,297	140,469	136,841	126,400	24,668	24,814	23,915	21,898

Federal Poverty Level	Average Monthly CAP Participation Electric, Combination, and Gas			
	2014	2015	2016	2017
≤50%	35,889	36,335	35,677	33,670
51% - 100%	75,945	75,904	74,034	69,738
101% - 150%	54,131	53,044	51,045	44,890
Total	165,965	165,283	160,756	148,298

CAP Requirements

The requirements for CAP are as follows.

- Complete a CAP application and provide documented proof of income for all adult household members.

- Re-certify every two years.
- Report changes in household income to PECO.
- Pay CAP bills on time and in full every month, or late charges will be assessed on past due balances and service may be terminated.
- Provide PECO with permission to verify income with authorized entities including credit reporting bureaus.
- Participate in energy reduction and conservation programs offered by PECO if identified as high-usage.
- Requested to provide social security numbers for all household members.
- Enroll only one account in CAP.
- Encouraged to apply for LIHEAP each season.
- Cannot have an alternative supplier (rules may change per the Commission).

CAP Application

The customer must complete and sign a CAP application and provide proof of income for all adult household members. While PECO cannot enroll customers in the FCO without the income amount and household size, PECO will use information on LIHEAP receipt to target customers for CAP application receipt. PECO will utilize the list of LIHEAP recipients within the past two years to identify potential CAP customers and mail a CAP application with a letter explaining the program and the benefits.

Customers can apply for CAP by mail, fax, email, and on-line. Most customers apply through the mail, but PECO has recently seen a slight increase in electronic CAP application.

CAP Re-Enrollment

PECO customers who were previously removed from CAP and submitted a completed CAP application and are income-eligible are re-enrolled. They are not eligible for pre-program arrearage forgiveness, but they are not required to pay any past due amounts to re-enroll in CAP.

CAP Recertification

CAP customers must recertify income eligibility every two years. If the customer provides incomplete information, PECO will send a letter requesting the missing information. If the customer does not respond, PECO will send a second letter 15 days later that requests the information and explains the risk of CAP removal. If the process is not completed within 45 days, the customer loses CAP benefits and a removal letter is mailed to the customer. The customer may reapply for CAP at any time.

CAP FCO Payment

The CAP FCO Payment Program began in October 2016. The payment is calculated as follows.

1. Determine prior year undiscounted charges for electricity generation and natural gas commodity services. Regulated charges are calculated based on the PECO tariff rate and

the price-to-compare for the time period examined. PECO then weather-normalizes the data.

If the customer does not have 12 months of prior service, PECO creates a profile based on the following in order of preference if data are available.

- Usage at the residence by the customer for the months available and by prior customers for the months unavailable.
 - Usage at that residence by prior customers.
 - Usage at similar residences or CAP residences in the same area.
 - System-wide usage or CAP usage averages.
2. Verify household income and determine poverty level.
 3. Determine allowable energy burden using the table below.

**Table II-4
CAP FCO Energy Burden Target**

Federal Poverty Level	Electric Non-Heating Rate R	Electric Heating Rate RH	Electric with Gas Heating Dual Commodity
0% - 50%	5%	13%	13%
51% - 100%	6%	16%	16%
101% - 150%	7%	17%	17%

4. Calculate the annual credit.
 - The Annual CAP Bill Amount = Household Income * Energy Burden
 - The Annual Credit = Weather-Normalized Base Charges – Annual CAP Bill

The maximum Annual Credit was calculated to provide bills within Commission energy burden guidelines to approximately 93 percent of Rate R customers (including dual fuel) and 96 percent of Rate RH customers. These maximum credits will remain at these levels for four years.

**Table II-5
CAP FCO Maximum Annual Credits**

Federal Poverty Level	Electric Non-Heating Rate R	Electric Heating Rate RH	Electric with Gas Heating Dual Commodity
0% - 50%	\$2,048	\$2,922	Same as Rate R for electric service; no maximum for gas service.
51% - 100%	\$1,389	\$1,881	
101% - 150%	\$1,241	\$1,661	

The minimum monthly bills result in bills above Commission energy burden guidelines for approximately six percent of CAP customers.

**Table II-6
CAP FCO Minimum Monthly Bills**

Electric Non-Heating Rate R	Electric Heating Rate RH	Gas Heating
\$12	\$30	\$25

5. Apply Annual Credit to Bill. PECO applies the Annual Credit over the year using the following monthly percentages. The intention is to provide a credit that fluctuates with seasonal usage patterns. Credits are applied on a rolling basis, so if the customer's credit in a month exceeds the outstanding balance, the credit will be rolled forward to future months and used to offset future balances.

**Table II-7
CAP FCO Seasonal Distribution of Credits**

Seasonal Distribution of CAP Credits			
Month	Electric Non-Heating	Electric Heating	Gas Heating
Jan	9.6%	13.9%	20.6%
Feb	8.9%	14.2%	19.5%
Mar	8.9%	12.2%	14.5%
Apr	7.0%	9.0%	9.6%
May	5.8%	5.3%	4.5%
June	7.7%	5.2%	2.6%
July	11.3%	6.4%	2.0%
Aug	10.6%	5.9%	1.8%
Sept	9.3%	5.4%	2.0%
Oct	6.6%	4.5%	2.6%
Nov	6.6%	6.4%	6.9%
Dec	8.7%	11.7%	13.6%
Total	100%	100%	100%

6. Period Recalculation and Adjustment of Annual Credit
- Customers are required to re-verify income and household size at the time of re-certification.
 - PECO recalculates and determines a new Annual Credit for each customer near the anniversary of the customer's enrollment in the FCO.
 - Every three months PECO recalculates energy costs using the customer's most recent three months of usage data to perform a Quarterly Recalculation of the Annual Credit.
 - PECO recalculates the annual credit if the customer updates household income or household size.

- If the customer verifies to PECO that a household member has increased usage as a result of medical reasons and it is expected to be more than a 12-month usage pattern, PECO will verify and increase the customer's Annual Credit by an amount equal to the estimated charges for the increased usage as a result of medical equipment for the remainder of that quarter, provided that the Annual Credit does not exceed the maximum Annual Credit.

Some customers will not receive an annual credit even if they are income-eligible for CAP, based on their energy burden. PECO estimated that approximately 40,000 households that received rate discounts under PECO's previous program would not receive discounts under the FCO. PECO provides a Phase-Out Benefit of \$50 per household to these households as a monthly bill credit of \$4.17 for each month the household continued to take service, up to a maximum of 12 consecutive months.

Customers who are eligible for CAP but do not receive an Annual Credit are eligible for any other benefits available to CAP customers including pre-program arrearage forgiveness and prioritization for LIURP.

Arrearage Forgiveness

When a customer enters CAP, the total Pre-Program Arrearage (PPA), the delinquency before initial CAP enrollment, is set aside and divided into 12 parts. PECO will forgive the PPA if the customer pays the new discounted CAP bill on time and in full each month. Each month the CAP customer pays the CAP bill in full and on time, one twelfth of the PPA is forgiven. Customers can catch up on missed forgiveness when they bring their bill current. During the initial 12-month period, PECO will forgive any missed forgiveness and if it is after the 12-month period, PECO will forgive all missed forgiveness when the bill is brought current.

CAP customers accumulated approximately \$45 million of "in-program arrears" (InPA), the amounts they had been billed since they entered CAP, but had not been paid. Stakeholders testified that these InPA were due to PECO's historic CAP that did not provide rates that comprehensively met the Commission's guidelines for affordable service. PECO guaranteed to absorb one third of the InPA to fully resolve these claims. PECO wrote off and will not seek rate recovery for one third of the InPA. PECO may recover the remaining two thirds of the InPA as a transition cost of moving to the FCO, through a combination of CAP customer payments and rate recovery.

CAP customers who converted to the new CAP FCO in October 2016 were eligible for a one-time InPA Forgiveness. The customer was given the opportunity to pay one third of the InPA and have the remaining two thirds forgiven. This program was approved by the Commission in 2015 in PECO's last base rate case proceeding. Customers were eligible to continue to receive InPA forgiveness through the 60-month term of the program. If the customer's account was finalized and the customer came back to PECO within the length of the original InPA installment plan, that customer's InPA was automatically reinstated.

Customers who fully utilized their medical certificates and renewals prior to entering the InPA Forgiveness program and were coded as Medical Certificate Non-Renewal (MCNR) were not eligible to utilize additional medical certificates unless they pay their bills in full immediately after enrollment into the InPA Forgiveness program.

CAP Portability

CAP moves from one premise to another within PECO's service territory as long as the transfer of service is within a 60-day window from the date the service was disconnected at the previous address. Previously unforgiven PPA is transferred to the new address and the customer continues to be eligible for forgiveness as long as the customer remains CAP-eligible.

CAP Dismissal

Customers can be dismissed from CAP for the following reasons.

- Over income guidelines
- Failure to meet program requirements
- Failure to accept program services
- Failure to participate in a LIURP audit
- Failure to complete the recertification process
- Fraud, theft of service, or other misappropriations of services

If an account is removed from CAP for fraud, theft of service, or other misappropriations of service, the customer is not eligible for CAP benefits for one full year from the date of removal. The customer may also be held liable for account arrearages, PPA, InPA, and collection fees.

Collections

CAP customers are subject to PECO's credit and collection policy, up to and including termination. CAP customers are not eligible for payment arrangements. PECO begins collections actions as soon as the customer is past due to enable the customer to bring the account current as soon as possible so that the catch-up situation is manageable.

Other than MCNR CAP customers in the InPA Forgiveness Program, PECO treats all other CAP customers requesting medical certificates the same as non-CAP residential customers. Residential customers are eligible for one medical certificate and two medical renewals on an existing past due amount. If the customer pays the current bill, the customer is eligible to renew medical certificates.

Low-income customers receive the following benefits.

- PECO does not charge a deposit for low-income customers with income at or below 150 percent of the FPL, except in the case of a post-bankruptcy account.
- PECO does not terminate service to verified low-income customers with income below 250 percent of the FPL from December 1 through April 1.

CAP Restoration of Service

CAP customers can have their service restored if they pay their past due balance or if they provide a valid medical certificate or Protection from Abuse (PFA) order. CAP-eligible customers who have never been on CAP may have their service restored and will be enrolled in CAP after service restoration. Their prior arrearages will go into PPA. Existing CAP customers are required to pay the restoration requirements.

Pa. Code § 56.191(c)(2) specifies that a public utility may require the following restoration requirements.

- Full payment of any outstanding balance and any reconnection fees if the customer has an income exceeding 300 percent of the FPL or has defaulted on two or more payment agreements.
- If a customer with household income exceeding 300 percent of the FPL experiences a life event, the customer shall be permitted a period of not more than three months to pay the outstanding balance required for reconnection. A life event is defined as a job loss that extends beyond nine months, a serious illness that extends beyond nine months, or death of the primary wage earner.
- Full payment of any reconnection fees and repayment over 12 months of any outstanding balance incurred if the customer has an income exceeding 150 percent of the FPL but not greater than 300 percent of the FPL. The initial payment required toward the outstanding balance as a condition of restoration cannot exceed 1/12 of the outstanding balance.
- Full payment of any reconnection fees and repayment over 24 months of any outstanding balance incurred by the customer or applicant if the customer or applicant has an income not exceeding 150 percent of the FPL. The initial payment required toward the outstanding balance as a condition of restoration cannot exceed 1/24 of the outstanding balance.

PECO Call Center

PECO introduced a new call center in May 2017 where both CAP issues and credit and collections for low-income and non-low-income customers are handled. PECO's Senior Supervisor is responsible for monitoring and tracking the CAP back office work that is handled by the call center. PECO's CAP unit interfaces with the vendor to handle PUC complaints, errors that need to be corrected, and accounts due for recertification.

Community-Based Organizations (CBOs)

PECO partners with CBOs to promote CAP. They provide train-the-trainer sessions to education CBOs about their Universal Service Programs. PECO also works with CBOs to administer the Matching Energy Assistance Fund (MEAF).

Cost Containment

The CAP has the following provisions to limit costs.

- Minimum monthly payments
- Maximum annual credits

CAP Challenges

PECO's CAP underwent significant changes with the introduction of the FCO in November 2016. Customers who received large discounts under the old CAP structure may not be eligible for CAP credits under the new structure based upon their energy burden. Customers call in because they don't understand why they do not receive a credit and how the credit is calculated. The most common CAP calls received have been from customers asking why they do not receive CAP credits.

PECO encourages customers to stay on CAP even if they are not receiving a credit. Each customer's information is reassessed every three months, and even if the customer is not receiving a credit at one point in time, the credit would kick in automatically if the updated calculation resulted in a credit. Additionally, if the customer has PPA set aside, the customer needs to remain in CAP to continue to have their arrearages forgiven.

C. Low-Income Usage Reduction Program (LIURP)

LIURP is a usage reduction program for high-usage low-income residential customers with household gross income at or below 200 percent of the FPL. LIURP provides direct weatherization and conservation measures and in-home education that promotes usage reduction. Beginning in October 2017, and for a period of three years, PECO increased the annual electric LIURP budget by \$700,000 per year to implement measures for Defacto Heating customers. These are customers whose main heating fuel is not electric but who are using electric for their heating because the main heating fuel is not available due to broken equipment or nonpayment of the bill.

LIURP Resources

Table II-8 displays the annual LIURP budget for electric and gas measures for 2016 through 2018 and Table II-9 displays the total projected LIURP costs. The annual budget is \$5.6 million for electric measures and \$2.25 million for gas measures.

**Table II-8
Annual LIURP Budget, 2016-2018**

Annual LIURP Budget	
Electric	\$5,600,000
Gas	\$2,250,000
Total	\$7,850,000

**Table II-9
Total LIURP Budget, 2016-2018**

	2016	2017	2018
LIURP Budget	\$7,954,697	\$7,956,018	\$7,960,282

Table II-10 displays LIURP expenditures from 2014 through 2017.

**Table II-10
LIURP Expenditures, 2014-2017**

	2014	2015	2016	2017
Service Delivery	\$7,504,172	\$7,586,391	\$7,557,292	\$7,520,320
Defacto Heating Pilot				\$418,511
Evaluation	\$132,598	\$87,641	\$91,967	\$89,553
Internal/Other	\$227,672	\$221,260	\$203,589	\$265,267
Total	\$7,864,442	\$7,895,292	\$7,852,848	\$8,288,671

LIURP Eligibility

Customers must meet the following criteria to be eligible for LIURP.

- Household income below 200 percent of the FPL.
- Annual monthly usage above 600 kWh per month (500 kWh for CAP participants) for electric baseload.
- Average monthly usage above 1,400 kWh per month for electric heat.
- Average monthly usage above 50 ccf per month for gas heat.
- Special consideration is given to CAP households.

LIURP is required for high-usage CAP customers. CAP participants who refuse a LIURP audit will be removed from CAP following a series of letters and phone calls. Customers removed from CAP can be reinstated as soon as they allow PECO to conduct a LIURP audit in their home and install measures.

LIURP Enrollment

Projected LIURP enrollment is based on the average cost per home and administrative costs. PECO projected that an average of 9,000 customers would be served in LIURP in 2016, 2017, and 2018.

**Table II-11
LIURP Participation, 2014-2017**

Service Type	LIURP Participation			
	2014	2015	2016	2017
Electric Heating	1,062	1,111	1,316	943
Electric Baseload	8,341	8,913	6,361	6,081
Gas Heating	1,144	1,293	1,240	1,117
Total	10,547	11,317	8,917	8,141

Audit

The first step in direct service delivery is the Program audit. The auditor verifies the previously reported household characteristics, including income, number of household occupants, age of home, and years of occupancy. He or she also calculates the average household energy use per day, the energy use for each household appliance, temperature settings, and water temperature. The auditors provide an in-depth visual inspection and diagnostic testing such as combustion analysis, zonal pressure diagnostics, and infrared thermography where applicable. Based on this information, the auditor may wrap the water heater and pipes, and install aerators, smoke detectors, showerheads, and LEDs during this initial audit visit.

The LIURP vendor then schedules the appropriate subcontractors to complete any necessary major measures, such as insulation, heating system repair or replacement, or new appliances.

Health and Safety

PECO provides smoke detectors and carbon monoxide alarms during the initial audit. The customer is informed of any hazards including moisture, mold, asbestos, CO sources, and any indoor air quality (IAQ) concerns. Customers are referred to other programs for assistance with issues that are beyond the scope of LIURP, such as electric problems, structural damage, or heating system malfunctions that the program cannot address.

Contractors

CMC has contractual responsibility for managing the LIURP subcontractors. PECO requires contractor and subcontractor staff to be certified, and maintain professional licenses, certifications, and BPI certification.

Quality Control

Three methods are primarily used for LIURP quality control.

- An annual evaluation, conducted by an independent program evaluator.
- Customer satisfaction surveys administered by CMC.
- Inspections by the CMC Quality Control Manager and a third-party inspector.

The LIURP vendor must inspect all heating audits and five percent of baseload audits following installations.

D. Matching Energy Assistance Fund (MEAF)

The Matching Energy Assistance Fund (MEAF) is PECO's hardship fund. The program is partially funded through customer donations that can be one-time or recurring on the customer's monthly bill. PECO solicits grants with bill inserts and a check-off box on the bill stub. They also receive contributions through their website and hold an annual golf tournament fundraiser.

Customers who are in danger of service termination or have their services terminated are eligible for a MEAF grant of up to \$500 per fuel. The grant must eliminate the total amount due excluding the pre-program arrearage.

MEAF Resources

Table II-12 displays the MEAF budget for 2016 through 2018. The 2018 budget was \$864,303. Part of the funding is for the UESF, a Community-Based Organization.

**Table II-12
MEAF Budget, 2016-2018**

	2016	2017	2018
MEAF Budget	\$547,860	\$570,004	\$578,583
UESF Funding	\$261,475	\$277,398	\$285,720
Total	\$809,335	\$847,402	\$864,303

Table II-13 displays MEAF expenditures from 2014 through 2017.

**Table II-13
MEAF Expenditures, 2014-2017**

Expenditures	2014	2015	2016	2017
MEAF	\$564,047	\$588,798	\$529,885	\$700,600
UESF	\$240,148	\$260,148	\$260,148	\$261,129
Total	\$804,195	\$848,946	\$790,033	\$961,729

MEAF Eligibility

Customers are eligible for MEAF if they meet the following criteria.

- Income at or below 175 percent of the FPL.
- Live in the county of application.
- Have not received MEAF in the past 24 months.
- Are in imminent danger of service termination or their services have been terminated.
- Can bring their balance to zero with the MEAF grant and individual payment or other grants.

MEAF Intake

PECO has established a MEAF intake site in each of the six counties in their service territory.

MEAF Grant Participation

PECO has historically provided grants to an average of 1,000 customers per year. Average grants were \$518 for electric and \$525 for gas in 2017.

**Table II-14
MEAF Grant Participation, 2014-2017**

Fuel	Annual MEAF Grants			
	2014	2015	2016	2017
Electric				
# Grants	808	642	523	773
Total Grants	\$324,076	\$296,313	\$293,530	\$400,205
Average Grant	\$401	\$462	\$561	\$518
Gas				
# Grants	130	105	85	124
Total Grants	\$52,319	\$48,237	\$47,784	\$65,150
Average Grant	\$402	\$459	\$562	\$525

Customers are only eligible to receive MEAF every two years, as it is an emergency assistance program. The agencies provide budget counseling to customers, and also address housing issues, food stamps, workforce development, and referrals to LIURP, the Weatherization Assistance Program (WAP), Social Security, and other benefits.

E. Customer Assistance and Referral Evaluation Services Program (CARES)

The Customer Assistance and Referral Evaluation Services Program (CARES) provides referrals and information services to assist customers with special needs and/or extenuating circumstances that negatively impact their ability to pay their utility bill. Eligible customers may receive temporary protection from service termination and specific education and referrals for energy and non-energy related assistance.

The goal of CARES is to educate and inform customers about available resources, including energy and non-energy assistance, budget counseling, and housing assistance, to maximize their ability to pay their energy bills.

The first component of CARES is an extensive referral network of community organizations, government agencies, and social service agencies that assist low-income customers. The second component is an in-house assistance program that assists customers with the identification of grant assistance and referrals. CARES administrators work with

customers to ensure that they receive assistance that they are eligible for and provide direct follow-up, with the customer or the agency, as appropriate.

CARES Resources

Table II-15 displays the CARES budget for 2016 through 2018. The budget was \$382,319 in 2018.

**Table II-15
CARES Budget, 2016-2018**

	2016	2017	2018
CARES Budget	\$372,372	\$374,760	\$382,319

Table II-16 displays CARES costs for 2014 through 2017. Costs were \$452,021 in 2017.

**Table II-16
CARES Expenditures, 2014-2017**

	2014	2015	2016	2017
CARES Costs	\$347,271	\$301,051	\$287,132	\$452,021

CARES Eligibility

Customers at or below 200 percent of the FPL and with special needs or extenuating circumstances are eligible for CARES.

CARES Participation

Table II-17 displays the total number of CARES participants for 2014 through 2017. PECO has provided CARES referral services to an average of 2,500 customers a year historically.

**Table II-17
CARES Participation, 2014-2017**

	2014	2015	2016	2017
Electric Participants	226,3367	235,820	218,731	189,631
Gas Participants	36,545	38,389	35,607	30,870

PECO receives CARES referrals from the call center, CBOs, and other agencies. These referrals are assigned to PECO's three CARES representatives who contact the customers by phone within three business days. A follow-up letter is sent if the customer is not reached by phone.

The CARES representatives make referrals to the customers' based on their individual needs. The referrals may include MEAF, churches, or CBOs that can assist the customer.

PECO staff will often contact the agencies for the customer, especially if the customer has been placed in collections.

F. Universal Services Education – Outreach Programs

PECO provides outreach and education to all customers to create awareness of program benefits and provide tools for program enrollment. PECO’s Universal Services Website provides a description and contact information for CAP, LIURP, MEAF, LIHEAP, and CARES, and provides a printable CAP application and on-line CAP enrollment. PECO does radio advertising in English and Spanish, advertises on social media, sends text messages about LIHEAP, and will begin texting about CAP as well.

PECO’s outreach events include the following.

- **Community Organizations and Health Providers:** PECO educates service providers and staff members at organizations such as Neighborhood Energy Centers (NECs), Community Based Organizations (CBOs), and legal service organizations.
- **Customers:** PECO provides outreach in communities to increase customer awareness and access to low-income programs. In some cases they provide assistance with LIHEAP and CAP applications at these events.

PECO conducts about 60 outreach events each year in Philadelphia and at least ten in each of PECO’s other territories. They average a total of 150 to 200 events each year because they receive many requests.

PECO has increased their collaboration with the Neighborhood Energy Centers, Fuel Fund agencies, PGW, the water department, and clergy, as these groups are targeting the same low-income customers as PECO. They find that the most successful events are those where PECO partners with an elected official, as the customers trust the officials and these events are well-publicized.

Outreach Resources

Table II-18 displays PECO’s outreach budget for 2016 through 2018.

**Table II-18
Outreach Budget, 2016-2018**

	2016	2017	2018
Outreach Budget	\$296,333	\$277,398	\$285,720

PECO maintains relationships with the following CBOs to provide services to low-income customers.

- Utility Emergency Services Fund (UESF) – Philadelphia County
- Montgomery County Community Action Agency Development Commission – Montgomery County
- Community Action Agency of Delaware County – Delaware County

- Mason Dixon Cares – York County
- Bucks County Opportunity Council Inc. – Bucks County

Additionally, PECO works with other CBOs to provide referral services including job training, budget counseling, and education workshops.

G. External Grant Administration

PECO manages external grant administration and provides assistance to CBOs, NECs, and other agencies that provide financial assistance to low-income customers. The Pennsylvania Low-Income Home Energy Assistance Program (LIHEAP), an example of these programs, provides cash, crisis, and weatherization assistance.

- Late charges are suspended on LIHEAP recipient accounts from the time the grant is received until the end of the LIHEAP season.
- PECO reaches out to customers that were terminated and not restored in a given year for their Winter Survey and then to confirm the property is occupied and refer customers to LIHEAP Cash and Crisis grants to have their service restored.
- PECO conducts an expedited mailing to customers identified as being Crisis-eligible each February. The mailing includes a termination notice with a termination date of April 1. This notice is required for a LIHEAP Crisis grant. The letter also informs the customer that they are LIHEAP Crisis-eligible and how to apply.
- LIHEAP grants are posted to customer accounts in the following order: past due balance, current charges, and then credit to account.

LIHEAP Resources

Table II-19 displays PECO's LIHEAP budget for 2016 through 2018.

**Table II-19
LIHEAP Budget, 2016-2018**

	2016	2017	2018
LIHEAP Budget	\$1,084,058	\$1,078,695	\$1,101,663

III. Needs Assessment

PECO customers are income-eligible for the Customer Assistance Program (CAP) if they have income below 150 percent of the poverty level, and they are income-eligible for the Low-Income Usage Reduction Program (LIURP) if they have income below 200 percent of the poverty level. This section of the report provides an assessment of the number of PECO customers who are income-eligible for CAP and LIURP.

A. Methodology

This section provides a profile of low-income households in the PECO service territory using data from the American Community Survey (ACS). The ACS data provide information on household characteristics, including income level and demographic characteristics. We use data on household size and income to construct the poverty ratio for each household and identify those households that were income-eligible for the CAP and LIURP.

Most of the analyses are conducted using the 2014, 2015, and 2016 ACS data files. An average of the three years of data is used to provide a larger sample for analysis than would be available in the one-year file. Table III-5B also provides an analysis of the 2013-2015 files and the 2012-2014 files to assess whether there have been changes in the income-eligible population.

B. PECO Electric and Natural Gas Customers

There are approximately 1,700,000 households in the PECO service territory (excluding vacant units and group quarters). About 1,600,000 of these households are categorized as having PECO Residential Service because they received electric or gas service from PECO. Households are categorized as receiving electric or gas service from PECO if they provided a numeric value for their most recent month's gas or electricity bill and lived in one of the counties where PECO provides that service. Households are not included if their electricity and gas bills are included in their rent or condo fee, or if there was no charge for gas and electricity, or if neither gas nor electricity were used.

PECO Electric Service includes households in Bucks, Chester, Delaware, Montgomery, Philadelphia, and York counties. PECO Gas Services includes households in these counties except for Philadelphia county, as Philadelphia Gas Works (PGW) services these customers.

Table III-1
Distribution of Service Status for Households in PECO Service Territory

Service Status	#	%
PECO Residential Service	1,599,172	95%
PECO Electric Service	1,595,669	95%
PECO Gas Service	384,256	23%

Service Status	#	%
PECO Electric-Only Service	1,214,916	72%
PECO Combination Gas and Electric Service	380,753	23%
PECO Gas-Only Service	3,503	<1%
PECO Heating Service	606,219	36%
PECO Non-Heating Service	992,953	59%
All Households	1,683,831	100%

Table III-2 shows the number of households in each county who receive utility service from PECO. The county with the most households receiving PECO Residential Service is Philadelphia County with 539,462 such households, representing 34 percent of all the households who receive PECO service. The county with the most households receiving PECO Gas Service is York County, with 108,848 households.

**Table III-2
Distribution of Service Type for Households in PECO Service Territory, By County**

County	All Households	PECO Residential Service		PECO Electric Service		PECO Gas Service	
	#	#	%	#	%	#	%
Bucks	233,644	225,387	14%	224,935	14%	63,505	17%
Chester	187,151	180,016	11%	179,218	11%	61,128	16%
Delaware	204,321	195,709	12%	195,339	12%	62,341	16%
Montgomery	310,568	296,237	19%	295,515	19%	88,434	23%
Philadelphia	579,891	539,462	34%	539,462	34%	-	-
York	168,256	162,361	10%	161,200	10%	108,848	28%
Total Service Territory	1,683,831	1,599,172	100%	1,595,669	100%	384,256	100%

Table III-3 shows the number households in each county who receive service from PECO, broken down by whether their primary heating service is provided by PECO.

**Table III-3
Distribution of Heating Service for Households in PECO Service Territory
By County**

County	PECO Residential Service	PECO Heating Service		PECO Non-Heating Service	
	#	#	%	#	%
Bucks	225,387	104,253	17%	121,134	12%
Chester	180,016	80,286	13%	99,729	10%
Delaware	195,709	81,845	14%	113,864	11%

County	PECO Residential Service	PECO Heating Service		PECO Non-Heating Service	
	#	#	%	#	%
Montgomery	296,237	135,521	22%	160,716	16%
Philadelphia	539,462	88,261	15%	451,201	45%
York	162,361	116,053	19%	46,308	5%
Total Service Territory	1,599,172	606,219	100%	992,953	100%

C. PECO CAP and LIURP Income-Eligible Customers

Table III-4 presents data on income-eligible households by service type and heating service. We estimate in the most recent 3-year combined files that 18 percent of all households with PECO residential service are income-eligible for the CAP, and 26 percent for LIURP. Of the 1,599,172 households with residential utility service from PECO, approximately 292,913 have income at or below 150 percent of the federal poverty guidelines, and 411,542 have income at or below 200 percent of the federal poverty guidelines.

Table III-4
CAP and LIURP Income Eligibility Rate
By PECO Service Status

Service Status	Total Households	CAP Income-Eligible (150% of FPL)		LIURP Income-Eligible (200% of FPL)	
		#	%	#	%
PECO Residential Service	1,599,172	292,913	18%	411,542	26%
PECO Electric Service	1,595,669	291,780	18%	410,136	26%
PECO Gas Service	384,256	43,735	11%	67,015	17%
PECO Electric-Only Service	1,214,916	249,178	21%	344,528	28%
PECO Combination Gas and Electric Service	380,753	42,602	11%	65,609	17%
PECO Gas-Only Service	3,503	1,133	32%	1,406	40%
PECO Heating Service	606,219	98,073	16%	138,361	23%
PECO Non-Heating Service	992,953	194,840	20%	273,181	28%
All Households	1,683,831	328,228	19%	456,245	27%

Table III-5A presents data on income-eligible households by county. The county with the most eligible households and with the highest eligibility rate for both CAP and LIURP is Philadelphia County. There are 166,559 households that are income-eligible for CAP in Philadelphia (31%) and 219,432 that are income-eligible for LIURP (41%). The county with the least eligible households and with the lowest eligibility rate for both programs is Chester County.

**Table III-5A
CAP and LIURP Income Eligibility Rate
By County**

County	PECO Residential Service	CAP Income-Eligible (150% of FPL)		LIURP Income-Eligible (200% of FPL)	
	#	#	%	#	%
Bucks	225,387	23,457	10%	36,788	16%
Chester	180,016	15,824	9%	24,869	14%
Delaware	195,709	30,643	16%	43,853	22%
Montgomery	296,237	31,635	11%	48,375	16%
Philadelphia	539,462	166,599	31%	219,432	41%
York	162,361	24,755	15%	38,225	24%
Total Service Territory	1,599,172	292,913	18%	411,542	26%

Table III-5B shows that there has been an increase in the total number of households in PECO's service territory, but a decrease in the number of CAP income-eligible households, and in the percent of households that are income-eligible for CAP in the service territory. The number of income-eligible households declined from 312,391 in the 2012-2014 analysis to 301,838 in the 2013-2015 analysis, to 292,913 in the 2014-2016 analysis. The percent of households who were income-eligible declined from 20 percent to 19 percent to 18 percent. The number eligible in Philadelphia County declined from 175,599 in the 2012-2014 analysis to 166,599 in the 2014-2016 analysis.

**Table III-5B
CAP Income Eligibility Rate
By County**

County	2014-2016 ACS			2013-2015 ACS			2012-2014 ACS		
	PECO Residential Service	CAP Income-Eligible Households		PECO Residential Service	CAP Income-Eligible Households		PECO Residential Service	CAP Income-Eligible Households	
	#	#	%	#	#	%	#	#	%
Bucks	225,387	23,457	10%	225,281	24,635	11%	224,671	24,543	11%
Chester	180,016	15,824	9%	179,485	17,542	10%	177,700	19,344	11%
Delaware	195,709	30,643	16%	194,401	31,080	16%	193,250	33,256	17%
Montgomery	296,237	31,635	11%	294,093	32,883	11%	293,928	32,762	11%
Philadelphia	539,462	166,599	31%	540,732	170,450	32%	537,746	175,599	33%
York	162,361	24,755	15%	160,751	25,248	16%	162,548	26,887	17%
Total	1,599,172	292,913	18%	1,594,742	301,838	19%	1,589,843	312,391	20%

Table III-6 provides a breakdown of the income-eligible population receiving PECO residential service by poverty level and service type. While 72 percent of the LIURP income-eligible electric only households have income at or below 150 percent of poverty and are income-eligible for CAP, 64 percent of the LIURP income-eligible combination households are income-eligible for CAP.

**Table III-6
Distribution of Households
By Service Type and Poverty Group**

Poverty Group	Electric-Only			Combination			Gas-Only		
	#	%		#	%		#	%	
		Of CAP	Of LIURP		Of CAP	Of LIURP		Of CAP	Of LIURP
CAP & LIURP Eligible									
0% -25%	44,098	18%	13%	5,612	13%	9%	300	27%	21%
26% -50%	23,024	9%	7%	3,289	8%	5%	62	5%	4%
51% -75%	41,241	17%	12%	5,491	13%	8%	7	1%	1%
76%-100%	49,490	20%	14%	7,372	17%	11%	291	26%	21%
101%-125%	48,796	20%	14%	10,124	24%	15%	307	27%	22%
126% - 150%	42,528	17%	12%	10,715	25%	16%	166	15%	12%
Total CAP Eligible	249,178	100%	72%	42,602	100%	64%	1,133	100%	81%
LIURP Eligible									
151%-175%	49,436	-	14%	11,549	-	18%	181	-	13%
176%-200%	45,913	-	13%	11,458	-	17%	91	-	7%
Total LIURP Eligible	344,528	-	100%	65,609	-	100%	1,406	-	100%

Table III-7 provides a breakdown of the income-eligible population receiving PECO electric service by poverty level. While 26 percent of CAP income-eligible households are below 50 percent of the poverty level, 35 percent are between 51 and 100 percent, and 38 percent are between 101 and 150 percent.

**Table III-7
Distribution of Households with Electric Service
By Poverty Group**

Poverty Group	Households With Electric Service		
	#	%	
		Of CAP	Of LIURP
CAP & LIURP Eligible			
0% -25%	49,710	17%	12%
26% -50%	26,313	9%	6%
51% -75%	46,732	16%	11%
76%-100%	56,862	19%	14%
101%-125%	58,920	20%	14%
126% - 150%	53,243	18%	13%
Total CAP Eligible	291,780	100%	70%
LIURP Eligible			
151%-175%	60,985	-	15%
176%-200%	57,371	-	14%
Total LIURP Eligible	410,136	-	100%

Table III-8 and Table III-9 provide a breakdown of the CAP and LIURP income-eligible population receiving PECO electric service by poverty level and county. The county with the highest number and percentage of income-eligible households with income below 100% of the Federal Poverty Guidelines is Philadelphia County.

**Table III-8
Distribution of CAP Income-Eligible Households with Electric Service
By Poverty Group and County**

Poverty Group	County											
	Bucks		Chester		Delaware		Montgomery		Philadelphia		York	
	#	%	#	%	#	%	#	%	#	%	#	%
0% -25%	3,283	14%	2,289	15%	4,366	14%	4,960	16%	32,063	19%	2,748	11%
26% -50%	1,952	8%	1,025	7%	2,999	10%	2,089	7%	16,704	10%	1,544	6%
51% -75%	2,912	12%	2,688	17%	4,902	16%	3,506	11%	29,309	18%	3,415	14%
76%-100%	4,622	20%	2,968	19%	5,327	18%	6,208	20%	33,574	20%	4,163	17%
101%-125%	5,534	24%	3,470	22%	6,273	21%	7,037	22%	30,600	18%	6,007	25%
126% - 150%	5,154	22%	3,186	20%	6,459	21%	7,678	24%	24,349	15%	6,418	26%
Total CAP Eligible	23,457	100%	15,626	100%	30,326	100%	31,477	100%	166,599	100%	24,294	100%

Table III-9
Distribution of LIURP Income-Eligible Households with Electric Service
By Poverty Group and County

Poverty Group	County											
	Bucks		Chester		Delaware		Montgomery		Philadelphia		York	
	#	%	#	%	#	%	#	%	#	%	#	%
0% -25%	3,283	9%	2,289	9%	4,366	10%	4,960	10%	32,063	15%	2,748	7%
26% -50%	1,952	5%	1,025	4%	2,999	7%	2,089	4%	16,704	8%	1,544	4%
51% -75%	2,912	8%	2,688	11%	4,902	11%	3,506	7%	29,309	13%	3,415	9%
76%-100%	4,622	13%	2,968	12%	5,327	12%	6,208	13%	33,574	15%	4,163	11%
101%-125%	5,534	15%	3,470	14%	6,273	14%	7,037	15%	30,600	14%	6,007	16%
126% - 150%	5,154	14%	3,186	13%	6,459	15%	7,678	16%	24,349	11%	6,418	17%
151%-175%	5,921	16%	4,507	18%	7,460	17%	7,613	16%	28,183	13%	7,302	19%
176%-200%	7,352	20%	4,517	18%	5,750	13%	9,051	19%	24,650	11%	6,051	16%
Total LIURP Eligible	36,730	100%	24,651	100%	43,536	100%	48,141	100%	219,432	100%	37,647	100%

Table III-10 provides a breakdown of the income-eligible population receiving PECO gas service by poverty level. While 22 percent of CAP income-eligible households are below 50 percent of the poverty level, 31 percent are between 51 and 100 percent, and 49 percent are between 101 and 150 percent.

Table III-10
Distribution of Households with Gas Service
By Poverty Group

Poverty Group	Households With Gas Service		
	#	%	
		Of CAP	Of LIURP
CAP & LIURP Eligible			
0% -25%	5,912	14%	9%
26% -50%	3,351	8%	5%
51% -75%	5,498	13%	8%
76%-100%	7,662	18%	11%
101%-125%	10,431	24%	16%
126% - 150%	10,881	25%	16%
Total CAP Eligible	43,735	100%	65%

Poverty Group	Households With Gas Service		
	#	%	
		Of CAP	Of LIURP
LIURP Eligible			
151%-175%	11,730	-	18%
176%-200%	11,549	-	17%
Total LIURP Eligible	67,015	-	100%

Table III-11 and Table III-12 provide a breakdown of the CAP and LIURP income-eligible population receiving PECO gas service by poverty level and county. No households in Philadelphia County receive PECO gas service. The county with the highest number of income-eligible households with income below 100% of the Federal Poverty Guidelines is York County. The county with the highest percentage of income-eligible households with income below 100% of the Federal Poverty Guidelines is Delaware County, where 59 percent of the households have income at or below that level.

**Table III-11
Distribution of CAP Income-Eligible Households with Gas Service
By Poverty Group and County**

Poverty Group	County											
	Bucks		Chester		Delaware		Montgomery		Philadelphia		York	
	#	%	#	%	#	%	#	%	#	%	#	%
0% -25%	628	10%	897	17%	1,372	17%	1,241	17%	-	-	1,775	11%
26% -50%	513	9%	325	6%	821	10%	528	7%	-	-	1,163	7%
51% -75%	964	16%	800	15%	1,110	14%	709	10%	-	-	1,915	11%
76%-100%	1,167	19%	911	17%	1,432	18%	1,265	17%	-	-	2,887	17%
101%-125%	1,148	19%	1,393	26%	1,848	23%	1,720	23%	-	-	4,321	26%
126% - 150%	1,591	26%	1,097	20%	1,479	18%	1,866	25%	-	-	4,848	29%
Total CAP Eligible	6,010	100%	5,425	100%	8,061	100%	7,330	100%	-	-	16,909	100%

Table III-12
Distribution of LIURP Income-Eligible Households with Gas Service
By Poverty Group and County

Poverty Group	County											
	Bucks		Chester		Delaware		Montgomery		Philadelphia		York	
	#	%	#	%	#	%	#	%	#	%	#	%
0% -25%	628	7%	897	11%	1,372	11%	1,241	10%	-	-	1,775	7%
26% -50%	513	6%	325	4%	821	7%	528	4%	-	-	1,163	5%
51% -75%	964	11%	800	10%	1,110	9%	709	6%	-	-	1,915	8%
76%-100%	1,167	13%	911	11%	1,432	12%	1,265	10%	-	-	2,887	12%
101%-125%	1,148	13%	1,393	17%	1,848	15%	1,720	14%	-	-	4,321	17%
126% - 150%	1,591	18%	1,097	13%	1,479	12%	1,866	15%	-	-	4,848	19%
151%-175%	1,287	14%	1,592	19%	2,239	18%	2,110	17%	-	-	4,502	18%
176%-200%	1,588	18%	1,377	16%	2,083	17%	2,842	23%	-	-	3,659	15%
Total LIURP Eligible	8,885	100%	8,394	100%	12,383	100%	12,282	100%	-	-	25,070	100%

D. CAP Participation Rates

Table III-13 displays the participation rate for Program Year 2015. The table shows that an estimated 56 percent of the income-eligible population participated in the CAP.

Table III-13
Participation Rate for 2015
By Poverty Level

Poverty Level	CAP Participants	CAP Eligible PECO Residential Households	Participation Rates
0% -50%	36,335	76,385	48%
51% -100%	75,904	103,892	73%
101% -150%	53,044	112,636	47%
Total	165,283	292,913	56%

E. Summary

This section provided a profile of income-eligible households in the PECO service territory using data from the American Community Survey (ACS). Key findings from the analysis are provided below.

- There are approximately 1,683,831 households in the PECO service territory and about 1,599,172 have direct PECO bill payment.
- While 18 percent of all households with PECO residential service are income-eligible for CAP, 26 percent are income-eligible for LIURP.

- The number of CAP income-eligible households declined from 312,391 in the 2012-2014 analysis to 301,838 in the 2013-2015 analysis, to 292,913 in the 2014-2016 analysis. The percent of households who were income-eligible for CAP declined from 20 percent to 19 percent to 18 percent.
- An estimated 56 percent of the income-eligible population participated in CAP during Program Year 2015.

IV. Participant In-Depth Interviews

This section provides a summary of the findings from in-depth interviews conducted with program participants.

A. Methodology

APPRISE conducted telephone interviews with 30 Customer Assistance Program (CAP) participants. The goal of the interviews was to understand challenges in program enrollment and re-certification and survey participants' perspective on CAP benefits, interactions between CAP and other benefits/programs, and overall CAP satisfaction.

A sample of 100 current CAP participants was selected for the interviews, 50 electric-only customers and 50 combination customers. Only active CAP participants who participated in the program in 2017 were included.

Interviews were conducted between September 6, 2018 and September 18, 2018. Advance letters were sent by mail to all selected respondents, and a toll-free number was provided for respondents to call in to complete the interview. Most respondents were interviewed through outbound telephone calls, though several respondents completed the survey by calling in to the toll-free number.

B. Interview Findings

This section provides a summary of the findings from the interviews in the following areas.

- Status Confirmation
- Enrollment and Recertification
- CAP Understanding and Impact
- Other Assistance
- Satisfaction and Recommendations

Status Confirmation

CAP participants were asked if they participated in PECO's CAP. If necessary, they were reminded that the program provides a reduced utility bill and arrearage forgiveness. Table IV-1 shows that all participants interviewed confirmed their knowledge of participation in CAP. Twenty-seven participants reported that they were currently participating in the program, and three participants reported that they had participated in the program within the past year.

**Table IV-1
Participation in Customer Assistance Program**

Are you currently participating in PECO's Customer Assistance Program? Have you participated in PECO's Customer Assistance Program within the past year?		
	Currently Participating	Participated within Past Year
Yes	27	3
No	3	0
Not Applicable	0	27
Total	30	30

Enrollment and Recertification

Participants were asked when they began participating in CAP. Table IV-2 shows that 20 participants reported that they enrolled two or more years ago, four participants reported that they enrolled one year ago, and three participants reported that they enrolled this year. Three participants reported that they did not know when they began participating in CAP.

**Table IV-2
Beginning of Participation in Customer Assistance Program**

When did you begin participating in CAP?	
Two or more years ago	20
One year ago	4
This year	3
Don't know	3
Total	30

Participants were also asked how they found out about CAP. Table IV-3 shows that 13 of 30 participants reported that they found out about the program from a PECO representative. Other participants reported that they found out from friends or relatives; from local, community action, government, or social service agencies; or from other sources, including neighbors and leaflets found at a library.

Table IV-3
Awareness of Customer Assistance Program

How did you find out about CAP?	
PECO Representative	13
Friend or Relative	6
Local/Community Action/Government/Social Service/ Elected Official	5
Other	2
Don't Know	4
Total	30

Participants were asked why they decided to enroll in CAP. Table IV-4 shows that 16 participants reported that they decided to enroll to lower their utility bills. Other participants expressed that they enrolled because they had low or fixed income or finances; because they needed help and felt that the program could offer assistance; or for other reasons, including being disabled, unemployed, or a single parent. Participants offered the following comments.

- My bill was becoming sky high, and I'm a single mom, so I needed help.
- I didn't want things to get too far out of hand, and I didn't want to be without utilities, because I have machines that need electric.
- [CAP seemed] convenient. You don't have to come up with lots of money.

Table IV-4
Reasons for Enrolling in the Customer Assistance Program

Why did you decide to enroll in CAP?	
Lower Utility Bills/Bills Were Too High	16
Low/Fixed Income or Finances	9
Needed Help/Sounded Like It Could Help	5
Other	5

*Some participants provided more than one response.

Participants were next asked about the CAP application process. First, participants were read a list of the steps involved in CAP enrollment, and asked if any of these steps were difficult for them. The steps asked about were as follows.

- Obtaining the application
- Understanding the application instructions
- Providing proof of income for yourself

- Providing proof of income for other members of your household
- Sending in the application
- Other

Table IV-5 shows that 27 participants reported that none of these steps posed difficulties. However, one participant reported difficulty with providing proof of income for himself, and two participants reported difficulty with other aspects of the application, including completing the application within the time period designated by PECO.

Table IV-5
Difficult Aspects of Enrollment in the Customer Assistance Program

When applying for CAP, did you have any difficulty with the following parts of the application process?	
Providing Proof of Income for Yourself	1
Other	2
None	27
Total	30

Participants were also asked how difficult it was to apply for CAP overall. Table IV-6 shows that 28 participants reported that it was not at all difficult to apply for CAP, while two participants reported that it was not too difficult to apply for CAP.

Table IV-6
Difficulty of Applying for the Customer Assistance Program

Overall, how difficult was it to apply for CAP?	
Very Difficult	0
Somewhat Difficult	0
Not Too Difficult	2
Not At All Difficult	28
Total	30

Participants were asked if they had ever re-certified for CAP. If necessary, they were reminded that recertifying means providing an update to PECO about their household and income levels. Table IV-7 shows that whereas 17 participants reported that they had re-certified for CAP, 12 participants reported that they had not.

Table IV-7
Recertification for the Customer Assistance Program

Have you ever re-certified for CAP?	
Yes	17
No	12
Don't Know	1
Total	30

Participants who reported that they had re-certified for CAP were asked how difficult this was. Table IV-8 shows that 16 participants reported that it was not at all difficult to re-certify in the program, while one participant reported that it was somewhat difficult to re-certify in the program.

Table IV-8
Difficulty of Recertifying in the Customer Assistance Program

How difficult was it to re-certify in CAP?	
Very Difficult	0
Somewhat Difficult	1
Not Too Difficult	0
Not At All Difficult	16
Total	17

CAP Understanding and Impact

Participants were asked if they felt that they had a good understanding of the benefits provided by CAP. Table IV-9 shows that whereas 24 participants reported that they had a good understanding of these benefits, five participants reported that they did not have a good understanding of these benefits.

Table IV-9
Understanding of Customer Assistance Program Benefits

Do you feel that you have a good understanding of the benefits provided by CAP?	
Yes	24
No	5
Refused	1
Total	30

Participants were next asked what they perceived as the benefits of CAP. Table IV-10 shows that 26 participants reported that lower energy/gas bills were a benefit of the program, two participants reported that helping out families was a benefit, and one participant reported

that reduced arrearages were a benefit. Seven participants described other benefits of the program, such as its promotion of environmentally-friendly behaviors and its connection of participants with LIHEAP and other energy assistance programs. Participants offered the following comments.

- They prorate your bill so that you're not putting so much out of pocket. Plus, as long as you pay within a certain time period, [your arrearages] go down.
- [The benefit is] not having to worry about having a high bill come in.
- I'm on oxygen and I can't be without air conditioning. Especially this summer, I would've never made it [without CAP].

**Table IV-10
Customer Assistance Program Benefits**

What do you feel are the benefits of CAP?	
Lower Utility Bills/More Affordable Utility Bills	26
Helps Out My Family/Other Families/Other Low-Income People	2
Reduced Money Owed to PECO/Reduced Arrearages	1
Other	7
Refused	1

*Some participants provided more than one response.

Participants were specifically asked whether they felt that lower bills are a benefit of CAP. Table IV-11 shows that all but one participant reported that they did view lower bills as a program benefit. Participants were also specifically asked whether they felt that receiving a monthly reduction in their past due balance is a benefit of CAP. Table IV-11 shows that all but three participants reported that they did view a reduction in their past due balance as a program benefit.

**Table IV-11
Prompted Customer Assistance Program Benefits**

Do you feel that lower bills are a benefit of the program?		
Do you feel that a monthly reduction in your balance that was past due is a benefit of the program?		
	Lower Bills	Arrearage Reduction
Yes	29	27
No	1	3
Total	30	30

Participants were next asked what they viewed as the single most important benefit of CAP. Table IV-12 shows that 19 participants viewed lower utility bills as the most important

benefit of the program. Other participants saw reduced arrearages, the ability to keep their utility service on, the ability to afford other bills or expenses, and assistance for low-income families as the most important benefit of CAP. Four participants cited other most important benefits of the program, including that the program relieves stress and offers high-quality customer service. Participants offered the following comments.

- The biggest benefit is being able to afford our utility bills. It's a lifesaver for us.
- It saves me a lot of stress in terms of wondering where I'm going to get the payments.
- As a single parent, [the savings] help me get stuff for my daughter that she needs.

Table IV-12
Single Most Important Customer Assistance Program Benefit

What do you feel is the single most important benefit of CAP?	
Lower Utility Bills/More Affordable Utility Bills	19
Helps Out My Family/Other Families/Other Low-Income People	3
Keeping Utility Service/Not Having Service Turned Off	1
Reduced Money Owed to PECO/Reduced Arrearages	1
Other	4
Don't Know	1
Refused	1
Total	30

Participants were asked how difficult it was to pay their monthly PECO bills before enrolling in CAP and while they were enrolled. Table IV-13 shows that 21 participants reported that it was very difficult to pay their PECO bills prior to enrolling in the program, and only one participant stated that it was very difficult to pay their bills while participating in CAP. Additionally, only one customer said it was not at all difficult to pay the monthly PECO bill before participating in CAP, but 11 said that paying their bills was not at all difficult while participating in CAP.

Table IV-13
Paying PECO Bill before Enrolling in the Customer Assistance Program

How difficult was it to pay your monthly PECO bill before/while participating in PECO's CAP?		
	Before Participating	While Participating
Very Difficult	21	1
Somewhat Difficult	5	5
Not Too Difficult	3	11
Not At All Difficult	1	11
Don't Know	0	2
Total	30	30

Participants were next asked whether they received monthly credits through the Customer Assistance Program. Table IV-14 shows that 12 participants reported that they did receive monthly credits, while 10 participants reported that they did not receive monthly credits, and eight participants reported that they did not know if they received monthly credits. Participants offered the following comments.

- I don't know how they do it. I just get the bill and I pay it.
- [I don't receive monthly credits] that I know of. These things that you're talking about, PECO doesn't go out of its way to talk about them.
- I know nothing about [monthly credits].

Table IV-14
Recipient of Monthly Credits through CAP

Do you receive monthly credits through the Customer Assistance Program?	
Yes	12
No	10
Don't Know	8
Total	30

Participants were also asked whether they usually pay their full PECO bills each month. Table IV-15 shows that all participants reported that they pay their full bill each month.

Table IV-15
Payment of Full PECO Bill Each Month

Do you usually pay your full PECO payment each month?	
Yes	30
Total	30

Next, participants who reported that they receive monthly credits from CAP were asked whether they were aware of any monthly variation in the size of their credits. Table IV-16 shows that eight participants reported that they did notice changes in the size of their credits.

Table IV-16
Awareness of Monthly Changes in CAP Credits

From month to month, do you notice any changes in the size of the credits that you receive from CAP?	
Yes	8
No	3
Don't Know	1
Total	12

Participants who reported that they noticed monthly variation in their CAP benefits were further asked whether they found it more or less difficult to pay their PECO bills in certain parts of the year. Table IV-17 shows that five participants reported that they find it more difficult to pay their PECO bills in the summer and three participants reported that they find it more difficult to pay their PECO bills in the winter. While five of eight participants reported that there are no parts of the year when paying their PECO bill is less difficult, three participants reported that they find it less difficult to pay their bills in the summer, winter, and fall, respectively.

Table IV-17
Seasonal Difficulty of Paying PECO Bill

Are there certain parts of the year when it find it <u>more/less</u> difficult to pay your monthly PECO bill?		
	More Difficult	Less Difficult
Summer	5	1
Winter	3	1
Fall	0	1
None	1	5

*Some participants provided more than one response.

Participants were asked how important CAP has been in helping them to make ends meet. Table IV-18 shows that 23 participants reported that CAP has been very important in helping them to make ends meet, and three participants reported that it has been somewhat important in helping them to make ends meet. Only one participant reported that CAP has not been at all important in helping her to make ends meet.

Table IV-18
Importance of Customer Assistance Program in Helping Make Ends Meet

How important has CAP been in helping you to make ends meet?	
Very Important/Has Made a Big Difference	23
Somewhat Important/Has Made a Difference	3
Not At All Important/Not Big Enough Benefit to Help	1
Don't Know	2
Refused	1
Total	30

Other Assistance

Participants were next asked if they had received other benefits or participated in other programs as a result of their participation in CAP. Table IV-19 shows that while 11 participants reported they had received other benefits or participated in other programs due to enrolling in CAP, 19 participants reported that they had not. Participants were also specifically asked whether they receive benefits from LIHEAP. Table IV-19 shows that 20 participants reported that they received benefits from LIHEAP, while 10 participants reported that they did not receive LIHEAP benefits.

Relevant participants next detailed the other benefits they had received or programs they had participated in as a result of enrolling in the Customer Assistance Program. Aside from LIHEAP, participants mentioned the following benefits and programs.

- Philadelphia Gas Works' Customer Responsibility Program (3 customers)
- PECO's Low Income Usage Reduction Program (1 customer)
- Budget billing with other utility companies (1 customer)

Table IV-19
Other Benefit Receipt or Program Participation
Due to Customer Assistance Program

Have you received any other benefits or participated in any other programs a result of participating in CAP? Do you receive benefits from the Low-Income Home Energy Assistance Program?		
	Any Benefit/Program	LIHEAP
Yes	11	20
No	19	10
Total	30	30

Participants who reported that they received benefits from LIHEAP were asked whether they received LIHEAP benefits before or after they began participating in CAP. Table IV-20 shows that 10 participants reported that they received LIHEAP benefits after they began

participating in CAP, while five participants reported that they received LIHEAP benefits before they began participating in CAP.

Table IV-20
Timeline of LIHEAP Participation

Can you recall if you received LIHEAP before you began participating in CAP or after you began participating in CAP?	
After Participating in CAP	10
Before Participating in CAP	5
Same Time	1
Don't Know	4
Total	20

Satisfaction and Recommendations

Participants were finally asked about their overall satisfaction with CAP. Table IV-21 shows that 23 participants reported that they were very satisfied with CAP, and five participants reported that they were somewhat satisfied with CAP. Participants offered the following comments.

- I'm really grateful for [CAP]. It's one of the best programs I've seen in a while.
- I don't have any complaints about [CAP]. It's helping people out.
- [CAP] is a good program. It helped us for that time we were on it.

Table IV-21
Satisfaction with Customer Assistance Program

Overall, how satisfied have you been with PECO's CAP?	
Very Satisfied	23
Somewhat Satisfied	5
Not Too Satisfied	1
Not At All Satisfied	1
Total	30

Participants who reported that they were not very satisfied with CAP were asked about the reasons for their dissatisfaction. Participants offered the following comments.

- It's supposed to help poor people, people who have disabilities. But they do nothing.
- I think that there was a change since I started CAP. I'm not sure I receive the same benefits that I did before.
- I'd like them to give us more money, like they did a couple years ago.

Participants were next asked about recommendations they had for CAP. Participants offered the following ideas.

- Review applications more quickly. [One participant reported that it took PECO a year to approve his CAP application.]
- Better communication from PECO about payments, shutoff notices, re-certification timelines, etc.
- Connect the CAP application with local public assistance programs so that applicants on public assistance can more easily provide proof of income and other necessary documentation.

Finally, participants were also asked to share any last thoughts or ideas about CAP. Participants offered the following comments.

- I just wish they'd lower the prices because they don't let us go on different programs.
- Sometimes trying to get through [to customer service] to find out information is hard.
- [CAP should have] consistency regarding making sure that the customers know what needs to be paid, without finding out the hard way later. If a person is going to pay a certain amount, and then he gets called later [to make further payments], if he has already budgeted for other things, something can get turned off due to that individual not being properly informed.

C. Summary of Findings and Recommendations

Findings from the interviews conducted with participants in the Customer Assistance Program are summarized in this section.

- **Status Confirmation**
 - Participation: All respondents were aware that they participated in CAP, whether currently or in the past year.
- **Enrollment and Recertification**
 - Awareness: Thirteen participants said they found out about CAP from a PECO representative, six participants said they found out from a friend or relative, and five participants said they found out from a local, community action, government, or social service agency.
 - Beginning of Participation: Whereas 20 participants indicated that they began participating in CAP two or more years ago, four participants said they began participating one year ago, and three participants said they began participating this year.
 - Reasons for Enrolling: The main reason that 16 participants enrolled in CAP was to lower their utility bills. Nine participants enrolled in CAP because they had low or fixed income or finances, and five participants enrolled because they needed help and felt that CAP could offer assistance.
 - Difficult Parts of Enrollment: A majority of participants said that no parts of the CAP application process presented any difficulty for them.

- Overall Difficulty of Enrollment: All but two participants stated that it was not at all difficult to enroll in CAP. The application process appears to be smooth for most participants.
- Recertification: Of the 17 participants who reported that they had completed a CAP recertification, 16 felt that re-certifying was not at all difficult, while one participant felt that re-certifying was somewhat difficult.
- CAP Understanding and Impact
 - Understanding of Benefits: Most participants reported that they had a good understanding of CAP benefits. However, five participants said they did not have a good understanding of these benefits.
 - Program Benefits: The CAP benefit most commonly mentioned, noted by 26 participants, was lower or more affordable utility bills. Participants also identified the following other program benefits: reduced money or arrearages owed to PECO, help for low-income families and people, and promotion of environmentally-friendly behaviors.
 - Other Program Benefits: When asked directly whether they viewed lower bills as a benefit of CAP, all but one participant affirmed that they did. When asked whether they viewed arrearage forgiveness as a benefit of CAP, all but three participants affirmed that they did.
 - Single Most Important Program Benefit: Nineteen participants stated that they view lower utility bills as the most important benefit of CAP. Other participants identified CAP's help for low-income people and families, reduced arrearages, and the ability to afford other bills as the most important benefits of the program.
 - Bill Payment: While 21 participants stated it was very difficult to pay their PECO bills prior to enrolling in the program, only one stated that it was very difficult to do so while participating in CAP. Based on this feedback, CAP seems to have an important impact on participants' energy affordability.
 - Awareness of Monthly Credits: While 12 participants reported that they receive monthly credits through CAP, 10 participants said that they do not receive monthly credits, and eight participants indicated that they did not know whether they receive monthly credits.
 - Payment of Full PECO Bill: All 30 participants reported that they pay their full PECO payment each month.
 - Variation in CAP Credits: Only eight participants stated that they were aware of monthly changes in the size of the credits they received from CAP. Of these

participants, five said it is more difficult to pay their PECO bills in the summer, and three said it is more difficult to pay their PECO bills in the winter.

- Importance of Program in Making Ends Meet: Twenty-three participants said that CAP was very important in helping them to make ends meet, and an additional three participants described CAP as somewhat important in helping them to make ends meet.
- Other Assistance
 - Other Benefit Receipt or Program Participation: While 19 participants said that they had not received other benefits or participated in other programs as a result of participating in CAP, 11 participants stated that they had. Programs and benefits mentioned by these participants included LIHEAP, PECO's Low Income Usage Reduction Program, Philadelphia Gas Works' Customer Responsibility Program, and budget billing plans with other utility companies. CAP appears to be important in connecting customers with additional benefits.
 - LIHEAP Participation: When prompted about their participation in LIHEAP specifically, 10 participants stated that they did not receive benefits from LIHEAP, while 20 participants stated they did receive LIHEAP benefits. Of these participants, five said they received LIHEAP benefits before they began participating in CAP, and 10 participants said they received LIHEAP benefits after participating in CAP. CAP appears to succeed in connecting customers to LIHEAP.
- Satisfaction and Recommendations
 - Satisfaction: Twenty-three participants stated that they were very satisfied with CAP, and five participants stated that they were somewhat satisfied with CAP.
 - Reasons for Dissatisfaction: Participants who reported that they were not very satisfied with CAP were asked to provide explanations for their responses. Most of these participants indicated dissatisfaction with the size of the benefits provided by CAP. Two participants indicated dissatisfaction with the program's client communications.
 - Participant Recommendations: Participants offered the following ideas for program improvement: quicker application review, improved program communications, and connection of the CAP application to public assistance programs.

V. Participant Survey

APPRISE conducted a quantitative survey with current and recent CAP participants. The goals of the survey were to document challenges in program enrollment and re-certification, participants' understanding of CAP benefits, perceived impact of CAP on financial and other outcomes, and overall CAP satisfaction. This section furnishes a summary of the interviews and their findings.

A. Methodology

This section provides a description of the survey implementation and response rates.

Survey Implementation

APPRISE sent advance letters to the sample of CAP participants that was selected for the survey. The letter announced the survey, notified potential respondents that they would be called to participate, explained the purpose of the survey, and gave potential respondents the option to call APPRISE using a toll-free number to complete the survey at their convenience.

APPRISE staff were responsible for conducting the survey. A researcher from APPRISE trained interviewers on the survey instrument and monitored survey implementation. The training session provided interviewers with an overview of the project and furnished strategies to provide clarification and elicit acceptable responses through neutral probing techniques. Following the training session, interviewers were also trained on how to use the computerized version of the survey to record customer responses.

Telephone interviews were conducted between October 8, 2018 and November 9, 2018. During this time period, 428 interviews were completed. Most respondents were interviewed through outbound telephone calls, though several respondents completed the survey by calling in to APPRISE. In response to several respondents' requests to complete their interviews in Spanish, APPRISE also prepared a Spanish language translation of the survey instrument, which was utilized to interview 16 Spanish-speaking respondents.

Response Rates

A sample of 1,148 current CAP participants was selected for the interviews. The sample was comprised of 574 customers who only had a calculation for the annual electric CAP credit in the program data and 574 customers who had a calculation for the annual electric and the annual gas CAP credit in the program data. Only active 2017 CAP participants with calculated CAP credits (either positive or zero) were included in the sample. Table V-1 details the outcomes of attempted surveys with this sample.

- **Number selected:** A total of 574 electric CAP customers and 574 combination CAP customers were selected to participate in the survey. Between these two respondent groups, the final sample consisted of 1,148 respondents.

- **Unusable:** Researchers determined 138 respondents to be unusable due to missing, unavailable, disconnected, or incorrect phone numbers. An additional 21 respondents who claimed to have no familiarity with CAP were also deemed unusable. Comprising 159 respondents in total, these unusable cases are not included in the denominator of the response rate or the cooperation rate. They are included in the denominator of the completed interview rate.
- **Non-interviews:** A total of 179 respondents who refused to complete the interview, could not complete the interview because of a language barrier, or asked to be called back at a later time but did not complete the interview during the field period were classified as non-interviews. These respondents are included in the denominator of the cooperation rate, the response rate, and the completed interview rate.
- **Unknown eligibility:** There were 382 respondents who did not answer their phones and therefore had unknown eligibility to complete the interview. These households are not included in the denominator of the cooperation rate. They are included in the denominator of the response rate and the completed interview rate.
- **Cooperation rate:** The cooperation rate is the percent of eligible households contacted who completed the survey. This is calculated as the number of completed interviews divided by the number of completed interviews plus the number of non-interviews (refusals plus non-completed call backs). Overall, this survey achieved a 76 percent cooperation rate.
- **Response rate:** The response rate represents the number of completed interviews divided by the number of completed interviews plus the number of non-interviews (refusals plus non-completed call backs) plus all cases of unknown eligibility (due to answering machines). This survey attained a 47 percent response rate.
- **Completed interview rate:** The completed interview rate is the percentage of households selected that completed the survey. This survey attained a 37 percent completed interview rate.

**Table V-1
Sample and Response Rates**

	Total Sample Statistics	
	#	%
Number Selected	1,148	100%
Unusable	159	14%
Non-Interviews	179	16%
Unknown Eligibility	382	33%
Completed Interviews	428	37%

	Total Sample Statistics	
	#	%
Cooperation Rate	76%	
Response Rate	47%	
Completed Interview Rate	37%	

Table V-2 displays interview outcomes by respondent group. Of the 574 electric CAP customers who were selected for the interviews, a total of 234 interviews were completed, with an overall response rate of 50 percent. Of the 574 combination CAP customers who were selected for the interviews, a total of 194 interviews were completed, with a response rate of 45 percent.

**Table V-2
Number of Completed Interviews by Respondent Group**

	Respondent Group		
	Electric Only	Electric & Gas	Total
Total Selected	574	574	1148
Completed Interviews	234	194	428
Response Rate	50%	45%	47%

Weights

Electric CAP and combination CAP customers were selected at different rates for the survey to allow for a large sample of each group. Survey weights were calculated to provide an overall response that accounts for this differential sampling, and some differentials in response. These weights were applied to tabulations of the full sample of respondents. Because of the weights, the total of the electric CAP and the combination CAP does not equal the total column.

B. Survey Findings

This section reviews the findings from the CAP survey. Findings are presented on the following topics.

- Unemployment and Assistance
- CAP Participation
- Enrollment and Recertification
- CAP Understanding
- CAP Impact
- CAP Credits
- Other Assistance
- CAP Satisfaction

Unemployment and Assistance

Survey respondents were asked two questions to provide additional financial data that are not available in program records. (Additional program data will be analyzed later in the report.) First, participants were asked whether any member of their household was unemployed and looking for work in the past year. Table V-3 shows that 28 percent of respondents reported that at least one household member was unemployed and looking for work in the past year.

**Table V-3
Unemployment in Past Twelve Months**

In the past 12 months, was any member of your household unemployed and looking for work?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	65	28%	58	30%	120	28%
No	167	71%	136	70%	305	71%
Refused	2	1%	0	0%	3	1%
Total	234	100%	194	100%	428	100%

Respondents were also asked whether in the past year any member of their household had received benefits from Temporary Assistance for Needy Families, Supplemental Security Income, Food Stamps, or general assistance or public assistance. Table V-4 shows that 69 percent of respondents reported that their households had received at least one of these types of benefits in the past year.

**Table V-4
Assistance Benefits in the Past Twelve Months**

In the past 12 months, did you or any member of your household receive benefits from Temporary Assistance for Needy Families, Supplemental Security Income, Food Stamps, or general assistance or public assistance?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	162	69%	130	67%	295	69%
No	69	29%	64	33%	129	30%
Don't Know	1	< 1%	0	0%	2	< 1%
Refused	2	1%	0	0%	3	1%
Total	234	100%	194	100%	428	100%

CAP Participation

At the outset of the survey, respondents were asked if they were currently participating in PECO's CAP, or if they had participated in CAP within the past year. If necessary, they were reminded that the program provides assistance with current PECO bills and past due PECO bills. Customers were not eligible for the survey if they reported that they were not participating in CAP currently or had not participated in CAP within the past year. Table V-5 shows that 93 percent of respondents reported that they were currently participating in CAP and seven percent reported that they had participated in CAP within the past year.

Table V-5
CAP Participation

Are you currently participating in PECO's Customer Assistance Program? Have you participated in PECO's Customer Assistance Program within the past year?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Currently Participating	218	93%	183	94%	400	93%
Participated within Past Year	16	7%	11	6%	28	7%
Total	234	100%	194	100%	428	100%

Respondents were asked when they began participating in CAP. Table V-6 shows that 65 percent of respondents reported that they joined CAP two or more years ago, 12 percent reported that they joined one year ago, and two percent reported that they joined this year (2018).

Table V-6
CAP Participation Length

When did you begin participating in CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Two or More Years Ago	151	65%	127	65%	277	65%
One Year Ago	29	12%	23	12%	53	12%
This Year	6	3%	3	2%	10	2%
Don't Know	47	20%	41	21%	87	20%
Refused	1	< 1%	0	0%	2	< 1%
Total	234	100%	194	100%	428	100%

Enrollment and Recertification

Respondents were asked how they learned about CAP. Table V-7 shows that 39 percent of respondents reported that they learned about CAP from a PECO representative and 16 percent reported that they learned about CAP from friends or relatives. Other respondents reported that they found out about CAP from agencies or elected officials or from mailings or notices sent with bills.

**Table V-7
CAP Information Source**

How did you find out about CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
PECO Representative	91	39%	79	41%	168	39%
Friend or Relative/Word of Mouth	37	16%	37	19%	70	16%
Agency/Elected Official	29	12%	24	12%	53	12%
Notice Sent with Bill/Mailing	19	8%	15	8%	34	8%
Online Materials	5	2%	3	2%	9	2%
On CAP Previously	4	2%	2	1%	7	2%
PGW	2	1%	0	0%	3	1%
Other	8	3%	3	2%	13	3%
Don't Know	38	16%	28	14%	68	16%
Refused	3	1%	2	1%	5	1%

*Totals do not add up to 100% as some participants provided more than one response.

Respondents were next asked why they decided to apply for CAP. Table V-8 shows that the most common response, reported by 44 percent of respondents, was that CAP offered lower utility bills. In addition, 36 percent of respondents reported that they applied because they needed help, and 30 percent reported that they applied because they had low or fixed income or finances. Other respondents reported that they applied because they were disabled, unemployed, or hoping to reduce their PECO arrearages.

**Table V-8
CAP Application Reason**

Why did you decide to apply for CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
Lower Utility Bills	104	44%	82	42%	189	44%
Needed Help	84	36%	70	36%	154	36%
Low/Fixed Income or Finances	69	29%	65	34%	129	30%
Disabled	18	8%	8	4%	30	7%
Unemployed/Lost Job	13	6%	4	2%	21	5%
Reduce Arrearages	7	3%	6	3%	13	3%
Was Eligible	4	2%	2	1%	7	2%
Keep Utility Service On	3	1%	1	1%	5	1%
Recommended by PECO Representative	2	1%	4	2%	5	1%
Other	3	1%	3	2%	6	1%
Don't Know	2	1%	0	0%	3	1%
Refused	0	0%	1	1%	0	0%

*Totals do not add up to 100% as some participants provided more than one response.

Respondents were asked how difficult it was to apply for CAP. Table V-9 shows that 74 percent reported that it was not at all difficult to apply, 13 percent reported that it was not too difficult, seven percent reported that it was somewhat difficult, and two percent said it was very difficult.

**Table V-9
CAP Application Difficulty**

How difficult was it to apply for CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Very Difficult	6	3%	4	2%	11	2%
Somewhat Difficult	18	8%	11	6%	31	7%
Not Too Difficult	28	12%	36	19%	56	13%
Not At All Difficult	175	75%	135	70%	316	74%
Don't Know	6	3%	6	3%	11	3%

How difficult was it to apply for CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Refused	1	< 1%	2	1%	2	1%
Total	234	100%	194	100%	428	100%

Respondents who reported some difficulty in applying for CAP were asked which part of the application process had been most difficult for them. Table V-10 shows that respondents were most likely to state that providing proof of income and filling out the application were the most challenging part of the CAP application.

Table V-10
Difficult Aspects of CAP Enrollment

What part of applying for CAP did you find most difficult?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Application Wasn't Difficult	175	75%	135	70%	316	74%
Providing Proof of Income	15	6%	9	5%	26	6%
Filling out the Application	8	3%	7	4%	15	3%
Sending in the Application	4	2%	7	4%	9	2%
Understanding Instructions	5	2%	2	1%	8	2%
The Application Process	3	1%	4	2%	6	1%
Getting an Application	1	< 1%	2	1%	2	1%
None	7	3%	9	5%	14	3%
Other	6	3%	4	2%	11	2%
Don't Know	8	3%	11	6%	16	4%
Refused	2	1%	4	2%	5	1%
Total	234	100%	194	100%	428	100%

Respondents were next asked whether they had ever re-certified for CAP. If necessary, they were reminded that recertifying means providing an update to PECO about their household and income levels. Table V-11 shows that 73 percent of respondents reported that they had re-certified for CAP.

**Table V-11
CAP Recertification**

Have you ever re-certified for CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	170	73%	140	72%	311	73%
No	49	21%	40	21%	89	21%
Don't Know	14	6%	14	7%	27	6%
Refused	1	< 1%	0	0%	2	< 1%
Total	234	100%	194	100%	428	100%

Respondents who reported that they had re-certified for CAP were asked how difficult this was. Table V-12 shows that the majority of respondents reported that it was not at all difficult to re-certify, three percent reported it was very difficult, eight percent reported that it was somewhat difficult, and 12 percent reported that it was not too difficult.

**Table V-12
CAP Recertification Difficulty**

How difficult was it to recertify for CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Very Difficult	5	3%	4	3%	9	3%
Somewhat Difficult	14	8%	12	9%	26	8%
Not Too Difficult	21	12%	16	11%	38	12%
Not At All Difficult	126	74%	103	74%	230	74%
Don't Know	2	1%	2	1%	4	1%
Refused	2	1%	3	2%	4	1%
Total	170	100%	140	100%	311	100%

Respondents who reported some difficulty in recertifying for CAP were asked which part of the recertification process had been most difficult for them. Table V-13 shows that ten percent reported that providing proof of income was most difficult and four percent reported that sending in the application was most difficult.

**Table V-13
Difficult Aspects of CAP Recertification**

What part of recertifying for CAP did you find most difficult?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Recertification Wasn't Difficult	126	74%	103	74%	230	74%
Providing Proof of Income	18	11%	6	4%	30	10%
Sending In the Application	7	4%	7	5%	13	4%
Understanding Instructions	4	2%	1	1%	6	2%
Waiting for Approval	1	1%	1	1%	2	1%
Filling Out the Application	1	1%	0	0%	2	< 1%
No Particular Part	2	1%	3	2%	4	1%
Other	5	3%	10	7%	11	4%
Don't Know	4	2%	2	1%	7	2%
Refused	2	1%	5	4%	5	2%
Total	170	100%	140	100%	311	100%

CAP Understanding

Respondents were asked if they felt that they had a good understanding of the benefits provided by CAP. Table V-14 shows that 81 percent reported that they had a good understanding of these benefits.

**Table V-14
Understanding of CAP Benefits**

Do you feel that you have a good understanding of the benefits provided by CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	189	81%	158	81%	346	81%
No	36	15%	33	17%	67	16%
Don't Know	8	3%	3	2%	13	3%

Do you feel that you have a good understanding of the benefits provided by CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Refused	1	< 1%	0	0%	2	< 1%
Total	234	100%	194	100%	428	100%

Respondents were asked what they perceived as the benefits of CAP. Table V-15 shows that 58 percent of respondents reported that lower bills were a benefit of the program. Additionally, 21 percent reported that help for their families and low-income people was a benefit, 11 percent reported that saving money was a benefit, and eight percent reported that energy conservation/reduction was a benefit. Other respondents cited keeping utility service on, reduced arrearages, and budget billing as program benefits.

**Table V-15
CAP Benefits**

What do you feel are the benefits of CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
Lower Bills	133	57%	119	61%	247	58%
Helps My Family/Low-Income People	52	22%	31	16%	91	21%
Saving Money	24	10%	25	13%	46	11%
Energy Conservation/Reduction	18	8%	16	8%	33	8%
Keeping Utility Service On	15	6%	12	6%	27	6%
Reduced Arrearages	11	5%	5	3%	19	4%
Budget Billing	6	3%	10	5%	13	3%
Eases Financial Struggles	6	3%	5	3%	11	3%
Good Customer Service	4	2%	5	3%	8	2%
Referral to Other Programs	4	2%	5	3%	8	2%
Other	9	4%	13	7%	19	4%
Don't Know	20	9%	8	4%	33	8%
Refused	1	< 1%	1	1%	2	< 1%

*Totals do not add up to 100% as some participants provided more than one response.

Respondents were specifically asked whether they felt that lower bills were a benefit of CAP. Table V-16 shows that 94 percent reported that they did view lower bills as a program

benefit. Participants were also asked whether they felt that receiving a monthly reduction in their past due balance was a benefit of CAP. Table V-16 shows that 75 percent reported that they did view reductions in their past due balance as a program benefit.

**Table V-16
Prompted CAP Benefits**

Do you feel that lower bills/arrearage reduction is a benefit of CAP?												
	Lower Bills						Arrearage Forgiveness					
	Respondent Group						Respondent Group					
	Electric Only		Electric & Gas		Total		Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Yes	220	94%	183	94%	403	94%	172	74%	157	81%	310	75%
No	11	5%	6	3%	19	4%	28	12%	20	10%	50	12%
Don't Know	3	1%	5	3%	6	2%	30	13%	16	8%	52	12%
Refused	0	0%	0	0%	0	0%	4	2%	1	1%	6	2%
Total	234	100%	194	100%	428	100%	234	100%	194	100%	428	100%

Respondents were next asked what they viewed as the single most important benefit of CAP. Table V-17 shows that 39 percent reported that lower bills were the single most important CAP benefit, and 21 percent reported that help for their families and low-income people was the most important program benefit. Other respondents named saving money, keeping utility service on, reduced arrearages, and budget billing as the most important program benefit.

**Table V-17
Most Important CAP Benefit**

What do you feel is the single most important benefit of CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Lower/More Affordable Bills	89	38%	80	41%	165	39%
Helps My Family/Low-Income People	50	21%	37	19%	90	21%
Saving Money	20	9%	12	6%	35	8%
Keeping Utility Service On	14	6%	9	5%	25	6%
Reduced Arrearages	7	3%	11	6%	15	3%
Budget Billing	6	3%	6	3%	11	3%
Can Afford Other Bills/Expenses	4	2%	1	1%	6	2%
LIURP-Related Benefits	2	1%	3	2%	4	1%

What do you feel is the single most important benefit of CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Extra Time to Pay Bill	2	1%	2	1%	4	1%
Referral to Other Programs	0	0%	3	2%	1	< 1%
Other	13	6%	6	3%	22	5%
Don't Know	24	10%	22	11%	45	10%
Refused	3	1%	2	1%	5	1%
Total	234	100%	194	100%	428	100%

Respondents were also asked what they perceived as their responsibility as participants in CAP. Table V-18 shows that the most common response, reported by 76 percent of respondents, was keeping up with PECO payments. Others reported responsibilities including reporting changes in household income to PECO, reducing energy usage, participating in energy conservation, and recertifying.

Table V-18
CAP Participant Responsibilities

As a participant in CAP, what is your understanding of your responsibility in the program?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
Keep Up with Payments	178	76%	150	77%	326	76%
Report Changes in Household Income	19	8%	23	12%	37	9%
Reduce Energy Usage	20	9%	11	6%	34	8%
Participate in Energy Reduction/Conservation Programs	16	7%	11	6%	28	7%
Recertify Every 1-2 Years	16	7%	8	4%	27	6%
Report Any Problems to PECO	1	< 1%	6	3%	4	1%
Apply for LIHEAP Each Season	0	0%	1	1%	0	0%
Other	7	3%	7	4%	13	3%
Don't Know	11	5%	12	6%	21	5%
Refused	2	1%	2	1%	4	1%

*Totals do not add up to 100% as some participants provided more than one response.

CAP Impact

Respondents were next asked how difficult it was to pay their monthly PECO bills both before participating in CAP and while participating in CAP. Table V-19A shows that 52 percent of electric CAP customers reported that it was very difficult to pay their PECO bills before participating in CAP, but only ten percent reported that it was very difficult to pay their bills while in CAP. While 61 percent of electric and gas CAP customers reported that it was very difficult to pay their PECO bills before participating in CAP, only 11 percent reported that it was very difficult to pay their bills while in CAP. The difference between respondents' reported difficulty of bill payment before and while participating in CAP was statistically significant at the 95 percent level.

**Table V-19A
PECO Bill Payment Difficulty**

How difficult is/was it to pay your monthly PECO bill?												
	Before CAP						In CAP					
	Respondent Group						Respondent Group					
	Electric Only		Electric & Gas		Total		Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Very Difficult	121	52%	119	61%	228	53%	24	10%	21	11%	44	10%
Somewhat Difficult	76	32%	55	28%	136	32%	54	23%	65	34%	106	25%
Not Too Difficult	10	4%	13	7%	20	5%	68	29%	56	29%	124	29%
Not At All Difficult	12	5%	3	2%	19	5%	83	35%	50	26%	145	34%
Don't Know	5	2%	1	1%	8	2%	2	1%	1	1%	3	1%
Refused	10	4%	3	2%	16	4%	3	1%	1	1%	5	1%
Total	234	100%	194	100%	428	100%	234	100%	194	100%	428	100%

Table V-19B displays reported bill payment difficulty by whether respondents reported that their bills were higher or lower after joining CAP. While 64 percent of those who said their bills were higher on CAP said it was very difficult to pay their bills before joining CAP, 20 percent of that group said it was very difficult to pay their bills while in CAP. While 56 percent of those who reported that their bills were lower on CAP said it was very difficult to pay their bills before joining CAP, only six percent of those participants said that it was very difficult to pay their bills while in CAP.

Table V-19B
PECO Bill Payment Difficulty, by CAP Bill Impact

How difficult is/was it to pay your monthly PECO bill?								
	Before CAP				In CAP			
	Respondent Group				Respondent Group			
	Participant Reported Higher Bills on CAP		Participant Reported Lower Bills on CAP		Participant Reported Higher Bills on CAP		Participant Reported Lower Bills on CAP	
	#	%	#	%	#	%	#	%
Very Difficult	32	64%	144	56%	10	20%	17	6%
Somewhat Difficult	11	22%	93	35%	25	50%	58	22%
Not Too Difficult	3	6%	12	5%	7	14%	91	35%
Not At All Difficult	3	6%	6	2%	8	16%	94	36%
Don't Know	0	0%	3	1%	0	0%	2	1%
Refused	1	2%	5	2%	0	0%	1	< 1%
Total	50	100%	263	100%	50	100%	263	100%

Table V-19C presents reported bill payment difficulty by poverty level. While 65 percent of respondents below 50 percent of the Federal Poverty Level (FPL) reported that it was very difficult to pay their bills before joining CAP, 54 percent of respondents between 51 and 100 percent of the FPL and 53 percent of respondents above 100 percent of the FPL reported the same. However, while participating in CAP, only 12 percent of the lowest poverty group, 11 percent of the middle poverty group, and ten percent of the highest group reported that it was very difficult to pay their bills. CAP appears to help equalize the circumstances of the lowest poverty level group.

Table V-19C
PECO Bill Payment Difficulty
By Poverty Level

How difficult is/was it to pay your monthly PECO bill?												
	Before CAP						In CAP					
	Respondent Group						Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL		≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	#	%	#	#	%	#	%	#	%
Very Difficult	58	65%	117	54%	65	53%	11	12%	24	11%	44	10%
Somewhat Difficult	27	30%	63	29%	40	33%	21	24%	66	34%	106	25%
Not Too Difficult	1	1%	15	7%	7	6%	25	28%	63	29%	124	29%
Not At All Difficult	1	1%	8	4%	6	5%	31	35%	60	26%	145	34%
Don't Know	0	0%	5	2%	1	1%	1	1%	0	1%	3	1%

How difficult is/was it to pay your monthly PECO bill?												
	Before CAP						In CAP					
	Respondent Group						Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL		≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	#	%	#	#	%	#	%	#	%
Refused	2	2%	7	3%	4	3%	0	0%	2	1%	5	1%
Total	89	100%	215	100%	123	100%	89	100%	215	100%	123	100%

Table V-19D displays reported bill payment difficulty by whether respondents had a positive annual electric credit calculation compared to a zero dollar credit calculation (as reported in the program data). Both groups reported a big impact of CAP on their ability to pay PECO bills. While 59 percent of those with positive electric credit calculations reported that it was very difficult to pay their bills before joining CAP, only ten percent of these respondents reported that it was very difficult to pay their bills when participating in CAP. While 51 percent of those with zero electric credit calculations reported that it was very difficult to pay their bills before joining CAP, only 11 percent of these respondents reported that it was very difficult to pay their bills when participating in CAP.

Table V-19D
PECO Bill Payment Difficulty, by Annual CAP Electric Credit Calculation

How difficult is/was it to pay your monthly PECO bill?									
	Before CAP					In CAP			
	Respondent Group					Respondent Group			
	Participants with Nonzero Electric Credit Calculations		Participants with \$0 Electric Credit Calculations			Participants with Nonzero Electric Credit Calculations		Participants with \$0 Electric Credit Calculations	
	#	%	#	%	#	%	#	%	
Very Difficult	158	59%	82	51%	27	10%	18	11%	
Somewhat Difficult	81	30%	50	31%	73	27%	46	29%	
Not Too Difficult	12	4%	11	7%	85	32%	39	24%	
Not At All Difficult	7	3%	8	5%	81	30%	52	33%	
Don't Know	5	2%	1	1%	0	0%	3	2%	
Refused	5	2%	8	5%	2	1%	2	1%	
Total	268	100%	160	100%	268	100%	160	100%	

Respondents were asked whether they ever had to delay or skip paying other bills in order to make ends meet both before participating in CAP and while participating in CAP. Table V-20 shows that 75 percent of respondents reported that they did delay or skip paying other bills before participating in CAP but only 41 percent reported that they did so while in CAP.

The difference between reports of this problem before and while participating in CAP was statistically significant at the 95 percent level.

Table V-20
Challenges with Other Bills

Did you ever have to delay or skip paying other bills, like rent or car payments, in order to make ends meet?													
	Before CAP						In CAP						
	Respondent Group						Respondent Group						
	Electric Only		Electric & Gas		Total		Electric Only		Electric & Gas		Total		
	#	%	#	%	#	%	#	%	#	%	#	%	
Yes	173	74%	150	77%	319	75%	94	40%	84	43%	174	41%	
No	49	21%	41	21%	90	21%	136	58%	108	56%	247	58%	
Don't Know	8	3%	3	2%	13	3%	1	< 1%	1	1%	2	< 1%	
Refused	4	2%	0	0%	6	1%	3	1%	1	1%	5	1%	
Total	234	100%	194	100%	428	100%	234	100%	194	100%	428	100%	

Respondents were also asked, both before participating in CAP and while participating in CAP, whether there was a time they wanted to use their heat but could not because their heating system was broken and too costly to repair or replace. Table V-21 shows that while 29 percent of respondents reported that they had this problem before participating in CAP, 16 percent reported that they had this problem when participating in CAP. The difference between reports of this problem before and while participating in CAP was statistically significant at the 95 percent level.

Table V-21
Problems with Home Heating

Was there ever a time when you wanted to use your main source of heat, but could not because your heating system was broken and you were unable to pay for its repair or replacement?													
	Before CAP						In CAP						
	Respondent Group						Respondent Group						
	Electric Only		Electric & Gas		Total		Electric Only		Electric & Gas		Total		
	#	%	#	%	#	%	#	%	#	%	#	%	
Yes	69	29%	56	29%	126	29%	39	17%	28	14%	70	16%	
No	149	64%	135	70%	277	65%	191	82%	163	84%	351	82%	
Don't Know	11	5%	3	2%	18	4%	2	1%	1	1%	3	1%	
Refused	5	2%	0	0%	8	2%	2	1%	2	1%	4	1%	
Total	234	100%	194	100%	428	100%	234	100%	194	100%	428	100%	

Respondents were also asked whether their energy bills were higher, lower, or had not changed since joining CAP. Table V-22A shows that 60 percent of respondents reported that their bills were lower since joining CAP, 15 percent reported that their bills had not changed, and 12 percent reported that their bills were higher since joining CAP.

**Table V-22A
CAP Impact on Energy Bill**

As a participant in CAP, would you say that your energy bill is higher, lower, or has not changed in comparison to what it was before participating in the program?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Higher	28	12%	23	12%	51	12%
Lower	137	59%	126	65%	255	60%
No Change	34	15%	28	14%	62	15%
Varies	16	7%	6	3%	27	6%
Other	2	1%	0	0%	3	1%
Don't Know	15	6%	11	6%	27	6%
Refused	2	1%	0	0%	3	1%
Total	234	100%	194	100%	428	100%

Table V-22B displays reported changes in bill size by poverty level. While 70 percent of respondents below 50 percent of the FPL reported that their bills were lower since joining CAP, ten percent reported that their bills were higher since joining CAP. Participants at higher poverty levels were less likely to report that their bills were lower.

**Table V-22B
CAP Impact on Energy Bill
By Poverty Level**

As a participant in CAP, would you say that your energy bill is higher, lower, or has not changed in comparison to what it was before participating in the program?						
	Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	%	#	%
Higher	9	10%	28	13%	13	11%
Lower	62	70%	122	57%	78	63%
No Change	11	12%	31	14%	20	16%
Varies	3	3%	14	7%	5	4%
Don't Know	4	4%	17	8%	5	4%

As a participant in CAP, would you say that your energy bill is higher, lower, or has not changed in comparison to what it was before participating in the program?						
	Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	%	#	%
Refused	0	0%	3	1%	2	2%
Total	89	100%	215	100%	123	100%

Respondents were asked how important CAP had been in helping them to make ends meet. Table V-23A shows that 75 percent of respondents reported that CAP was very important and 17 percent reported that CAP was somewhat important.

Table V-23A
CAP Importance

Overall, how important has CAP been in helping you to make ends meet?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Very Important	175	75%	145	75%	320	75%
Somewhat Important	40	17%	32	16%	73	17%
Of Little Importance	9	4%	8	4%	17	4%
Not At All Important	7	3%	7	4%	13	3%
Don't Know	1	< 1%	1	1%	2	< 1%
Refused	2	1%	1	1%	3	1%
Total	234	100%	194	100%	428	100%

Table V-23B presents the reported importance of CAP by poverty level. While 82 percent of participants below 50 percent of the FPL reported that CAP was very important, nine percent reported that CAP was somewhat important. Participants at higher poverty levels were less likely to report that CAP was very important in helping them to make ends meet and more likely to report that CAP was somewhat important.

Table V-23B
CAP Importance
By Poverty Level

Overall, how important has CAP been in helping you to make ends meet?						
	Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	%	#	%
Very Important	73	82%	161	75%	85	69%
Somewhat Important	8	9%	37	17%	27	22%
Of Little Importance	3	3%	10	5%	4	3%
Not At All Important	4	4%	4	2%	6	5%
Don't Know	0	0%	1	< 1%	1	1%
Refused	1	1%	2	1%	0	0%
Total	89	100%	215	100%	123	100%

Table V-23C displays the reported importance of CAP in making ends meet by whether respondents had a nonzero calculated annual electric credit (as reported in program data). While 79 percent of those with a calculated nonzero annual electric credit reported that CAP was very important in helping them to make ends meet, 68 percent of those with a zero dollar calculated annual credit reported that CAP was very important in helping them to make ends meet.

Table V-23C
CAP Importance
By Calculated Annual Electric Credits

Overall, how important was CAP in helping you to make ends meet?				
	Respondent Group			
	Participants with Nonzero Electric Credit Calculations		Participants with \$0 Electric Credit Calculations	
	#	%	#	%
Very Important	212	79%	108	68%
Somewhat Important	39	15%	33	21%
Of Little Importance	8	3%	9	6%
Not At All Important	6	2%	8	5%
Don't Know	1	< 1%	1	1%
Refused	2	1%	1	1%
Total	268	100%	160	100%

CAP Credits

Respondents were asked whether they received monthly credits through CAP. Table V-24A shows that 30 percent of respondents reported that they received monthly credits.

Table V-24A
CAP Credit Receipt

Do you receive monthly credits through CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	70	30%	57	29%	128	30%
No	99	42%	77	40%	179	42%
Don't Know	64	27%	60	31%	120	28%
Refused	1	< 1%	0	0%	2	< 1%
Total	234	100%	194	100%	428	100%

Table V-24B displays reported receipt of CAP credits by calculated annual CAP electric credit, as reported in the program data. While 34 percent of those with nonzero electric credit calculations reported that they receive monthly credits from CAP, 22 percent of non-electric credit recipients reported that they receive monthly credits from CAP.

Table V-24B
CAP Credit Receipt
By Calculated Annual Electric Credits

Do you receive monthly credits through CAP?				
	Respondent Group			
	Participants with Nonzero Electric Credit Calculations		Participants with \$0 Electric Credit Calculations	
	#	%	#	%
Yes	92	34%	35	22%
No	104	38%	72	45%
Don't Know	71	26%	53	33%
Refused	1	< 1%	0	0%
Total	268	100%	160	100%

Respondents who reported that they received monthly credits from CAP were asked whether they were aware of changes in the size of their credits from month to month. Table V-25

shows that 16 percent reported that they did notice monthly changes in the size of their credits, while ten percent reported that they did not notice any monthly changes.

Table V-25
Awareness of Changes in CAP Credits

From month to month, do you notice any changes in the size of the credits that you receive from CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	37	16%	29	15%	67	16%
No	24	10%	18	9%	43	10%
Not Aware of Monthly Credits	164	70%	137	71%	300	70%
Don't Know	9	4%	10	5%	17	4%
Total	234	100%	194	100%	428	100%

Respondents were asked whether they found it harder to pay their PECO bills during any parts of the year. Table V-26 shows that while 38 percent of electric CAP customers reported that paying their bills was not harder in any part of the year, 26 percent reported that paying their bills was harder in the winter, and 23 percent reported that paying their bills was harder in the summer. While 30 percent of electric and gas CAP customers reported that paying their bills was not harder in any part of the year, 39 percent reported that paying their bills was harder during the winter.

Respondents were also asked whether they found it easier to pay their PECO bills during any parts of the year. Table V-26 shows that while 41 percent of electric-only customers reported that paying their bills was not easier in any part of the year, 20 percent reported that paying their bills was easier in the summer, and 16 percent reported that paying their bills was easier in the winter. While 33 percent of electric and gas customers reported that paying their bills was not easier in any part of the year, 23 percent reported that it was easier to pay their bills during the summer.

**Table V-26
Seasonal Difficulty of Bill Payment**

Are there certain parts of the year when you find it <u>harder/easier</u> to pay your PECO bill?												
	Harder						Easier					
	Respondent Group						Respondent Group					
	Electric Only		Electric & Gas		Total		Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
None	88	38%	58	30%	155	36%	95	41%	63	33%	168	39%
Summer	54	23%	29	15%	93	22%	47	20%	44	23%	88	21%
Winter	60	26%	76	39%	120	28%	38	16%	18	9%	64	15%
Spring	3	1%	0	0%	5	1%	14	6%	20	10%	29	7%
Fall	1	< 1%	0	0%	2	< 1%	6	3%	7	4%	12	3%
Summer & Winter	14	6%	17	9%	28	6%	0	0%	0	0%	0	0%
Other Combinations	2	1%	2	1%	4	1%	17	7%	29	15%	37	9%
Varies	0	0%	2	1%	1	< 1%	0	0%	0	0%	0	0%
Other	0	0%	1	1%	0	0%	3	1%	3	2%	6	1%
Don't Know	4	2%	4	2%	8	2%	7	3%	8	4%	6	1%
Refused	8	3%	5	3%	14	3%	7	3%	2	1%	11	3%
Total	234	100%	194	100%	428	100%	234	100%	194	100%	428	100%

Other Assistance

Respondents were asked if they received other benefits or participated in other programs as a result of participating in CAP. Table V-27 shows that while 62 percent of respondents reported that they did not receive other benefits or participate in other programs, 21 percent of electric CAP and 31 percent of electric and gas CAP customers said that they received benefits from LIHEAP. In addition, six percent reported that they received energy efficiency services.

**Table V-27
Other Benefit Receipt or Program Participation**

Have you received any other benefits or participated in any other programs a result of participating in CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
None	148	63%	114	59%	267	62%
LIHEAP	49	21%	60	31%	97	22%
Energy Efficiency Services	13	6%	15	8%	25	6%
PGW CRP	14	6%	0	0%	21	5%
PECO LIURP	4	2%	1	1%	6	2%
Budget Billing	3	1%	2	1%	5	1%
Other	3	1%	2	1%	5	1%
Don't Know	5	2%	4	2%	9	2%

*Totals do not add up to 100% as some participants provided more than one response.

Respondents were specifically asked whether they received benefits from LIHEAP. Table V-28 shows that 73 percent of respondents reported that they did receive LIHEAP benefits.

**Table V-28
LIHEAP Benefits**

Do you receive benefits from the Federal Low-Income Home Energy Assistance Program, also known as LIHEAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	173	74%	134	69%	313	73%
No	57	24%	57	29%	108	25%
Don't Know	4	2%	3	2%	7	2%
Total	234	100%	194	100%	428	100%

Respondents who reported that they received LIHEAP benefits were asked whether they found out about LIHEAP from CAP. Table V-29 shows that 38 percent of electric CAP and 45 percent of combination CAP customers reported that they found out about LIHEAP from CAP.

Table V-29
Connection of CAP Participants with LIHEAP

Did you find out about LIHEAP from CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Yes	89	38%	88	45%	168	39%
No	64	27%	40	21%	112	26%
Does Not Receive LIHEAP	61	26%	60	31%	115	27%
Don't Know	20	9%	6	3%	33	8%
Total	234	100%	194	100%	428	100%

CAP Satisfaction

Respondents were asked how satisfied they were with CAP overall. Table V-30A shows that while 71 percent of electric CAP customers reported that they were very satisfied with CAP, 23 percent reported that they were somewhat satisfied. While 64 percent of electric and gas CAP customers reported that they were very satisfied with CAP, 30 percent reported that they were somewhat satisfied.

Table V-30A
CAP Satisfaction

Overall, how satisfied have you been with CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Very Satisfied	165	71%	125	64%	297	69%
Somewhat Satisfied	53	23%	58	30%	102	24%
Somewhat Dissatisfied	9	4%	7	4%	16	4%
Very Dissatisfied	4	2%	2	1%	7	2%
Don't Know	0	0%	1	1%	0	0%
Refused	3	1%	1	1%	5	1%
Total	234	100%	194	100%	428	100%

Table V-30B displays reported CAP satisfaction by whether respondents reported having a good understanding of CAP benefits. While 77 percent of those who said they had a good understanding of CAP benefits reported that they were very satisfied, 26 percent of those who said they did not have a good understanding of CAP benefits reported that they were

very satisfied. The difference between these respondents' reported satisfaction with CAP was statistically significant at the 95 percent level.

**Table V-30B
CAP Satisfaction
By Understanding of CAP Benefits**

Overall, how satisfied have you been with CAP?				
	Respondent Group			
	Reported that they Understand CAP Benefits		Reported that they Do Not Understand CAP Benefits	
	#	%	#	%
Very Satisfied	266	77%	18	26%
Somewhat Satisfied	70	20%	36	52%
Somewhat Dissatisfied	7	2%	9	13%
Very Dissatisfied	1	< 1%	5	7%
Don't Know	0	0%	1	1%
Refused	3	1%	0	0%
Total	347	100%	69	100%

Table V-30C presents reported CAP satisfaction by whether respondents reported that their bills were higher or lower after joining CAP. While 38 percent of respondents who said their bills were higher on CAP reported that they were very satisfied, 81 percent of respondents who said their bills were lower on CAP reported that they were very satisfied. The difference between these respondents' reported satisfaction with CAP was statistically significant at the 95 percent level.

**Table V-30C
CAP Satisfaction
By CAP Impact on Bill**

Overall, how satisfied have you been with CAP?				
	Respondent Group			
	Participant Reported Higher Bills on CAP		Participant Reported Lower Bills on CAP	
	#	%	#	%
Very Satisfied	19	38%	214	81%
Somewhat Satisfied	22	44%	43	16%
Somewhat Dissatisfied	7	14%	3	1%
Very Dissatisfied	2	4%	1	< 1%
Refused	0	0%	2	1%

Overall, how satisfied have you been with CAP?				
	Respondent Group			
	Participant Reported Higher Bills on CAP		Participant Reported Lower Bills on CAP	
	#	%	#	%
Total	50	100%	263	100%

Table V-30D displays reported CAP satisfaction by poverty level. While 64 percent of respondents between 51 and 100 percent of the FPL reported that they were very satisfied with CAP, 30 percent reported that they were somewhat satisfied. Respondents below 50 percent of the FPL and above 100 percent of the FPL were more likely to report that they were very satisfied with CAP and less likely to report that they were somewhat satisfied.

Table V-30D
CAP Satisfaction
By Poverty Level

Overall, how satisfied have you been with CAP?						
	Respondent Group					
	≤50% FPL		51-100% FPL		101-150% FPL	
	#	%	#	%	#	%
Very Satisfied	62	70%	137	64%	91	74%
Somewhat Satisfied	20	22%	64	30%	26	21%
Somewhat Dissatisfied	4	4%	8	4%	4	3%
Very Dissatisfied	2	2%	2	1%	2	2%
Don't Know	1	1%	0	0%	0	0%
Refused	0	0%	4	2%	0	0%
Total	89	100%	215	100%	123	100%

Respondents were also asked if they felt unsatisfied with any parts of CAP. Table V-31 shows that while 69 percent reported that there was no part of the program with which they were unsatisfied, 15 percent reported that they were unsatisfied with CAP credits or benefits toward their bills, and five percent reported that they were unsatisfied with CAP's communication and transparency.

**Table V-31
CAP Dissatisfaction Elements**

Are there any particular parts of CAP with which you feel unsatisfied?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Observations	234		194		428	
None	162	69%	130	67%	295	69%
Program Credits/Benefits toward Bill	36	15%	27	14%	65	15%
Program Communication/Transparency	12	5%	8	4%	21	5%
Program Application/ Recertification	7	3%	6	3%	13	3%
Shutoff Notices/Terminations	5	2%	5	3%	9	2%
Program Requirements	3	1%	5	3%	6	2%
Lack of Flexibility/Payment Arrangements	3	1%	4	2%	6	1%
Arrearage Forgiveness	1	< 1%	2	1%	2	1%
Customer Service	3	1%	2	1%	5	1%
Other	5	2%	6	3%	10	2%
Don't Know	5	2%	3	2%	9	2%
Refused	2	1%	1	1%	3	1%

*Totals do not add up to 100% as some participants provided more than one response.

Respondents were finally asked how likely they were to continue to participate in CAP. Table V-32A shows that 84 percent of respondents reported that they were very likely to continue to participate in CAP, while 11 percent reported that they were somewhat likely to continue.

**Table V-32A
Continued CAP Participation**

How likely are you to continue to participate in CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Very Likely	297	84%	165	85%	361	84%
Somewhat Likely	25	11%	21	11%	46	11%
Not Too Likely	1	< 1%	2	1%	2	1%
Not At All Likely	2	1%	1	1%	3	1%
Don't Know	5	2%	4	2%	9	2%

How likely are you to continue to participate in CAP?						
	Respondent Group					
	Electric Only		Electric & Gas		Total	
	#	%	#	%	#	%
Refused	4	2%	1	1%	6	2%
Total	234	100%	194	100%	428	100%

Table V-32B displays reported chances of continued CAP participation by whether respondents reported having a good understanding of CAP benefits. While 87 percent of those who said they had a good understanding of CAP benefits reported that they were very likely to continue to participate, 70 percent of those who said they did not have a good understanding of CAP benefits reported that they were very likely to continue to participate. The difference between these respondents' reported chances of continued CAP participation was statistically significant at the 95 percent level.

Table V-32B
Continued CAP Participation
By Understanding of CAP Benefits

How likely are you to continue to participate in CAP?				
	Respondent Group			
	Reported that they Understand CAP Benefits		Reported that they Do Not Understand CAP Benefits	
	#	%	#	%
Very Likely	303	87%	48	70%
Somewhat Likely	34	10%	12	17%
Not Too Likely	2	1%	1	1%
Not At All Likely	1	< 1%	2	3%
Don't Know	4	1%	4	6%
Refused	3	1%	2	3%
Total	347	100%	69	100%

Table V-32C presents reported chances of continued CAP participation by whether respondents reported that their bills were higher or lower after joining CAP. While 60 percent of those who said their bills were higher on CAP reported that they were very likely to continue to participate, 91 percent of those who said their bills were lower on CAP reported that they were very likely to continue to participate. The difference between these groups' reported chances of continued CAP participation was statistically significant at the 95 percent level.

**Table V-32C
Continued CAP Participation
By CAP Impact on Bill**

How likely are you to continue to participate in CAP?				
	Respondent Group			
	Participant Reported Higher Bills on CAP		Participant Reported Lower Bills on CAP	
	#	%	#	%
Very Likely	30	60%	240	91%
Somewhat Likely	13	26%	17	6%
Not Too Likely	1	2%	0	0%
Not At All Likely	1	2%	0	0%
Don't Know	4	8%	4	2%
Refused	1	2%	2	1%
Total	50	100%	263	100%

C. Summary of Findings

We conducted a telephone survey with 428 current and recent PECO CAP participants to understand their views on program participation, enrollment and recertification, CAP's impact on affordability, and satisfaction with the program overall. This section provides a summary of the survey results.

Unemployment and Assistance

- **Unemployment:** Twenty-eight percent of respondents reported that at least one member of their household was unemployed and looking for work in the past year.
- **Assistance:** Sixty-nine percent of respondents reported that their households had received benefits from Temporary Assistance for Needy Families, Supplemental Security Income, Food Stamps, or general assistance or public assistance in the past year.

CAP Participation

- **CAP Participation:** While 93 percent of respondents reported that they were currently participating in CAP, seven percent reported that they had participated in CAP in the past year.
- **CAP Participation Length:** While 65 percent of respondents reported that they began participating in CAP two or more years ago, 12 percent reported that they began participating one year ago, and two percent reported that they began participating this year (2018). Twenty percent did not know when they began participating.

Enrollment and Recertification

- CAP Information Source: Thirty-nine percent of respondents stated that they found out about CAP from a PECO representative, 16 percent from friends or relatives, 12 percent from agencies or elected officials, and eight percent from PECO mailings.
- CAP Application Reason: Most respondents reported that they applied for CAP because they wanted to lower their bills, needed help, or had low or fixed income or finances. Others reported that they applied because they were disabled or unemployed.
- CAP Application Difficulty: While 74 percent of respondents reported that it was not at all difficult to apply for CAP, 13 percent reported that it was not too difficult, seven percent reported that it was somewhat difficult, and two percent said it was very difficult. Respondents were most likely to state that providing proof of income and filling out the application were the most challenging part of the CAP application.
- CAP Recertification: Seventy-three percent of respondents reported that they had previously re-certified for CAP. The majority of respondents reported that it was not at all difficult to recertify for CAP. Providing proof of income and sending in the application were the parts of recertification that were identified as challenging.

CAP Understanding

- Understanding of CAP Benefits: Eighty-one percent of respondents reported that they had a good understanding of the benefits of CAP. When asked what they felt the benefits were, 58 percent reported lower bills, 21 percent reported help for their family or low-income households, and 11 percent reported saving money.
- Prompted CAP Benefits: When asked specifically about lower bills, 94 percent agreed that they were a benefit of CAP. When asked specifically about a reduction in money owed to PECO, 75 percent agreed that arrearage reduction was a benefit.
- Most Important CAP Benefit: While 39 percent viewed lower bills as the most important CAP benefit, others identified help for their families or low-income people, saving money, and keeping utility service on as the most important benefit.
- CAP Participant Responsibilities: When asked about their responsibility in CAP, 76 percent reported that it was to keep up with payments. Others reported that their responsibilities included reporting changes in household income, reducing energy usage, participating in energy conservation, and re-certifying.

CAP Impact

- Difficulty of Bill Payment: While 53 percent of respondents reported it was very difficult to pay their PECO bills prior to CAP, only ten percent reported that it was very difficult to pay their PECO bills while participating in CAP.

- **Challenges with Other Bills:** While 75 percent of respondents reported that they delayed or skipped paying other bills before participating in CAP, only 41 percent reported that they did so while in CAP.
- **Problems with Home Heating:** Twenty-nine percent of respondents reported that before participating in CAP there was a time they wanted to use their heat but could not because their heating system was broken and too costly to repair or replace. Only 16 percent reported that they experienced this problem while in CAP.
- **CAP Impact on Energy Bill:** While 60 percent of respondents reported that their bills were lower since joining CAP, 12 percent reported that their bills were higher, and 15 percent reported that their bills had not changed. Seventy percent of participants below 50 percent of the poverty level reported that their bills were lower in CAP.
- **CAP Importance:** Seventy-five percent of respondents reported that CAP was very important in helping them to make ends meet and 17 percent reported that CAP was somewhat important. Eighty-two percent of respondents below 50 percent of the poverty level reported that CAP was very important.

CAP Credits

- **CAP Credit Receipt:** When asked whether they received monthly credits from CAP, 30 percent reported that they did.
- **Seasonal Difficulty of Bill Payment:** While some respondents stated that their PECO bills were harder to pay in the winter and summer, some stated that they were easier to pay in the winter and summer.

Other Assistance

- **Other Benefit Receipt or Program Participation:** While a majority of respondents reported that they did not receive other benefits or participate in other programs as a result of participating in CAP, 22 percent reported that they received LIHEAP benefits, and six percent reported that they received benefits from energy efficiency services.
- **LIHEAP Benefits:** When specifically asked whether they received benefits from LIHEAP, nearly three-quarters of respondents reported that they did receive LIHEAP benefits. Thirty-nine percent of respondents reported that they found out about LIHEAP from CAP.

CAP Satisfaction

- **Overall Satisfaction with CAP:** While 69 percent of respondents reported that they were very satisfied with CAP, 24 percent reported that they were somewhat satisfied.
 - While 77 percent of those who said they had a good understanding of CAP benefits reported that they were very satisfied, 26 percent of those who said they did not have a good understanding of CAP benefits reported that they were very satisfied.

- While 81 percent of respondents who said that their bills were lower on CAP reported that they were very satisfied with CAP, 38 percent of those who said their bills were higher on CAP reported that they were very satisfied.
- CAP Dissatisfaction: While the majority of respondents reported that there were no parts of CAP with which they were unsatisfied, some respondents expressed dissatisfaction with CAP credits/benefits toward their bill and CAP communication/transparency.
- Continued CAP Participation: Eighty-four percent of respondents reported that they were very likely to continue to participate in CAP and 11 percent reported that they were somewhat likely to continue.
 - While 87 percent of those who said they had a good understanding of CAP benefits reported that they were very likely to continue to participate, 70 percent of those who said they did not have a good understanding of CAP benefits reported that they were very likely to continue to participate.
 - While 60 percent of those who said their bills were higher on CAP reported that they were very likely to continue to participate, 91 percent of those who said their bills were lower on CAP reported that they were very likely to continue to participate.

VI. Impact Analysis Approach

APPRISE conducted in-depth analysis of PECO's customer, CAP, billing, payment, arrearages, collections, and usage data to assess the impact of CAP on energy affordability, bill payment, arrearage forgiveness, collections actions, and energy usage. This section describes the methodology used in the analysis.

A. Research Goals and Methodology

There were several goals for the analysis.

- Characterize the CAP participants.
- Analyze CAP retention rates.
- Assess the impact of the CAP on energy affordability.
- Determine whether the CAP improves participants' bill payment compliance.
- Ascertain the impact of CAP participation on LIHEAP receipt.
- Evaluate whether the CAP impacts collections actions.
- Assess whether the CAP impacts the amount of energy used by program participants.

PECO provided customer, CAP, billing, payment, arrearages, collections, and usage data to APPRISE to allow for analysis of these issues.

Evaluation Treatment Group

Customers who enrolled in CAP in 2017 and did not participate in the CAP in the year prior to enrollment were included as potential members of the treatment analysis group. This group was chosen for the analysis, as one full year of post-program data is required for an analysis of program impacts. We compared the characteristics and payment behavior of these customers in the year prior to CAP enrollment to those in the year following CAP enrollment.

In addition to analyzing characteristics and behavior for this select group of recent CAP enrollees, we analyzed data for all customers who participated in the CAP in the year prior to the implementation of the FCO (November 1, 2015 – October 31, 2016), all customers who participated in CAP in 2017, and all customers who participated in CAP in 2018.

Comparison Group

When measuring the impact of an intervention, it is necessary to recognize other exogenous factors that can impact changes in outcomes. Changes in a client's payment behavior and bill coverage rate, between the year preceding CAP enrollment and the year following enrollment, may be affected by many factors other than program services received. Some of these factors include changes in household composition or health of family members, changes in utility prices, changes in weather, and changes in the economy.

The ideal way to control for other factors that may influence payment behavior would be to randomly assign low-income customers to a treatment or control group. The treatment group would be given the opportunity to participate in the program first. The control group would not be given an opportunity to participate in the program until one full year later. This would

allow evaluators to determine the impact of the program by subtracting the change in behavior for the control group from the change in behavior for the treatment group. Such random assignment is rarely done in practice because of a desire to include all eligible customers in the benefits of the program or to target a program to those who are most in need.

A comparison group was constructed for the CAP data analysis to control for exogenous factors. The comparison group was designed to be as similar as possible to the treatment group, those who received services and who we are evaluating, so that the exogenous change for the comparison group is as similar as possible to those of the treatment group. We developed a comparison group using a sample of low-income nonparticipants, comprised of 2017 LIHEAP recipients. We requested data from PECO for customers who received LIHEAP in 2017 but who did not participate in CAP in 2017. The group of customers was replicated to represent customers who enrolled in the program in each quarter of 2017. A quasi intervention date of the middle of the quarter was chosen for each group to compare to the participating customers who enrolled in that quarter.

While the low-income nonparticipants are probably somewhat better off than the 2017 CAP enrollees because they did not need to enroll in the program, it is likely that the exogenous changes they experienced during the analysis period are similar to the changes experienced by the CAP participants.

For the CAP program impact analysis, we examined pre- and post-treatment statistics. The difference between the pre- and post-treatment statistics for the treatment group is considered the gross change. This is the actual change in behaviors and outcomes for those participants who were served by the program. Some of these changes may be due to the program, and some of these changes are due to other exogenous factors, but this is the customer's actual experience. The net change is the difference between the change for the treatment group and the change for the comparison group, and represents the actual impact of the program, controlling for other exogenous changes.

The data that were used for the study and comparison groups were as follows:

- 2017 CAP enrollee treatment group data extended from one year before the customer joined the CAP to one year after the customer joined the CAP.
- Low-income nonparticipant comparison group data included one year of data before the mid-point of the first quarter of 2017 to one year of data after the mid-point of the last quarter of 2017.

Table VI-1 describes the treatment and comparison groups that were analyzed.

**Table VI-1
Treatment and Comparison Groups**

	2017 Enrollee Treatment Group	Nonparticipant Comparison Group
Group	2017 CAP Enrollees	Nonparticipants
CAP Enrollment	Last enrollment date is in 2017	None
CAP Participation	Did not participate in the CAP in the year prior to enrollment	Did not participate in CAP for the pre or post quasi-enrollment year
Pre-participation Dates	1 year prior to enrollment	One year prior to the quasi-enrollment dates of 2/15/17, 5/15/17, 8/15/17, 11/15/17
Post-participation Dates	1 year after enrollment	One year after the quasi-enrollment dates of 2/15/17, 5/15/17, 8/15/17, 11/15/17

B. Data Attrition

This section provides information on the reasons customers were excluded from the analysis and the percentage of eligible customers included in the analysis. Table VI-2 displays the attrition analysis for the 2017 CAP Enrollees. Customers were eligible to be included in the 2017 Enrollee Treatment Group if they enrolled in CAP in 2017, did not receive a CAP discount or arrearage forgiveness in the year prior to enrollment, and were not on the CAP rate in the year prior to enrollment. The table shows that 35 percent of eligible customers were included in the analysis. The most common reason that customers were excluded from the analysis was that they did not have at least 11 bills in the pre- and post-enrollment years. A small percentage of additional outliers were excluded from the analysis.

**Table VI-2
2017 CAP Enrollees
Attrition Analysis**

Exclusion Reason	2017 Enrollees
Enrolled in CAP between 1/1/17-12/31/17	32,653
Did Not Receive CAP Discount in Year Prior to Enrollment	23,471
Did Not Receive Arrearage Forgiveness in Year Prior to Enrollment	23,152
Not on CAP Rate in Year Prior to Enrollment	11,932
On CAP Rate At Least 1 Month in Year Following Enrollment (Eligible)	11,317
First Bill After Enrollment Before 12/17	10,468
Included in Billing Data	10,468
At Least 11 Bills in Pre- and Post-Enrollment Year	4,108
No More than 16 Bills in Pre- or Post-Enrollment Year	4,072
Billing and Payment Outliers Removed	3,958
Percent of Eligible	35%

Table VI-3 displays the attrition analysis for the 2017 CAP Enrollee Nonparticipant Comparison Group. Customers were eligible to be included if they were not on CAP in the pre and post quasi-enrollment years. The table shows that 42 to 56 percent of eligible customers were included in the analysis. The most common reason that customers were excluded from the analysis was that they did not have at least 11 bills in the pre- and post-enrollment years. A small percentage of additional outliers were excluded from the analysis.

Table VI-3
2017 CAP Enrollee Nonparticipant Comparison Group
Attrition Analysis

Exclusion Reason	2017 Enrollee Comparison		
	Electric Non-Heating	Electric Heating	Gas Heating
In Low-Income Customer File	13,416	3,936	5,084
Not on CAP in Pre/Post Quasi-Enrollment Years	10,221	3,231	4,451
No CAP Discount in Pre/Post Quasi-Enrollment Years (Eligible)	10,215	3,113	4,207
Included in Billing Data	10,207	3,112	4,172
At Least 11 Pre and Post Bills	5,774	1,468	2,617
No More than 16 Pre or Post Bills	5,575	1,447	2,568
Billing and Payment Outliers Removed	5,414	1,304	2,370
Percent of Eligible	53%	42%	56%

Table VI-4 displays the attrition analysis for the 2016, 2017, and 2018 CAP participants. Customers were eligible to be included in these groups if they were on the CAP rate for at least one month during the year analyzed. About 79 percent of eligible customers in each year were included. The most common reasons for exclusion were that they had fewer than 11 bills in the analysis year. A small percentage of additional outliers were excluded.

Table VI-4
All 2016, 2017, and 2018 CAP Participants
Attrition Analysis

Exclusion Reason	2016 CAP Participants	2017 CAP Participants	2018 CAP Participants
In CAP Customer & Program Files	187,884	173,650	157,654
On CAP Rate at Least 1 Month (Eligible)	178,709	165,394	151,426
Included in Billing Data	177,532	164,841	150,951
At Least 11 Bills	141,834	131,060	121,378
No More than 16 Bills	141,733	130,921	121,140
Billing and Payment Outliers Removed	139,479	129,921	120,122
Percent of Eligible	78%	79%	79%

Table VI-5 displays the attrition analysis for the low-income CAP nonparticipants. Customers were eligible to be included in these groups if they were not on the CAP rate and did not receive a CAP discount during the year analyzed. The table shows that 42 to 74 percent of eligible customers were included in the analysis. The electric heating customers were less likely to have the data available, and the 2016 nonparticipants were less likely to have the data available than the 2017 nonparticipants. The most common reasons that customers were excluded from the analysis was that they did not have at least 11 bills in the analysis year. A small percentage of additional outliers were excluded from the analysis.

**Table VI-5
All CAP Nonparticipants
Attrition Analysis**

Exclusion Reason	2016 Nonparticipants			2017 Nonparticipants		
	Gas Heating	Electric Non-Heating	Electric Heating	Gas Heating	Electric Non-Heating	Electric Heating
In Low-Income Customer File	1,271	3,354	984	1,271	3,354	984
Not on CAP Rate	1,091	2,575	800	1,246	3,243	941
No CAP Discount (Eligible)	1,064	2,575	785	1,246	3,243	941
Included in Billing Data	816	2,005	546	1,234	3,238	941
At Least 11 Bills	631	1,452	364	1,004	2,462	653
No More than 16 Bills	630	1,435	363	990	2,427	650
Billing and Payment Outliers Removed	586	1,408	326	915	2,382	584
Percent of Eligible	55%	55%	42%	73%	74%	62%

VII. CAP Participant Demographics and Program Characteristics

This section provides information on the CAP participant demographics and the CAP participant characteristics.

A. Customer Demographics

Table VII-1 displays the service type for all of the groups analyzed. The table shows that the majority of the participants and nonparticipants were electric only accounts. While 83 percent of each participant group had an electric only account, 74 to 76 percent of the comparison groups had an electric only account. Less than one percent had gas only accounts and these customers are not analyzed in the report.

**Table VII-1
CAP Participants and Nonparticipants
Service Type**

	2017 CAP		CAP Participants			CAP Nonparticipants	
	Enrollees	Comparison Group	2016	2017	2018	2016	2017
Observations	3,958	9,089	139,479	129,921	120,122	2,322	3,881
Electric Only	83%	74%	83%	83%	83%	75%	76%
Gas Only	< 1%	0%	< 1%	< 1%	< 1%	0%	0%
Electric & Gas	17%	26%	17%	17%	17%	25%	24%
Total	100%	100%	100%	100%	100%	100%	100%

Table VII-2A displays the poverty level for the CAP participants. The table shows that about one quarter of the CAP participants had income at or below 50 percent of the poverty level, about 40 percent had income between 50 and 100 percent, and about 30 percent had income above 100 percent of the poverty level. Electric and gas customers were more likely to be in the 101 to 150 percent of poverty group than the electric only customers.

Table VII-2A
All CAP Participants and 2017 Enrollee Treatment Group
Poverty Level

Poverty Level	2017 CAP Enrollees		CAP Participants					
			Electric Only			Electric & Gas		
	Electric Only	Electric & Gas	2016	2017	2018	2016	2017	2018
Observations	3,224	637	101,305	101,971	98,002	21,073	20,803	20,230
≤ 50%	28%	24%	21%	23%	24%	22%	24%	26%
51% - 100%	40%	37%	47%	48%	49%	37%	39%	41%
101% - 150%	31%	39%	32%	29%	27%	41%	36%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis, 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-2B displays the poverty level for the CAP nonparticipants. The table shows that the distribution is similar to that of the CAP participants, but these customers were somewhat more likely to be in the group above 100 percent of the poverty level and less likely to be in the group between 51 and 100 percent of the poverty level.

Table VII-2B
All CAP Nonparticipants and 2017 Enrollee Comparison Group
Poverty Level

Poverty Level	2017 CAP Enrollee Comparison Group		CAP Nonparticipants			
			Electric Only		Electric & Gas	
	Electric Only	Electric & Gas	2016	2017	2016	2017
Observations	1,901	5,571	458	735	1,347	2,432
≤ 50%	21%	28%	21%	25%	27%	31%
51% - 100%	25%	32%	28%	27%	33%	34%
101% - 150%	54%	40%	52%	47%	40%	35%
Total	100%	100%	100%	100%	100%	100%

Note: 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis, 386 Electric Only and 131 Electric & Gas customers were excluded from the 2016 Nonparticipants analysis, and 534 Electric Only and 180 Electric & Gas customers were excluded from the 2017 Nonparticipants analysis due to missing poverty level data.

Table VII-3A displays the income source for the CAP participants. The table shows that the most common specified income source for the CAP participants was employment, followed by SSI, and then retirement income.

Table VII-3A
All CAP Participants and 2017 Enrollee Treatment Group
Income Source

	2017 CAP Enrollees		CAP Participants					
			Electric Only			Electric & Gas		
	Electric Only	Electric & Gas	2016	2017	2018	2016	2017	2018
Observations	3,297	655	115,113	107,654	99,361	24,032	22,004	20,252
Employment	30%	39%	23%	25%	24%	29%	31%	32%
SSI	15%	9%	23%	26%	27%	16%	18%	19%
Social Security or Pension	19%	16%	21%	22%	22%	18%	19%	19%
Public Assistance	4%	1%	4%	4%	5%	1%	2%	2%
Unemployment	4%	3%	2%	2%	2%	2%	2%	2%
Other	28%	32%	27%	22%	19%	32%	28%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Table VII-3B displays the income source for the CAP nonparticipants. The table shows that as with the CAP participants, the most common specified income source was employment, followed by SSI, and then retirement income. However, comparison group customers were most likely to have an "Other" source of income.

Table VII-3B
All CAP Nonparticipants and 2017 Enrollee Comparison Group
Income Source

	2017 CAP Enrollee Comparison Group		CAP Nonparticipants			
			Electric Only		Electric & Gas	
	Electric Only	Electric & Gas	2016	2017	2016	2017
Observations	6,719	2,370	1,733	2,966	589	915
Employment	29%	33%	25%	28%	30%	31%
SSI	11%	7%	11%	12%	6%	7%
Social Security or Pension	13%	15%	14%	11%	15%	14%
Public Assistance	3%	1%	3%	4%	1%	2%
Unemployment	3%	3%	3%	2%	4%	3%
Other	41%	41%	44%	42%	43%	44%
Total	100%	100%	100%	100%	100%	100%

Table VII-4A displays the annual household income for the CAP participants. The table shows that about 40 percent of electric only customers and 30 percent of electric and gas customers had annual household income below \$10,000. Mean annual income was about \$13,000 for the electric only participants and about \$16,000 for the electric and gas participants.

Table VII-4A
All CAP Participants and 2017 Enrollee Treatment Group
Annual Household Income

	2017 CAP Enrollees		CAP Participants					
			Electric Only			Electric & Gas		
	Electric Only	Electric & Gas	2016	2017	2018	2016	2017	2018
Observations	3,224	637	101,305	101,971	98,002	21,073	20,803	20,230
≤ \$10,000	40%	30%	41%	44%	45%	31%	34%	35%
\$10,001 - \$20,000	40%	39%	40%	40%	39%	40%	40%	40%
> \$20,000	21%	32%	19%	17%	15%	30%	26%	24%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Annual Income	\$13,821	\$16,298	\$14,108	\$13,375	\$12,930	\$16,839	\$15,661	\$14,964

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis, 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-4B displays the annual household income for the CAP nonparticipants. The table shows that the electric only nonparticipants had annual income that is somewhat higher than the CAP participants. Mean annual income was about \$19,000 for the electric only nonparticipants and about \$16,000 for the electric and gas nonparticipants.

Table VII-4B
All CAP Nonparticipants and 2017 Enrollee Comparison Group
Annual Household Income

Income Group	2017 CAP Enrollee Comparison Group		CAP Nonparticipants			
			Electric Only		Electric & Gas	
	Electric Only	Electric & Gas	2016	2017	2016	2017
Observations	1,901	5,571	458	735	1,347	2,432
≤ \$10,000	23%	36%	24%	27%	36%	39%
\$10,001 - \$20,000	36%	35%	37%	38%	36%	34%
> \$20,000	41%	29%	39%	35%	28%	27%
Total	100%	100%	100%	100%	100%	100%
Mean Annual Income	\$19,755	\$16,262	\$19,242	\$18,214	\$16,143	\$15,193

Note: 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis, 386 Electric Only and 131 Electric & Gas customers were excluded from the 2016 Nonparticipants analysis, and 534 Electric Only and 180 Electric & Gas customers were excluded from the 2017 Nonparticipants analysis due to missing poverty level data.

Table VII-5A displays the total amount due (not including pre-program arrearages) at the time the data were downloaded for the CAP participants. The 2016 and 2017 CAP data were downloaded in October 2018 and the 2018 CAP data were downloaded in January 2019. The table shows that about half of the participants had no amount owed, and one quarter to one third had an amount less than \$250 owed. The mean amount owed was about \$200 for electric only customers and about \$300 for electric and gas customers.

Table VII-5A
All CAP Participants and 2017 Enrollee Treatment Group
Total Amount Due at Time of Data Download

	2017 CAP Enrollees		CAP Participants					
			Electric Only			Electric & Gas		
	Electric Only	Electric & Gas	2016	2017	2018	2016	2017	2018
Observations	3,297	655	115,113	107,654	99,361	24,032	22,004	20,525
\$0	54%	57%	46%	53%	57%	47%	53%	55%
\$1 - \$250	32%	25%	33%	33%	30%	27%	27%	25%
\$251 - \$500	6%	7%	8%	6%	7%	10%	8%	11%
\$501 - \$1,000	4%	4%	6%	4%	3%	7%	5%	6%
> \$1,000	4%	7%	6%	4%	3%	10%	7%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Amount Due	\$164	\$239	\$245	\$168	\$127	\$353	\$257	\$206

Table VII-5B displays the total amount due (not including pre-program arrearages) at the time the data were downloaded for the nonparticipants. The table shows that the electric and gas nonparticipants were somewhat less likely than the electric and gas CAP participants to have an amount owed.

Table VII-5B
All CAP Nonparticipants and 2017 Enrollee Comparison Group
Total Amount Due at Time of Data Download

	2017 CAP Enrollee Comparison Group		CAP Nonparticipants			
			Electric Only		Electric & Gas	
	Electric Only	Electric & Gas	2016	2017	2016	2017
Observations	6,719	2,370	1,733	2,966	589	915
\$0	55%	65%	51%	47%	60%	56%
\$1 - \$250	30%	23%	28%	30%	23%	23%
\$251 - \$500	8%	6%	9%	9%	7%	8%
\$501 - \$1,000	3%	3%	6%	6%	4%	5%
> \$1,000	4%	3%	6%	8%	6%	7%
Total	100%	100%	100%	100%	100%	100%
Mean Amount Due	\$164	\$137	\$275	\$311	\$202	\$290

B. Program Characteristics

This section examines the CAP characteristics of the analysis groups.

Table VII-6A displays the length of CAP participation. The length of CAP participation is defined as the time between a participant's most recent CAP enrollment date and the date the program data were downloaded for this evaluation. The 2016 and 2017 CAP data were downloaded in October 2018 and the 2018 CAP data were downloaded in January 2019. For participants who left the program prior to the data download date, the length of participation is defined as the time between CAP enrollment and removal.

The table shows that the customers participated in CAP for an average of about four years. About 20 percent participated between five and ten years and ten percent participated for more than ten years.

Table VII-6A
All CAP Participants
Length of CAP Participation

Length of Participation	CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	115,113	107,654	99,361	24,032	22,004	20,525
≤ 1 Year	9%	9%	17%	9%	9%	18%
1 – 2 Years	11%	19%	20%	10%	19%	18%
2 – 3 Years	28%	24%	18%	26%	22%	17%
3 – 4 Years	12%	10%	9%	12%	10%	9%
4 – 5 Years	10%	9%	8%	10%	9%	8%
5 – 10 Years	19%	18%	18%	23%	21%	21%
> 10 Years	10%	10%	10%	10%	10%	10%
Total	100%	100%	100%	100%	100%	100%
Mean Years	4.0	3.9	3.7	4.1	4.0	3.7

Table 6B displays the percent of customers who were on CAP for the full year of analysis. The table shows that 97 percent of the 2017 enrollee treatment group was on CAP for the full year following enrollment, and between 79 and 87 percent of the groups of all CAP participants were on CAP for the full year.

Table VII-6B
All CAP Participants and 2017 Enrollee Treatment Group
Percent on CAP for Full Analysis Year

	2017 Enrollee Treatment Group		All CAP Participants					
	Electric Only	Electric & Gas	Electric Only			Electric & Gas		
			2016	2017	2018	2016	2017	2018
Observations	3,297	655	115,113	107,654	99,361	24,032	22,004	20,525
Full Year CAP	97%	97%	87%	79%	86%	85%	80%	85%

Table VII-7 displays the reason for CAP removal. The table shows that the most common reason was that income verification was not returned.

**Table VII-7
All CAP Participants
CAP Removal Reason**

	CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	51,888	35,767	18,738	11,600	7,528	4,082
Income Verification Not Returned	64%	71%	70%	59%	63%	61%
Account Transferred	22%	16%	11%	22%	17%	12%
Not Eligible	11%	11%	15%	17%	17%	22%
Customer Requested Removal	1%	1%	2%	2%	2%	3%
Other*	1%	1%	2%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%

*"Other" includes the following categories: state agency can't supply requested info, customer disputes DPW/state information, company request for internal processing, customer removed due to theft of service, enrolled in error, failure to complete a LIURP audit, and successful graduation.

Table VII-8 displays the percentage of CAP participants who recertified. The table shows that about 60 percent of the participants have re-certified for CAP. Households at or below 50 percent of the poverty level were less likely than the other groups to have re-certified.

**Table VII-8
All CAP Participants
Recertification by Poverty Level**

Poverty Level	CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	101,305	101,971	98,002	21,073	20,803	20,230
≤ 50%	53%	48%	43%	57%	50%	44%
51% - 100%	74%	70%	66%	71%	66%	61%
101% - 150%	64%	63%	61%	62%	61%	58%
Total	66%	63%	59%	64%	60%	55%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-9 displays whether the most recently calculated CAP annual credit was based on estimated annual usage. The table shows that only one to three percent of the participants had their annual credit calculated based on estimated usage.

Table VII-9
All CAP Participants and 2017 CAP Enrollee Treatment Group
Annual Credit Used Estimated Usage
By Poverty Level

Poverty Level	2017 CAP Enrollees Post-Enrollment		CAP Participants					
			Electric Only			Electric & Gas		
	Electric Only	Electric & Gas	2016	2017	2018	2016	2017	2018
Observations	3,224	637	101,305	101,971	98,002	21,073	20,803	20,230
≤ 50%	< 1%	1%	< 1%	1%	4%	1%	2%	4%
51% - 100%	< 1%	< 1%	< 1%	1%	2%	1%	1%	3%
101% - 150%	< 1%	2%	< 1%	1%	2%	1%	2%	3%
Total	< 1%	1%	< 1%	1%	3%	1%	2%	3%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis. 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-10A displays the calculated annual credit that was most recently calculated for each CAP customer. The table shows that the mean calculated annual electric credit was approximately \$500 for the electric only participants and \$400 for the electric and gas participants. The mean calculated annual gas credit was approximately \$100. While about 35 percent of the electric only customers had no calculated electric credit, about 40 percent of the electric and gas customers had no calculated electric credit, and about 80 percent of the electric and gas customers had no calculated gas credit. About 20 percent of the electric only customers had a calculated electric credit over \$1,000 and about 17 percent of the electric and gas customers had a calculated annual electric credit over \$1,000. Only about two percent of the electric and gas customers had a calculated gas credit over \$1,000.

Table VII-10A
All CAP Participants and 2017 Enrollee Treatment Group
Calculated CAP Annual Electric Credit Amount

Calculated Annual Credit	Electric Only			Electric & Gas – Electric Credit			Electric & Gas – Gas Credit		
	2017 Enrollees	CAP Participants		2017 Enrollees	CAP Participants		2017 Enrollees	CAP Participants	
		2017	2018		2017	2018		2017	2018
Observations	3,297	107,604	99,296	655	21,995	20,509	655	21,995	20,414
\$0	37%	34%	36%	46%	39%	42%	78%	79%	78%
\$1 - \$50	2%	6%	3%	2%	7%	3%	2%	1%	1%
\$51 - \$500	20%	23%	23%	18%	20%	21%	10%	11%	11%
\$501 - \$1,000	20%	18%	19%	18%	17%	17%	8%	6%	7%
\$1,001 - \$2,000	18%	16%	17%	14%	15%	15%	3%	2%	2%
> \$2,000	3%	3%	3%	2%	2%	2%	0%	< 1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean Annual Credit	\$506	\$488	\$505	\$400	\$427	\$434	\$111	\$103	\$109

Note: 65 Electric Only 2018 Participants, 16 Electric & Gas 2018 Participants, 50 Electric Only 2017 Participants, and nine Electric & Gas 2017 Participants were excluded from this table due to lack of calculated annual electric credit. 111 Electric & Gas 2018 Participants and nine 2017 Electric & Gas Participants were excluded from this table due to lack of calculated annual gas credit.

Table VII-10B displays the mean calculated annual credit that was most recently calculated for each CAP customer by poverty level. (Overall numbers differ slightly from the previous table due to missing poverty level for some customers.) Mean annual electric credits were almost \$1,000 for electric only customers at or below 50 percent of the poverty level. Mean annual electric credits were almost \$900 for electric and gas customers with income at or below 50 percent of the poverty level. Mean annual gas credits were about \$350 for electric and gas customers with income at or below 50 percent of the poverty level.

Table VII-10B
All CAP Participants and 2017 Enrollee Treatment Group
Calculated CAP Annual Credit Amount
By Poverty Level

Poverty Level	Electric Only			Electric & Gas – Electric Credit			Electric & Gas – Gas Credit		
	2017 Enrollees	CAP Participants		2017 Enrollees	CAP Participants		2017 Enrollees	CAP Participants	
		2017	2018		2017	2018		2017	2018
Observations	3,224	101,932	97,953	637	20,796	20,216	637	20,796	20,124
≤ 50%	\$926	\$962	\$997	\$875	\$877	\$894	\$377	\$325	\$348
51% - 100%	\$456	\$440	\$449	\$368	\$391	\$387	\$38	\$40	\$38
101% - 150%	\$178	\$180	\$174	\$140	\$150	\$135	\$9	\$15	\$12
Total	\$502	\$484	\$504	\$403	\$422	\$432	\$109	\$100	\$109

Note: 65 Electric Only 2018 Participants, 16 Electric & Gas 2018 Participants, 50 Electric Only 2017 Participants, and nine Electric & Gas 2017 Participants were excluded from this table due to lack of calculated annual electric credit. 111 Electric & Gas 2018 Participants and nine 2017 Electric & Gas Participants were excluded from this table due to lack of calculated annual gas credit. 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis, 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data. Overall, 73 Electric Only 2017 Enrollees, 18 Electric & Gas 2017 Enrollees, 5,722 Electric Only 2017 Participants, 1,208 Electric & Gas 2017 Participants and 1,408 Electric Only 2018 Participants were excluded from this table. In addition, 309 Electric & Gas 2018 Participants were excluded from the Electric Credit column, and 401 Electric & Gas 2018 Participants were excluded from the Gas Credit column.

Table VII-10C displays the distribution of the calculated annual CAP credit by poverty level. The table shows that about ten percent of the electric only customers and seven percent of the electric and gas customers with income at or below 50 percent of the poverty level had an annual electric CAP credit of more than \$2,000.

**Table VII-10C
All CAP Participants and 2017 Enrollee Treatment Group
Distribution of Calculated CAP Annual Credit Amount
By Poverty Level**

Poverty Level	Electric Only Customers								
	2017 Enrollees			All CAP Participants					
				2017			2018		
	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	912	1,303	1,009	23,257	49,090	29,585	23,258	47,975	26,720
\$0	10%	29%	72%	8%	28%	63%	8%	30%	71%
\$1 - \$50	1%	4%	2%	2%	6%	10%	1%	4%	2%
\$51 - \$500	16%	29%	12%	17%	31%	13%	17%	31%	13%
\$501 - \$1,000	33%	21%	7%	30%	19%	7%	31%	19%	7%
\$1,001 - \$2,000	31%	17%	7%	32%	15%	6%	32%	16%	6%
> \$2,000	9%	< 1%	< 1%	10%	1%	< 1%	11%	1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Poverty Level	Electric & Gas Customers – Electric Credit								
	2017 Enrollees			All CAP Participants					
				2017			2018		
	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	155	235	247	5,053	8,204	7,539	5,196	8,209	6,811
\$0	15%	38%	73%	13%	33%	65%	12%	35%	75%
\$1 - \$50	1%	4%	2%	2%	6%	11%	1%	4%	2%
\$51 - \$500	14%	25%	14%	17%	30%	12%	18%	30%	12%
\$501 - \$1,000	31%	20%	6%	28%	18%	7%	30%	18%	6%
\$1,001 - \$2,000	33%	12%	5%	32%	13%	4%	33%	13%	4%
> \$2,000	6%	0%	0%	8%	< 1%	< 1%	7%	< 1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Poverty Level	Electric & Gas Customers – Gas Credit								
	2017 Enrollees			All CAP Participants					
	≤ 50%	51%-100%	101%-150%	2017			2018		
	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	155	235	247	5,053	8,205	7,538	5,160	8,176	6,788
\$0	33%	90%	96%	40%	88%	96%	37%	88%	97%
\$1 - \$50	4%	1%	1%	3%	2%	< 1%	3%	2%	< 1%
\$51 - \$500	28%	6%	2%	29%	8%	2%	30%	7%	2%
\$501 - \$1,000	25%	3%	1%	21%	2%	1%	23%	2%	1%
\$1,001 - \$2,000	10%	0%	0%	7%	1%	< 1%	8%	< 1%	< 1%
> \$2,000	0%	0%	0%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: 65 Electric Only 2018 Participants, 16 Electric & Gas 2018 Participants, 50 Electric Only 2017 Participants, and nine Electric & Gas 2017 Participants were excluded from this table due to lack of calculated annual electric credit. 111 Electric & Gas 2018 Participants and nine 2017 Electric & Gas Participants were excluded from this table due to lack of calculated annual gas credit. 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis, 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data. Overall, 73 Electric Only 2017 Enrollees, 18 Electric & Gas 2017 Enrollees, 5,722 Electric Only 2017 Participants, 1,208 Electric & Gas 2017 Participants and 1,408 Electric Only 2018 Participants were excluded from this table. In addition, 309 Electric & Gas 2018 Participants were excluded from the Electric Credit column, and 401 Electric & Gas 2018 Participants were excluded from the Gas Credit column.

Table VII-11A displays the percentage of 2017 CAP enrollees who received the maximum annual electric credit, based upon the actual credit received. While two percent of the electric only heating participants received the maximum annual credit, and six percent of the electric only baseload customers received the maximum annual credit, three percent of the electric and gas customers received the specified maximum annual credit.

Table VII-11A
2017 CAP Enrollee Treatment Group
Receipt of Maximum CAP Credit

Poverty Level	2017 CAP Enrollees											
	Electric Only Heating				Electric Only Baseload				Electric & Gas			
	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Observations	93	130	102	325	819	1,173	907	2,899	155	235	247	637
Max. Credit	\$2,922	\$1,881	\$1,661	--	\$2,048	\$1,389	\$1,241	--	\$2,048	\$1,389	\$1,241	--
≥ Max Credit	3%	2%	0%	2%	3%	8%	5%	6%	3%	3%	2%	3%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis due to missing poverty level data.

Table VII-11B displays the percentage of electric only CAP participants who received the maximum annual electric credit. While these were not in place in 2016, we provide the percentage who received a credit of the FCO specified maximum amount for comparison purposes. Four percent of the 2016 electric only heating participants received the FCO maximum annual credit, three percent of the 2017, and three percent of the 2018 electric only heating participants received the specified maximum annual credit. Seven percent of the 2016 electric only baseload participants received the FCO maximum annual credit, four percent of the 2017, and four percent of the 2018 electric only baseload participants received the specified maximum annual credit.

**Table VII-11B
All CAP Participants – Electric Only Customers
Receipt of Maximum CAP Credit**

	All CAP Participants – Electric Only Heating											
	2016				2017				2018			
	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Poverty Level												
Obs.	2,426	5,046	4,159	11,631	2,741	5,260	3,822	11,823	2,917	5,480	3,543	11,940
Max. Credit	\$2,922	\$1,881	\$1,661	--	\$2,922	\$1,881	\$1,661	--	\$2,922	\$1,881	\$1,661	--
≥ Max Credit	4%	4%	3%	4%	2%	3%	2%	3%	4%	3%	1%	3%
	All CAP Participants – Electric Only Baseload											
	2016				2017				2018			
	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Obs.	18,758	42,575	28,341	89,674	20,527	43,847	25,774	90,148	20,350	42,515	23,197	86,062
Max. Credit	\$2,048	\$1,389	\$1,241	--	\$2,048	\$1,389	\$1,241	--	\$2,048	\$1,389	\$1,241	--
≥ Max Credit	6%	9%	6%	7%	3%	5%	3%	4%	4%	5%	3%	4%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-11C displays the percentage of electric and gas CAP participants who received the maximum annual electric credits. While these were not in place in 2016, we provide the percentage who received a credit of the FCO specified maximum amount for comparison purposes. Eleven percent of the 2016 electric and gas participants received a discount greater than or equal to the FCO maximum annual credit, and three percent of the 2017 and 2018 electric and gas participants received a credit greater than or equal to the specified maximum annual credit.

Table VII-11C
All CAP Participants – Electric & Gas Customers
Receipt of Maximum CAP Credit

	All CAP Participants – Electric & Gas											
	2016				2017				2018			
Poverty Level	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Obs.	4,580	7,889	8,604	21,073	5,057	8,205	7,541	20,803	5,201	8,215	6,814	20,230
Max. Credit	\$2,048	\$1,389	\$1,241	--	\$2,048	\$1,389	\$1,241	--	\$2,048	\$1,389	\$1,241	--
≥ Max Credit	14%	13%	7%	11%	3%	5%	3%	3%	3%	4%	2%	3%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

We considered a customer to be charged the minimum monthly bill amount if the annual electric and gas charges were twelve times the minimum monthly bill amount. Customers with fewer than twelve bills were considered to have the minimum monthly bill if their annual charges were the number of bills times the minimum monthly bill amount.

Table VII-12A shows that seven percent of the 2017 electric only heating enrollees, six percent of the electric only baseload enrollees, and five percent of the electric and gas CAP enrollees had a bill less than or equal to the minimum monthly amount. Most of the customers with the minimum bills had income at or below 50 percent of the poverty level

Table VII-12A
2017 CAP Enrollee Treatment Group
Minimum Monthly Bill

	2017 CAP Enrollees											
	Electric Only Heating				Electric Only Baseload				Electric & Gas			
Poverty Level	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Observations	93	130	102	325	819	1,173	907	2,899	155	235	247	637
Min Bill	\$30				\$12				\$37			
≤ Min Bill	25%	< 1%	1%	7%	18%	1%	1%	6%	18%	0%	1%	5%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis due to missing poverty level data.

Table VII-12B shows that eight percent of the 2016 electric only heating participants, six percent of the 2017 electric only heating participants, and six percent of the 2018 electric only heating participants had a bill less than or equal to the minimum monthly amount. Four percent of the 2016, 2017, and 2018 electric only baseload participants had a bill less than or equal to the minimum monthly amount.

Table VII-12B
All CAP Participants – Electric Only Customers
Minimum Monthly Bill

	All CAP Participants – Electric Heating											
	2016				2017				2018			
Poverty Level	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Observations	2,426	5,046	4,159	11,631	2,741	5,260	3,822	11,823	2,917	5,480	3,543	11,940
Min Bill	\$30				\$30				\$30			
≤ Min Bill	13%	9%	2%	8%	16%	4%	2%	6%	16%	3%	1%	6%
	All CAP Participants – Electric Baseload											
Observations	18,758	42,575	28,341	89,674	20,527	43,847	25,774	90,148	20,350	42,515	23,197	86,062
Min Bill	\$12				\$12				\$12			
≤ Min Bill	9%	4%	1%	4%	12%	1%	1%	4%	13%	1%	1%	4%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VII-12C shows that three percent of the 2016, 2017, and 2018 electric and gas CAP participants had a bill less than or equal to the minimum monthly amount. Most of these customers had income at or below 50 percent of the poverty level.

Table VII-12C
All CAP Participants – Electric & Gas Customers
Receipt of Minimum Monthly Bill Amount

	All CAP Participants – Electric & Gas											
	2016				2017				2018			
Poverty Level	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All	≤ 50%	51%-100%	101%-150%	All
Observations	4,580	7,889	8,604	21,073	5,057	8,205	7,541	20,803	5,201	8,215	6,814	20,230
Min Bill	\$37				\$37				\$37			
≤ Min Bill	7%	3%	1%	3%	11%	1%	1%	3%	10%	1%	< 1%	3%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

C. Summary

This section provided findings from the analysis of customer demographics and CAP characteristics.

Customer Demographics

Key findings from the customer demographics analysis are summarized below.

- **Poverty Level:** About one quarter of the CAP participants had income at or below 50 percent of the poverty level, about 40 percent had income between 50 and 100 percent, and about 30 percent had income above 100 percent of the poverty level. Electric and gas participants were more likely to be in the 101 to 150 percent of poverty group than the electric only participants. For example, 29 percent of the 2017 electric only CAP participants and 36 percent of the 2017 electric and gas participants had income between 101 and 150 percent of the poverty level. The electric only CAP nonparticipants were somewhat more likely than the electric only CAP participants to be in the group between 101 and 150 percent of the poverty level. While 47 percent of the 2017 electric only CAP nonparticipants had income between 101 and 150 percent of the poverty level, 35 percent of the electric and gas nonparticipants were in that group.
- **Income Source:** The most common specified income source for the CAP participants was employment, followed by SSI, and then retirement income. As with the CAP participants, the most common specified income source for the nonparticipants was employment, followed by SSI, and then retirement income. However, comparison group customers were most likely to have an “Other” source of income.
- **Income:** About 40 percent of electric only customers and 30 percent of electric and gas customers had annual household income below \$10,000. Mean annual income was about \$13,000 for the electric only participants and about \$16,000 for the electric and gas participants. The electric only nonparticipants had annual income that is somewhat higher than the CAP participants. Mean annual income was about \$19,000 for the electric only nonparticipants and about \$16,000 for the electric and gas nonparticipants.
- **Total Amount Due:** About half of the participants had no amount owed (not including pre-program arrearages) at the time the data were downloaded, and one quarter to one third had an amount less than \$250 owed. The mean amount owed was about \$200 for electric only customers and about \$300 for electric and gas customers. The electric and gas nonparticipants were somewhat less likely than the electric and gas CAP participants to have an amount owed.

CAP Participant Characteristics

Key findings from the customer demographics analysis are summarized below.

- **Length of CAP Participation:** Customers participated in CAP for an average of about four years. About 20 percent participated between five and ten years and ten percent participated more than ten years.
- **Full CAP Analysis Year:** We analyzed data for each group of customers for one year. We found that 97 percent of the 2017 enrollee treatment group was on CAP for the full year following enrollment, and between 79 and 87 percent of the groups of all CAP participants in 2016, 2017, and 2018 were on CAP for the full year.

- **CAP Removal Reason:** The most common reason that customers were removed from CAP was that they did not return their income verification. Other common reasons were that the account was transferred and the customer was not eligible.
- **CAP Recertification:** About 60 percent of the CAP participants have re-certified for CAP. Households at or below 50 percent of the poverty level were less likely than the other groups to have re-certified.
- **Calculated Annual Credit:** The mean calculated annual electric credit was approximately \$500 for the electric only participants and \$400 for the electric and gas participants. The mean calculated annual gas credit was approximately \$100. While about 35 percent of the electric only customers had no calculated electric credit, about 40 percent of the electric and gas customers had no calculated electric credit, and about 80 percent of the electric and gas customers had no calculated gas credit. About 20 percent of the electric only customers had a calculated electric credit over \$1,000 and about 17 percent of the electric and gas customers had a calculated annual electric credit over \$1,000. Only about two percent of the electric and gas customers had a calculated gas credit over \$1,000.

Mean annual electric credits were almost \$1,000 for electric only customers at or below 50 percent of the poverty level. Mean annual electric credits were almost \$900 for electric and gas customers with income at or below 50 percent of the poverty level. Mean annual gas credits were about \$350 for electric and gas customers with income at or below 50 percent of the poverty level.

- **Maximum Annual Credit:** Based on analysis of CAP credits received by participants, two percent of the 2017 electric heating enrollee treatment group received the specified maximum annual electric credit, six percent of the electric baseload enrollees, and three percent of the electric and gas enrollees received the specified maximum annual credit.

Three percent of the 2017 electric only heating participants, four percent of the 2017 electric only baseload participants, and three percent of the 2017 electric and gas participants received the specified maximum annual credit.

- **Minimum Monthly Bill:** We considered a customer to be charged the minimum monthly bill amount if their annual electric and gas charges were twelve times the minimum monthly bill amount. Customers with fewer than twelve bills were considered to have the minimum monthly bill if their annual charges were the number of bills times the minimum monthly bill amount. Six percent of the 2017 electric only heating participants, four percent of the 2017 electric only baseload participants, and three percent of the 2017 electric and gas participants had a bill less than or equal to the minimum monthly amount. Most of these customers had income at or below 50 percent of the poverty level.

VIII. Affordability, Bills and Payments, and Energy Assistance

This section analyzes the impact of CAP on energy affordability, bills and payments, and energy assistance. Results are shown for the 2017 CAP enrollees as well as the 2016, 2017, and 2018 CAP participants. The 2017 enrollees' findings are from the year prior to and the year following CAP enrollment. The 2016 participants' results are from November 2015 through October 2016, before the FCO went into effect. The 2017 and 2018 results are for the calendar year, and represent the first and second full years of the implementation of the FCO.

A. Affordability

Table VIII-1A displays the distribution of the annual CAP credit and the mean annual CAP credit received by electric only customers. The CAP discount amount is defined as the annual difference between the CAP bill and the full bill, including both gas and electric amounts (if applicable). The mean annual discount for the 2017 electric only CAP enrollees and the 2017 and 2018 electric only CAP participants under the new FCO ranged from \$417 to \$478. This compares to a mean discount of \$700 in 2016 under the previous CAP discount program. While 18 percent of the 2017 enrollees received an annual credit of more than \$1,000, 14 percent of the 2017 electric only participants and 15 percent of the 2018 electric only participants received a credit of more than \$1,000.

PECO was aware that many customers who received CAP discounts under the previous design would not receive a credit under the new FCO approach. Therefore, they offered previous CAP participants who would not receive an FCO credit a one-year Phase-Out benefit of \$50 per household through a \$4.17 monthly bill credit for up to 12 months. Table VIII-1A shows that while six percent of the 2017 participants received no credit, 31 percent of the 2018 participants received no credit, after the Phase-Out period ended. This compares to three percent of the 2016 participants who received no discount.

Because of the Phase-Out credit, we show most of the results in this section for the subset of participants with an annual credit of more than \$50, as well as for the full CAP population. When the results are shown for this subset, the distributions of the 2017 and 2018 credits are very similar.

Table VIII-1A
All CAP Participants and 2017 Enrollee Treatment Group
Electric Only Customers
Annual CAP Discount Amount Received

	Electric Only Customers			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	3,297	115,113	107,654	99,361
\$0	31%	3%	6%	31%
\$1 - \$50	5%	3%	29%	7%
\$51 - \$500	25%	37%	31%	29%
\$501 - \$1,000	21%	35%	19%	18%
\$1,001 - \$2,000	16%	19%	13%	13%
> \$2,000	2%	3%	1%	2%
Total	100%	100%	100%	100%
Mean Annual Discount	\$478	\$700	\$431	\$417
	Electric Only Customers Discount Amounts Greater than \$50			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	2,109	108,663	69,734	61,554
\$51 - \$500	39%	39%	48%	47%
\$501 - \$1,000	33%	37%	30%	29%
\$1,000 - \$2,000	25%	21%	20%	21%
> \$2,000	3%	3%	2%	3%
Total	100%	100%	100%	100%
Mean Annual Discount	\$746	\$741	\$651	\$671

Table VIII-1B displays the distribution of the annual CAP credit and the mean annual CAP credit received by electric and gas CAP participants. The mean annual discount for the 2017 electric and gas enrollees and the 2017 and 2018 electric and gas CAP participants under the new FCO ranged from \$440 to \$469. This compares to a mean discount of \$766 in 2016 under the previous CAP discount program. While 20 percent of the 2017 enrollees received an annual credit of more than \$1,000, 17 percent of the 2017 and the 2018 participants received a credit of more than \$1,000. While eight percent of the 2017 electric and gas participants received no annual credit, 37 percent of the 2018 electric and gas participants received no annual credit.

Table VIII-1B
All CAP Participants and 2017 Enrollee Treatment Group
Electric & Gas Customers
Annual CAP Discount Amount Received

	Electric & Gas Customers			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	655	24,032	22,004	20,525
\$0	40%	1%	8%	37%
\$1 - \$50	4%	2%	33%	7%
\$51 - \$500	21%	41%	26%	24%
\$501 - \$1,000	14%	29%	16%	15%
\$1,001 - \$2,000	16%	22%	14%	14%
> \$2,000	4%	5%	3%	3%
Total	100%	100%	100%	100%
Mean Annual Discount	\$469	\$766	\$457	\$440
	Electric & Gas Customers Discount Amounts Greater than \$50			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	364	23,327	13,051	11,542
\$51 - \$500	38%	42%	44%	43%
\$501 - \$1,000	26%	30%	28%	27%
\$1,000 - \$2,000	29%	23%	24%	24%
> \$2,000	7%	6%	5%	6%
Total	100%	100%	100%	100%
Mean Annual Discount	\$842	\$788	\$751	\$780

Table VIII-2A displays the mean annual CAP discount amount for electric only customers by poverty level. Some customers were excluded from this analysis because their poverty level data were not available. The table shows that the mean annual credit for electric only customers at or below 50 percent of the poverty level ranged from \$721 to \$816 for the 2017 enrollees and the 2017 and 2018 participants and was \$978 for the 2016 participants at or below 50 percent of the poverty level.

Table VIII-2A
All CAP Participants and 2017 Enrollee Treatment Group
Electric Only Customers
CAP Discount Amount by Poverty Level

Poverty Level	Electric Only Customers			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	3,224	101,305	101,971	98,002
≤ 50%	\$816	\$978	\$721	\$770
51% - 100%	\$465	\$720	\$424	\$392
101% - 150%	\$183	\$469	\$212	\$156
Total	\$476	\$693	\$430	\$417
Electric Only Customers Discount Amounts Greater than \$50				
Poverty Level	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
	Observations	2,061	95,649	65,888
≤ 50%	\$912	\$1,013	\$814	\$859
51% - 100%	\$653	\$737	\$589	\$587
101% - 150%	\$570	\$529	\$534	\$517
Total	\$742	\$734	\$650	\$671

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis, 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-2B displays the mean annual CAP discount amount for electric and gas customers by poverty level. The table shows that the mean annual credit for electric and gas customers at or below 50 percent of the poverty level ranged from \$874 to \$1,065 for the 2017 enrollees and the 2017 and 2018 participants and was \$1,195 for the 2016 participants at or below 50 percent of the poverty level.

Table VIII-2B
All CAP Participants and 2017 Enrollee Treatment Group
Electric & Gas Customers
CAP Discount Amount by Poverty Level

Poverty Level	Electric & Gas Customers			
	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
Observations	637	21,073	20,803	20,230
≤ 50%	\$1,065	\$1,195	\$874	\$947
51% - 100%	\$399	\$775	\$419	\$368
101% - 150%	\$167	\$508	\$207	\$138
Total	\$471	\$757	\$453	\$439
Electric & Gas Customers Discount Amounts Greater than \$50				
Poverty Level	2017 Enrollees Post-Enrollment	All CAP Participants		
		2016	2017	2018
	Observations	355	20,451	12,270
≤ 50%	\$1,231	\$1,221	\$1,025	\$1,091
51% - 100%	\$619	\$787	\$618	\$597
101% - 150%	\$585	\$532	\$557	\$513
Total	\$843	\$780	\$748	\$780

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis. 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis. 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis. and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-3A displays the distribution of the CAP discount for electric only customers by poverty level. While 41 percent of those at or below 50 percent of the poverty level received a discount of more than \$1,000 in 2016, 28 percent received a discount of that amount in 2017 and 31 percent received a discount of that amount in 2018.

**Table VIII-3A
All CAP Participants – Electric Only Customers
Distribution of CAP Discount Amounts by Poverty Level**

	Electric Only Customers – All Participants								
	2016 CAP Participants			2017 CAP Participants			2018 CAP Participants		
Poverty Level	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	21,184	47,621	32,500	23,268	49,107	29,596	23,267	47,995	26,740
\$0	2%	1%	6%	3%	5%	12%	7%	25%	63%
\$1 - \$50	1%	1%	6%	9%	25%	52%	3%	9%	7%
\$51 - \$500	21%	34%	54%	31%	37%	21%	30%	36%	18%
\$501 - \$1,000	34%	42%	24%	30%	20%	9%	29%	18%	7%
\$1,001 - \$2,000	34%	19%	9%	24%	13%	5%	25%	12%	4%
> \$2,000	7%	2%	1%	4%	1%	< 1%	6%	1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean Discount	\$978	\$720	\$469	\$721	\$424	\$212	\$770	\$392	\$156
	Electric Only Customers – Discount Amounts Greater than \$50								
	2016 CAP Participants			2017 CAP Participants			2018 CAP Participants		
Poverty Level	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	20,453	46,505	28,691	20,528	34,637	10,723	20,822	31,881	7,992
\$51 - \$500	22%	35%	61%	35%	53%	58%	33%	54%	60%
\$501 - \$1,000	35%	43%	28%	34%	29%	26%	33%	28%	25%
\$1,001 - \$2,000	35%	20%	10%	27%	18%	15%	28%	18%	15%
> \$2,000	8%	2%	1%	4%	1%	1%	6%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean Discount	\$1,013	\$737	\$529	\$814	\$589	\$534	\$859	\$587	\$517

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-3B displays the distribution of the CAP discount for electric and gas customers by poverty level. While 55 percent of those at or below 50 percent of the poverty level received a discount of more than \$1,000 in 2016, 38 percent received a discount of that amount in 2017 and 42 percent received a discount of that amount in 2018.

Table VIII-3B
All CAP Participants – Electric & Gas Customers
Distribution of CAP Discount Amounts by Poverty Level

Poverty Level	Electric & Gas Customers -- All Participants								
	2016 CAP Participants			2017 CAP Participants			2018 CAP Participants		
	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	4,580	7,889	8,604	5,057	8,205	7,451	5,201	8,215	6,814
\$0	1%	1%	1%	4%	6%	12%	10%	29%	66%
\$1 - \$50	1%	1%	3%	11%	27%	54%	3%	10%	7%
\$51 - \$500	19%	35%	59%	22%	34%	19%	22%	33%	16%
\$501 - \$1,000	23%	37%	24%	24%	19%	9%	23%	17%	7%
\$1,001 - \$2,000	40%	23%	11%	30%	13%	5%	31%	11%	4%
> \$2,000	15%	4%	1%	8%	1%	1%	11%	1%	< 1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean Discount	\$1,195	\$775	\$508	\$873	\$419	\$207	\$947	\$368	\$138

Poverty Level	Electric & Gas Customers – Discount Amounts Greater Than \$50								
	2016 CAP Participants			2017 CAP Participants			2018 CAP Participants		
	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%	≤ 50%	51%-100%	101%-150%
Obs.	4,481	7,760	8,210	4,288	5,438	2,544	4,512	5,032	1,809
\$51 - \$500	19%	36%	62%	26%	51%	57%	25%	54%	61%
\$501 - \$1,000	24%	38%	26%	29%	28%	26%	27%	27%	25%
\$1,001 - \$2,000	41%	23%	11%	35%	19%	15%	36%	18%	13%
> \$2,000	15%	4%	1%	10%	2%	2%	13%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean Discount	\$1,221	\$787	\$532	\$1,025	\$618	\$557	\$1,091	\$597	\$513

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis. 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-4A displays the full energy bill prior to the CAP discount, the CAP discount, and the net energy bill for the 2017 electric only CAP enrollees and the nonparticipant comparison group. The table shows that the 2017 electric only CAP enrollees received an average CAP discount of \$478. While their full (non-discounted) bill declined by \$131 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$609. The 2017 electric only CAP enrollees with discounts over \$50 received a mean CAP discount of \$746 and their CAP bill declined by \$877. The nonparticipant comparison group bills remained at the same level in the pre and post periods.

Table VIII-4A
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers
Affordability

	Electric Only Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	\$ Change	Pre	Post	\$ Change	
Observations	3,297			6,719			
Full Bill	\$1,490	\$1,359	-\$131	\$1,415	\$1,419	\$4	-\$135
CAP Discount	\$0	\$478	\$478	\$0	\$0	\$0	\$478
Net Bill	\$1,490	\$881	-\$609	\$1,415	\$1,419	\$4	-\$613
	Electric Only Customers – Discount Amounts Greater than \$50						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	\$ Change	Pre	Post	\$ Change	
Observations	2,109			6,719			
Full Bill	\$1,683	\$1,552	-\$131	\$1,415	\$1,419	\$4	-\$135
CAP Discount	\$0	\$746	\$746	\$0	\$0	\$0	\$746
Net Bill	\$1,683	\$806	-\$877	\$1,415	\$1,419	\$4	-\$881

Table VIII-4B displays the same information by poverty level for the electric enrollees. The table shows that the 2017 CAP electric only enrollees with income at or below 50 percent of the poverty level received an average CAP discount of \$816. While their full (non-discounted) bill declined by \$81 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$897.

Table VIII-4B
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers
Affordability by Poverty Level

Poverty Level	Electric Only Customers								Net Change
	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
Full Bill									
≤ 50%	912	\$1,485	\$1,404	-\$81	1,575	\$1,430	\$1,434	\$4	-\$85
51% - 100%	1,303	\$1,470	\$1,354	-\$116	1,787	\$1,410	\$1,408	-\$2	-\$114
101% - 150%	1,009	\$1,521	\$1,329	-\$192	2,209	\$1,519	\$1,525	\$6	-\$198
CAP Discount									
≤ 50%	912	\$0	\$816	\$816	1,575	\$0	\$0	\$0	\$816
51% - 100%	1,303	\$0	\$465	\$465	1,787	\$0	\$0	\$0	\$465
101% - 150%	1,009	\$0	\$183	\$183	2,209	\$0	\$0	\$0	\$183
Net Bill									
≤ 50%	912	\$1,485	\$589	-\$897	1,575	\$1,430	\$1,434	\$4	-\$901
51% - 100%	1,303	\$1,470	\$889	-\$581	1,787	\$1,410	\$1,408	-\$2	-\$579
101% - 150%	1,009	\$1,521	\$1,146	-\$375	2,209	\$1,519	\$1,525	\$6	-\$381

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data.

Table VIII-4C displays bills and discounts by poverty level for the electric only enrollees with discounts greater than \$50. The table shows that the 2017 electric only CAP enrollees with income at or below 50 percent of the poverty level received an average CAP discount of \$912. While their full (non-discounted) bill declined by \$79 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$992.

Table VIII-4C
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers with Discount Amounts Greater than \$50
Affordability by Poverty Level

Poverty Level	Electric Only Customers -- Discount Amounts Greater than \$50								Net Change
	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
Full Bill									
≤ 50%	815	\$1,513	\$1,433	-\$79	1,575	\$1,430	\$1,434	\$4	-\$83
51% - 100%	925	\$1,656	\$1,531	-\$125	1,787	\$1,410	\$1,408	-\$2	-\$123
101% - 150%	321	\$2,187	\$1,923	-\$264	2,209	\$1,519	\$1,525	\$6	-\$270
CAP Discount									
≤ 50%	815	\$0	\$912	\$912	1,575	\$0	\$0	\$0	\$912
51% - 100%	925	\$0	\$653	\$653	1,787	\$0	\$0	\$0	\$653
101% - 150%	321	\$0	\$570	\$570	2,209	\$0	\$0	\$0	\$570
Net Bill									
≤ 50%	815	\$1,513	\$521	-\$992	1,575	\$1,430	\$1,434	\$4	-\$996
51% - 100%	925	\$1,656	\$878	-\$777	1,787	\$1,410	\$1,408	-\$2	-\$775
101% - 150%	321	\$2,187	\$1,353	-\$834	2,209	\$1,519	\$1,525	\$6	-\$840

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data.

Table VIII-4D displays the full energy bill prior to the CAP discount, the CAP discount, and the net energy bill for the 2017 electric and gas CAP enrollees and the nonparticipant comparison group. The table shows that the 2017 electric and gas CAP enrollees received an average CAP discount of \$469. While their full (non-discounted) bill declined by \$101 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$570. The nonparticipant comparison group bills remained at about the same level in the pre- and post-periods.

Table VIII-4D
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers
Affordability

	Electric & Gas Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	Change	Pre	Post	Change	
Observations	655			2,370			
Full Bill	\$2,139	\$2,038	-\$101	\$1,931	\$1,979	\$48	-\$149
CAP Discount	\$0	\$469	\$469	\$0	\$0	\$0	\$469
Net Bill	\$2,139	\$1,569	-\$570	\$1,931	\$1,979	\$48	-\$618
	Electric & Gas Customers -- Discount Amounts Greater than \$50						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	Change	Pre	Post	Change	
Observations	364			2,370			
Full Bill	\$2,370	\$2,272	-\$98	\$1,931	\$1,979	\$48	-\$146
CAP Discount	\$0	\$842	\$842	\$0	\$0	\$0	\$842
Net Bill	\$2,370	\$1,430	-\$941	\$1,931	\$1,979	\$48	-\$989

Table VIII-4E displays the same information by poverty level for the electric and gas enrollees. The table shows that the 2017 electric and gas CAP enrollees with income at or below 50 percent of the poverty level received an average CAP discount of \$1,065. While their full (non-discounted) bill declined by \$33 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$1,098.

Table VIII-4E
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers
Affordability by Poverty Level

Poverty Level	Electric & Gas Customers								Net Change
	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
Full Bill									
≤ 50%	155	\$2,179	\$2,146	-\$33	395	\$2,016	\$2,103	\$87	-\$120
51% - 100%	235	\$2,156	\$2,047	-\$109	482	\$1,985	\$2,031	\$46	-\$155
101% - 150%	247	\$2,115	\$1,982	-\$132	1,024	\$1,935	\$1,967	\$32	-\$164
CAP Discount									
≤ 50%	155	\$0	\$1,065	\$1,065	395	\$0	\$0	\$0	\$1,065
51% - 100%	235	\$0	\$399	\$399	482	\$0	\$0	\$0	\$399
101% - 150%	247	\$0	\$167	\$167	1,024	\$0	\$0	\$0	\$167
Net Bill									
≤ 50%	155	\$2,179	\$1,081	-\$1,098	395	\$2,016	\$2,103	\$87	\$1,185
51% - 100%	235	\$2,156	\$1,648	-\$508	482	\$1,985	\$2,031	\$46	-\$554
101% - 150%	247	\$2,115	\$1,815	-\$299	1,024	\$1,935	\$1,967	\$32	-\$331

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data.

Table VIII-4F displays bills and discounts by poverty level for the electric and gas CAP enrollees with discounts greater than \$50. The table shows that the 2017 CAP enrollees with income at or below 50 percent of the poverty level received an average CAP discount of \$1,231. While their full (non-discounted) bill declined by \$38 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$1,269.

Table VIII-4F
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers with Discount Amounts Greater than \$50
Affordability by Poverty Level

Poverty Level	Electric & Gas Customers – Discount Amounts Greater than \$50								Net Change
	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
Full Bill									
≤ 50%	134	\$2,194	\$2,156	-\$38	395	\$2,016	\$2,103	\$87	\$125
51% - 100%	151	\$2,394	\$2,284	-\$109	482	\$1,985	\$2,031	\$46	-\$155
101% - 150%	70	\$2,675	\$2,497	-\$178	1,024	\$1,935	\$1,967	\$32	-\$210
CAP Discount									
≤ 50%	134	\$0	\$1,231	\$1,231	395	\$0	\$0	\$0	\$1,231
51% - 100%	151	\$0	\$619	\$619	482	\$0	\$0	\$0	\$619
101% - 150%	70	\$0	\$585	\$585	1,024	\$0	\$0	\$0	\$585
Net Bill									
≤ 50%	134	\$2,194	\$925	-\$1,269	395	\$2,016	\$2,103	\$87	\$1,356
51% - 100%	151	\$2,394	\$1,665	-\$729	482	\$1,985	\$2,031	\$46	-\$775
101% - 150%	70	\$2,675	\$1,912	-\$763	1,024	\$1,935	\$1,967	\$32	-\$795

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data.

Table VIII-4G displays the full energy bill prior to the CAP discount, the CAP discount, and the net energy bill for the 2016, 2017, and 2018 CAP participants. The table shows that the mean CAP bill for electric only CAP participants was \$937 in 2018, compared to \$839 in 2017, and \$859 in 2016. The mean CAP bill for electric and gas CAP participants was \$1,636 in 2018, compared to \$1,434 in 2017, and \$1,394 in 2016.

**Table VIII-4G
All CAP Participants
Affordability**

	All CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	115,113	107,654	99,361	24,032	22,004	20,525
Full Bill	\$1,559	\$1,270	\$1,355	\$2,160	\$1,890	\$2,076
CAP Discount	\$700	\$431	\$417	\$766	\$457	\$440
Net Bill	\$859	\$839	\$937	\$1,394	\$1,434	\$1,636
	CAP Participants – Discount Amounts Greater than \$50					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	108,663	69,734	61,554	23,327	13,051	11,542
Full Bill	\$1,571	\$1,466	\$1,591	\$2,174	\$2,130	\$2,349
CAP Discount	\$741	\$651	\$671	\$788	\$751	\$780
Net Bill	\$830	\$815	\$921	\$1,386	\$1,379	\$1,570

Table VIII-4H displays the same information by poverty level. The table shows that the mean CAP bill for electric only customers at or below 50 percent of the poverty level was \$774 in 2018, compared to \$714 in 2017, and \$837 in 2016. The mean CAP bill for electric and gas customers at or below 50 percent of the poverty level was \$1,354 in 2018, compared to \$1,219 in 2017, and \$1,280 in 2016. The lower poverty group CAP participants have relatively more affordable bills with the new CAP format, but the higher poverty level groups have higher bills. This is due to the fact that the new program structure has a direct relationship between discounts and energy burden.

**Table VIII-4H
All CAP Participants
Affordability by Poverty Level**

Poverty Level	All CAP Participants											
	Electric Only						Electric & Gas					
	2016		2017		2018		2016		2017		2018	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Full Bill												
≤ 50%	21,184	\$1,815	23,268	\$1,436	23,267	\$1,544	4,580	\$2,475	5,057	\$2,092	5,201	\$2,301
51% - 100%	47,621	\$1,488	49,107	\$1,211	47,995	\$1,287	7,889	\$2,094	8,205	\$1,829	8,215	\$1,998
101% - 150%	32,500	\$1,474	29,596	\$1,232	26,740	\$1,311	8,604	\$2,057	7,541	\$1,821	6,814	\$2,002
CAP Discount												
≤ 50%	21,184	\$978	23,268	\$721	23,267	\$770	4,580	\$1,195	5,057	\$874	5,201	\$947
51% - 100%	47,621	\$720	49,107	\$424	47,995	\$392	7,889	\$775	8,205	\$419	8,215	\$368
101% - 150%	32,500	\$469	29,596	\$212	26,740	\$156	8,604	\$508	7,541	\$207	6,814	\$137
Net Bill												
≤ 50%	21,184	\$837	23,268	\$714	23,267	\$774	4,580	\$1,280	5,057	\$1,219	5,201	\$1,354
51% - 100%	47,621	\$768	49,107	\$787	47,995	\$895	7,889	\$1,319	8,205	\$1,409	8,215	\$1,631
101% - 150%	32,500	\$1,005	29,596	\$1,020	26,740	\$1,155	8,604	\$1,549	7,541	\$1,614	6,814	\$1,864

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-4I displays the same information by poverty level only for those customers with a discount of more than \$50. The table shows that the mean CAP bill for electric only customers at or below 50 percent of the poverty level with discounts over \$50 was \$736 in 2018, compared to \$671 in 2017, and \$819 in 2016. The mean CAP bill for electric and gas customers at or below 50 percent of the poverty level with a discount over \$50 was \$1,270 in 2018, compared to \$1,137 in 2017, and \$1,271 in 2016.

Table VIII-4I
All CAP Participants
Customers with Discount Amounts Greater than \$50
Affordability by Poverty Level

Poverty Level	CAP Participants – Discount Amounts Greater than \$50											
	Electric Only						Electric & Gas					
	2016		2017		2018		2016		2017		2018	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Full Bill												
≤ 50%	20,453	\$1,831	20,528	\$1,486	20,822	\$1,595	4,481	\$2,492	4,288	\$2,163	4,512	\$2,361
51% - 100%	46,505	\$1,492	34,637	\$1,383	31,881	\$1,509	7,760	\$2,099	5,438	\$2,032	5,032	\$2,265
101% - 150%	28,691	\$1,485	10,723	\$1,690	7,992	\$1,917	8,210	\$2,076	2,544	\$2,294	1,809	\$2,572
CAP Discount												
≤ 50%	20,453	\$1,013	20,528	\$814	20,822	\$859	4,481	\$1,221	4,288	\$1,026	4,512	\$1,091
51% - 100%	46,505	\$737	34,637	\$589	31,881	\$587	7,760	\$787	5,438	\$618	5,032	\$597
101% - 150%	28,691	\$529	10,723	\$534	7,992	\$517	8,210	\$532	2,544	\$557	1,809	\$512
Net Bill												
≤ 50%	20,453	\$819	20,528	\$671	20,822	\$736	4,481	\$1,271	4,288	\$1,137	4,512	\$1,270
51% - 100%	46,505	\$755	34,637	\$795	31,881	\$922	7,760	\$1,312	5,438	\$1,414	5,032	\$1,668
101% - 150%	28,691	\$956	10,723	\$1,156	7,992	\$1,400	8,210	\$1,544	2,544	\$1,737	1,809	\$2,060

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-4J displays the net energy bill for the CAP participants and nonparticipants. The table shows that the discounted CAP bill is much lower than the full bill that the nonparticipants are charged. For example, the CAP bill for the 2017 electric only participants averaged \$839 compared to \$1,375 for the nonparticipants.

**Table VIII-4J
All CAP Participants and Nonparticipants
Net Energy Bill**

	Electric Only			
	2016		2017	
	Participants	Nonparticipants	Participants	Nonparticipants
Observations	115,113	1,733	107,654	2,966
Net Bill	\$859	\$1,405	\$839	\$1,375
	Electric & Gas			
	2016		2017	
	Participants	Nonparticipants	Participants	Nonparticipants
Observations	24,032	589	22,004	915
Net Bill	\$1,394	\$1,948	\$1,434	\$1,840

Table VIII-4K displays the net energy bill for the CAP participants and nonparticipants by poverty level. The table shows that the CAP bill for the 2017 electric only participants with income at or below 50 percent of the poverty level averaged \$714, compared to \$1,397 for the nonparticipants.

**Table VIII-4K
All CAP Participants and Nonparticipants
Net Energy Bill by Poverty Level**

	Electric Only			
	2016		2017	
	Participants	Nonparticipants	Participants	Nonparticipants
Observations	101,305	1,347	101,971	2,432
≤ 50%	\$837	\$1,448	\$714	\$1,397
51% - 100%	\$768	\$1,391	\$787	\$1,379
101% - 150%	\$1,005	\$1,524	\$1,020	\$1,455
All	\$858	\$1,460	\$838	\$1,411
	Electric & Gas			
	2016		2017	
	Participants	Nonparticipants	Participants	Nonparticipants
Observations	21,073	458	20,803	735
≤ 50%	\$1,280	\$2,010	\$1,219	\$1,957
51% - 100%	\$1,319	\$1,995	\$1,409	\$1,877
101% - 150%	\$1,549	\$1,979	\$1,614	\$1,838
All	\$1,404	\$1,990	\$1,437	\$1,878

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, 386 Electric Only and 131 Electric & Gas customers were excluded from the 2016 Nonparticipants analysis, and 534 Electric Only and 180 Electric & Gas customers were excluded from the 2017 Nonparticipants analysis due to missing poverty level data.

Table VIII-5A displays the distribution of the full bill and the CAP bill for the 2016, 2017, and 2018 CAP electric only participants. The table shows that while eight percent of 2016 CAP electric only participants had a CAP bill over \$2,000, four percent of 2017 CAP participants and six percent of 2018 CAP participants had a CAP bill over \$2,000.

Table VIII-5A
All CAP Participants – Electric Only Customers
Annual Full Bill Amount and CAP Bill

	Electric Only Customers					
	2016 CAP Participants		2017 CAP Participants		2018 CAP Participants	
	Full Bill	CAP Bill	Full Bill	CAP Bill	Full Bill	CAP Bill
Observations	115,113		107,654		99,361	
< \$500	5%	37%	8%	29%	7%	22%
\$501 - \$1,000	29%	33%	36%	43%	33%	45%
\$1,001 - \$1,500	27%	15%	28%	17%	27%	19%
\$1,501 - \$2,000	16%	7%	15%	6%	15%	8%
\$2,001 - \$2,500	9%	4%	7%	2%	8%	3%
\$2,501 - \$3,000	6%	2%	3%	1%	4%	2%
> \$3,000	9%	2%	3%	1%	5%	1%
Annual Amount	\$1,559	\$859	\$1,270	\$839	\$1,355	\$937
	Electric Only Customers – Discount Amounts Greater than \$50					
	2016 CAP Participants		2017 CAP Participants		2018 CAP Participants	
	Full Bill	CAP Bill	Full Bill	CAP Bill	Full Bill	CAP Bill
Observations	108,663		69,734		61,554	
< \$500	5%	39%	2%	32%	2%	24%
\$501 - \$1,000	29%	33%	29%	41%	25%	43%
\$1,001 - \$1,500	27%	15%	32%	16%	30%	18%
\$1,501 - \$2,000	16%	7%	19%	6%	19%	8%
\$2,001 - \$2,500	10%	3%	9%	2%	11%	4%
\$2,501 - \$3,000	6%	2%	5%	1%	6%	2%
> \$3,000	9%	2%	5%	1%	7%	2%
Annual Amount	\$1,571	\$830	\$1,466	\$815	\$1,591	\$921

Table VIII-5B displays the distribution of the full bill and the CAP bill for the 2016, 2017, and 2018 CAP electric and gas participants. The table shows that while 17 percent of 2016 CAP electric and gas participants had a CAP bill over \$2,000, 17 percent of 2017 CAP participants and 27 percent of 2018 CAP participants had a CAP bill over \$2,000.

Table VIII-5B
All CAP Participants – Electric & Gas Customers
Annual Full Bill Amount and CAP Bill

	Electric & Gas Customers					
	2016 CAP Participants		2017 CAP Participants		2018 CAP Participants	
	Full Bill	CAP Bill	Full Bill	CAP Bill	Full Bill	CAP Bill
Observations	24,032		22,004		20,525	
< \$500	< 1%	5%	< 1%	4%	< 1%	4%
\$501 - \$1,000	7%	29%	9%	21%	6%	15%
\$1,001 - \$1,500	20%	30%	25%	34%	19%	28%
\$1,501 - \$2,000	25%	19%	28%	24%	26%	26%
\$2,001 - \$2,500	19%	10%	20%	11%	22%	16%
\$2,501 - \$3,000	12%	4%	10%	4%	13%	7%
> \$3,000	17%	3%	8%	2%	13%	4%
Mean Annual Bill	\$2,160	\$1,394	\$1,890	\$1,434	\$2,076	\$1,636
	Electric & Gas Customers –Discount Amounts Greater than \$50					
	2016 CAP Participants		2017 CAP Participants		2018 CAP Participants	
	Full Bill	CAP Bill	Full Bill	CAP Bill	Full Bill	CAP Bill
Observations	23,327		13,051		11,542	
< \$500	< 1%	5%	< 1%	7%	0%	6%
\$501 - \$1,000	7%	29%	3%	23%	2%	17%
\$1,001 - \$1,500	20%	30%	18%	33%	12%	28%
\$1,501 - \$2,000	25%	19%	28%	22%	24%	24%
\$2,001 - \$2,500	19%	10%	24%	10%	24%	14%
\$2,501 - \$3,000	12%	4%	14%	4%	18%	6%
> \$3,000	17%	3%	12%	2%	20%	5%
Mean Annual Bill	\$2,174	\$1,386	\$2,130	\$1,379	\$2,349	\$1,569

Table VIII-6A displays the mean energy burden by poverty level for the 2017 CAP enrollees and the comparison group. The table shows that the energy burden declined from an average of 27 percent before the electric only heating participants enrolled in CAP to 21 percent after they enrolled. The net change was a decline of seven percentage points. The electric only heating participants at or below 50 percent of the poverty level had a decline of 16 percentage points, but their mean energy burden was 47 percent following enrollment in the program. The electric only baseload enrollees and the electric and gas enrollees had similar declines in energy burden.

Table VIII-6A
2017 CAP Enrollee Treatment and Comparison Groups
Mean Energy Burden by Poverty Level

Electric Only Heating									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	93	63%	47%	-16%	207	67%	67%	0%	-16%
51% - 100%	130	15%	12%	-3%	296	13%	13%	0%	-3%
101% - 150%	102	9%	8%	-1%	593	8%	8%	0%	-1%
All	325	27%	21%	-6%	1,096	20%	21%	1%	-7%
Electric Only Baseload									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	819	49%	34%	-15%	1,357	58%	58%	0%	-15%
51% - 100%	1,173	12%	6%	-6%	1,486	11%	10%	-1%	-5%
101% - 150%	907	7%	5%	-5%	1,612	6%	6%	0%	-5%
All	2,899	21%	14%	-7%	4,455	23%	23%	0%	-7%
Electric & Gas									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	155	65%	53%	-12%	1,575	59%	59%	0%	-12%
51% - 100%	235	15%	11%	-4%	1,787	11%	11%	0%	-4%
101% - 150%	247	10%	8%	-2%	2,209	6%	6%	0%	-2%
All	637	25%	20%	-5%	5,571	23%	23%	0%	-5%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data. 403 customers were excluded from the 2017 Enrollee Comparison analysis due to missing rates data. An additional 19 Electric Only customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing rates data.

Table VIII-6B displays the same results excluding customers with estimated usage, with a credit at or above the maximum amount, with a bill at or below the minimum bill, and those on CAP for less than a full year. These customers had a lower energy burden when participating in CAP than the full group shown above.

Table VIII-6B
2017 CAP Enrollee Treatment and Comparison Groups
Excluding Customers With Estimated Usage, Maximum Credits, Minimum Bills,
And On CAP Less than the Full Year
Mean Energy Burden by Poverty Level

Electric Only Heating									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	63	51%	35%	-16%	207	67%	67%	0%	-16%
51% - 100%	125	15%	12%	-3%	296	13%	13%	0%	-3%
101% - 150%	96	9%	8%	-1%	593	8%	8%	0%	-1%
All	284	21%	16%	-5%	1,096	20%	21%	1%	-6%
Electric Only Baseload									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	636	41%	28%	-13%	1,575	59%	59%	0%	-13%
51% - 100%	1,066	11%	6%	-5%	1,787	11%	11%	0%	-5%
101% - 150%	816	7%	5%	-2%	2,209	6%	6%	0%	-2%
All	2,518	17%	11%	-6%	5,571	23%	23%	0%	-6%
Electric & Gas									
Poverty Level	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	121	58%	45%	-13%	1,575	59%	59%	0%	-13%
51% - 100%	225	15%	11%	-4%	1,787	11%	11%	0%	-4%
101% - 150%	225	10%	8%	-2%	2,209	6%	6%	0%	-2%
All	571	22%	17%	-5%	5,571	23%	23%	0%	-5%

Note: 31 Electric Only and 9 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group pre-period analysis, 44 Electric Only and 41 Electric & Gas were excluded from the 2017 Enrollee Treatment Group post-period analysis, and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data. An additional 19 Electric Only customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing rates data.

Table VIII-6C displays the mean energy burden by poverty level for the 2016, 2017, and 2018 CAP participants and the nonparticipants. The table shows that energy burden averaged about 18 percent for the electric only heating participants, 11 percent for the electric only baseload participants, and 17 percent for the electric and gas participants. While energy burden for electric only heating participants at or below 50 percent of the poverty level averaged 45 percent in 2017, energy burden for electric only heating nonparticipants at or below 50 percent of the poverty level averaged 64 percent.

Table VIII-6C
All CAP Participants and All CAP Nonparticipants
Mean Energy Burden by Poverty Level

Electric Only Heating					
Poverty Level	All CAP Participants			All CAP Nonparticipants	
	2016	2017	2018	2016	2017
Observations	11,631	11,823	11,940	244	475
≤ 50%	48%	45%	46%	71%	64%
51% - 100%	10%	11%	13%	13%	13%
101% - 150%	7%	7%	8%	8%	7%
All	17%	18%	20%	20%	23%
Electric Only Baseload					
Poverty Level	All CAP Participants			All CAP Nonparticipants	
	2016	2017	2018	2016	2017
Observations	89,674	90,148	86,062	1,090	1,937
≤ 50%	32%	29%	30%	60%	56%
51% - 100%	6%	6%	7%	11%	10%
101% - 150%	4%	5%	5%	6%	6%
All	11%	11%	12%	23%	24%

Electric & Gas					
Poverty Level	All CAP Participants			All CAP Nonparticipants	
	2016	2017	2018	2016	2017
Observations	21,073	20,803	20,230	458	735
≤ 50%	46%	44%	45%	68%	63%
51% - 100%	10%	11%	12%	14%	13%
101% - 150%	7%	7%	9%	8%	8%
All	16%	17%	19%	22%	23%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis, 386 Electric Only and 131 Electric & Gas customers were excluded from the 2016 Nonparticipants analysis, and 534 Electric Only and 180 Electric & Gas customers were excluded from the 2017 Nonparticipants analysis due to missing poverty level data. An additional 13 Electric Only customers were excluded from the 2016 Nonparticipants analysis and an additional 20 Electric Only customers were excluded from the 2017 Nonparticipants analysis due to missing rates data.

Table VIII-6D displays the same results for the CAP participants after excluding customers with estimated usage, with a credit at or above the maximum amount, with a bill at or below the minimum bill, and those on CAP for less than the full year. The FCO participants had a mean energy burden that was about one percentage point lower.

Table VIII-6D
All CAP Participants
Excluding Customers With Estimated Usage, Maximum Credits, and Minimum Bills
And On CAP Less than the Full Year
Mean Energy Burden by Poverty Level

Poverty Level	All CAP Participants								
	Electric Only Heating			Electric Only Baseload			Electric & Gas		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Observations	8,896	8,960	9,222	68,509	64,471	66,540	15,120	15,288	15,741
≤ 50%	47%	44%	42%	31%	28%	27%	44%	40%	41%
51% - 100%	11%	11%	13%	5%	6%	6%	10%	10%	12%
101% - 150%	8%	7%	9%	4%	5%	5%	7%	8%	9%
All	17%	16%	17%	10%	10%	10%	15%	16%	18%

Note: 8,298 Electric Only and 2,200 Electric & Gas customers were excluded from the 2016 Participants analysis, 2,998 Electric Only and 710 Electric & Gas customers were excluded from the 2017 Participants analysis, and 43 Electric Only and 14 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

The Pennsylvania Public Utility Commission (PUC) has established standards for energy burdens for CAP participants. The PUC energy burden targets are displayed in Table VIII-7. The burden targets vary based on poverty level and service type.

**Table VIII-7
PUC Energy Burden Targets
By Poverty Level**

Poverty Level	Energy Burden Targets		
	Electric Baseload	Electric Heating	Gas Heating
≤ 50%	2%-5%	7%-13%	5%-8%
51% - 100%	4%-6%	11%-16%	7%-10%
101% - 150%	6%-7%	15%-17%	9%-10%

Table VIII-8A displays the percentage of customers with an energy burden that is below, within, and above the target by customer type. The table shows that the 2017 enrollees had a large reduction in the percent above the energy burden after enrolling in CAP. For example, while 44 percent of the electric only heating customers had an electric burden above the target prior to enrolling in CAP, only 25 percent had a burden above the target following enrollment. This compares to a one percentage point increase for the comparison group, resulting in a net change of 20 percentage points, as shown in Table VIII-8B.

**Table VIII-8A
2017 CAP Enrollee Treatment and Comparison Groups
Energy Burden Relative to PUC Target**

Customer Type	2017 Enrollee Treatment Group							2017 Enrollee Comparison Group						
	Obs.	Pre			Post			Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above		Below	Within	Above	Below	Within	Above
Electric Only Heating Elec Burden	325	41%	15%	44%	45%	30%	25%	1,096	59%	16%	26%	59%	14%	27%
Electric Only Baseload Elec Burden	2,899	15%	15%	71%	23%	40%	37%	4,455	22%	15%	63%	22%	15%	63%
Electric & Gas Gas Burden	637	66%	11%	23%	65%	17%	19%	1,901	73%	9%	18%	71%	10%	19%
Electric & Gas Elec Burden	637	22%	17%	61%	31%	40%	29%	1,901	38%	17%	45%	39%	19%	42%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data. An additional 19 Electric Only customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing rates data.

Table VIII-8B
2017 CAP Enrollee Treatment and Comparison Groups
Percentage above PUC Target

	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
Electric Only Heating– Electric Burden	325	44%	25%	-19%	1,096	26%	27%	1%	-20%
Electric Only Baseload– Electric Burden	2,899	71%	37%	-34%	4,455	63%	63%	0%	-34%
Electric & Gas– Gas Burden	637	23%	19%	-4%	1,901	18%	19%	1%	-5%
Electric & Gas– Electric Burden	637	61%	29%	-32%	1,901	45%	42%	-3%	29%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data. An additional 19 Electric Only customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing rates data.

Table VIII-8C displays the percentage of 2017 CAP enrollees below, within, and above the target burden by special category, and then removing customers in any of those categories. Following removal of those categories, 19 percent of the electric only heating enrollees had an electric burden above the target following enrollment, 33 percent of the electric only baseload enrollees had an electric burden above the target following enrollment, 15 percent of the electric and gas accounts had a gas burden above the target following enrollment, and 25 percent of the electric and gas accounts had an electric burden above the target following enrollment.

Table VIII-8C
2017 CAP Enrollee Treatment and Comparison Groups
Energy Burden Relative to PUC Target

	2017 Enrollee Treatment Group						
	Electric Only Heating Accounts – Electric Burden						
	Obs.	Pre			Post		
Below		Within	Above	Below	Within	Above	
All	325	41%	15%	44%	45%	30%	25%
Estimated Usage	2	50%	0%	50%	50%	0%	50%
Max Credit	0	--	--	--	--	--	--
≥ Max Credit	6	0%	0%	100%	17%	17%	67%
Min Bill	21	5%	0%	95%	5%	0%	95%
≤ Min Bill	24	4%	0%	96%	4%	4%	92%
< Full Year On CAP	11	45%	18%	36%	45%	36%	18%
All Except Groups Listed	284	45%	17%	38%	49%	32%	19%

	Electric Only Baseload Accounts – Electric Burden						
	Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above
All	2,899	15%	15%	71%	23%	40%	37%
Estimated Usage	1	100%	0%	0%	100%	0%	0%
Max Credit	1	0%	0%	100%	0%	100%	0%
≥ Max Credit	158	0%	2%	98%	6%	14%	80%
Min Bill	166	1%	1%	98%	10%	19%	70%
≤ Min Bill	167	1%	1%	98%	10%	20%	70%
< Full Year On CAP	58	53%	12%	34%	60%	10%	29%
All Except Groups Listed	2,517	15%	17%	68%	24%	43%	33%
	Electric & Gas Accounts – Gas Burden						
	Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above
All	637	66%	11%	23%	65%	17%	19%
Estimated Usage	0	--	--	--	--	--	--
Max Credit	0	--	--	--	--	--	--
≥ Max Credit	18	67%	11%	22%	61%	22%	17%
Min Bill	19	5%	0%	95%	5%	0%	95%
≤ Min Bill	30	10%	0%	90%	10%	7%	83%
< Full Year On CAP	12	92%	0%	8%	92%	0%	8%
All Except Groups Listed	577	69%	12%	20%	67%	18%	15%
	Electric & Gas Accounts – Electric Burden						
	Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above
All	637	22%	17%	61%	31%	40%	29%
Estimated Usage	6	50%	0%	50%	67%	17%	17%
Max Credit	0	--	--	--	--	--	--
≥ Max Credit	18	0%	0%	100%	11%	22%	67%
Min Bill	19	5%	0%	95%	5%	0%	95%
≤ Min Bill	30	3%	0%	97%	7%	3%	90%
< Full Year On CAP	12	58%	8%	33%	75%	8%	17%
All Except Groups Listed	571	22%	19%	59%	31%	43%	25%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis due to missing poverty level data.

Table VIII-8D displays the energy burden relative to the target for the 2017 CAP enrollees and comparison group by poverty level. The table shows that most of the CAP enrollees who were above the target burden were at or below 50 percent of the poverty level.

Table VIII-8D
2017 CAP Enrollee Treatment and Comparison Groups
Energy Burden Relative to PUC Target, by Poverty Level

	2017 Enrollee Treatment Group							2017 Enrollee Comparison Group						
Poverty Level	Electric Only Heating Accounts – Electric Burden													
	Obs.	Pre			Post			Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above		Below	Within	Above	Below	Within	Above
≤ 50%	93	0%	4%	96%	2%	25%	73%	207	0%	2%	98%	0%	2%	98%
51% - 100%	130	34%	32%	35%	39%	52%	8%	296	33%	51%	16%	36%	41%	23%
101% - 150%	102	88%	4%	8%	90%	7%	3%	593	92%	3%	5%	91%	4%	5%
Poverty Level	Electric Only Baseload Accounts – Electric Burden													
	Obs.	Pre			Post			Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above		Below	Within	Above	Below	Within	Above
≤ 50%	819	0%	1%	99%	0%	24%	76%	1,357	0%	1%	99%	0%	1%	99%
51% - 100%	1,173	3%	19%	78%	10%	59%	31%	1,486	3%	22%	75%	3%	23%	74%
101% - 150%	907	43%	22%	35%	61%	28%	10%	1,612	58%	20%	22%	58%	18%	23%
Poverty Level	Electric & Gas Accounts – Gas Burden													
	Obs.	Pre			Post			Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above		Below	Within	Above	Below	Within	Above
≤ 50%	155	8%	11%	81%	4%	26%	70%	395	4%	15%	81%	2%	13%	86%
51% - 100%	235	72%	21%	7%	71%	25%	4%	482	78%	20%	3%	70%	26%	4%
101% - 150%	247	98%	2%	1%	97%	3%	0%	1,024	98%	1%	0%	98%	1%	0%
Poverty Level	Electric & Gas Accounts – Electric Burden													
	Obs.	Pre			Post			Obs.	Pre			Post		
		Below	Within	Above	Below	Within	Above		Below	Within	Above	Below	Within	Above
≤ 50%	155	<1%	1%	99%	<1%	23%	77%	395	<1%	2%	98%	<1%	1%	99%
51% - 100%	235	4%	24%	72%	10%	67%	23%	482	6%	34%	60%	5%	39%	56%
101% - 150%	247	52%	21%	28%	70%	25%	6%	1,024	68%	15%	17%	70%	17%	14%

Note: 73 Electric Only and 18 Electric & Gas customers were excluded from the 2017 Enrollee Treatment Group analysis and 1,148 Electric Only and 469 Electric & Gas customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing poverty level data. An additional 19 Electric Only customers were excluded from the 2017 Enrollee Comparison Group analysis due to missing rates data.

Table VIII-8E displays the percentage of 2016, 2017, and 2018 CAP participants below, within, and above the target burden by special category, and then removing customers in any of those categories. Following removal of those categories, 28 percent of the 2018 electric only heating participants, 40 percent of the 2018 electric only baseload participants, 21 percent of the 2018 electric and gas participants' gas bill, and 38 percent of the electric and gas accounts' electric bill were above the burden target.

Table VIII-8E
All CAP Participants
Energy Burden Relative to PUC Target

	Electric Only Heating Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
All	11,631	62%	15%	24%	11,823	53%	25%	22%	11,940	45%	24%	31%
Estimated Usage	22	50%	14%	36%	121	62%	15%	23%	500	39%	20%	41%
Max Credit	2	50%	50%	0%	3	100%	0%	0%	1	100%	0%	0%
≥ Max Credit	418	40%	12%	48%	328	45%	23%	31%	315	29%	14%	57%
Min Bill	164	74%	12%	14%	651	40%	15%	44%	641	31%	13%	57%
≤ Min Bill	873	73%	10%	17%	701	42%	15%	43%	673	32%	13%	55%
< Full Year CAP	1,482	64%	12%	24%	1,875	56%	19%	26%	1,396	52%	15%	32%
All Except Groups Listed	8,896	61%	16%	23%	8,958	54%	27%	19%	9,222	46%	26%	28%
	Electric Only Baseload Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
All	89,674	41%	24%	35%	90,148	25%	41%	33%	86,062	19%	37%	44%
Estimated Usage	200	30%	26%	44%	744	31%	24%	45%	2,262	18%	22%	59%
Max Credit	50	18%	14%	68%	24	29%	29%	42%	31	16%	29%	55%
≥ Max Credit	6,415	13%	13%	74%	3,521	19%	22%	59%	3,768	8%	14%	79%
Min Bill	2,677	50%	24%	26%	3,268	29%	33%	38%	3,277	20%	27%	53%
≤ Min Bill	3,691	58%	22%	20%	3,325	30%	33%	37%	3,306	21%	27%	52%
< Full Year CAP	11,313	35%	20%	45%	19,168	29%	28%	43%	10,945	25%	22%	53%
All Except Groups Listed	68,495	44%	25%	31%	64,467	25%	47%	29%	66,522	19%	42%	40%

	Electric & Gas Accounts – Gas Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
All	21,073	76%	11%	13%	20,083	69%	17%	15%	20,230	60%	17%	22%
Estimated Usage	66	80%	6%	14%	228	72%	14%	14%	614	61%	16%	24%
Max Credit	11	64%	18%	18%	7	57%	29%	14%	6	67%	0%	33%
≥ Max Credit	2,234	78%	10%	13%	703	68%	24%	8%	585	51%	24%	25%
Min Bill	210	60%	11%	29%	372	24%	12%	63%	354	17%	9%	74%
≤ Min Bill	640	67%	10%	23%	675	32%	16%	52%	580	20%	10%	70%
< Full Year CAP	3,100	79%	8%	13%	4,074	73%	12%	15%	2,846	68%	13%	20%
All Except Groups Listed	15,211	76%	12%	13%	15,378	70%	17%	13%	15,809	61%	18%	21%
	Electric & Gas Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
All	21,073	47%	20%	33%	20,803	33%	36%	31%	20,230	25%	34%	41%
Estimated Usage	143	38%	20%	42%	292	38%	23%	39%	619	27%	27%	46%
Max Credit	11	18%	18%	64%	7	29%	14%	57%	6	0%	33%	67%
≥ Max Credit	2,234	27%	14%	59%	703	28%	22%	50%	585	15%	16%	69%
Min Bill	210	54%	16%	30%	372	21%	17%	62%	354	16%	14%	70%
≤ Min Bill	640	56%	17%	26%	675	21%	21%	58%	580	15%	14%	71%
< Full Year CAP	3,100	47%	18%	36%	4,074	40%	24%	37%	2,846	33%	24%	43%
All Except Groups Listed	15,141	50%	22%	28%	15,318	32%	41%	27%	15,799	25%	38%	38%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-8F displays the energy burden relative to the target for the 2016, 2017, and 2018 CAP participants by poverty level. The table shows that most of the CAP participants who were above the target burden were at or below 50 percent of the poverty level.

**Table VIII-8F
All CAP Participants
Energy Burden Relative to PUC Target
By Poverty Level**

	Electric Only Heating Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
≤ 50%	2,426	6%	18%	76%	2,741	3%	24%	73%	2,917	2%	16%	82%
51% - 100%	5,046	62%	22%	15%	5,260	49%	42%	10%	5,480	39%	39%	22%
101% - 150%	4,159	93%	3%	3%	3,822	96%	3%	1%	3,543	91%	6%	3%
Total	11,631	62%	15%	24%	11,823	53%	25%	22%	11,940	45%	24%	31%
	Electric Only Baseload Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
≤ 50%	18,758	1%	20%	79%	20,527	< 1%	24%	76%	20,350	< 1%	18%	82%
51% - 100%	42,575	36%	32%	32%	43,847	12%	60%	28%	42,515	7%	51%	42%
101% - 150%	28,341	75%	13%	12%	25,774	68%	24%	8%	23,197	57%	28%	15%
Total	89,674	41%	24%	35%	90,148	25%	41%	33%	86,062	19%	37%	44%
	Electric & Gas Accounts – Electric Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
≤ 50%	4,580	1%	17%	82%	5,057	1%	22%	77%	5,201	< 1%	17%	82%
51% - 100%	7,889	38%	32%	29%	8,205	15%	59%	26%	8,215	9%	52%	39%
101% - 150%	8,604	79%	12%	9%	7,541	74%	21%	5%	6,814	64%	25%	11%
Total	21,073	47%	20%	33%	20,803	33%	36%	31%	20,230	25%	34%	41%
	Electric & Gas Accounts – Gas Burden											
	2016 CAP Participants				2017 CAP Participants				2018 CAP Participants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above	Obs.	Below	Within	Above
≤ 50%	4,580	21%	24%	55%	5,057	10%	33%	57%	5,201	6%	22%	73%
51% - 100%	7,889	83%	15%	2%	8,205	77%	21%	1%	8,215	65%	27%	8%
101% - 150%	8,604	99%	< 1%	< 1%	7,541	99%	1%	< 1%	6,814	97%	2%	1%
Total	21,073	76%	11%	13%	20,803	69%	17%	15%	20,230	60%	17%	22%

Note: 13,808 Electric Only and 2,959 Electric & Gas customers were excluded from the 2016 Participants analysis, 5,683 Electric Only and 1,201 Electric & Gas customers were excluded from the 2017 Participants analysis, and 1,359 Electric Only and 295 Electric & Gas customers were excluded from the 2018 Participants analysis due to missing poverty level data.

Table VIII-8G displays the energy burden relative to the target for the nonparticipant comparison group. The table shows that the nonparticipants were more likely to have an energy burden above the target. For example, 33 percent of the 2017 electric only heating nonparticipants had an electric burden above the target, compared to 22 percent of the 2017 CAP participants.

**Table VIII-8G
All CAP Nonparticipants
Energy Burden Relative to PUC Target**

Customer Type	2016 CAP Nonparticipants				2017 CAP Nonparticipants			
	Obs.	Below	Within	Above	Obs.	Below	Within	Above
Electric Only Heating– Electric Burden	244	61%	13%	26%	475	54%	13%	33%
Electric Only Baseload– Electric Burden	1,090	21%	14%	65%	1,937	21%	15%	64%
Electric & Gas – Electric Burden	458	33%	17%	50%	735	36%	17%	47%
Electric & Gas – Gas Burden	458	74%	8%	18%	735	70%	10%	20%

Note: 386 Electric Only and 131 Electric & Gas customers were excluded from the 2016 Nonparticipants analysis and 534 Electric Only and 180 Electric & Gas customers were excluded from the 2017 Nonparticipants analysis due to missing poverty level data. An additional 13 Electric Only customers were excluded from the 2016 Nonparticipants analysis and an additional 20 Electric Only customers were excluded from the 2017 Nonparticipants analysis due to missing rates data.

Table VIII-8H displays the percent of CAP participants at or below 50 percent of the FPL that were above PUC energy burden targets, and the mean amount above the target for those whose burden exceeded the target. The table shows customers exceeded the targets by a large amount. The mean amount above burden targets ranged from \$399 to \$872 in 2018.

**Table VIII-8H
All CAP Participants ≤ 50% of Poverty Level
Percent Above PUC Targeted Burden
And Mean \$ Above PUC Target for Those Exceeding Target Burden**

	All CAP Participants ≤ 50% of Poverty Level								
	2016 CAP Participants			2017 CAP Participants			2018 CAP Participants		
	Obs.	% Above	\$ Above Target Burden	Obs.	% Above	\$ Above Target Burden	Obs.	% Above	\$ Above Target Burden
Electric Only Heating	2,426	76%	\$1,070	2,741	73%	\$876	2,917	82%	\$872
Electric Only Baseload	18,758	79%	\$680	20,527	76%	\$539	20,350	82%	\$554
Electric & Gas – Electric Burden	4,580	82%	\$703	5,057	77%	\$570	5,201	82%	\$560
Electric & Gas – Gas Burden	4,580	55%	\$366	5,057	57%	\$382	5,201	73%	\$399

Table VIII-8I displays the distribution of the dollar amount above PUC target for CAP participants at or below 50 percent of the FPL who were above burden targets. The table shows that most customers were more than \$100 above the burden target and that except for gas burdens, a significant percentage were more than \$1,000 above the target burden. Electric only heating customers were more likely than other groups to be above the burden targets by more than \$1,000.

Table VIII-8I
All CAP Participants \leq 50% of Poverty Level Exceeding Target Burden
Distribution of \$ Above PUC Target

\$ Above Burden Target	Electric Only Heating		
	All CAP Participants \leq 50% of Poverty Level		
	2016 CAP Participants	2017 CAP Participants	2018 CAP Participants
Obs.	1,852	2,001	2,395
\$1-\$100	4%	7%	7%
\$101-\$500	28%	35%	36%
\$501-\$1,000	25%	24%	22%
\$1,001-\$1,500	18%	17%	16%
> \$1,500	24%	17%	18%
Total	100%	100%	100%
\$ Above Burden Target	Electric Only Baseload		
	All CAP Participants \leq 50% of Poverty Level		
	2016 CAP Participants	2017 CAP Participants	2018 CAP Participants
Obs.	14,786	15,605	16,624
\$1-\$100	8%	12%	14%
\$101-\$500	43%	47%	45%
\$501-\$1,000	27%	27%	24%
\$1,001-\$1,500	12%	9%	10%
> \$1,500	10%	5%	7%
Total	100%	100%	100%

S Above Burden Target	Electric & Gas – Electric Burden		
	All CAP Participants ≤ 50% of Poverty Level		
	2016 CAP Participants	2017 CAP Participants	2018 CAP Participants
Obs.	3,772	3,905	4,286
\$1-\$100	6%	10%	11%
\$101-\$500	40%	46%	46%
\$501-\$1,000	29%	28%	27%
\$1,001-\$1,500	14%	11%	11%
> \$1,500	10%	5%	5%
Total	100%	100%	100%

S Above Burden Target	Electric & Gas – Gas Burden		
	All CAP Participants ≤ 50% of Poverty Level		
	2016 CAP Participants	2017 CAP Participants	2018 CAP Participants
Obs.	2,510	2,901	3,784
\$1-\$100	10%	13%	14%
\$101-\$500	65%	59%	56%
\$501-\$1,000	23%	24%	23%
\$1,001-\$1,500	2%	3%	6%
> \$1,500	< 1%	< 1%	1%
Total	100%	100%	100%

B. Billing and Payment

This section examines the impact of CAP on bills, payments, and coverage rates. Table VIII-9A displays the bills, payments, and coverage rates for the 2017 electric only CAP enrollees and comparison group. The table shows that mean charges declined by \$609 for the participants after they entered CAP and charges for the comparison group remained at the same level. Cash coverage rates, defined as customer payments divided by electric charges, increased from 80 percent prior to enrollment, to 108 percent following enrollment. Total coverage rates, defined as total payments divided by electric charges, increased from 84 percent prior to enrollment to 118 percent following enrollment. The total coverage rate declined by three percentage points for the comparison group, so the net change was an increase of 38 percentage points. The total coverage rates exceed 100 percent, because there may be additional charges, and customers may receive LIHEAP credits that more than cover their bills.

Table VIII-9A
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers
Bill and Payment Amounts

	Electric Only Customers						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			\$	%
	Pre	Post	Change	Pre	Post	Change		
Observations	3,297			6,719				
Electric Charges	\$1,490	\$881	-\$609	\$1,415	\$1,419	\$4	-\$613	-41%
Customer Payments	\$1,177	\$861	-\$316	\$1,159	\$1,145	-\$14	-\$302	-26%
Assistance Payments	\$47	\$60	\$13	\$256	\$256	\$0	\$13	28%
Total Payments	\$1,224	\$921	-\$303	\$1,415	\$1,401	-\$14	-\$289	-24%
Cash Coverage Rate	80%	108%	28%	80%	78%	-3%	--	31%
Total Coverage Rate	84%	118%	35%	103%	100%	-3%	--	38%
	Electric Only Customers – Discount Amounts Greater than \$50						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			\$	%
	Pre	Post	Change	Pre	Post	Change		
Observations	2,109			6,719				
Electric Charges	\$1,683	\$806	-\$877	\$1,415	\$1,419	\$4	-\$881	-52%
Customer Payments	\$1,300	\$819	-\$481	\$1,159	\$1,145	-\$14	-\$467	-36%
Assistance Payments	\$52	\$62	\$10	\$256	\$256	\$0	\$10	19%
Total Payments	\$1,353	\$882	-\$471	\$1,415	\$1,401	-\$14	-\$457	-34%
Cash Coverage Rate	78%	117%	39%	80%	78%	-3%	--	42%
Total Coverage Rate	81%	130%	48%	103%	100%	-3%	--	51%

Table VIII-9B displays the bills, payments, and coverage rates for the 2017 electric and gas CAP enrollees and comparison group. The table shows that mean electric and gas charges declined by \$570 for the participants after they entered CAP and charges for the comparison group increased by \$48, for a net decline of \$618. Total coverage rates increased from 84 percent prior to enrollment to 102 percent following enrollment. The total coverage rate declined by one percentage point for the comparison group, so the net change was an increase of 19 percentage points.

**Table VIII-9B
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers
Bill and Payment Amounts**

	Electric & Gas Customers						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			\$	%
	Pre	Post	Change	Pre	Post	Change		
Observations	655			2,370				
Electric Charges	\$1,406	\$863	-\$543	\$1,231	\$1,196	-\$34	-\$509	-36%
Gas Charges	\$732	\$706	-\$27	\$700	\$783	\$82	-\$109	-15%
Electric & Gas Charges	\$2,139	\$1,569	-\$570	\$1,931	\$1,979	\$48	-\$618	-29%
Customer Payments	\$1,693	\$1,451	-\$242	\$1,661	\$1,698	\$36	-\$278	-16%
Assistance Payments	\$87	\$110	\$23	\$259	\$259	\$0	\$23	26%
Total Payments	\$1,780	\$1,561	-\$219	\$1,920	\$1,956	\$36	-\$255	-14%
Cash Coverage Rate	80%	93%	13%	85%	84%	-1%	--	14%
Total Coverage Rate	84%	102%	18%	100%	99%	-1%	--	19%
	Electric & Gas Customers – Discount Amounts Greater than \$50						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			\$	%
	Pre	Post	Change	Pre	Post	Change		
Observations	364			2,370				
Electric Charges	\$1,623	\$775	-\$848	\$1,231	\$1,196	-\$34	-\$814	-50%
Gas Charges	\$747	\$654	-\$93	\$700	\$783	\$82	-\$175	-23%
Electric & Gas Charges	\$2,370	\$1,430	-\$941	\$1,931	\$1,979	\$48	-\$989	-42%
Customer Payments	\$1,828	\$1,372	-\$457	\$1,661	\$1,698	\$36	-\$493	-27%
Assistance Payments	\$106	\$109	\$2	\$259	\$259	\$0	\$2	2%
Total Payments	\$1,935	\$1,481	-\$454	\$1,920	\$1,956	\$36	\$490	25%
Cash Coverage Rate	77%	97%	21%	85%	84%	-1%	--	22%
Total Coverage Rate	82%	108%	26%	100%	99%	-1%	--	27%

Table VIII-9C displays the bills, payments, and coverage rates for the 2016, 2017, and 2018 CAP participants. The table shows that mean charges were about the same in 2016 and 2017, but increased by approximately \$100 for electric only participants in 2018 and by approximately \$200 for electric and gas participants in 2018. Bills increased by approximately the same amount in 2018 when limited to those customers with annual CAP credits of more than \$50. Total coverage rates were about or close to 100 percent for both customer types in 2016 and 2017, but declined to 95 percent for electric and gas customers in 2018.

**Table VIII-9C
All CAP Participants
Bill and Payment Amounts**

	CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	115,113	107,654	99,361	24,032	22,004	20,525
Electric Charges	\$859	\$839	\$937	\$841	\$826	\$902
Gas Charges	\$0	\$0	\$0	\$553	\$607	\$734
Electric & Gas Charges	\$859	\$839	\$937	\$1,394	\$1,434	\$1,636
Customer Payments	\$743	\$730	\$799	\$1,209	\$1,230	\$1,335
Assistance Payments	\$78	\$61	\$82	\$151	\$136	\$191
Total Payments	\$822	\$792	\$881	\$1,360	\$1,366	\$1,526
Cash Coverage Rate	88%	90%	89%	85%	85%	80%
Total Coverage Rate	102%	99%	100%	100%	97%	95%
	CAP Participants – Discount Amounts Greater than \$50					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	108,663	69,734	61,554	23,327	13,051	11,542
Electric Charges	\$830	\$815	\$921	\$833	\$785	\$858
Gas Charges	\$0	\$0	\$0	\$553	\$594	\$712
Electric & Gas Charges	\$830	\$815	\$921	\$1,386	\$1,379	\$1,570
Customer Payments	\$721	\$706	\$774	\$1,205	\$1,172	\$1,259
Assistance Payments	\$76	\$65	\$85	\$151	\$144	\$202
Total Payments	\$796	\$771	\$860	\$1,356	\$1,317	\$1,460
Cash Coverage Rate	88%	91%	90%	85%	84%	79%
Total Coverage Rate	102%	102%	102%	100%	98%	96%

Table VIII-10A displays the distribution of coverage rates for the 2017 enrollee treatment group and the comparison group. The table shows that while 32 percent of the 2017 enrollee treatment group paid 100 percent or more of their bill in the year prior to enrollment, about 50 percent paid the full bill in the year following enrollment. While about 40 percent paid less than 80 percent of the bill in the year prior to enrollment, about 20 percent paid less than 80 percent of the bill in the year following enrollment.

**Table VIII-10A
2017 CAP Enrollee Treatment and Comparison Groups
Coverage Rate Distribution**

Electric Only								
Coverage Rate	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group			
	Cash Coverage		Total Coverage		Cash Coverage		Total Coverage	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	3,297				6,718			
≥ 100%	28%	48%	32%	54%	26%	22%	60%	50%
90%-99%	15%	13%	16%	13%	14%	14%	17%	11%
80%-89%	13%	11%	13%	11%	17%	17%	10%	11%
< 80%	43%	29%	40%	22%	43%	48%	13%	27%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Rate	80%	108%	84%	118%	80%	78%	103%	100%
Electric & Gas								
Coverage Rate	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group			
	Cash Coverage		Total Coverage		Cash Coverage		Total Coverage	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	655				2,370			
≥ 100%	23%	40%	32%	48%	22%	24%	60%	52%
90%-99%	20%	14%	18%	19%	19%	19%	21%	18%
80%-89%	16%	16%	14%	14%	25%	24%	10%	11%
< 80%	41%	30%	36%	19%	34%	34%	9%	19%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Rate	80%	93%	84%	102%	85%	84%	100%	98%

Table VIII-10B displays the distribution of coverage rates for the 2016, 2017, and 2018 participants. The table shows that about half of the participants paid 100 percent or more of the bill in 2016, 2017, and 2018. The one exception is that only 40 percent of the 2018 electric and gas participants paid 100 percent or more of the bill. About 24 percent of the electric only participants and 20 percent of the electric and gas participants paid less than 80 percent of the bill.

Table VIII-10B
All CAP Participants
Coverage Rate Distribution

Electric Only						
Coverage Rate	2016 Participants		2017 Participants		2018 Participants	
	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage
Observations	115,113		107,654		99,361	
≥ 100%	40%	51%	42%	50%	38%	48%
90%-99%	13%	15%	14%	15%	16%	18%
80%-89%	11%	11%	11%	11%	11%	11%
< 80%	36%	24%	33%	24%	35%	24%
Total	100%	100%	100%	100%	100%	100%
Mean Rate	88%	102%	90%	99%	89%	100%
Electric & Gas						
Coverage Rate	2016 Participants		2017 Participants		2018 Participants	
	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage
Observations	24,032		22,004		20,525	
≥ 100%	32%	52%	32%	48%	23%	40%
90%-99%	15%	18%	15%	20%	17%	25%
80%-89%	14%	11%	15%	12%	17%	15%
< 80%	39%	19%	38%	19%	44%	20%
Total	100%	100%	100%	100%	100%	100%
Mean Rate	85%	100%	85%	97%	80%	95%

Table VIII-10C displays the distribution of coverage rates for the 2016 and 2017 nonparticipants. The nonparticipants did a somewhat better job of covering their bills. The table shows that about 55 to 60 percent of the nonparticipants paid 100 percent or more of the bill in 2016 and 2017. About eight to 18 percent of the nonparticipants paid less than 80 percent of the bill.

**Table VIII-10C
All CAP Nonparticipants
Coverage Rate Distribution**

Electric Only				
Coverage Rate	2016 Nonparticipants		2017 Nonparticipants	
	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage
Observations	1,733		2,966	
≥ 100%	46%	54%	15%	61%
90%-99%	17%	18%	12%	15%
80%-89%	10%	9%	16%	9%
< 80%	26%	18%	57%	15%
Total	100%	100%	100%	100%
Mean Rate	90%	96%	70%	107%
Electric & Gas				
Coverage Rate	2016 Nonparticipants		2017 Nonparticipants	
	Cash Coverage	Total Coverage	Cash Coverage	Total Coverage
Observations	587		915	
≥ 100%	51%	61%	15%	57%
90%-99%	21%	21%	16%	20%
80%-89%	14%	10%	23%	11%
< 80%	15%	8%	46%	12%
Total	100%	100%	100%	100%
Mean Rate	95%	100%	79%	101%

Table VIII-11A displays the number of payments missed by the 2017 enrollee treatment and comparison groups. The number of missed payments is defined two ways. Under the first definition, each customer assistance payment counts as one payment and under the second definition, the customer assistance payments count as the number of average bills that the assistance covers. In both cases, the customer is counted as having no missed payments if the cash and assistance payments cover the full bill or more than the full bill.

- Missed Payment Definition 1
 - Missed Payments = Number of Bills - Number of Customer Payments - Number of Assistance Payments
 - Total Coverage Rate = (Customer Payments + Assistance Payments) / (Annual Gas charges + Annual Electric charges)
 - Missed Payments is always equal to zero if total coverage rate $\geq 100\%$

- Missed Payment Definition 2:
 - Missed Payments = Number of Bills - Number of Customer Payments - (Total \$ in Assistance Payments/Average Bill)
 - Average Bill = (Annual Electric Charges + Annual Gas Charges)/ Number of Bills
 - Total Coverage Rate = (Customer Payments + Assistance payments) / (Annual Gas charges + Annual Electric charges)
 - Missed Payments is always equal to zero if total coverage rate $\geq 100\%$

The table shows that the 2017 enrollees reduced their number of missed payments after enrolling in CAP. The mean number of missed payments went from about three missed payments to two missed payments. The percent of enrollees that missed no payments went from about 40 percent to about 60 percent. The enrollee comparison group had somewhat fewer missed payments.

**Table VIII-11A
2017 CAP Enrollee Treatment and Comparison Groups
Number of Missed Payments**

Electric Only								
Number of Missed Payments	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group			
	Definition 1		Definition 2		Definition 1		Definition 2	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	3,297				6,719			
0	37%	57%	38%	58%	64%	55%	67%	59%
1	5%	5%	6%	6%	5%	5%	5%	6%
2	5%	4%	5%	4%	4%	5%	5%	6%
3	5%	4%	6%	4%	4%	5%	4%	5%
4-6	21%	12%	21%	13%	11%	14%	11%	13%
7-9	18%	12%	17%	10%	9%	12%	6%	8%
10 or More	9%	5%	8%	5%	3%	5%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Missed	3.7	2.4	3.6	2.2	1.8	2.5	1.4	2.0
Electric & Gas								
Number of Missed Payments	2017 Enrollee Treatment Group				2017 Enrollee Comparison Group			
	Definition 1		Definition 2		Definition 1		Definition 2	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	655				2,370			
0	41%	57%	41%	59%	70%	60%	72%	64%
1	6%	8%	6%	8%	6%	9%	6%	8%
2	6%	6%	6%	7%	4%	6%	4%	6%
3	7%	6%	8%	6%	4%	5%	5%	5%
4-6	20%	11%	21%	11%	11%	12%	9%	10%
7-9	15%	8%	13%	7%	4%	7%	3%	5%
10 or More	5%	4%	5%	3%	1%	2%	< 1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Mean Missed	3.1	2.0	3.0	1.8	1.2	1.6	1.0	1.3

Table VIII-11B displays the number of missed payments for the 2016, 2017, and 2018 CAP participants. These customers missed about two payments on average. About 60 percent missed no payments.

**Table VIII-11B
All CAP Participants
Number of Missed Payments**

Electric Only						
Number of Missed Payments	2016 Participants		2017 Participants		2018 Participants	
	Definition 1	Definition 2	Definition 1	Definition 2	Definition 1	Definition 2
Observations	115,113		107,654		99,361	
0	59%	60%	56%	57%	59%	61%
1	5%	6%	6%	6%	6%	7%
2	4%	5%	5%	5%	5%	5%
3	4%	4%	4%	5%	4%	4%
4-6	12%	11%	12%	12%	11%	11%
7-9	9%	9%	10%	9%	9%	8%
10 or More	6%	5%	7%	6%	6%	5%
Total	100%	100%	100%	100%	100%	100%
Mean Missed	2.2	2.1	2.4	2.2	2.2	2.0
Electric & Gas						
Number of Missed Payments	2016 Participants		2017 Participants		2018 Participants	
	Definition 1	Definition 2	Definition 1	Definition 2	Definition 1	Definition 2
Observations	24,032		22,004		20,525	
0	62%	63%	55%	58%	59%	62%
1	6%	7%	8%	8%	8%	8%
2	5%	6%	7%	7%	6%	6%
3	5%	5%	6%	6%	5%	5%
4-6	12%	11%	13%	12%	12%	11%
7-9	7%	6%	8%	7%	7%	5%
10 or More	3%	2%	4%	3%	3%	3%
Total	100%	100%	100%	100%	100%	100%
Mean Missed	1.7	1.6	2.1	1.8	1.8	1.6

Table VIII-11C displays the number of missed payments for the 2016 and 2017 nonparticipants. The electric only nonparticipants missed about two payments on average and the electric and gas nonparticipants missed about one payment on average. About 60 to 67 percent of the electric only nonparticipants missed no payments and about 65 to 70 percent of the electric and gas nonparticipants missed no payments.

Table VIII-11C
All CAP Nonparticipants
Number of Missed Payments

Electric Only				
Number of Missed Payments	2016 Nonparticipants		2017 Nonparticipants	
	Definition 1	Definition 2	Definition 1	Definition 2
Observations	1,733		2,966	
0	59%	59%	64%	67%
1	5%	5%	3%	4%
2	5%	6%	3%	5%
3	4%	5%	3%	5%
4-6	13%	13%	12%	12%
7-9	9%	9%	11%	5%
10 or More	4%	4%	5%	1%
Total	100%	100%	100%	100%
Mean Missed	2.1	2.0	2.1	1.4
Electric & Gas				
Number of Missed Payments	2016 Nonparticipants		2017 Nonparticipants	
	Definition 1	Definition 2	Definition 1	Definition 2
Observations	589		915	
0	69%	68%	64%	69%
1	8%	9%	6%	6%
2	5%	4%	5%	5%
3	5%	4%	4%	5%
4-6	9%	10%	11%	10%
7-9	4%	4%	6%	4%
10 or More	1%	1%	2%	1%
Total	100%	100%	100%	100%
Mean Missed	1.2	1.2	1.6	1.3

C. Energy Assistance

This section examines energy assistance received by CAP participants and nonparticipants. Table VIII-12A displays LIHEAP and MEAF grants for 2017 CAP electric only enrollees. The percent who received LIHEAP increased from 11 percent in the year prior to enrollment to 17 percent in the year following enrollment. The enrollee comparison group was also more likely to receive LIHEAP in the year following enrollment, so the net change was an increase of two percentage points in the percentage of CAP enrollees who received LIHEAP. The table shows that the electric only enrollees received an average of \$47 in LIHEAP grants in the year prior to enrollment and \$60 in the year following enrollment.

Table VIII-12A
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers
LIHEAP and MEAF Grants

	Electric Only Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	\$ Change	Pre	Post	\$ Change	
Observations	3,297			6,719			
Percent Received LIHEAP	11%	17%	6%	64%	67%	4%	2%
Mean LIHEAP Grant – Received LIHEAP	\$409	\$353	-\$56	\$403	\$361	-\$42	-\$14
Mean LIHEAP Grant – All	\$47	\$60	\$13	\$256	\$242	-\$14	\$27
Percent Received MEAF	< 1%	0%	0%	< 1%	< 1%	0%	0%
Mean MEAF Grant – Received MEAF	\$238	\$0	-\$238	\$239	\$237	-\$2	-\$236
Mean MEAF Grant – All	< \$1	\$0	\$0	< \$1	< \$1	\$0	\$0

Table VIII-12B displays LIHEAP and MEAF grants for 2017 CAP electric and gas enrollees. The percent who received LIHEAP increased from 23 percent in the year prior to enrollment to 32 percent in the year following enrollment. The enrollee comparison group was less likely to receive LIHEAP in the year following enrollment, so the net change was an increase of 17 percentage points in the percentage of CAP enrollees who received LIHEAP. The table shows that the electric and gas enrollees received an average of \$87 in LIHEAP grants in the year prior to enrollment and \$108 in the year following enrollment.

Table VIII-12B
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers
LIHEAP and MEAF Grants

	Electric & Gas Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	\$ Change	Pre	Post	\$ Change	
Observations	655			2,370			
Percent Received LIHEAP	23%	32%	9%	72%	64%	-8%	17%
Mean LIHEAP Grant – Received LIHEAP	\$378	\$337	-\$41	\$358	\$358	\$0	-\$41
Mean LIHEAP Grant – All	\$87	\$108	\$21	\$258	\$229	-\$29	\$50
Percent Received MEAF	< 1%	< 1%	0%	< 1%	< 1%	0%	0%
Mean MEAF Grant – Received MEAF	\$276	\$412	\$136	\$400	\$403	\$3	\$133
Mean MEAF Grant – All	< \$1	\$2	\$1	\$1	< \$1	-\$1	\$2

Table VIII-12C displays LIHEAP and MEAF grants for 2016, 2017, and 2018 CAP participants. While about 20 percent of the electric only participants received LIHEAP, 38 to 47 percent of the electric and gas participants received LIHEAP. The table shows that the 2018 electric only participants received an average of \$82 in LIHEAP grants and the electric and gas participants received an average of \$189.

Table VIII-12C
All CAP Participants
LIHEAP and MEAF Grants

	CAP Participants					
	Electric Only			Electric & Gas		
	2016	2017	2018	2016	2017	2018
Observations	115,113	107,654	99,361	24,032	22,004	20,525
Percent Received LIHEAP	21%	17%	22%	43%	38%	47%
Mean LIHEAP Grant – Received LIHEAP	\$365	\$351	\$375	\$348	\$354	\$405
Mean LIHEAP Grant – All	\$78	\$61	\$82	\$149	\$134	\$189
Percent Received MEAF	< 1%	< 1%	< 1%	< 1%	1%	1%
Mean MEAF Grant – Received MEAF	\$222	\$187	\$199	\$353	\$322	\$369
Mean MEAF Grant – All	< \$1	< \$1	< \$1	\$1	\$2	\$2

D. Summary

This section analyzed the impact of CAP on energy affordability, bills and payments, and energy assistance. Results are shown for the 2017 CAP enrollees as well as the 2016, 2017, and 2018 CAP participants. The 2017 enrollees' findings are from the year prior to and the year following CAP enrollment. The 2016 participants results are from November 2015 through October 2016, before the FCO went into effect. The 2017 and 2018 results are for the calendar year, and represent the first and second full years of the implementation of the FCO.

Affordability

This section summarizes the findings with respect to CAP's impact on energy affordability.

- **CAP Discounts:** The CAP discount amount is defined as the annual difference between the CAP bill and the full bill, including both gas and electric amounts (if applicable). The mean annual discount for the 2017 electric only CAP enrollees and the 2017 and 2018 electric only CAP participants under the new FCO ranged from \$417 to \$478. This compares to a mean discount of \$700 in 2016 under the previous CAP discount program.

PECO was aware that many customers who received CAP discounts under the previous design would not receive a credit under the new FCO approach. Therefore, they offered previous CAP participants who would not receive an FCO credit a one-year Phase-Out benefit of \$50 per household through a \$4.17 monthly bill credit for up to 12 months. While six percent of the 2017 participants received no credit, 31 percent of the 2018 participants received no credit, after the Phase-Out period ended. This compares to three percent of the 2016 participants who received no discount.

Because of the Phase-Out credit, we show most of the results for the subset of participants with an annual credit of more than \$50, as well as for the full CAP population. When the results are shown for this subset, the distributions of the 2017 and 2018 CAP participants' credits are very similar.

The mean annual discount for the 2017 electric and gas enrollees and the 2017 and 2018 electric and gas CAP participants under the new FCO ranged from \$440 to \$469. This compares to a mean discount of \$766 in 2016 under the previous CAP discount program. While 20 percent of the 2017 enrollees received an annual credit of more than \$1,000, 17 percent of the 2017 and the 2018 participants received a credit of more than \$1,000. While eight percent of the 2017 electric and gas participants received no annual credit, 37 percent of the 2018 electric and gas participants received no annual credit.

- **Bill Impact:** The 2017 electric only CAP enrollees received an average CAP discount of \$478. While their full (non-discounted) bill declined by \$131 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$609. The 2017 electric only CAP enrollees with discounts over \$50 received a mean CAP discount of \$746 and their bill declined by \$877. The nonparticipant comparison group bills remained at the same level in the pre and post periods.

The 2017 electric and gas CAP enrollees received an average CAP discount of \$469. While their full (non-discounted) bill declined by \$101 from the pre-enrollment to the post-enrollment period, their CAP bill declined by an average of \$570. The nonparticipant comparison group bills remained at about the same level in the pre and post periods.

The mean CAP bill for electric only CAP participants was \$937 in 2018, compared to \$839 in 2017, and \$859 in 2016. The mean CAP bill for electric and gas CAP participants was \$1,636 in 2018, compared to \$1,434 in 2017, and \$1,394 in 2016.

The discounted CAP bill is much lower than the full bill that the nonparticipants are charged. For example, the CAP bill for the 2017 electric only participants averaged \$839 compared to \$1,375 for the nonparticipants. The CAP bill for the 2017 electric and gas participants averaged \$1,434 compared to \$1,840 for the nonparticipants.

- **Energy Burden:** The energy burden for the 2017 electric only heating enrollees declined from an average of 27 percent before CAP enrollment to 21 percent after enrollment. The net change was a decline of seven percentage points. The electric only heating participants at or below 50 percent of the poverty level had a decline of 16 percentage points, but their mean energy burden was still 47 percent following enrollment in the program. When excluding customers with estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, the mean post-enrollment energy burden for 2017 electric only heating enrollees at or below 50 percent of the poverty level was 35 percent.

Energy burden for the 2017 electric and gas CAP enrollees declined by five percentage points, but the mean energy burden for the electric and gas participants was still 20 percent in the year following enrollment. When excluding customers with estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, the mean post-enrollment energy burden for 2017 electric and gas CAP enrollees at or below 50 percent of the poverty level was 45 percent.

The energy burden averaged about 18 percent for all electric only heating participants, 11 percent for all electric only baseload participants, and 17 percent for all electric and gas participants. While energy burden for electric only heating participants at or below 50 percent of the poverty level averaged 45 percent in 2017, energy burden for electric only heating nonparticipants at or below 50 percent of the poverty level averaged 64 percent. When excluding customers with estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, the mean energy burden for all electric only 2017 heating participants at or below 50 percent of the poverty level was 44 percent.

While energy burden for electric and gas CAP participants at or below 50 percent of the poverty level averaged 44 percent in 2017, energy burden for electric and gas nonparticipants at or below 50 percent of the poverty level averaged 63 percent. When excluding customers with estimated usage, the maximum credit, the minimum bill, or

who were on CAP for less than the full year, the mean energy burden for all electric and gas 2017 CAP participants at or below 50 percent of the poverty level was 40 percent.

- **Energy Burden Compared to PUC Target:** The 2017 CAP enrollees had a large reduction in the percent above the energy burden after enrolling in CAP. While 44 percent of the electric only heating customers had an electric burden above the target prior to enrolling in CAP, only 25 percent had a burden above the target following enrollment. While 71 percent of the electric only baseload customers had an electric burden above the target prior to enrolling in CAP, only 37 percent had a burden above the target following enrollment. While 23 percent of the electric and gas customers had a gas burden above the target prior to enrolling in CAP, only 19 percent had a gas burden above the target following enrollment. While 61 percent of the electric and gas customers had an electric burden above the target prior to enrolling in CAP, only 29 percent had a burden above the target following enrollment. The 2017 enrollee comparison group had from a three percentage point decline to a one percentage point increase in the percent above the target from the pre to the post period.

Following removal of customers who had estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, 19 percent of the electric only heating enrollees had an electric burden above the target following enrollment, 33 percent of the electric only baseload enrollees had an electric burden above the target following enrollment, 15 percent of the electric and gas accounts had a gas burden above the target following enrollment, and 25 percent of the electric and gas accounts had an electric burden above the target following enrollment.

Following removal of customers who had estimated usage, the maximum credit, the minimum bill, or who were on CAP for less than the full year, 28 percent of the 2018 electric only heating participants had an electric burden above the target, 40 percent of the 2018 electric only baseload participants had an electric burden above the target, 21 percent of the 2018 electric and gas participants had a gas burden above the target, and 38 percent of the electric and gas accounts had an electric burden above the target. Most of the CAP participants who were above the target burden were at or below 50 percent of the poverty level.

The nonparticipants were more likely to have an energy burden above the target. For example, 33 percent of the 2017 electric only heating nonparticipants had an electric burden above the target compared to 22 percent of the 2017 CAP participants, 64 percent of the 2017 electric only baseload nonparticipants had an electric burden above the target compared to 33 percent of the 2017 CAP participants, 47 percent of the electric and gas nonparticipants had an electric burden above the target compared to 31 percent of the participants, and 20 percent of the electric and gas nonparticipants had a gas burden above the target compared to 15 percent of the participants.

Bills and Payments

This section summarizes the findings with respect to CAP's impact on bills and payments.

- **Electric and Gas Charges:** The mean electric charges for the 2017 electric only CAP enrollees declined by \$609 after they entered CAP. Charges for the comparison group remained at the same level.

The mean electric and gas charges for the 2017 electric and gas CAP enrollees declined by \$570 after they entered CAP and charges for the comparison group increased by \$48, for a net decline of \$618.

The mean charges for all CAP participants were about the same in 2016 and 2017, but increased by approximately \$100 for electric only participants and by approximately \$200 for electric and gas participants in 2018. Bills increased by approximately the same amount in 2018 when limited to those customers with annual CAP credits of more than \$50.

- **Payments:** Mean customer payments for the 2017 electric only CAP enrollees declined by \$316 and assistance payments remained at approximately the same level. Mean customer payments for the 2017 electric and gas CAP enrollees declined by \$457 and assistance payments remained at approximately the same level.
- **Coverage Rates:** Cash coverage rates, defined as customer payments divided by electric charges, increased from 80 percent prior to enrollment to 108 percent following enrollment. Total coverage rates, defined as total payments divided by electric charges, increased from 84 percent prior to enrollment to 118 percent following enrollment. The total coverage rate declined by three percentage points for the comparison group, so the net change was an increase of 38 percentage points. The total coverage rates exceed 100 percent, because there may be additional charges, and customers may receive LIHEAP credits that more than cover their bills.

Total coverage rates for the 2017 electric and gas CAP enrollees increased from 84 percent prior to enrollment to 102 percent following enrollment. The total coverage rate declined by one percentage point for the comparison group, so the net change was an increase of 19 percentage points.

While 32 percent of the 2017 enrollee treatment group (electric only and electric and gas customers) paid 100 percent or more of their bill in the year prior to enrollment, about 50 percent paid the full bill in the year following enrollment. While about 40 percent paid less than 80 percent of the bill in the year prior to enrollment, about 20 percent paid less than 80 percent of the bill in the year following enrollment.

Total coverage rates for all CAP participants were about or close to 100 percent for electric only and electric and gas customers in 2016 and 2017, but declined to 95 percent for electric and gas customers in 2018. About half of all CAP participants (electric only and electric and gas customers) paid 100 percent or more of the bill in 2016, 2017, and 2018. The one exception is that only 40 percent of the 2018 electric and gas participants

paid 100 percent or more of the bill. About 24 percent of the electric only participants and 20 percent of the electric and gas participants paid less than 80 percent of the bill in 2016, 2017, and 2018.

The nonparticipants did a somewhat better job of covering their bills than the CAP participants. About 55 to 60 percent of the nonparticipants paid 100 percent or more of the bill in 2016 and 2017. About eight to 18 percent of the nonparticipants paid less than 80 percent of the bill.

- **Missed Payments:** The 2017 enrollees reduced their number of missed payments after enrolling in CAP. The mean number of missed payments went from about three missed payments to two missed payments. The percent of enrollees that missed no payments went from about forty percent to about sixty percent. The enrollee comparison group had somewhat fewer missed payments.

The 2016, 2017, and 2018 CAP participants missed about two payments on average. About 60 percent missed no payments. The electric only nonparticipants missed about two payments on average and the electric and gas nonparticipants missed about one payment on average. About 60 to 67 percent of the electric only nonparticipants missed no payments and about 65 to 70 percent of the electric and gas nonparticipants missed no payments.

Energy Assistance

This section summarizes the findings with respect to CAP's impact on energy assistance.

- **LIHEAP Assistance Receipt:** The percentage of 2017 CAP electric only enrollees who received LIHEAP increased from 11 percent in the year prior to enrollment to 17 percent in the year following enrollment. The enrollee comparison group was also more likely to receive LIHEAP in the year following enrollment, so the net change was an increase of two percentage points in the percentage of CAP enrollees who received LIHEAP.

The percentage of 2017 CAP electric and gas enrollees who received LIHEAP increased from 23 percent in the year prior to enrollment to 32 percent in the year following enrollment. The enrollee comparison group was less likely to receive LIHEAP in the year following enrollment, so the net change was an increase of 17 percentage points in the percentage of CAP enrollees who received LIHEAP.

While about 20 percent of the electric only CAP participants received LIHEAP, 43 percent of the 2016 electric and gas participants, 38 percent of the 2017 participants, and 47 percent of the 2018 participants received LIHEAP.

- **LIHEAP Assistance Amount:** The mean LIHEAP grant received by the 2017 CAP electric only enrollees declined from \$409 in the year prior to enrollment to \$353 in the year following enrollment. The average amount of LIHEAP received by all 2017 CAP electric only enrollees increased from \$47 in the year prior to enrollment to \$60 in the

year following enrollment, due to the greater percentage of enrollees who received LIHEAP in the year following enrollment.

The mean LIHEAP grant received by the 2017 CAP electric and gas enrollees declined from \$378 in the year prior to enrollment to \$337 in the year following enrollment. The average amount of LIHEAP received by all 2017 CAP electric and gas enrollees increased from \$87 in the year prior to enrollment to \$108 in the year following enrollment, due to the greater percentage of enrollees who received LIHEAP in the year following enrollment.

The mean LIHEAP grant received by the groups of all CAP participants was about \$350 to \$400. Across all CAP participants, the mean amount of LIHEAP received was \$60 to \$80 for electric only participants and \$134 to \$189 for electric and gas participants.

- **MEAF Assistance:** Less than one percent of 2017 electric only CAP enrollees received MEAF in the pre-enrollment period and none received MEAF in the post-enrollment period. The mean MEAF grant for those who received assistance was \$238.

Less than one percent of 2017 electric and gas CAP enrollees received MEAF in the pre- and post-enrollment periods. The mean MEAF grant for those who received assistance was \$276 in the pre-enrollment period and \$412 in the post-enrollment period.

IX. Arrearage Forgiveness

This section provides results from the analysis of arrearage forgiveness data and reports findings on the initial level of pre-program arrearages and in-program arrearages, and the amount of arrearages forgiven.

A. Analysis Findings

This section provides information on the pre-program (PPA) and in-program (InPA) arrearage forgiveness received by CAP participants.

Table IX-1 displays the initial arrearage amount, the monthly forgiveness amount, the number of credits received, and the projected and actual pre-program arrearage forgiveness received. The projected credit amount is defined as the number of pre-program arrearage credits received multiplied by the monthly forgiveness amount. The actual pre-program arrearage credits received are defined as the sum of all arrearage forgiveness payments during the program participation year.

The first part of the table displays the results for all 2017 CAP enrollees and 2017 participants with an initial amount to be forgiven and a monthly forgiveness amount. Not all of these customers were included in the data that showed the arrearages forgiven each month, so the second part of the table shows the data just for those included in the monthly forgiveness file.

While the 2017 CAP enrollees had average arrearages of about \$700 when they enrolled, the 2016, 2017, and 2018 participants had arrearages of about \$550 to \$600 when they enrolled. The monthly arrearage forgiveness amount was approximately \$100. The 2017 enrollees received an average of \$500 in arrearage forgiveness, compared to about \$120 received by the 2017 and 2018 participants.

Table IX-1
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount and Monthly Forgiveness Amount
Pre-Program Arrearage Forgiveness Credits Received in Program Participation Year

		2017 Enrollees	All CAP Participants		
			2016	2017	2018
All	Observations	2,784	76,253	67,180	59,350
	Initial Amount	\$693	\$581	\$556	\$541
	Monthly Forgiveness	\$121	\$118	\$112	\$106
Had Arrearage Transactions Data	Observations	2,116	30,517	40,999	38,367
	Initial Amount	\$673	\$622	\$646	\$617
	Monthly Forgiveness	\$58	\$65	\$112	\$99
	# Credits Received	8.4	4.5	2.2	2.1
	Projected Credit	\$444	\$222	\$104	\$105
	\$ Credits Received	\$494	\$250	\$119	\$119

Customers with a monthly pre-program forgiveness amount of \$3,000 or more were excluded from this analysis. 390 observations were removed from the 2016 analysis, 313 observations were removed from the 2017 analysis, and 279 observations were removed from the 2018 analysis due to large pre-program monthly forgiveness amounts.

Table IX-2 displays the percent of CAP participants who received pre-program arrearage forgiveness. The table shows that just about all 2017 CAP enrollees with arrearages received forgiveness, compared to 89 percent of all 2016 participants, 45 percent of all 2017 participants, and 44 percent of all 2018 participants. Some of the groups of all participants may have had their arrearages forgiven prior to the year of analysis.

Table IX-2
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount, Monthly Forgiveness, and Arrearage Transactions Data
Percent Received Pre-Program Arrearage Forgiveness

	2017 Enrollees	All CAP Participants		
		2016	2017	2018
Observations	2,116	30,517	40,999	38,367
% Received Pre-Program Forgiveness	99%	89%	45%	44%

Customers with a monthly pre-program arrearage amount of \$3,000 were excluded from this analysis. 24 observations were removed from the 2016 analysis, 195 observations were removed from the 2017 analysis, and 158 observations were removed from the 2018 analysis due to large pre-program monthly arrearage amounts.

Table IX-3 displays the pre-program arrearage forgiveness received and the projected pre-program arrearage forgiveness for customers who received at least one arrearage forgiveness payment. Of those who received arrearage forgiveness, the mean amount forgiven was

about \$500 for the 2017 CAP enrollees and approximately \$275 for the 2016, 2017 and 2018 participants.

Table IX-3
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount and Monthly Forgiveness Amount
Those Who Received Pre-Program Arrearage Forgiveness
Pre-Program Arrearage Forgiveness Credits Received

	2017 Enrollees	All CAP Participants		
		2016	2017	2018
Observations	2,100	27,171	18,613	16,715
Initial Amount	\$671	\$617	\$583	\$612
Monthly Forgiveness	\$57	\$53	\$50	\$53
# Credits Received	8.5	5.1	5.0	4.9
Projected Credit	\$447	\$249	\$228	\$240
\$ Credits Received	\$498	\$280	\$261	\$272

Table IX-4 displays the distribution of initial amount, monthly forgiveness amount, and arrearage forgiveness received for the CAP participants with an initial amount, a monthly forgiveness amount, and those customers included in the arrearage forgiveness transactions data. The table shows that about 20 percent of participants had an initial amount greater than \$1,000, and most customers had a monthly forgiveness amount of less than \$50. While most of the 2017 enrollees and 2016 participants received arrearage forgiveness of less than \$500, most of the 2017 and 2018 participants received no arrearage forgiveness.

Table IX-4
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount and Monthly Forgiveness Amount
Included in Arrearage Transactions Data
Distribution of Pre-Program Arrearage Forgiveness Credits Received

		2017 Enrollees	All CAP Participants		
			2016	2017	2018
Initial Amount	Observations	2,116	30,517	40,999	38,367
	\$1 - \$250	33%	38%	36%	39%
	\$251 - \$500	22%	23%	23%	23%
	\$501 - \$750	16%	14%	14%	14%
	\$751 - \$1,000	9%	8%	8%	8%
	> \$1,000	20%	17%	18%	17%
	Total	100%	100%	100%	100%

		2017 Enrollees	All CAP Participants		
			2016	2017	2018
Mean Amount		\$674	\$622	\$646	\$617
Monthly Amount	\$1 - \$50	61%	65%	60%	62%
	\$51 - \$100	23%	20%	19%	19%
	\$101 - \$150	8%	7%	7%	6%
	\$151 - \$200	4%	3%	3%	3%
	> \$200	4%	5%	11%	10%
	Total	100%	100%	100%	100%
	Mean Amount	\$58	\$65	\$112	\$99
Arrearage Forgiveness Received	\$0	1%	11%	55%	56%
	\$1 - \$250	44%	60%	31%	30%
	\$251 - \$500	23%	16%	8%	7%
	\$501 - \$750	13%	6%	3%	3%
	\$751 - \$1,000	7%	3%	2%	2%
	> \$1,000	12%	4%	2%	2%
	Total	100%	100%	100%	100%
	Mean Amount	\$494	\$250	\$119	\$119

Customers with a monthly pre-program arrearage amount of \$3,000 were excluded from this analysis. 24 observations were removed from the 2016 analysis, 195 observations were removed from the 2017 analysis, and 158 observations were removed from the 2018 analysis due to large pre-program monthly arrearage amounts.

Table IX-5 displays the initial InPA amount, the monthly forgiveness amount, the number of credits received, and the projected and actual InPA forgiveness received. The first part of the table displays the results for all 2017 CAP enrollees and 2017 participants with an initial amount to be forgiven and a monthly forgiveness amount. Not all of these customers were included in the data that showed the arrearages forgiven each month, so the second part of the table shows the data just for those included in the monthly forgiveness file.

Only a few of the 2017 CAP enrollees had an InPA amount because they had only recently enrolled in CAP and had not yet had time to build up an in-program arrearage. The 2017 and 2018 participants had an InPA amount of about \$475. The monthly arrearage forgiveness amount was approximately three to six dollars. The 2017 enrollees received an average of \$14 in InPA forgiveness, compared to about \$47 received by the 2018 participants.

Table IX-5
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount and Monthly Forgiveness Amount
In-Program Arrearage Forgiveness Credits Received in Program Participation Year

		2017 Enrollees	All CAP Participants		
			2016	2017	2018
All Customers with Arrearages	Observations	4	49,776	47,466	35,658
	Initial Amount	\$221	\$444	\$479	\$475
	Monthly Forgiveness	\$3	\$5	\$6	\$6
Customers with Arrearage Transactions Data	Observations	4	15,851	47,466	35,658
	Initial Amount	\$221	\$416	\$479	\$475
	Monthly Forgiveness	\$3	\$5	\$6	\$6
	# Credits Received	10.0	0.4	11.3	10.1
	Projected Credit	\$29	\$2	\$69	\$67
	\$ Credits Received	\$14	\$1	\$52	\$47

Table IX-6 displays the percentage of CAP participants who received InPA forgiveness. The table shows that all 2017 participants with arrearages received forgiveness, compared to 39 percent of all 2016 participants, 99 percent of all 2017 participants, and 89 percent of all 2018 participants.

Table IX-6
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount, Monthly Forgiveness Amount, and Arrearage Transactions Data
Percent Received In-Program Arrearage Forgiveness

	2017 Enrollees	All CAP Participants		
		2016	2017	2018
Observations	4	15,851	47,466	35,658
% Received In-Program Forgiveness	100%	39%	99%	89%

Table IX-7 displays the InPA forgiveness received and the projected InPA forgiveness for customers who received at least one payment. Of those who received arrearage forgiveness, the mean amount forgiven was about \$14 for the 2017 CAP enrollees and \$53 for the 2017 and 2018 participants.

Table IX-7
All CAP Participants and 2017 Enrollee Treatment Group
Customers with Initial Amount and Monthly Forgiveness Amount
Those Who Received In-Program Arrearage Forgiveness
In-Program Arrearage Forgiveness Credits Received

	2017 Enrollees	All CAP Participants		
		2016	2017	2018
Observations	4	6,152	46,785	31,656
Initial Amount	\$221	\$437	\$486	\$531
Monthly Forgiveness	\$3	\$5	\$6	\$6
# Credits Received	10.0	1.0	11.5	11.4
Projected Credit	\$29	\$5	\$70	\$76
\$ Credits Received	\$14	\$3	\$53	\$53

B. Summary

This section provided information on the pre-program (PPA) and in-program (InPA) arrearage forgiveness received by CAP participants.

- **Pre-Program Arrearages:** While the 2017 CAP enrollees had average arrearages of about \$700 when they enrolled, the 2016, 2017, and 2018 participants had arrearages of about \$550 to \$600 when they enrolled. The monthly arrearage forgiveness amount was approximately \$100. The 2017 enrollees received an average of \$500 in arrearage forgiveness, compared to about \$120 received by the 2017 and 2018 participants.

Just about all 2017 CAP enrollees with arrearages received forgiveness, compared to 89 percent of all 2016 participants, 45 percent of all 2017 participants, and 44 percent of all 2018 participants. Some of the groups of all participants may have had their arrearages forgiven prior to the year of analysis.

Of those who received arrearage forgiveness, the mean amount forgiven was about \$500 for the 2017 CAP enrollees and approximately \$275 for the 2016, 2017 and 2018 participants.

Only a few of the 2017 CAP enrollees had an InPA amount, because they had only recently enrolled in CAP and had not yet had time to build up an in-program arrearage. The 2017 and 2018 participants had an InPA amount of about \$475. The monthly arrearage forgiveness amount was approximately three to six dollars. The 2017 enrollees received an average of \$14 in InPA forgiveness, compared to about \$47 received by the 2018 participants.

Of the CAP participants who had an InPA initial amount, a monthly forgiveness amount, and arrearage transactions data, 39 percent of 2016 participants, 99 percent of 2017 participants, and 89 percent of 2018 participants received InPA forgiveness.

X. Collection Actions and Costs

This section displays the impact of CAP on collections actions and costs.

A. Analysis Findings

Table X-1A displays the number of collections actions of each type received by the 2017 electric only CAP enrollees and comparison group and the cost of those actions. The table shows that the 2017 electric only CAP enrollees had a reduction in all types of collection actions except for “other notices”. Their total number of collections actions declined by an average of 5.9 actions and the actions for the comparison group increased by one action, so the net change was a decline of 6.9 actions. PECO provided average costs for each type of action, and the average net reduction in costs was a \$76 reduction.

Table X-1A
2017 CAP Enrollee Treatment and Comparison Groups
Electric Only Customers
Number of Collections Actions

	Electric Only Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	Change	Pre	Post	Change	
Observations	3,279			5,680			
Call	6.5	4.9	-1.7	6.1	7.1	1.0	-2.7
Notice	7.1	4.0	-3.1	5.9	5.5	-0.4	-2.7
Office Work	7.8	5.1	-2.7	6.7	6.5	-0.2	-2.5
Field Notification	< 0.1	0	> -0.1	< 0.1	0	> -0.1	> -0.1
Termination	0.3	0.1	-0.2	0.3	0.3	< 0.1	-0.2
Other Notices	13.5	15.1	1.6	12.2	12.7	0.5	1.1
Total Number	34.9	29.0	-5.9	30.8	31.7	1.0	-6.9
Total Cost	\$226	\$149	-\$77	\$196	\$195	-\$1	-\$76

Table X-1B displays the number of collections actions of each type received by the 2017 electric and gas CAP enrollees and comparison group and the cost of those actions. The table shows that the 2017 electric and gas CAP enrollees had a reduction in all types of collection actions except for “other notices”. Their total number of collections actions declined by an average of 2.8 actions and the actions for the comparison group increased by three actions, so the net change was a decline of 5.8 actions. The average net reduction in costs was a \$68 reduction.

Table X-1B
2017 CAP Enrollee Treatment and Comparison Groups
Electric & Gas Customers
Number of Collections Actions

	Electric & Gas Customers						Net Change
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			
	Pre	Post	Change	Pre	Post	Change	
Observations	654			1,719			
Call	5.8	5.4	-0.5	5.4	7.0	1.6	-2.1
Notice	7.6	5.1	-2.5	5.4	5.5	0.1	-2.6
Office Work	8.0	6.0	-2.0	5.9	6.2	0.2	-2.2
Field Notification	0	0	0	0	0	0	0
Termination	0.4	0.3	-0.1	0.3	0.4	0.1	-0.2
Other Notice	15.0	17.2	2.3	12.0	13.1	1.1	1.2
Total Number	36.4	33.6	-2.8	28.8	31.8	3.0	-5.8
Total Cost	\$230	\$176	-\$55	\$176	\$188	\$13	-\$68

Table X-1C displays the number of collections actions of each type received by the 2016, 2017, and 2018 CAP participants and nonparticipants and the cost of those actions. The table shows that the 2018 participants experienced a greater number of actions than the 2016 and 2017 participants and their average collections costs were greater. The electric only nonparticipants received a greater number of collections actions and higher costs than the electric only CAP participants.

Table X-1C
All CAP Participants and Nonparticipants
Number of Collections Actions

	CAP Participants						CAP Nonparticipants			
	Electric Only			Electric & Gas			Electric Only		Electric & Gas	
	2016	2017	2018	2016	2017	2018	2016	2017	2016	2017
Observations	114,769	106,995	86,408	23,976	21,973	18,639	1,438	2,815	479	864
Call	4.3	3.4	5.4	4.5	3.5	5.8	7.6	5.3	6.0	4.8
Notice	3.1	3.5	4.6	3.9	4.7	6.3	5.6	6.1	4.9	5.4
Office Work	4.2	3.4	4.9	5.0	4.4	6.1	7.2	6.5	5.9	5.6
Field Notification	< 0.1	< 0.1	< 0.1	0	< 0.1	0	< 0.1	0	0	< 0.1
Termination	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.5
Other Notice	10.7	12.0	13.8	12.7	14.9	17.2	11.3	13.5	10.6	12.7
Total Number	22.2	22.4	28.8	26.1	27.5	35.4	31.7	31.5	27.5	28.6

	CAP Participants						CAP Nonparticipants			
	Electric Only			Electric & Gas			Electric Only		Electric & Gas	
	2016	2017	2018	2016	2017	2018	2016	2017	2016	2017
Observations	114,769	106,995	86,408	23,976	21,973	18,639	1,438	2,815	479	864
Total Cost	\$123	\$101	\$147	\$147	\$127	\$180	\$214	\$190	\$176	\$168

Table X-2A displays the percent of 2017 CAP enrollees and comparison group who received one or more shutoffs. The table shows that the percent of electric only enrollees who received shutoffs declined from 23 percent in the year prior to enrollment to 12 percent in the year following enrollment, and the net change was a reduction of 12 percentage points. The electric and gas enrollees had a net reduction of seven percentage points.

Table X-2A
2017 CAP Enrollee Treatment and Comparison Groups
Percent Received One or More Shutoffs

		2017 Enrollee Treatment Group			2017 Enrollee Comparison Group			Net Change
		Pre	Post	Change	Pre	Post	Change	
Elec Only	Obs.	3,279			5,680			
	Shutoffs	23%	12%	-11%	20%	20%	1%	-12%
Elec & Gas	Obs.	654			1,719			
	Shutoffs	21%	16%	-6%	17%	19%	1%	-7%

Table X-2B displays the percent of 2016, 2017, and 2018 CAP participants and the 2016 and 2017 nonparticipants who received one or more shutoffs. The table shows that the 2018 participants were more likely than the 2016 and 2017 participants to receive a shutoff. The nonparticipants were more likely to receive shutoffs than the participants.

Table X-2B
All CAP Participants and Nonparticipants
Percent Received One or More Shutoffs

	CAP Participants						CAP Nonparticipants			
	Electric Only			Electric & Gas			Electric Only		Electric & Gas	
	2016	2017	2018	2016	2017	2018	2016	2017	2016	2017
Obs.	114,769	106,995	86,408	23,976	21,973	18,639	1,438	2,815	479	864
Shutoffs	9%	8%	11%	11%	11%	14%	21%	25%	16%	20%

B. Summary

This section provided an analysis of the impact of CAP on collections actions and costs.

- **Collections Actions:** The 2017 electric only and electric and gas CAP enrollees had a reduction in all types of collection actions, including calls, notices, office work, field notifications, and terminations, except for “other notices”. The 2017 electric only CAP enrollees had their total number of collections actions decline by an average of 5.9 actions and the actions for the enrollee comparison group increased by one action, so the net change was a decline of 6.9 actions. The 2017 electric and gas CAP enrollees had their total number of collections actions decline by an average of 2.8 actions and the actions for the enrollee comparison group increased by three actions, so the net change was a decline of 5.8 actions.

The 2017 electric only CAP participants had an average of 22.4 actions and the 2018 electric only CAP participants had an average of 28.8 actions. The 2017 electric only nonparticipants had an average of 31.5 collections actions.

The 2017 electric and gas CAP participants had an average of 27.5 actions and the 2018 electric and gas CAP participants had an average of 35.4 actions. The 2017 electric and gas nonparticipants had an average of 28.6 collections actions.

- **Collections Costs:** PECO provided average costs for each type of action, and the average net change in costs for the 2017 electric only CAP enrollees was a \$76 reduction. The average net reduction in costs for the 2017 electric and gas CAP enrollees was a \$68 reduction.

The 2017 electric only CAP participants had average collections costs of \$101 and the 2018 electric only CAP participants had average collections costs of \$147. The 2017 electric only nonparticipants had average collections costs of \$190.

The 2017 electric and gas CAP participants had average collections costs of \$127 and the 2018 electric and gas CAP participants had average collections costs of \$180. The 2017 electric and gas nonparticipants had average collections costs of \$168.

- **Shutoffs:** The percentage of 2017 electric only CAP enrollees who received shutoffs declined from 23 percent in the year prior to enrollment to 12 percent in the year following enrollment, and the net change was a reduction of 12 percentage points. The electric and gas enrollees who received shutoffs declined from 21 percent in the year prior to enrollment to 16 percent in the year following enrollment, and the net change was a reduction of seven percentage points.

While nine percent of the 2016 electric only CAP participants, eight percent of the 2017 electric only participants, and 11 percent of the 2018 electric only participants received a shutoff, 11 percent of the 2016 and 2017 electric and gas participants and 14 percent of the 2018 electric and gas participants received a shutoff. By comparison, 25 percent of

the 2017 electric only nonparticipants and 20 percent of the 2017 electric and gas nonparticipants received a shutoff.

- The weather-normalized electric usage for electric only 2017 CAP enrollees and the weather-normalized electric and gas usage for the 2017 electric and gas CAP enrollees remained at the same level, with no estimate showing more than a two percent change in usage.
- All CAP Participants: While the raw usage for the CAP participants increased from 2016 to 2017 and then again in 2018 (due to changes in the weather), the weather-normalized natural gas usage and electric usage remained approximately the same for participants in the three years analyzed. The largest change was about a two percent increase in electric usage for electric only and electric and gas customers from 2016 to 2018.

XI. Energy Usage

This section analyzes the weather-normalized energy usage for the CAP participants and nonparticipants.

A. Methodology

The customers who were included in the billing analysis were assessed to determine if they had sufficient usage data to be included in the usage analysis. Table XI-1A shows that 95 percent of the 2017 enrollee treatment group, and 91 to 98 percent of the enrollee comparison group was included in the usage analysis.

Table XI-1A
2017 CAP Enrollees
Attrition Analysis

Attrition	2017 CAP Enrollee Treatment Group		2017 CAP Enrollee Comparison Group					
			Electric Non-Heating		Electric Heating		Gas Heating	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
In CAP Billing Analysis	2,259	2,259	5,414	5,414	1,304	1,304	2,370	2,370
Enough Usage Data	2,236	2,254	5,331	5,408	1,279	1,304	2,332	2,366
Outliers Removed	2,227	2,243	5,325	5,400	1,275	1,299	2,320	2,348
Observations in Pre and Post Period	2,199		5,314		1,273		2,307	
Raw, Degree Day, & PRISM Results	2,149		5,307		1,273		2,159	
% of Those Included in Billing Analysis	95%		98%		98%		91%	

Table XI-1B shows that between 93 and 98 percent of the CAP participants and nonparticipants were included in the usage analysis.

Table XI-1B
All CAP Participants and Nonparticipants
Attrition Analysis

Attrition	CAP Participants			CAP Nonparticipants	
	2016	2017	2018	2016	2017
In CAP Billing Analysis	138,019	116,930	120,122	2,245	3,716
Enough Usage Data	136,243	116,274	119,147	2,238	3,667
Outliers Removed	134,444	114,696	117,836	2,227	3,646
Raw, Degree Day, & PRISM Usage Results	133,330	113,973	117,162	2,083	3,643
Percent of Those Included in Billing Analysis	97%	97%	98%	93%	98%

When analyzing changes in usage data over time, it is important to weather-normalize those data to ensure that the changes are due to the impact of the program and not due to changes in the weather. There are several different methods that can be used to conduct the weather normalization. We provide two different approaches for comparison.

1. **PRISM Normalization:** This process uses the statistical software developed at Princeton University. The software takes the monthly usage data and weather data as inputs and provides a normalized annual consumption for a one-year period for each meter. This normalized usage can then be compared in the period before and after CAP enrollment or from one year of participants/nonparticipants to another.
2. **Degree Day Normalization:** This is a proprietary APPRISE process that also develops a household-level estimate of annual energy usage. This process involved the following steps.
 - a. Calculate the heating and cooling degree-days that are included in each usage period.
 - b. Determine whether periods should be classified as baseload periods, heating periods, or cooling periods based on the number of heating and cooling degree-days in the period.
 - c. Calculate the total baseload period usage, heating period usage, and cooling period usage.
 - d. Calculate the relationship between heating usage minus baseload usage and degree-days. Use that slope and the average long-term heating degree-days to calculate normalized heating period usage. Do the same for cooling usage.
 - e. Add up the baseload usage, heating period usage, and cooling period usage to obtain the normalized annual usage.

B. Analysis Findings

This section presents the findings from the usage analysis. Table XI-2A displays the usage for the 2017 CAP enrollees and comparison groups. The table shows that the electric usage for electric only 2017 CAP enrollees and the electric and gas usage for the 2017 electric and gas CAP enrollees remained at the same level, with no estimate showing more than a two percent change in usage.

**Table XI-2A
2017 CAP Enrollees
Annual Energy Usage**

	Electric & Gas Customers – Electric Usage (kWh)						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group				
	Pre	Post	Change	Pre	Post	Change	kWh	%
Observations	378			2,159				
Raw	8,697	8,562	135	7,257	7,239	18	117	1%
Degree Day	8,859	8,893	-34	7,297	7,414	-117	83	1%
PRISM	8,785	8,626	159	7,221	7,203	18	141	2%
Electric Only Customers – Electric Usage (kWh)								
	Electric Only Customers – Electric Usage (kWh)						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group				
	Pre	Post	Change	Pre	Post	Change	kWh	%
Observations	1,767			6,580				
Raw	9,299	9,339	-40	8,815	9,036	-221	181	2%
Degree Day	9,646	9,655	-9	9,211	9,250	-39	30	< 1%
PRISM	9,528	9,395	133	9,114	9,006	108	25	< 1%
Electric & Gas Customers – Gas Usage								
	Electric & Gas Customers – Gas Usage						Net Change	
	2017 Enrollee Treatment Group			2017 Enrollee Comparison Group				
	Pre	Post	Change	Pre	Post	Change	ccf	%
Observations	382			2,159				
Raw	772	874	-102	705	780	-75	-27	-3%
Degree Day	878	899	-21	786	788	-2	-19	-2%
PRISM	880	874	6	790	772	18	-12	1%

Table XI-2B displays the annual energy usage for the CAP participants in 2016, 2017, and 2018. The table shows that while the raw usage increased from 2016 to 2017 and then again in 2018 (due to changes in the weather), the weather-normalized natural gas usage and electric usage remained approximately the same for participants in the three years analyzed. The largest change was about a two percent increase in electric usage for electric only and electric and gas customers from 2016 to 2018.

**Table XI-2B
All CAP Participants
Annual Energy Usage**

	All CAP Participants								
	Natural Gas Usage (ccf)			Electric Usage (kWh) Electric & Gas Customers			Electric Usage (kWh) Electric Only Customers		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Observations	21,245	17,974	18,555	21,245	17,974	18,855	112,085	95,999	98,607
Raw	637	761	886	7,835	8,209	8,657	8,032	8,571	9,435
Degree Day	875	866	860	8,666	8,755	8,693	9,189	9,236	9,420
PRISM	866	873	842	8,524	8,594	8,626	9,023	9,062	9,201

Table XI-2C displays the annual energy usage for the 2016 and 2017 CAP nonparticipants. The table shows that natural gas usage remained approximately the same for nonparticipants in 2016 and 2017, but that the electric usage increased from 2016 to 2017 for the non-heating customers.

**Table XI-2C
All CAP Nonparticipants
Annual Energy Usage**

	Natural Gas (ccf) Heating Customers		Electric Usage (kWh) Non-Heating Customers		Electric Usage (kWh) Heating Customers	
	2016	2017	2016	2017	2016	2017
Observations	462	718	1,315	2,350	306	575
Raw	596	706	7,104	8,061	10,895	12,305
Degree Day	814	811	8,068	8,762	13,427	13,739
PRISM	808	818	7,889	8,602	13,335	13,776

Table XI-3 displays a comparison of heating and cooling degree days for the analysis periods and for the 20-year average period. The table shows that heating degree days increased from 2016 to 2017, and increased again in 2018. However, cooling degree days were lower in 2017 and 2018 than they were in 2016. Heating degree days increased from the pre-enrollment to the post-enrollment period for the 2017 CAP enrollees, and the cooling degree days declined from the pre to the post period. Such changes in weather would result in an underestimate of the heating usage (based on the previous year's weather) and an overestimate of the cooling usage and a CAP subsidy that differed from the subsidy needed based on actual usage. In particular for the 2018 participants, both heating and cooling degree days increased from the previous year, resulting in a CAP credit that was likely to be lower than needed to reach the targeted energy burden.

**Table XI-3
Heating and Cooling Degree Day Comparisons**

Weather	20-Year Average	All CAP Participants and Nonparticipants			2017 Enrollee Treatment Group			2017 Enrollee Comparison Group		
		2016	2017	2018	Pre	Post	Change	Pre	Post	Change
Heating Degree Days	4,424	3,627	4,001	4,588	3,924	4,429	505	3,958	4,451	493
Cooling Degree Days	804	1,038	822	888	995	836	-159	991	848	-143

C. Summary

This section analyzed the impact of CAP on energy usage. Key findings are presented below.

- 2017 CAP Enrollees: The electric usage for electric only 2017 CAP enrollees and the electric and gas usage for the 2017 electric and gas CAP enrollees remained at the same level, with no estimate showing more than a two percent change in usage.
- All CAP Participants: While the raw usage for the CAP participants increased from 2016 to 2017 and then again in 2018 (due to changes in the weather), the weather-normalized natural gas usage and electric usage remained approximately the same for participants in the three years analyzed. The largest change was about a two percent increase in electric usage for electric only and electric and gas customers from 2016 to 2018.
- Nonparticipants: Natural gas usage remained approximately the same for nonparticipants in 2016 and 2017, but the electric usage increased from 2016 to 2017 for the non-heating customers.

XII. Key Findings and Recommendations

This section provides a summary of the key findings and recommendations from all of the analyses in this report.

A. Customer Assistance Program

The CAP was a tiered discount approach from 1998 until 2016, and was changed to a Fixed Credit Option (FCO) CAP beginning in October 2016. The goal of the FCO is to provide a fixed credit for the year that results in an affordable utility bill. The credit is based upon household income, number of household members, and utility usage in the prior year, and is structured to reach a specific energy burden.

Despite this significant change, the program appears to be working well. CAP has significant impacts on affordability, increased LIHEAP receipt, improved bill payment, reduced arrearages, and reduced collections costs. It does not appear to result in increased usage. CAP participants are very satisfied with the program and perceive that it has an important impact for them.

The one key area for improvement is better calculation of credits to reduce the percent of customers who are significantly above the targeted energy burden levels.

CAP Design and Procedures

- **CAP Participation and Costs:** Following the implementation of the FCO at the end of 2016, participation and costs declined significantly. While there were over 160,000 average monthly CAP participants in 2016, there were about 148,000 average monthly CAP participants in 2017.
- **CAP Information Source:** Customers learn about CAP from a variety of sources. The survey found that 39 percent of respondents found out about CAP from a PECO representative, 16 percent from friends or relatives, 12 percent from agencies or elected officials, and eight percent from PECO mailings. Others found out about the program from online materials, from previous CAP participation, and from PGW. *Recommendation: PECO should continue to use a wide variety of outreach to inform customers about CAP.*
- **CAP Application:** While 74 percent of CAP survey respondents reported that it was not at all difficult to apply for CAP, 13 percent reported that it was not too difficult, seven percent reported that it was somewhat difficult, and two percent said it was very difficult. Respondents were most likely to state that providing proof of income and filling out the application were the most challenging part of the CAP application. It appears that the application process is working well and no changes are recommended.
- **Recertification:** Seventy-three percent of CAP survey respondents reported that they had previously re-certified for CAP. The majority of respondents reported that it was not at

all difficult to recertify for CAP. Providing proof of income and sending in the application were the parts of recertification that were identified as challenging. The recertification process appears to work well.

- **CAP Understanding:** When asked specifically about lower bills during the CAP survey, 94 percent agreed that they were a benefit of CAP. When asked specifically about a reduction in money owed to PECO, 75 percent agreed that arrearage reduction was a benefit. When asked about their responsibility in CAP, 76 percent reported that it was to keep up with payments. Others reported that their responsibilities included reporting changes in household income, reducing energy usage, participating in energy conservation, and re-certifying. Customers appear to have a good understanding of CAP.
- **CAP Discount:** The mean annual discount for the 2017 electric only CAP enrollees and the 2017 and 2018 electric only CAP participants under the new FCO ranged from \$417 to \$478. This compares to a mean discount of \$700 in 2016 under the previous CAP discount program. While six percent of the 2017 participants received no credit, 31 percent of the 2018 participants received no credit, after the Phase-Out period ended. This compares to three percent of the 2016 participants who received no discount.

The mean annual discount for the 2017 electric and gas enrollees and the 2017 and 2018 electric and gas CAP participants under the new FCO ranged from \$440 to \$469. This compares to a mean discount of \$766 in 2016 under the previous CAP discount program. While eight percent of the 2017 electric and gas participants received no annual credit, 37 percent of the 2018 electric and gas participants received no annual credit.

CAP Impact

- **Affordability Impact:** While 53 percent of CAP survey respondents reported it was very difficult to pay their PECO bills prior to CAP, only ten percent reported that it was very difficult to pay their PECO bills while participating in CAP. While 75 percent of respondents reported that they delayed or skipped paying other bills before participating in CAP, only 41 percent reported that they did so while in CAP.
- **Energy Burden Impact:** CAP participation resulted in a large reduction in energy burden for program participants, but the mean burden was still above the target level for the lowest poverty level group. Similarly, CAP resulted in a large reduction in the percent of participants with an energy burden above the targeted level, but there was still a significant percentage of the lowest poverty level group with a burden above the targeted level. *Recommendation: PECO should re-assess the calculation of the annual credit for the lowest poverty level group. Because it is based on weather normalized usage (and bills are based on actual usage), it is recalculated quarterly, and discounts vary across the year, this may result in a less accurate provision of the credit needed to reach an affordable burden. PECO should consider increasing the credit for the lowest income group to ensure that customers are closer to the targeted burden.*

- **LIHEAP Impact:** While a majority of CAP survey respondents reported that they did not receive other benefits or participate in other programs as a result of participating in CAP, 22 percent reported that they received LIHEAP benefits, and six percent reported that they received benefits from energy efficiency services. Thirty-nine percent of respondents reported that they found out about LIHEAP from CAP.

Customers were significantly more likely to receive LIHEAP in the year following enrollment.

- **Bill Payment Impact:** Total coverage rates, defined as total payments divided by electric (and gas) charges, increased significantly following enrollment in CAP and averaged at or above 100 percent for most groups and only slightly above 100 percent for the electric and gas CAP participants.
- **Missed Payments:** Participants reduced the number of missed payments following CAP enrollment. The mean number of missed payments went from about three missed payments to two missed payments. The percent of enrollees that missed no payments went from about 40 percent to about 60 percent.
- **Arrearage Forgiveness:** Participants received a significant amount of arrearage forgiveness for their pre-program arrears, and many also received in-program arrearage forgiveness.
- **Collections Actions and Costs:** Customers had fewer collections actions and a lower cost for collections following enrollment in CAP.
- **Energy Usage:** Participation in CAP does not appear to increase energy usage.
- **CAP Importance:** Seventy-five percent of CAP survey respondents reported that CAP was very important in helping them to make ends meet, and 17 percent reported that CAP was somewhat important. Eighty-two percent of respondents below 50 percent of the poverty level reported that CAP was very important.

CAP Satisfaction

- **CAP Satisfaction:** While 69 percent of respondents reported that they were very satisfied with CAP, 24 percent reported that they were somewhat satisfied. While 77 percent of those who said they had a good understanding of CAP benefits reported that they were very satisfied, 26 percent of those who said they did not have a good understanding of CAP benefits reported that they were very satisfied.

B. Low-Income Usage Reduction Program

LIURP is a usage reduction program for high-usage low-income residential customers with household gross income at or below 200 percent of the FPL. LIURP provides direct weatherization and conservation measures and in-home education that promotes usage reduction.

LIURP is required for high-usage CAP customers. CAP participants who refuse a LIURP audit will be removed from CAP following a series of letters and phone calls. Customers removed from CAP can be reinstated as soon as they allow PECO to conduct a LIURP audit in their home and install measures.

We made several recommendations in the most recent LIURP Evaluation Report to improve energy savings for the program. These include improved outreach to high-usage customers, improved audits and quality control, and increased penetration of major energy-saving measures.

C. Matching Energy Assistance Fund

The Matching Energy Assistance Fund (MEAF) is PECO's hardship fund. The program is partially funded through customer donations that can be one-time or recurring on the customer's monthly bill. PECO solicits grants with bill inserts and a check-off box on the bill stub. They also received contributions through their website and hold an annual golf tournament fundraiser.

Customers who are in danger of service termination or have their services terminated are eligible for a MEAF grant of up to \$500 per fuel. The grant must eliminate the total amount due excluding the pre-program arrearage.

The MEAF program appears to be working well and providing important benefits for customers who need assistance. We do not have any recommendations for this program.

D. Customer Assistance and Referral Evaluation Services Program

The Customer Assistance and Referral Evaluation Services Program (CARES) provides referrals and information services to assist customers with special needs and/or extenuating circumstances that negatively impact their ability to pay their utility bill. Eligible customers may receive temporary protection from service termination and specific education and referrals for energy and non-energy related assistance.

The goal of CARES is to educate and inform customers about available resources, including energy and non-energy assistance, budget counseling, and housing assistance, to maximize their ability to pay their energy bills.

The CARES program appears to be working well and providing important services and referrals for customers who need assistance. We do not have any recommendations for this program.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PECO Energy Company Universal Service and Energy Conservation Plan for 2013-2015	:	
	:	Docket No. M-2012-2290911
	:	
PECO Energy Company Universal Service and Energy Conservation Plan for 2016-2018	:	Docket No. M-2015-2507139
	:	
	:	
PECO Energy Company Universal Services Program Six-Year Evaluation Report	:	Docket No. M-2019-_____
	:	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served PECO Energy Company's Universal Service Program Six-Year Evaluation upon the individuals listed below by first class mail. Where an email address is listed, service was also made by email.

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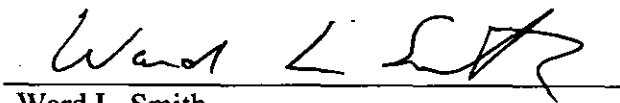
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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

JUN 28 2019

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