Applied Public Policy Research
APPRISE
Institute for Study and Evaluation

PECO Energy
Customer Assistance Program For Customers Below 50 Percent of Poverty
Final Evaluation Report

October 2006

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Executive Summary

This report presents the findings from the 2006 Evaluation of PECO's Customer Assistance Program (CAP) Rates A, B, and C for customers with income below 50 percent of the Federal Poverty Level (FPL). PECO's CAP assists eligible low-income customers by providing discounted electric and gas bills. PECO introduced increased electric rate discounts for customers with income below 50 percent of the FPL in February 2004. This report examines the need for CAP Rates A, B, and C; customer understanding of the program; customer perception of the impact of the program; and findings from data analysis on the impact of the program on bill affordability and customer bill payment.

Introduction

PECO Energy has implemented a set of Universal Services Programs to meet requirements set by Pennsylvania's electric and gas restructuring legislation and various Public Utility Commission orders and agreements. The Bureau of Consumer Services (BCS) of the Public Utility Commission (PUC) requires that PECO evaluate its Universal Service Programs, and has developed standard evaluation questions to guide Universal Services Programs evaluations. APPRISE developed a report to answer the PUC questions and analyze all of PECO's Universal Services Programs in April 2006. This report's key findings with respect to PECO's CAP were as follows:

1. PECO has relatively high customer participation in their CAP. While 43 percent of PECO's income-eligible customers participate in CAP, only 14 percent of income-eligible customers in other electric utilities' service territories participate in CAP.

2. PECO has low CAP participation among households with income below 25 percent of the FPL. Only 16 percent of these customers participate in PECO's CAP.

3. Customers do not understand the CAP discount. The customer survey showed that over 80 percent of customers did not know what percentage discount they receive on their PECO bills.

4. Customers perceive that the CAP has a large impact on their ability to afford their energy bills and their other household necessities.

5. The bill analysis also showed that the CAP had a large impact on bill affordability. The CAP reduced average energy burden from 12 percent to 8.6 percent.

6. The CAP increased payment compliance. Customers paid an average of 89 percent of their bills in the year following CAP enrollment, as compared to 85 percent prior to program enrollment.

7. Most CAP customers are asked to pay less with the CAP discount than they paid in the year prior to enrollment. As a result, customers are likely to reduce the amount that they pay PECO after enrolling in the CAP. PECO should reexamine the CAP structure and pilot other options. One potential method is to develop two tiers of CAP discounts, higher discounts for customers who are severely payment-troubled with arrears over $500, and lower discounts for customers with less severe payment problems.[1]

8. Only 38 percent of combination CAP customers receive LIHEAP assistance. PECO should work to increase LIHEAP outreach.

9. Customers did not increase their usage after enrolling in CAP.

The PUC also directed PECO to separately address how their CAP served customers with income below 50 percent of the Federal Poverty Level (FPL). To better meet the needs of this population, PECO implemented three new electric CAP rates in February 2004. CAP Rate A provides a $12 or $30 (depending on whether the customer uses electric heat) monthly bill to special needs customers with income less than or equal to 25 percent of the FPL. CAP Rate B provides an 85 percent discount to customers with income less than or equal to 25 percent of the FPL. CAP Rate C provides a 75 percent discount to customers with income between 26 and 50 percent of the FPL. This report provides an analysis of CAP Rates A, B, and C.

While this report provides a separate analysis of the new CAP Rates, it should be read in conjunction with the 2006 PECO Universal Services Evaluation Report.

Evaluation

The following activities were conducted as part of this evaluation.

1. *Customer Needs Assessment*: We used data from the 2000 Census and PECO's customer database to develop information on the number of customers who are eligible for the CAP and to assess the needs of customers for the CAP.

2. *Customer Interviews*: We contacted participants in CAP Rates B and C to assess the efficiency and effectiveness of program operations, and participants' views on the impact and importance of the program.

3. *Data Retrieval and Analysis*: We developed systems to obtain billing, payment, and arrearage information for participant customers. We used available data to develop gross and net performance statistics for the CAP.

[1] The CAP analysis summary of findings in the 2006 PECO Universal Services Evaluation Report is on pages 223 through 225.

PECO's Customer Assistance Program

The Customer Assistance Program, referred to as CAP or CAP Rate, is a discounted residential tariff for low-income, payment-troubled residential customers. Customers with total gross household income less than or equal to 150 percent of the FPL are eligible for the CAP. Additionally, customers must be considered payment-troubled to be eligible for the program.[2]

Effective February 2004, PECO has five CAP Rate tiers, which can be summarized as followed:

- CAP Rate A: Customers with household income less than or equal to 25 percent of the FPL with extenuating circumstances are eligible. Electric non-heating customers receive a minimum $12 per month bill and electric heating customers receive a minimum $30 per month bill.
- CAP Rate B: Customers with household income less than or equal to 25 percent of the FPL without extenuating circumstances are eligible. They receive an 85 percent discount on their first 500 kWh monthly.
- CAP Rate C: Customers with household income between 26 and 50 percent of the FPL are eligible. They receive a 75 percent discount on their first 500 kWh monthly.
- CAP Rate D: Customers with household income between 51 and 100 percent of the FPL are eligible. They receive a 50 percent discount on their first 500 kWh monthly.
- CAP Rate E: Customers with household income between 101 and 150 percent of the FPL are eligible. They receive a 25 percent discount on their first 500 kWh monthly.

CAP Rate customers with gas service also receive a discount on their gas variable distribution charge. The gas CAP Rate discount results in a discount up to 28 cents per cubic foot (ccf) of monthly gas usage. Customers with household income at or below 100 percent (i.e., gas CAP D) are not charged for variable distribution costs. Customers with household income between 101 and 150 percent (i.e., gas CAP Rate E) are charged 13 cents per ccf.[3]

Customer Needs Assessment

In this section of the report, we assess the penetration of PECO's Customer Assistance Program. We present information on the size of the population eligible for CAP benefits and the number of PECO customers who participate in CAP. These data are used to evaluate how effective the program has been in enrolling customers who are at or below 50 percent of the FPL.

[2] PECO offers CAP customers the opportunity to make two payment arrangements.
[3] PECO's public CAP Rate information literature reports that the gas discount is restricted to the first 100 cubic feet (ccf) of a gas monthly bill. However, according to PECO Universal Services, the gas discount is applied to all ccf.

CAP Eligible Population

Roughly 66,000 PECO residential customers are income-eligible for CAP Tiers A/B or C because their income is at or below 50 percent of the FPL. This represents five percent of PECO's residential customers. Almost 10 percent of Philadelphia county customers with residential service are CAP income-eligible for CAP Rate A/B or C.

We examined average energy burdens for CAP-eligible households by poverty level and type of PECO service. Households in the lower poverty groups are much more likely to have energy burdens that exceed the PUC energy burden thresholds. Almost all households with income at or below 50 percent of the FPL have energy burdens that exceed the PUC targets. Eighty-six percent of electric heating households with income below 50 percent of the FPL exceed the PUC targets, while 96 percent of combination electric and gas customers with income below 50 percent of the FPL have an energy burden greater than the PUC target.

CAP Participation Rates

Forty-five percent of eligible households participated in PECO's CAP in 2005. Approximately 234,000 PECO customers were eligible and 105,000 PECO customers participated in the CAP. CAP program participation is lowest among households with income below 25 percent of FPL. Sixteen percent of eligible households with annual income below 25 percent of the FPL participated in the CAP; however, 64 percent of households between 25 percent and 50 percent of the FPL, and 73 percent of households between 50 percent and 100 percent of the FPL participated in the CAP.

CAP Participant Survey

APPRISE conducted a telephone survey with PECO's CAP Rate B and CAP Rate C customers.[4] The purpose of the customer survey was to assess CAP customer understanding, customer satisfaction, and program impact.

Survey Findings

Key findings from the CAP survey are highlighted below.

- *Demographic Characteristics:* Households that participate in CAP Rate B and CAP Rate C were likely to have at least one vulnerable member. Overall, 86 percent of respondents had at least one vulnerable member. Thirteen percent had an individual 60 or older, 64 percent had at least one child 18 or younger, 46 percent had a disabled individual, and 42 percent had someone who required the use of electricity or gas for medical reasons in their household.

  Only 16 percent of respondents reported that they earned any wages from employment and six percent of respondents reported that they received retirement income in the year

[4] Only 2 CAP Rate A customers enrolled in the time period studied and remained on the CAP through April 2006. Therefore, these customers were not included in the survey.

preceding the survey. Conversely, 53 percent reported that they received public assistance, and 66 percent reported that they received food stamps.

There were some indicators that households may temporarily be in a situation where their income is below 50 percent of the FPL. Fifty-five percent reported that someone in the home had been unemployed and looking for work in the past twelve months. Thirty-four percent reported that their income was less than it had been the previous year, compared to 18 percent who said it was higher than it had been the previous year. Thirty-six percent said that there was someone in the household who had left the workforce in the past twelve months. Most of these were due to a layoff or a medical condition. Forty-nine percent projected that they would have higher income the next year, compared to five percent who projected lower income, and 36 percent who projected that their income would be about the same.

- *Customer Assistance Program Outreach:* Twenty-eight percent of respondents reported that they heard about the CAP from a PECO representative. Other respondents reported that they heard about the CAP through a friend or relative, a PECO bill or flyer, or a social service or government agency.

- *Reasons for CAP Enrollment:* Fifty-two percent of respondents reported that they enrolled in the CAP to reduce their energy bills. Thirty-seven percent of respondents enrolled because they were low-income, had a fixed-income, or because of unemployment. Other respondents reported that they enrolled for general financial help or to reduce their arrearages.

- *Ease of CAP Enrollment and Re-Certification:* The majority of respondents reported that CAP enrollment and re-certification were generally not too difficult. However, 35 percent of respondents reported that they had to provide their income information more than once during CAP enrollment.

- *Knowledge of CAP Benefits:* When asked to report what they needed to do to obtain arrearage forgiveness, 32 percent of the respondents reported that they did not know. Twenty-one percent of respondents reported that they understood they had to pay their bill. Other respondents reported that their responsibility was to pay their bill on time for six consecutive months, pay their bill for six consecutive months, or pay their bill on time for a year.

  When asked to describe CAP benefits, respondents were most likely to refer to lower energy bills, budget billing, reduced arrearages, maintaining their utility service, and general financial help. Thirty-six percent of respondents identified lower energy bills as the most important benefit and 32 percent of respondents identified maintaining their utility service as the most important benefit. However, respondents were unlikely to know the percentage discount that the CAP provided.

- *CAP Impact on Bill Payment:* Respondents were asked how difficult it was for them to pay their bills prior to participating in the CAP and while participating in the CAP. Sixty-six percent of respondents reported that it was very difficult to pay their bills prior to CAP enrollment and only 11 percent reported that it was difficult to pay their bills while enrolled in the program. Fifty-six percent of respondents felt that they need additional assistance to pay their energy bills.

- *Financial Obligations and Bill Payment Difficulties:* Respondents were asked whether they had foregone or delayed spending on non-energy bills such as food, medicine, medical or dental service, mortgage or rent, telephone or cable, loan or credit card, car payments, and child care, before participating in the CAP and while participating in the CAP. Respondents were less likely to report that they had foregone or delayed these other bills while enrolled in the CAP than they were prior to participating in the Program. For example, 43 percent said that they had delayed expenditures on medicine prior to enrolling in the CAP, compared to 20 percent who said they had delayed this expenditure while participating in the CAP.

- *Participants' Expectations for Future CAP Participation:* Ninety-eight percent of respondents reported that they were very or somewhat likely to continue to participate in the CAP and 60 percent of respondents said that they would continue to participate as long as they were eligible.

- *General Evaluation of Program Benefits:* Ninety-six percent of respondents reported that the CAP has been very or somewhat important in helping them to meet their needs. Ninety-six percent of respondents said that they were somewhat or very satisfied with the Program.

CAP Analysis

PECO provided APPRISE with household demographic data, CAP participation data, billing and payment data, and account balance data for 2005 and 2006 CAP participants. APPRISE used the data to analyze CAP impacts on affordability, bill payment, and account balances.

Methodology

Customers who enrolled in the CAP between January 1, 2005 and June 31, 2005 were included as potential members of the study group. 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 changes for the comparison group are as similar as possible to those of the treatment 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.

In the evaluation of the CAP, 2006 Q1 and Q2 enrollees were used as a comparison group. We required that they have no discounted bills in the two years preceding enrollment to ensure that they are non-participants in both periods. These participants serve as a good comparison because they are lower income households who were eligible for the program and chose to participate. We used data for these participants for the two years preceding CAP enrollment, to compare their change in payment behavior in the years prior to enrolling to the treatment group's change in payment behavior after enrolling. Because these customers did not participate in the CAP in both analysis years, changes in bills and behavior should be related to factors that are exogenous to the program.

For the CAP program impact analysis, we examine 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 estimated impact of the program, controlling for other exogenous changes.

Some of the customers in the treatment and comparison groups were not included in the final analysis because they did not have adequate data available. We refer to all eligible customers in the treatment and comparison group as the "original" analysis group and to those who have enough data to be included in the impact analysis as the "final" analysis group. Two factors must be weighed when selecting the sample for the final analysis. First, when conducting a program evaluation, the goal is always to include as much as the population as possible in the analysis, so that the results are not biased due to elimination of distinctive subgroups. However, to provide good estimates of program impacts, it is also necessary to restrict the sample to those customers who have a minimum level and quality of data.

CAP Analysis Findings

This section summarizes findings from the data analysis of CAP participants.

- *Household Demographics*: Customers in the 2005 CAP enrollee treatment group are somewhat more likely to have at least one child age 18 or under in the household, and customers in the 2006 CAP enrollee comparison group are somewhat more likely to live alone. In all other household characteristics, the treatment group is very similar to the comparison group.

- *Account Characteristics*: The 2005 CAP enrollee treatment group is very similar to the 2006 CAP enrollee comparison group with respect to services and CAP Rate tier. However, customers in the treatment group were less likely to have arrears between $1 and $250 and more likely to have arrears above $500 at the time of CAP enrollment than the comparison group at the start of the comparable analysis period. The fact that the 2006 CAP comparison group was twice as likely to have the lowest amount of arrears is attributable to the fact that it is the average amount of arrears two years before the group's actual CAP enrollment date; with higher arrears 2006 CAP participants may have enrolled earlier.

- *Retention Rates*: Ninety-four percent of the original 2005 treatment group received a discount in each of the first three months after enrollment, 85 percent remained in the CAP for the first six months, and 71 percent remained on for the first twelve months.

- *Arrearage Forgiveness*: PECO provides arrearage forgiveness to CAP customers who pay their bills on time and in full, and who are current with their CAP payment obligations for six consecutive months. Among the final treatment group, 40 percent did not receive any arrearage forgiveness, seven percent received between $1 and $100, 28 percent received between $101 and $500, and 26 percent received greater than $500 in arrearage forgiveness. Customers in CAP Rate B were more likely to receive forgiveness than customers in CAP Rate C, and received greater amounts of arrearage forgiveness than customers in CAP Rate C.

- *Affordability Impacts*: The CAP had a positive impact on affordability for program participants. The asked to pay amount decreased by $489 for the 2005 CAP enrollee treatment group and increased by $147 for the 2006 CAP enrollee comparison group. The net impact of the CAP on the asked to pay amount was therefore a decrease of $636. 2005 CAP participants experienced an 11 percentage point gross decrease in energy burden, falling from 29 percent in the year prior to participating in the program to 18 percent in the first year of program participation. The average net impact of the CAP on the energy burden was a decrease of 14 percentage points.

  The impact of the CAP on the asked to pay amount and energy burdens of customers differed by CAP Rate, as the discount percentage differs by CAP Rate. Customers in the treatment group enrolled in CAP Rate B experienced an average net decrease in their asked to pay amounts of $673 and an average net decrease in their energy burdens of 17 percentage points. Customers in the treatment group enrolled in CAP Rate C had an average gross decrease in their asked to pay amounts of $612 and an average net decrease in their energy burdens of 12 percentage points.

  CAP customers are eligible for both electric and gas CAP Rate discounts. PECO CAP customers who received both electric and gas service experienced a net decrease in their asked to pay amounts of $727, the greatest net impact for all PECO service types. Electric service only, non-heating CAP customers had the greatest net impact of the CAP on their total energy burden with a net decrease of 15 percentage points. Electric service only, heating CAP customers felt the lowest net impact of the CAP on their total energy burdens with only an eight percentage point decrease in energy burden. This may be due the fact that they are more likely to exceed the 500 kWh discount limit, due to their use of electricity for heating and baseload uses.

The PUC sets target ranges for low-income customers' energy burdens. The analysis showed that the CAP significantly reduced the percentage of customers who exceeded the energy burden target. However, the majority of customers still exceeded the target after receiving CAP benefits. Eighty-eight percent of electric heating customers had energy burdens above the PUC target prior to CAP enrollment and 71 percent had burdens above the target after enrollment. Seventy-four percent of PECO electric and gas customers had energy burdens exceeding the target in the year prior to CAP participation, and 64 percent had burdens exceeding the target in the year after enrollment. Ninety-three percent of electric only non-heating customers had burdens that exceeded the target in the year prior to CAP participation, and 78 percent had incomes that exceeded the target in the year following enrollment.

- *Payment Impacts*: Customers experienced large reductions in their asked to pay amounts and their total payments. Coverage rates increased because the reductions in the asked to pay amounts were larger on average than the reductions in total payments. With the help of lower bills and arrearage forgiveness, the treatment group customers were able to reduce their balances.

  Customers in the treatment group had an average total coverage rate of 81 percent in the year preceding enrollment and 92 percent in the year following enrollment, a gross increase of 11 percentage points. The average net impact of the CAP on the total coverage rate was an increase of 25 percentage points.

  Treatment group customers had an average shortfall of $287 in the year preceding enrollment and of $139 in the year following enrollment, for a gross decrease of $148. The average net impact of the CAP on shortfall was a decrease of $333.

  By paying their CAP bills and staying current with their CAP payment obligations for six consecutive months, treatment group customers received an average of $429 in arrearage forgiveness in the year following enrollment. Treatment group customers experienced an average gross decrease of $317 in their balance, and an average net decrease of $696.

- *Assistance Impacts*: Approximately 12 percent of treatment group customers received LIHEAP cash assistance in the year prior to enrollment, compared to 20 percent in the year after enrollment. Twenty-two percent of combination customers received LIHEAP in the year preceding CAP enrollment, and 45 percent received LIHEAP in the year after CAP enrollment.

Key Findings

This report, in conjunction with the 2006 Universal Services Evaluation, found the following key accomplishments of PECO's CAP:

1. High levels of CAP participation by most groups.

2. High levels of customer satisfaction with the CAP.
3. Large CAP impacts on bill affordability.
4. Large increases in payment compliance.
5. Large reductions in customer balances.
6. No increase in energy usage.
7. Reduction in collections actions and service terminations.

The following improvements were seen with the new CAP Rates A, B, and C.

1. The new CAP Rates have increased affordability for customers with income below 50 percent of the FPL. While the old discounts resulted in an average asked to pay amount of $892 for customers with income below 50 percent of the FPL, the new discounts result in an average asked to pay amount of $810 for this group.
2. The new CAP Rates have increased payment compliance for customers with income below 50 percent of the FPL. While the old discounts resulted in an average total coverage rate of 82 percent for customers in this group, the new discounts resulted in an average total coverage rate of 92 percent.

This report, in conjunction with the Universal Services Evaluation and additional research conducted by APPRISE, found the following issues in PECO's CAP:

1. Low CAP participation by customers with income below 25 percent of the FPL.
2. Energy burden that is not reduced to the PUC target for many customers with income below 50 percent of the FPL.
3. High participation by customers who have pre-CAP energy burdens that are below the affordable range defined by the PUC.
4. Reduction in payments after customers enroll in the CAP, and payment level below PECO's asked to pay amount.

Recommendations

This section summarizes the recommendations that are made in the report. Additional information on the recommendations can be found in the body of the report.

Issue 1: Low CAP participation by customers with income below 25 percent of the FPL.

- **Conduct targeted CAP marketing to customers with income below 25 percent of the FPL.** The differential participation rates between the lowest income customers and the higher income-eligible customers shows that PECO needs to do targeted marketing to customers with income below 25 percent of the FPL. PECO may be able to reach some of these customers through their CARES program.

- **Conduct additional research to determine why CAP participation rates for households with income below 25 percent of the FPL are so low.** It may be possible to work with local CBO's to identify these customers, and conduct focus groups to determine whether these customers know about the program and whether there are any barriers to program participation for this group. This information will help PECO to understand how to increase outreach for this group, how to provide CAP application assistance for this group, and whether these households need additional intervention to increase their CAP participation.

Issue 2: Energy burden that is not reduced to the PUC target for many customers with income below 50 percent of the FPL.

- **Option 1: Administrative approach.** PECO could increase affordability for households with income below 50 percent of the FPL by taking the following actions:
  - **Target CAP Rate A, B, and C customers for LIURP.** Provision of LIURP services to this group will reduce their energy usage, reduce the amount by which they exceed 500 kWh per month, and increase bill affordability.
  - **Accurately classify electric heaters.** Classifying default electric heaters in the electric heating category might change their LIHEAP status.
  - **Referrals to increase income.** Use the CARES program to help these households increase their income, and therefore reduce their energy burden.
- **Option 2: Incremental change to PECO's CAP.** PECO could remove or increase the 500 kWh limit for CAP discounts for those in the lowest poverty groups. APPRISE's earlier research showed that approximately 75 percent of PECO's CAP customers exceeded the 500 kWh monthly usage limit (after which the CAP discount declines and is then eliminated) for at least one month that they participated in CAP, and that customers, on average, exceeded the 500 kWh threshold in seven or eight months of the year that they participated in CAP. The threshold limit for the CAP discount decreases the benefit that customers receive as compared to a discount that is not restricted to a certain amount of electric usage.
- **Option 3: Change the PECO CAP structure.** With the implementation of a fixed credit program, PECO could provide greater benefits to customers who have a greater need for energy assistance, without increasing the total CAP subsidy costs. The fixed credit program could work in the following way:
  - Obtain the client's annual income at CAP intake.

- Calculate the client's affordable energy bill as X percent of annual income.
- Obtain the client's suggested annual budget from the billing system.
- Compute the client's annual CAP credit = Annual Budget – Affordable Annual Energy Bill.
- Apply a limit to the annual CAP credit if necessary.
- Compute the monthly CAP credit = Annual CAP credit/12.
- A budget bill would equalize the customer's payments over the year and allow the customer to budget for the monthly bill.

Issue 3: High participation by customers who have pre-CAP energy burdens that are below the affordable range defined by the PUC.

- **Remove eligibility for customers with affordable energy burdens.** While removing the 500 kWh discount limit for customers below 50 percent of the FPL would increase CAP costs, PECO could cover this increase by removing CAP eligibility for those customers whose energy burdens met the PUC target before receipt of CAP benefits. APPRISE's earlier research showed that approximately half of the customers who participated in CAP rates D and E had energy burdens that were at or below the PUC's energy burden target prior to receiving the CAP discount.

Issue 4: Reduction in payments after customers enroll in the CAP, and payment level below PECO's asked to pay amount.

- **PECO should consider a pilot approach to serving households differentially based upon ability to meet energy needs.**

Other issues:

- **Consider the use of the CARES program to provide temporary assistance to the lowest income households who are facing temporary financial crises.**
- **PECO should provide more outreach to combination customers to increase LIHEAP participation.**
- **The CAP is an important program that should be continued.** The research confirmed that the CAP provides important benefits to the lowest income households who are having difficulty meeting their financial obligations.

I. Introduction

This report presents the findings from the 2006 Evaluation of PECO's Customer Assistance Program (CAP) Rates A, B, and C for customers with income below 50 percent of the Federal Poverty Level (FPL). PECO's CAP assists eligible low-income customers by providing discounted electric and gas bills. PECO introduced increased electric rate discounts for customers with income below 50 percent of the FPL in February 2004. This report examines the need for CAP Rates A, B, and C; customer understanding of the Program; customer perception of the impact of the Program; and findings from data analysis on the impact of the CAP on bill affordability and customer bill payment.

A. Background

PECO Energy has implemented a set of Universal Services Programs to meet requirements set by Pennsylvania's electric and gas restructuring legislation and various Public Utility Commission orders and agreements. The Universal Service goals are:

- To protect consumers' health and safety by helping low-income customers maintain affordable utility service.
- To provide affordable utility service by making available payment assistance to low-income customers.
- To help low-income customers conserve energy and reduce residential utility bills.
- To ensure utilities operate universal service and energy conservation programs in a cost-effective and efficient manner.

The Universal Services Programs include:

- A CAP payment assistance program that is designed to make energy bills more affordable by furnishing payment subsidies.
- A LIURP program that is designed to make energy bills more affordable by helping to reduce usage.
- A CARES program that is designed to assist households in developing appropriate strategies for maintaining energy service.
- A MEAF hardship fund program that is designed to furnish emergency payments to households that cannot pay their energy bills.

B. *Objectives of the Evaluation*

The Bureau of Consumer Services (BCS) of the Public Utility Commission (PUC) requires that PECO evaluate its Universal Service Programs, and has developed standard evaluation questions to guide Universal Services Programs evaluations. APPRISE developed a report to answer the PUC questions and analyze all of PECO's Universal Services Programs in April 2006. This report's key findings with respect to PECO's CAP were as follows:

1. PECO has relatively high customer participation in their CAP. While 43 percent of PECO's income-eligible customers participate in CAP, only 14 percent of income-eligible customers in other electric utilities' service territories participate in CAP.

2. PECO has low CAP participation among households with income below 25 percent of the FPL. Only 16 percent of these customers participate in CAP.

3. Customers do not understand the CAP discount. The customer survey showed that over 80 percent of customers did not know what percentage discount they receive on their PECO bills.

4. Customers perceive that the CAP has a large impact on their ability to afford their energy bills and their other household necessities.

5. The bill analysis also showed that the CAP had a large impact on bill affordability. The CAP reduced average energy burden from 12 percent to 8.6 percent.

6. The CAP increased payment compliance. Customers paid an average of 89 percent of their bills in the year following CAP enrollment, as compared to 85 percent prior to program enrollment.

7. Most CAP customers are asked to pay less with the CAP discount than they paid in the year prior to enrollment. As a result, customers are likely to reduce the amount that they pay PECO after enrolling in the CAP. PECO should reexamine the CAP structure and pilot other options.

8. Only 38 percent of combination CAP customers receive LIHEAP assistance. PECO should work to increase LIHEAP outreach.

9. Customers did not increase their usage after enrolling in CAP.

The PUC also directed PECO to separately address how their CAP served customers with income below 50 percent of the FPL. To better meet the needs of this population, PECO implemented three new electric CAP rates in February 2004. CAP Rate A provides a $12 or $30 (depending on whether the customer uses electric heat) monthly bill to special needs customers with income less than or equal to 25 percent of the FPL. CAP Rate B provides an 85 percent discount to customers with income less than or equal to 25 percent of the FPL. CAP Rate C provides a 75 percent discount to customers with income between 26 and 50 percent of the FPL. This report provides an analysis of CAP Rates A, B, and C.

While this report provides a separate analysis of the new CAP Rates, it should be read in conjunction with the 2006 PECO Universal Services Evaluation Report.

The following activities were conducted as part of this evaluation.

1. *Customer Needs Assessment*: We used data from the 2000 Census and PECO's customer database to develop information on the number of customers who are eligible for the CAP and to assess the needs of customers for the Program.

2. *Customer Interviews*: We contacted participants in CAP Rates B and C to assess the efficiency and effectiveness of program operations and participants' views on the impact and importance of the CAP.

3. *Data Retrieval and Analysis*: We developed systems to obtain billing, payment, and arrearage information for participant customers. We used available data to develop gross and net performance statistics for the CAP.

C. Organization of the Report

Five sections follow this introduction.

- Section II – Customer Assistance Program: This section describes PECO's Customer Assistance Program.

- Section III – Customer Needs Assessment: This section provides data and statistics from the 2000 Census and from PECO's customer and program databases. We provide an analysis of the number of customers who are eligible for the CAP and the number of customers who participate in the Program.

- Section IV – Customer Survey: This section provides a summary of the CAP customer survey.

- Section V – CAP Impacts Analysis: This section provides data and statistics from our analysis of CAP participant and comparison group data. We provide analysis of CAP customer characteristics, CAP retention rates, and arrearage forgiveness. We analyze the impact of the CAP on affordability, bill coverage, and energy assistance.

- Section VI – Summary of Findings and Recommendations: This section provides a summary of the key findings and provides recommendations for PECO's CAP based on the analyses in this report.

APPRISE prepared this report under contract to PECO. PECO facilitated this research by furnishing program 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. Customer Assistance Program

PECO has implemented a set of Universal Service Programs to comply with Public Utility Commission Regulations. The programs are designed for low-income, residential customers who demonstrate or express difficulty paying for their monthly energy bill. One of these programs is the Customer Assistance Program (CAP). The CAP is a discounted residential tariff for low-income, payment-troubled residential customers. Customers with total gross household income less than or equal to 150 percent of the Federal Poverty Level (FPL) are eligible for the CAP. Additionally, customers must be considered payment-troubled to be eligible for the program. A customer is considered payment-troubled when one of the following circumstances exists:

- Late payments
- Consistent arrearages
- Multiple broken payment agreements
- Non-payment of energy bill
- Insufficient payments.

The number of customers enrolled in the CAP was 99,187 on December 31, 2003, 99,387 on December 31, 2004, and 102,762 on December 31, 2005. PECO reports that they are committed to enrolling all qualifying customers into a CAP Rate and has set CAP enrollment goals for 2006 through 2008 as follows: 110,000 for 2006, 115,000 for 2007, and 120,000 for 2008.

Effective February 2004, PECO has five CAP Rate tiers, which are summarized as followed:

- CAP Rate A: Customers with household income less than or equal to 25 percent of the FPL with extenuating circumstances are eligible. Electric non-heating customers receive a minimum $12 per month bill and electric heating customers receive a minimum $30 per month bill.

- CAP Rate B: Customers with household income less than or equal to 25 percent of the FPL without extenuating circumstances are eligible. They receive an 85 percent discount on their first 500 kWh monthly.

- CAP Rate C: Customers with household income between 26 and 50 percent of the FPL are eligible. They receive a 75 percent discount on their first 500 kWh monthly.

- CAP Rate D: Customers with household income between 51 and 100 percent of the FPL are eligible. They receive a 50 percent discount on their first 500 kWh monthly.

- CAP Rate E: Customers with household income between 101 and 150 percent of the FPL are eligible. They receive a 25 percent discount on their first 500 kWh monthly.

CAP Rate customers with gas service also receive a discount on their gas variable distribution charge. The gas CAP Rate discount results in a discount up to 28 cents per cubic foot (ccf) of monthly gas usage. Customers with household income at or below 100 percent of the FPL (i.e., gas CAP D) are not charged for variable distribution costs. Customers with household income between 101 and 150 percent of the FPL (i.e., gas CAP Rate E) are charged 13 cents per ccf.[5]

More detailed eligibility and benefit details for each electric CAP Rate tier are shown in Table II-1 below.

Table II-1
CAP Rate Program Discounts and Requirements

CAP Rate	Income Requirements	PECO Rate	Months	kWh Level	Charge	Budget	Supplier
A	Annual Income: **0%-25%** of the FPL with extenuating circumstances present. Income verification is required annually.	R	All	0 - 1000	$12 per month	A budget is **mandatory** for this rate (with the exception of customers with delinquent supplier dollars).	The customer **cannot** have an alternate supplier.
				1001 -1500	50% discount (CAP Rate D)		
				Over 1500	Rate R		
		RH	Oct-Jun	0 - 2000	$30 per month total		
				Over 2000	CAP Rate D		
			Jul-Sep	0 - 1000	$30 per month		
				Over 1000	CAP Rate D		
B	Annual Income: **0%-25%** of the FPL without extenuating circumstances present. Income verification is required every two years.	R	Oct-Jun	0 - 500	85% discount	A budget is **mandatory** for this rate (with the exception of customers with delinquent supplier dollars).	The customer **cannot** have an alternate supplier.
				Next 100	30% discount		
				Over 600	Rate R		
			Jul-Sep	0 - 500	85% discount		
				Over 500	Rate R		
		RH	Oct-Jun	0-500	85% discount		
				Next 100	30% discount		
				Over 600	Rate RH		
			Jul-Sep	0 - 500	85% discount		
				Over 500	Rate RH		
C	Annual Income: **26%-50%** of the FPL.	R	Oct-Jun	0 - 500	75% discount	A budget is **mandatory** for this rate	The customer **cannot**
				Next 100	30% discount		

[5] PECO's public CAP Rate information literature reports that the gas discount is restricted to the first 100 cubic feet (ccf) of a gas monthly bill. However, according to PECO Universal Services, the gas discount is applied to all ccf.

CAP Rate	Income Requirements	PECO Rate	Months	kWh Level	Charge	Budget	Supplier
	Income verification is required every two years.			Over 600	Rate R	(with the exception of customers with delinquent supplier dollars).	have an alternate supplier.
			Jul-Sep	0 - 500	75% discount		
				Over 500	Rate R		
		RH	Oct-Jun	0-500	75% discount		
				Next 100	30% discount		
				Over 600	Rate RH		
			Jul-Sep	0 - 500	75% discount		
				Over 500	Rate RH		
D	Annual Income: **51%-100%** of the FPL. Income verification is required every two years.	R (Old RJ)	All	0 - 500	50% discount	A budget is not mandatory for this rate (with the exception of customers with delinquent supplier dollars).	The customer can have an alternate supplier.
				Over 500	Rate R		
		RH (Old RHJ)	Oct-Jun	All	50% discount		
			Jul-Sep	0 - 500	50% discount		
				Over 500	Rate RH		
E	Annual Income: **101%-150%** of the FPL. Income verification is required every two years.	R (Old RK)	All	0 - 500	25% discount	A budget is not mandatory for this rate (with the exception of customers with delinquent supplier dollars).	The customer can have an alternate supplier.
				Over 500	Rate R		
		RH (Old RHK)	All	0-500	25% discount		
				Over 500	Rate RH		

There were two other significant modifications made to the CAP effective February 2004.

- PECO will forgive a customer's delinquency prior to CAP Rate enrollment (i.e., pre-program arrearage) if the customer pays his or her CAP Rate bill in full for each of six consecutive months. Prior to February 2004, instead of forgiving the full pre-program arrearage, the program forgave only the customer's delinquency that was greater than $500.

- PECO implemented a series of system changes to capture and maintain PUC requested data on Universal Service customers. Some of the new information recorded and retained includes number of household members, age of household members, current and historical income and calculated FPL, current and historical CAP status, and pre-program arrearages.

III. Customer Needs Assessment

In this section of the report, we assess the penetration of PECO's Customer Assistance Program (CAP). We present CAP program penetration statistics for PECO customers, including the number income-eligible for CAP, the number with energy burdens above the affordability targets set by the PA PUC guidelines, and the number of CAP participants.

A. Methodology for Estimating the Population Eligible for CAP Benefits

To better serve low-income customers, PECO needs information on the population of customers that is eligible for CAP benefits.[6] We developed information on the number and characteristics of PECO's low-income population by extracting data from the 2000 Census and updating the information to 2005 using microsimulation techniques. The following procedures were implemented.

- *Data* – We used the 5-Percent Public Use Microdata Sample (PUMS) from the 2000 Census. These data include information on household size, income, and energy bills for a sample of 5 percent of all households in the U.S. who completed the Census long form.

- *Geography* – We extracted households from five counties – Philadelphia, Montgomery, Delaware, Chester, and Bucks – to represent the PECO customer base.[7]

- *Electric and Gas Service* – We used the Census data to identify those households that paid an electric or gas bill to a utility company.[8]

- *Income Eligible Customers* – We used Census data on household size and income, in conjunction with federal poverty guideline data, to construct the poverty ratio for each household and identify those households that were income eligible for CAP benefits.

- *Energy Bills* – For non-PECO customers, we updated Census data on electric and gas bills with information on energy prices in Pennsylvania. Between 1999 and 2005, electric prices increased by about 15 percent and gas prices increased by about 71 percent. For PECO customers, we increased gas prices by 71 percent; however, we used data provided by PECO to increase electric prices by 7.5 percent.

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[6] The number of estimated low-income customers is the number of customers with household income at or below 150 percent of the Federal Poverty Level (FPL). In compliance with PUC guidelines, PECO currently tracks "confirmed low-income customers' – customers whose household income has been verified through the receipt of a LIHEAP grant or determined in the course of making a payment arrangement. The population of "confirmed low-income customers" is a subset of all PECO low-income customers.
[7] PECO serves a small portion of York County. This county was excluded from the analysis.
[8] We excluded those households that reported that they did not pay an electric or gas bill.

- *Energy Burden* – We estimated the energy burden for each household by comparing the updated energy bill to an updated estimate of income.

- *Targeted Customers* – We compared energy burdens for income-eligible households with income above the PUC targeted energy burden thresholds to identify households that should be targeted by the CAP.[9]

These procedures furnished a dataset that allows us to examine the population of PECO customers that are income eligible for CAP and that should be targeted for CAP according to PUC guidelines. In addition to the PECO population, we also prepared similar data for the remaining low-income households in Pennsylvania so that the CAP penetration rates for PECO could be compared to CAP penetration rates for the rest of Pennsylvania's low-income customers.

B. Analysis of Customers Income Eligible for CAP

Table III-1 presents a description of income-eligible households by service type and heating service. We estimate that 17 percent of all households with PECO residential service are income-eligible for the CAP. Of the 1.38 million households with residential utility service from PECO, approximately 234 thousand have income at or below 150 percent of the Federal Poverty Level (FPL). PECO electric-only customers have the highest eligibility rate for CAP; 21 percent are income-eligible for CAP. Only nine percent of PECO combination customers are CAP income-eligible.

Additionally, we estimate that five percent of all households with PECO residential service, roughly 66,000, are income-eligible for CAP Rates A/B or C because their income is at or below 50 percent of the FPL. With six percent eligibility, PECO electric-only customers have the highest number of households that are income-eligible for CAP Rates A/B or C. Only two percent of PECO combination customers are income-eligible for CAP Rates A/B or C.

Table III-1
CAP Income Eligibility Rate By PECO Service Status

Service Status	Total Households	Households Under 150% of Poverty		Households Under 50% of Poverty	
		Number	Percent	Number	Percent
PECO Residential Service	1,377,225	234,056	17%	66,276	5%
PECO Electric Service	1,374,727	233,542	17%	66,142	5%
PECO Gas Service	428,647	37,259	9%	7,805	2%

[9] The energy burden targets vary by poverty level and fuel type. For electric non-heating customers, we used burden targets of 3.5 percent for households at 0 to 50 percent of poverty, 5.0 percent for households at 51 to 100 percent of poverty, and 6.5 percent for households at 101 to 150 percent of poverty.

Service Status	Total Households	Households Under 150% of Poverty		Households Under 50% of Poverty	
		Number	Percent	Number	Percent
PECO Electric-Only Service	948,578	196,797	21%	58,471	6%
PECO Combination Gas and Electric Service	426,149	36,805	9%	7,671	2%
PECO Gas-Only Service	2,498	454	18%	134	5%
PECO Heating Service	527,148	54,698	10%	14,053	3%
PECO Non-heating Service	850,077	179,298	21%	52,223	6%
All Households	1,459,091	267,356	18%	78,295	5%

Table III-2 shows the CAP income eligibility rate by county. Almost 30 percent of Philadelphia county customers are CAP income-eligible, and almost 10 percent are eligible for CAP Rates A/B or C. Only about 10 percent of customers in each of the other four counties in PECO's service territory are income-eligible for CAP, and only about two percent are eligible for CAP Rates A/B or C.

Table III-2
CAP Income Eligibility Rate By County

County	Number of PECO Residential Service Recipients	Households Under 150% of Poverty		Households Under 50% of Poverty	
		Number	Percent	Number	Percent
Bucks	211,623	17,880	8%	5,895	3%
Chester	153,999	13,501	9%	2,793	2%
Delaware	196,590	24,594	13%	4,760	2%
Montgomery	274,501	21,384	8%	3,545	1%
Philadelphia	540,512	156,637	29%	49,283	9%
Total Service Territory	1,377,225	234,056	17%	66,276	5%

C. *Analysis of Customers Targeted for CAP*

A household's energy burden is the ratio of total home energy costs to total income and is an indicator of the affordability of a household's energy costs. This section presents data on the energy expenditures and burden for households served by PECO that are income-eligible for CAP. The energy burden described in the following tables is the ratio of the cost of electric and/or gas service from PECO to a household's income.

Regulations for CAP in Pennsylvania state that "CAP payments for total electric and natural gas home energy should not exceed 17 percent of the CAP participant's annual income."[10] Standards established for appropriate energy burdens for CAP participants include:

- "Maximum payments for electric nonheating service should be within the following ranges: household income between 0 and 50 percent of poverty at 2 percent to 5 percent of income, household income between 51 and 100 percent of poverty at 4 percent to 6 percent of income, household income between 101 and 150 percent of poverty at 6 percent to 7 percent of income."

- "Maximum payments for gas heating service should be within the following ranges: household income between 0 and 50 percent of poverty at 5 percent to 8 percent of income, household income between 51 and 100 percent of poverty at 7 percent to 10 percent of income, household income between 101 and 150 percent of poverty at 9 percent to 10 percent of income."

- "Maximum payments for electric heating or gas heating and electric nonheating combined should not exceed the following guidelines: household income between 0 and 50 percent of poverty at 7 percent to 13 percent of income, household income between 51 and 100 percent of poverty at 11 percent to 16 percent of income, household income between 101 and 150 percent of poverty at 15 percent to 17 percent of income."[11]

This section uses the midpoint of these standards in presenting the number and percentage of CAP income-eligible households exceeding the "target energy burden." For households with electric only baseload service, the number and percentage presented includes those above 3.5 percent, 5.0 percent, and 6.5 percent, for the three groups (0 to 50 percent, 51 to 100 percent, and 101 to 150 percent of the FPL), respectively. For households with electric heating or combination electric and gas service from PECO, the targets are 10.0 percent, 13.5 percent, and 16.0 percent, respectively. For households with only gas service from PECO, the targets are 6.5 percent, 8.5 percent, and 9.5 percent, respectively.

Table III-3 shows the median energy costs and burden for all households with PECO residential service who are income-eligible for CAP and those who are income-eligible specifically for CAP Rates A/B or C. Households with electric heat have substantially lower energy expenditures and burdens than those with combination gas and electric service. CAP income-eligible households with gas and electric service have annual energy costs of $2,089, while those with electric heat reported spending $968. Households that are income-eligible for CAP Rates A/B or C with gas and electric service have annual energy costs of $1,974, and those with electric heat reported spending $914. The median energy burden for CAP income-eligible households with gas and electric service is almost twice as large as those with electric heat; the median PECO energy burdens are 18 percent and 10 percent, respectively. The median energy burdens of CAP households at or below 50 percent of the

[10] 052 Pa. Code § 69.265 – CAP Design Elements, accessed at http://www.pacode.com/secure/data/052/chapter69/s69.265.html provides a full description of these guidelines.
[11] Accessed at http://www.pacode.com/secure/data/052/chapter69/s69.265.html on March 24, 2006.

FPL are at more than five times those of households at or below 150 percent; in households with income at or below 50 percent of the FPL, combination customers have a median energy burden of 100 percent and electric heating customers have a median energy burden of 75 percent.

Table III-3
Distribution of Energy Bills and Expenditures for
CAP Income-Eligible PECO Households By Service Status

Service Status	Households Under 150% of Poverty				Households Under 50% of Poverty			
	Number of Income-Eligible Households	PECO Energy Expenditures		Median PECO Energy Burden	Number of Income-Eligible Households	PECO Energy Expenditures		Median PECO Energy Burden
		Mean	Median			Mean	Median	
Electric-Only Baseload	169,856	$866	$645	7%	50,120	$857	$645	43%
Electric-Only Heating	26,941	$1117	$968	10%	8,351	$1024	$914	75%
Combination Gas and Electric	36,805	$2472	$2089	18%	7,671	$2374	$1974	100%
Gas Only	454	$1988	$1026	13%	134	$1161	$342	69%
All Households	234,056	$1150	$774	8%	66,276	$1054	$753	55%

As shown in Table III-3, the median expenditures for both the 170,000 CAP income-eligible households and the 50,000 CAP Rate A/B or C income-eligible households with electric-only baseload service (this includes households in any of the five counties with neither gas nor electric heat from PECO) are $645. Annual costs for these households create a burden that exceeds the highest PUC target for electric-only service for over half of CAP income-eligible households. The number of households exceeding the highest PUC target is almost doubled to 93 percent when examining only those households with income at or below 50 percent of the FPL.

Of all households that are income-eligible for CAP, approximately 128,000, or 55 percent, have energy burdens that exceed the target set by the PUC for their income group and service type. Almost all households with income at or below 50 percent of the FPL have energy burdens that exceed the PUC targets. Eighty-six percent of households with electric heating exceed the PUC targets, while 96 percent of households with combination electric and gas service have annual expenditures and income resulting in a burden greater than the PUC target.

Table III-4
CAP Income-Eligible PECO Households Exceeding Target Energy Burden
By Service Status

Service Status	Households Under 150% of Poverty			Households Under 50% of Poverty		
	Number of Income-Eligible Households	Number Exceeding Target	Percent Exceeding Target	Number of Income-Eligible Households	Number Exceeding Target	Percent Exceeding Target
Electric-Only Baseload	169,856	96,461	57%	50,120	46,477	93%
Electric-Only Heating	26,941	10,502	39%	8,351	7,191	86%
Combination Gas and Electric	36,805	21,212	58%	7,671	7,330	96%
Gas Only	454	301	66%	134	102	76%
All Households	234,056	128,476	55%	66,276	61,100	92%

D. CAP Participation Rates

Overall, 45 percent of eligible households participated in PECO's CAP in 2005. Approximately 105,000 PECO customers participated in the CAP program, while 234,000 PECO customers are eligible for some level of CAP benefit.

Table III-5 describes the participation rates for each CAP Rate tier. CAP program participation is lowest amongst households with income below 25 percent of FPL. Sixteen percent of eligible households with annual income below 25 percent of the FPL participated in the CAP; however, 64 percent of households between 25 percent and 50 percent of the FPL, and 73 percent of households between 50 percent and 100 percent of the FPL participated in the CAP.

Table III-5
Participation Rate By Poverty Level

Poverty Level (Cap Tier)	2005 CAP Participants	CAP Eligible PECO Residential Households	Participation Rates
0% ≤ 25% (A, B)	6,963	42,205	16%
25% ≤ 50% (C)	15,438	24,071	64%
50% ≤ 100% (D)	56,045	76,687	73%
100% ≤ 150% (E)	26,153	91,093	29%
Total	104,599	234,056	45%

Table III-6 describes the participation rates for CAP eligible households that have been identified as having energy burdens greater than targets set forth by the PUC. CAP program participation for targeted households is lowest amongst households with income below 25 percent of FPL. Seventeen percent of eligible households with annual income below 25 percent of the FPL participated in the CAP, while three-quarters of targeted households between 25 percent and 50 percent of the FPL participated in the CAP.

Table III-6 also shows that more than 100 percent of targeted households between 50 percent and 150 percent of the FPL participated in the CAP. This may result from the structure of PECO's CAP program, which does not target customers by energy burden. Consequently, many CAP participants, especially those in higher poverty groups, may participate in CAP despite having energy burdens that fall below the targets.

Table III-6
Participation Rate for Targeted Households By Poverty Level

Poverty Level (Cap Tier)	2005 CAP Participants	CAP Eligible PECO Targeted Residential Households	Participation Rates
0% ≤ 25% (A, B)	6,963	40,567	17%
25% ≤ 50% (C)	15,438	20,533	75%
50% ≤ 100% (D)	56,045	44,739	125%
100% ≤ 150% (E)	26,153	22,637	116%
Total	104,599	128,476	81%

E. Summary of Customer Needs Assessment

PECO provides utility service to a significant portion of Pennsylvania's low-income population. Approximately 234,000 households served by PECO have income at or below 150 percent of the FPL, and around 66,000 PECO customers have household income at or below 50 percent.

This analysis indicates that 45 percent of PECO's income-eligible customers and 64 percent of PECO's CAP Rate A/B or C income-eligible customers participate in the CAP, but that only 16 percent of customers at or below 25 percent of the FPL participate. PECO has a 75 percent participation rate for targeted customers between 25 and 50 percent of the FPL, but only 17 percent of the targeted households with income at or below 25 percent of the FPL participate.

IV. CAP Participant Survey

APPRISE conducted a telephone survey with PECO's CAP Rate B and CAP Rate C customers.[12] The purpose of the customer survey was to assess CAP customer understanding, customer satisfaction, and program impact. This memo presents the methodology used to implement the customer survey, conducted in August 2006, and summarizes the findings from the 100 completed interviews.

Respondents who completed the CAP survey were enrolled in the following CAP Rates:

- CAP Rate B: Customers with household income less than or equal to 25 percent of the Federal Poverty Line (FPL) without extenuating circumstances. There were 51 CAP Rate B customers who completed the survey.

- CAP Rate C: Customers with household income between 26 and 50 percent of the FPL. There were 49 CAP Rate C customers who completed the survey.

The Customer Assistance Program survey was designed to assess the following:

- Household demographics
- Reasons for CAP participation
- Understanding of the CAP
- Financial obligations and bill payment difficulties
- Impact of the CAP on energy usage and bills
- Satisfaction with the CAP

A. *Customer Survey Methodology*

CAP participants who enrolled in the first quarter of 2006 and remained on the CAP through April 2006 were eligible for the survey. There were 185 CAP Rate B and 365 CAP Rate C participants who met these criteria. Two hundred of these eligible households were chosen for the survey sample; 100 were CAP Rate B customers and 100 were CAP Rate C customers.

The survey first asked respondents whether they were currently participating in the CAP. Respondents who reported that they were currently participating in the CAP and respondents who reported that they had previously participated in the CAP were asked to complete the survey. Customers who reported that they never participated in the CAP were deemed ineligible for the survey.

[12] Only 2 CAP Rate A customers enrolled in the time period studied and remained on the CAP through April 2006. Therefore, these customers were not included in the survey.

Survey Implementation

An advance letter was sent to all customers who were selected for the survey. This letter notified customers that they would be called to participate in the survey, explained the purpose of the survey, and provided the option to call into the phone center to complete the survey at their convenience.

APPRISE retained Braun Research to conduct the survey through its phone center. Researchers from APPRISE trained Braun's employees on the survey instrument and monitored survey implementation. Braun's manager in charge of the survey instructed interviewers how to use the computerized version of the survey to record customer responses.

APPRISE staff trained Braun employees on the customer survey in two-hour training sessions for the day and evening interviewers. Training included an explanation of the CAP, an introduction to the CAP customer population, an explanation of field codes included in the survey instrument, an overview of each question, and in-depth discussion of survey questions that required special attention.

Interviewer monitoring allowed APPRISE researchers to both listen to the way interviewers conducted surveys and see the answers they chose on the computerized data entry form. Braun's manager facilitated open communication between the monitors and interviewers, which allowed the monitors to further instruct interviewers on how to implement the survey and accurately record customer responses.

Sample Selection and Response Rates

The survey sample was designed to furnish data on CAP participants in CAP Rate B and CAP Rate C. Customers who enrolled in the past year were selected for the survey because they should remember the enrollment process and enough time had elapsed for them to observe the impact of the program.

Table IV-1 details the number of customers selected to complete the survey, and the number of completed interviews, cooperation rates, and response rates for each of the two CAP Rates. The table presents the following information for the sample:

- **Number Selected:** There were 200 CAP customers selected to complete the survey. Of the 200 CAP customers selected, 100 were CAP Rate B customers and 100 were CAP Rate C customers.

- **Unusable:** There were 42 cases deemed unusable because no one was present in the home during the survey who was able to answer questions related to the household electric bills and the CAP, or because phone numbers were busy, disconnected, or incorrect.[13] These households are not included in the denominator of the response rate or

[13] Forty-two cases were deemed unusable because phone numbers were unavailable, disconnected, or incorrect. This may be related to incorrect customer information or to interruptions in telephone service. However, we do not believe that these unusable numbers will bias the results of the survey.

the cooperation rate. They are included in the denominator of the completed interview rate.

- **Non-Interviews:** There were 27 cases classified as non-interviews because the qualified respondent refused to complete the interview, or because the respondent asked the interviewer to call back to complete the interview at a later time, but did not complete the interview during the field period. These households are included in the denominator of the cooperation rate, the response rate, and the completed interview rate.

- **Unknown Eligibility:** There were 25 cases that were determined to have unknown eligibility to complete the interview, due to answering machines, no answers, and language barriers. 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.

- **Not Eligible – Customer Reported No CAP Participation:** There were six cases that were deemed not eligible to complete the interview because the respondent did not remember participating in the CAP. These households 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.

- **Completed Interviews:** The completed interviews are households that were reached and that answered the full set of survey questions. In total, 100 interviews were completed.

- **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 interviews plus the number of non-interviews (refusals plus non-completed call backs). Overall, this survey achieved a 78 percent cooperation rate: 74 percent for CAP Rate B customers and 84 percent for CAP Rate C customers.

- **Response Rate:** The response rate is 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 and language barriers). Overall, this survey attained a 66 percent response rate: 65 percent for CAP Rate B customers and 66 percent for CAP Rate C customers.

- **Completed Interview Rate:** The completed interview rate is the percentage of households selected that completed the survey. Overall, this survey attained a 50 percent completed interview rate: 51 percent for CAP Rate B customers and 49 percent for CAP Rate C customers.

Table IV-1
Sample and Response Rates

	CAP Rate B	CAP Rate C	Total
Number selected	100	100	200
Unusable	20	22	42
Non-Interviews	18	9	27
Unknown eligibility	9	16	25
Not eligible – Customer Did Not Recall CAP Participation	2	4	6
Completed interviews	51	49	100
Cooperation rate	74%	84%	79%
Response rate	65%	66%	66%
Completed interview rate	51%	49%	50%

B. CAP Survey Findings

This section summarizes the findings from the CAP survey. Findings are grouped into the following areas:

- Demographic Characteristics
- Enrollment and Recertification
- Perception of CAP Benefits
- CAP Impact on Bill Payment
- Bill Payment Difficulty
- Expectations for Future CAP Participation
- CAP Importance and Satisfaction

Demographic Characteristics

This section examines the demographic characteristics of survey respondents. All customers were asked whether they currently participate in the CAP and whether they have ever participated in the CAP. Table IV-2 displays the responses to these questions. Ninety-seven percent reported that they are current CAP participants and three percent reported that they previously participated in the CAP.

Table IV-2
Customer-Defined CAP Participation Status

	CAP Rate B	CAP Rate C	Total
Current Participants	94%	98%	97%
Past Participants	6%	2%	3%

Table IV-3A displays the total number of household members. The mean number of household members was 2.7. Fifty-one percent of CAP Rate B participants and four percent of CAP Rate C participants reported that there was only one individual in the household.

Table IV-3A
Household Size

Number of Household Members	CAP Rate B	CAP Rate C	Total
1	51%	4%	20%
2	22%	37%	32%
3	18%	39%	32%
4	2%	8%	6%
5-8	8%	12%	11%
Mean Number of Household Members	2.0	3.0	2.7

Table IV-3B shows the percentage of respondents that have at least one vulnerable member - a disabled member, an elderly member (60 years of age or older), or one or more children (18 years of age and younger). CAP Rate C participants are more likely than CAP Rate B participants to have at least one vulnerable member in their household. CAP Rate C participants are also more likely to have at least one child in their household.

Table IV-3B
Percent with Vulnerable Household Members

	CAP Rate B	CAP Rate C	Total
% With At Least One Vulnerable Member	73%	94%	86%
Elderly	6%	16%	13%
Children 18 or Younger	33%	80%	64%
Children 5 or Younger	14%	33%	26%
Medical Condition Requiring Additional Use of Electricity or Gas	33%	47%	42%
Disabled	43%	47%	46%

Respondents were asked whether they own or rent their home. Table IV-4 shows that 42 percent of respondents own their homes and 56 percent of respondents rent their homes.

Table IV-4
Home Ownership

	CAP Rate B	CAP Rate C	Total
Own	45%	41%	42%
Rent	51%	59%	56%
Living with Friend Or Relative	4%	0%	1%

Respondents were asked to report the highest level of education attained by any member of their household. Table IV-5 shows that more than half of all respondents reported that they have a high school diploma or equivalent. Thirty-one percent reported some college and five percent reported that they had a Bachelor's Degree.

Table IV-5
Highest Level of Education Obtained By Any Household Member

	CAP Rate B	CAP Rate C	Total
Less Than High School	2%	8%	6%
High School Diploma or Equivalent	51%	55%	54%
Some College/Associates Degree	35%	29%	31%
Bachelor's Degree	8%	4%	5%
Master's Degree or Higher	2%	0%	1%
Vocational Training	2%	2%	2%
Don't Know	0%	2%	1%

Respondents were asked to report their marital status. Table IV-6 shows that 11 percent of respondents are married. Forty-seven percent of respondents are single and have never been married.

Table IV-6
Marital Status

	CAP Rate B	CAP Rate C	Total
Married	10%	12%	11%
Single, Separated	14%	22%	20%
Single, Divorced	26%	12%	17%
Single, Never Married	43%	49%	47%
Widow/Widower	4%	4%	4%
Don't Know	2%	0%	1%
Refused	2%	0%	1%

Respondents were asked to report on several sources of income and benefits received by members of their household.

- Employment income from salaries and wages, or self-employment income from a business or farm.
- Retirement income, including Social Security, pensions, and other retirement funds.
- Public assistance benefits from TANF, SSI, or general assistance or public assistance.
- Hardship funds from PECO's Matching Energy Assistance Fund (MEAF).

- Non-cash benefits, including food stamps, subsidized health care programs, public housing, and energy assistance programs.

Table IV-7 shows that 16 percent of respondents reported that they received employment income, six percent reported that they received retirement income and 53 percent reported that they received Temporary Assistance for Needy Families, Supplemental Security Income, or public assistance.

Table IV-7
Type of Income Received
Prior 12 Months

	CAP Rate B	CAP Rate C	Total
Wages or Self-Employment Income	20%	14%	16%
Retirement Income	6%	6%	6%
TANF/SSI/Public Assistance	49%	55%	53%

Respondents were asked to report what types of assistance and benefits they received in the past 12 months. Table IV-8 shows that 66 percent of respondents received Food Stamps and 64 percent of respondents received LIHEAP benefits in the past 12 months. Twenty-six percent of respondents received Public/Subsidized housing and 26 percent of respondents received Adult Basic, Children's Health Insurance Program, or another state health care program. Twenty percent of respondents reported that they received Medicare benefits in the past 12 months. Three percent of respondents reported benefits from PECO's MEAF in the past year.

Table IV-8
Type of Assistance/Benefits Received
Prior 12 Months

	CAP Rate B	CAP Rate C	Total
Food Stamps	69%	65%	66%
LIHEAP	63%	65%	64%
Public/Subsidized Housing	24%	27%	26%
Adult Basic, Children's Health Insurance Program, State Health Care Program	26%	27%	26%
Medicare	14%	22%	20%
MEAF	4%	2%	3%

Respondents were asked if anyone in the household had been unemployed and looking for work in the past twelve months. Table IV-9 shows that 55 percent of respondents reported that at least one person in their household was unemployed and looking for work in the past 12 months. This is one indicator that households may be temporarily in this lowest income group while searching for employment.

Table IV-9
Unemployed, Looking For Work
Prior 12 Months

	CAP Rate B	CAP Rate C	Total
Yes	51%	57%	55%
No	49%	43%	45%

Table IV-10 displays the respondents' reported annual household income. Eighty-eight percent of respondents reported annual incomes below $15,000. CAP Rate B participants were more likely to report annual incomes less than $5000.

Table IV-10
Annual Household Income

	CAP Rate B	CAP Rate C	Total
≤$5,000	49%	20%	30%
$5,001-$10,000	29%	51%	44%
$10,001 - $15,000	10%	16%	14%
$15,001-$20,000	4%	2%	3%
≥$20,001	2%	6%	5%
Don't Know	4%	4%	4%
Refused	2%	0%	1%

Table IV-11 shows that 42 percent of respondents reported that they received cash assistance from a family member or friend to make ends meet and five percent received dwelling assistance. CAP Rate C participants are more likely than CAP Rate B participants to have received dwelling assistance from a family member or friend to make ends meet.

Table IV-11
Cash or Dwelling Assistance from Family Member or Friend to Make Ends Meet
Prior 12 Months

	Cash Assistance			Dwelling Assistance		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Yes	45%	41%	42%	0%	8%	5%
No	55%	59%	58%	100%	92%	95%

Households below 50 percent of the poverty level have very low income, as seen in table IV-10. To understand whether these low incomes are a temporary condition, respondents were asked to compare their current annual income to their annual income in the previous year. Table IV-12 shows that 18 percent of respondents reported that their current annual income is higher than their income in the year before, 34 percent of respondents reported that their current annual income is less than their income in the year before, and 48 percent reported that their current income is about the same as their income in the previous year.

Table IV-12
Current Annual Income
Compared to Previous Year's Annual Income

	CAP Rate B	CAP Rate C	Total
More	16%	18%	18%
Less	41%	31%	34%
About the Same	43%	51%	48%

Respondents who reported that their incomes were higher than the previous year were asked why their income increased. Most of these respondents reported that their income increased because of income from a job, disability benefits, or Social Security. Respondents who reported that their current annual incomes were less than their annual income in the previous year were asked to report the source of the income change. Most of these respondents said it was due to unemployment or working fewer hours. A few respondents reported that it was due to a medical condition.

All respondents were asked if anyone in the household had left the workforce or reduced the numbers of hours worked in the past 12 months. Table IV-13 shows that 36 percent of respondent households have at least one person that has left the workforce or reduced the numbers of hours worked.

Table IV-13
Person Left Workforce/Reduced Number of Hours Worked
Prior 12 Months

	CAP Rate B	CAP Rate C	Total
Yes	43%	33%	36%
No	57%	67%	64%

Respondents who reported that they left the workforce or reduced their hours of work were asked why they did so. Table IV-14 shows that 59 percent of respondents said that they or someone in their household had left the workforce or reduced the numbers of hours worked because they lost their job or were laid off from their job. A number of participants also reported a medical condition, a pregnancy, or their return to school as a reason why they had left the workforce or reduced the numbers of hours worked. Answers total more than 100 percent because respondents could provide more than one answer.

Table IV-14
Reasons Person Left the Workforce/Reduced Numbers of Hours Worked

	CAP Rate B[1]	CAP Rate C[2]	Total[3]
Lost Job/Laid Off From Job	55%	63%	59%
Became Disabled	27%	13%	18%
Medical Condition	9%	13%	11%
Pregnancy	9%	6%	7%
Went Back to School/Became Student	0%	6%	4%

[1]22 respondents [2]16 respondents [3]36 respondents

Table IV-15 displays the respondents' income projections for next year. Forty-nine percent of respondents reported that their annual incomes next year would be higher than this year's annual income, five percent expected that their annual incomes next year would be lower, and 36 percent reported that their annual incomes next year would be about the same as their current annual income.

Table IV-15
Next Year's Income Projections

	CAP Rate B	CAP Rate C	Total
Higher	41%	53%	49%
Lower	4%	6%	5%
About the Same	41%	33%	36%
Don't Know	14%	8%	10%

One reason that households may have income below 50 percent of the poverty level is that they are attending school, and they are not working full time. Table IV-16 shows that ten percent of CAP Rate B and two percent of CAP Rate C respondents reported that there was an adult full-time student in the household.

Table IV-16
Presence of Adult Full-Time Students

	CAP Rate B	CAP Rate C	Total
Yes	10%	2%	5%
No	90%	98%	95%

CAP Enrollment and Recertification

This section examines CAP enrollment and recertification. Table IV-17 shows that respondents were most likely to report that they had heard about the CAP from a PECO representative or a friend or relative. A number of participants also reported that they had heard about the program from a social service or government agency, a PECO bill or flyer, another energy assistance program, or an unspecified PECO collections representative. Answers total more than 100 percent because respondents could provide more than one answer.

Table IV-17
How Customers Learned About the CAP

	CAP Rate B	CAP Rate C	Total
PECO Representative	32%	26%	28%
Friend or Relative	20%	25%	23%
PECO Bill/Flyer/Letter/Newsletter	8%	14%	12%
Social Service or Government Agency	14%	10%	11%
Customer Contacted PECO About the Program	14%	8%	10%
PECO Contacted Customer About the Program	4%	10%	8%
Other Energy Assistance Program/Service	6%	4%	5%
Participated in Program Previously	2%	2%	2%
PECO Automatically Enrolled	0%	2%	1%
Community Workshop	2%	0%	1%
TV/Internet/Radio Advertisements	2%	0%	1%
Other	6%	4%	5%
Don't Know	0%	2%	1%

Respondents were asked why they enrolled in the CAP. Table IV-18 shows that 52 percent of the respondents reported that they enrolled in the CAP to reduce their energy bills. Thirty-seven percent of respondents said that they enrolled because they were low-income, had a fixed-income, or because of unemployment. Respondents also said they enrolled because they needed general financial help and to reduce arrearages. Answers total more than 100 percent because respondents could provide more than one answer.

Table IV-18
Reasons for Enrolling in the CAP

	CAP Rate B	CAP Rate C	Total
Reduce Energy Bills	53%	51%	52%
Low-Income/Fixed Income/Unemployment	37%	37%	37%
General Financial Help	2%	14%	10%
Reduce Arrearages	10%	4%	6%
Told to Enroll/Not Given A Choice	2%	0%	1%
Maintain Utility Service	2%	0%	1%
Other	4%	2%	3%

Respondents were asked how difficult it was to enroll in the CAP. Table IV-19 shows that 79 percent of respondents reported that the enrollment process was not too difficult or not at all difficult. Sixteen percent said it was somewhat difficult and six percent said it was very difficult.

Table IV-19
Difficulty of CAP Enrollment

	CAP Rate B	CAP Rate C	Total
Very Difficult	10%	4%	6%
Somewhat Difficult	14%	16%	16%
Not Too Difficult	22%	31%	28%
Not At All Difficult	55%	49%	51%

Respondents who said that the enrollment process was very or somewhat difficult were asked which parts of the process were most difficult. Table IV-20 shows that 44 percent of these respondents reported that waiting for the application or enrollment and providing proof of income were the most difficult parts of enrollment. Other respondents cited providing proof of income, completing the application, and making the required payments to get on the program as other difficult parts of the enrollment process. Answers total more than 100 percent because respondents could provide more than one answer.

Table IV-20
Reasons for Difficult CAP Enrollment

	CAP Rate B[1]	CAP Rate C[2]	Total[3]
Waiting for Application/Enrollment	50%	40%	44%
Providing Proof of Income	8%	20%	16%
Completing the Application	0%	10%	6%
Making Required Payments to Get on Program	8%	0%	3%
Other	8%	20%	16%
None	0%	10%	6%
Don't Know	8%	10%	9%

[1]12 respondents [2]10 respondents [3]21 respondents

There has been a concern that customers were asked to provide income documentation more than once during the enrollment process. To address this issue, respondents were asked whether they had to provide income documentation more than once during enrollment. Table IV-21 shows that 35 percent of respondents reported that they had to provide income information more than one time during the enrollment process.

Table IV-21
Provided Income Information More Than Once During the Enrollment Process

	CAP Rate B	CAP Rate C	Total
Yes	31%	37%	35%
No	63%	61%	62%
Don't Know	6%	2%	3%

Respondents were asked how well their questions about the program and about bill payments were answered during enrollment. Table IV-22 shows that the vast majority of respondents reported that their answers about both the program and bill payments were answered very or somewhat well.

Table IV-22
Questions about the Program and Bill Payment Answered During Enrollment

	Program			Bill Payments		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Very Well	61%	69%	67%	63%	69%	67%
Somewhat Well	35%	25%	28%	20%	25%	23%
Not at All Well	4%	2%	3%	12%	2%	5%
Did Not Have Questions	0%	2%	1%	6%	0%	2%
Don't Know	0%	2%	1%	0%	4%	3%

Respondents were asked whether they had ever re-certified for the CAP. Table IV-23 shows that 40 percent of respondents reported that they had re-certified for the CAP.

Table IV-23
Re-Certified for CAP

	CAP Rate B	CAP Rate C	Total
Yes	39%	41%	40%
No	57%	51%	53%
Don't Know	4%	8%	7%

Respondents who said that they had re-certified for the CAP were asked about the difficulty of re-certifying for the CAP. Table IV-24 shows that 93 percent of respondents reported that the re-certification process was not too difficult or not at all difficult.

Table IV-24
Difficulty of CAP Re-Certification

	CAP Rate B[1]	CAP Rate C[2]	Total[3]
Very Difficult	0%	0%	0%
Somewhat Difficult	20%	0%	7%
Not Too Difficult	20%	40%	34%
Not At All Difficult	55%	60%	59%
Don't Know	5%	0%	2%

[1]20 respondents [2]20 respondents [3]40 respondents

Respondents who said that the re-certification process was somewhat difficult were asked which parts of the process were most difficult. These respondents said that completing the application, providing the required information and understanding the application were the most difficult parts of re-certifying.

There has been a concern that customers have been asked to provide income documentation more than once during the re-certification process. Respondents were asked whether they were required to provide income documentation more than once during re-certification. Table IV-25 shows that 27 percent of respondents reported that they had to provide income information more than one time during the re-certification process.

Table IV-25
Provided Income Information More Than Once
During the Re-Certification Process

	CAP Rate B[1]	CAP Rate C[2]	Total[3]
Yes	30%	25%	27%
No	55%	70%	65%
Don't Know	15%	5%	8%

[1]20 respondents [2]20 respondents [3]40 respondents

Perception of CAP Benefits

This section examines how participants perceive the benefits of the CAP. CAP Rate B participants receive an 85 percent discount on the first 500 kWh they consume and CAP Rate C participants receive a 75 percent discount. Respondents were asked what percent discount they received. Table IV-26 shows that 88 percent of respondents reported that they did not know what discount they received on their electric bills. Only five percent reported a discount between 75 and 90 percent. This shows that respondents do not have a good understanding of the CAP discount.

Table IV-26
Reported Percent Discount Received

	CAP Rate B	CAP Rate C	Total
10%-25%	4%	2%	3%
50%	4%	4%	4%
75-90%	8%	4%	5%
Don't Know	84%	90%	88%

Respondents were asked what they felt were the benefits of the CAP. Table IV-27 shows the responses to this question. The largest share of respondents, 45 percent, said that lower energy bills were a benefit of the CAP. Respondents also considered budget billing and the reduction of arrearages to be program benefits. Other benefits cited by participants were maintaining utility service, receiving general financial help, and help affording other bills.

Table IV-27
Perception of Program Benefits

	CAP Rate B	CAP Rate C	Total
Lower Energy Bills	41%	47%	45%
Budget Billing/Even Payments	8%	18%	15%
Reduce Arrearages	8%	14%	15%
Maintaining Utility Service	10%	10%	10%
General Financial Help	18%	6%	10%
Helps Affords Other Bills	8%	2%	4%
Other	8%	6%	7%
No Benefits	2%	2%	2%
Don't Know	6%	4%	5%

After the unprompted question about Program benefits, respondents were asked specifically whether they felt maintaining their utility service, lower energy bills, and reduced arrearages were benefits of participating in the CAP. Table IV-28 shows that the vast majority of respondents agreed that all three were benefits of the CAP.

Table IV-28
Perception of Program Components as Benefits

	CAP Rate B	CAP Rate C	Total
Maintaining Utility Service	94%	96%	95%
Lower Energy Bills	98%	92%	94%
Reduced Arrearages	82%	80%	81%

Respondents were then asked what they felt was the most important benefit of the program. Table IV-29 shows that 36 percent of respondents said that lower energy bills was the most important benefit of the program. Thirty-two percent of respondents said that maintaining their utility service was the most important benefit of the program. Some respondents also reported good customer service, general financial help, budget billing, and the reduction of arrearages as the most important benefit of the program.

Table IV-29
Most Important Benefit

	CAP Rate B	CAP Rate C	Total
Lower Energy Bills	28%	41%	36%
Maintaining Utility Service	29%	33%	32%
Good Customer Service	12%	6%	8%
General Financial Help	16%	4%	8%
Budget Billing/Even Payments	8%	6%	7%
Reduce Arrearages	4%	4%	4%
Other	2%	0%	1%
Don’t Know	2%	6%	5%

CAP Impact on Bill Payment

This section examines the CAP’s impact on respondents’ bill payment behavior. Table IV-30 displays the amount of money that respondents reported that they save on a typical monthly gas bill in the winter months as a result of the CAP. Twenty-six percent of respondents said that they saved between $26 and $50. Twenty-two percent of respondents said that they saved between $51 and $100. Twelve percent of respondents said that they saved $101 or more.

Table IV-30
Savings on Monthly PECO Bills in Winter Months
While Enrolled in CAP

	CAP Rate B	CAP Rate C	Total
$0	0%	4%	3%
$1-$25	2%	4%	3%
$26-$50	20%	29%	26%
$51-$100	26%	20%	22%
$101 or more	6%	14%	12%
Don’t Know	47%	29%	35%

Respondents were asked what they were required to do to obtain arrearage forgiveness. As seen in Table IV-31, 21 percent of respondents said that they needed to pay their bill. Some customers noted that they were required to pay their bill for six months. This relates to the six month bill payment requirement for arrearage forgiveness. Thirty-two percent of respondents said that they did not know what they were responsible for in order to obtain arrearage forgiveness.

Table IV-31
Understanding of Program Responsibilities to Gain PECO Forgiveness

	CAP Rate B	CAP Rate C	Total
Pay Bill	18%	22%	21%
Pay Bill on Time for Six Consecutive Months	12%	6%	8%
Pay Bill For Six Consecutive Months	0%	10%	7%
Pay Bill on Time for a Year	4%	6%	7%
Contact PECO	0%	8%	5%
Pay All Bills over a Six Month Period	8%	4%	5%
Apply for LIHEAP	8%	4%	5%
No Arrearages	8%	4%	5%
Report Current Income to PECO	0%	2%	1%
Other	2%	8%	6%
Don't Know	43%	27%	32%

Respondents who did not report that they had no arrearages were asked if the forgiveness of money owed makes them more likely to pay their PECO bill. Table IV-32 shows that 88 percent of respondents reported that the forgiveness of money owed makes them more likely to pay their PECO bill.

Table IV-32
Forgiveness of Money Owed Makes Bill Payment More Likely for CAP Participants with Arrearages

	CAP Rate B[1]	CAP Rate C[2]	Total[3]
Yes	94%	85%	88%
No	4%	11%	9%
Don't Know	2%	4%	4%

[1]47 respondents [2]47 respondents [3]95 respondents

Table IV-33 displays respondents' views on the difficulty of PECO bill payment prior to enrollment and during CAP participation. Sixty-two percent of respondents said that it was very difficult to pay their bills prior to CAP enrollment and only eleven percent of respondents said that it was very difficult to pay their PECO bill while participating in the

CAP. CAP Rate B participants were more likely to find bill payment very difficult both prior to enrollment and while participating in the CAP.

Table IV-33
Difficulty of PECO Bill Payment
Prior to Enrollment and While Enrolled

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Very Difficult	73%	57%	62%	20%	6%	11%
Somewhat Difficult	16%	35%	28%	16%	33%	27%
Not Too Difficult	6%	6%	6%	31%	47%	42%
Not At All Difficult	6%	0%	2%	33%	14%	21%
Don't Know	0%	2%	1%	0%	0%	0%

Respondents were asked if there was ever a time prior to enrollment and during program participation when they could not pay their PECO bill. Table IV-34 shows that 81 percent of respondents could not pay their PECO bill at least once prior to enrollment, compared to 38 percent while participating in the CAP.

Table IV-34
Inability to Pay Bill Prior to Enrollment and While Enrolled

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Yes	78%	82%	81%	35%	39%	38%
No	20%	16%	17%	65%	61%	62%
Don't Know	2%	2%	2%	0%	0%	0%

Respondents who reported that they were unable to pay their bill before participating in the CAP and after enrollment in the CAP were asked if they spoke to a customer service representative about not being able to pay their bill. Table IV-35 shows that 88 percent of respondents spoke to a customer service representative about their inability to pay their PECO bill prior to enrolling in the CAP, compared to 59 percent after enrolling in the CAP.

Table IV-35
Spoke to a Customer Service Representative about Inability to Pay Bill

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
Yes	90%	88%	88%	61%	58%	59%
No	8%	10%	9%	39%	42%	41%

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
Don't Know	3%	3%	3%	0%	0%	0%

[1]40 respondents [2]40 respondents [3]81 respondents [4]18 respondents [5]19 respondents [6]38 respondents

Respondents who reported that they spoke to a customer service representative about their inability pay their bill prior to enrollment and during enrollment in the CAP were then asked if they were offered a payment arrangement. Table IV-36 shows that 80 percent of respondents were offered a payment arrangement prior to participating in the CAP, and 64 percent while participating in the CAP.

Table IV-36
Offered a Payment Arrangement

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
Yes	75%	83%	80%	64%	64%	64%
No	25%	9%	14%	36%	36%	36%
Don't Know	0%	9%	6%	0%	0%	0%

[1]36 respondents [2]35 respondents [3]71 respondents [4]11 respondents [5]11 respondents [6]22 respondents

Respondents were asked how many payment arrangements they were offered. Table IV-37 shows that 14 percent weren't offered any payment arrangements, 25 percent of respondents were offered one payment arrangement, and 18 percent of respondents were offered two payment arrangements prior to enrolling in the CAP. While enrolled, 36 percent of respondents weren't offered any payment arrangements, 36 percent were offered one payment arrangement, and 14 percent were offered two payment arrangements.

Table IV-37
Number of Payment Arrangements Offered

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
0	25%	9%	14%	36%	36%	36%
1	17%	29%	25%	36%	36%	36%
2	11%	23%	18%	9%	18%	14%
3	11%	9%	10%	0%	0%	0%
≥4	6%	11%	10%	18%	0%	5%
Don't Know	31%	20%	24%	0%	9%	5%

[1]36 respondents [2]35 respondents [3]71 respondents [4]11 respondents [5]11 respondents [6]22 respondents

Respondents who reported that they received a payment arrangement were asked to describe the affordability of their payment arrangement. Table IV-38 shows that 57 percent of respondents found their pre-CAP payment arrangement affordable. Eighty-six percent of respondents found their CAP payment arrangement affordable.

Table IV-38
Payment Arrangement Was Affordable

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
Yes	67%	52%	57%	86%	86%	86%
No	26%	48%	41%	14%	14%	14%
Don't Know	7%	0%	2%	0%	0%	0%

[1]27respondents [2]29 respondents [3]57 respondents [4]7 respondents [5]7 respondents [6]14 respondents

Bill Payment Difficulty

Payment-troubled customers may not pay their PECO bills in full, or they may pay their PECO bills at the expense of other household necessities, such as food, mortgage or rent, or medical care. This section examines the financial difficulties that survey respondents reported. Respondents were asked to report whether they had to forego paying for the following expenses prior to enrolling in the CAP and while enrolled in the CAP:

- Food
- Medicine
- Medical or Dental Service
- Mortgage or rent
- Telephone or Cable
- Credit Card or Loan
- Car Payment
- Child Care

Table IV-39 shows that respondents were less likely to report that they had to forego or delay spending on these other bills while they were enrolled in the CAP than they were prior to participating in the program.

Table IV-39
Forgone Household Bills

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Food	55%	67%	63%	22%	20%	21%
Medicine	43%	43%	43%	20%	20%	20%
Medical or Dental Service	51%	43%	46%	24%	22%	23%
Mortgage or Rent	47%	55%	52%	14%	22%	20%
Telephone or Cable	59%	69%	66%	24%	51%	42%

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Credit Card or Loan	37%	37%	37%	14%	20%	18%
Car Payment	14%	12%	13%	8%	6%	7%
Child Care	12%	14%	13%	6%	16%	13%

Respondents were asked whether their PECO bill amounts had changed while they participated in the CAP. Table IV-40 shows that 68 percent of the respondents said that their PECO bills were lower than they were before participating in the Program, 11 percent said that their PECO bills were higher and 16 percent said that their PECO bill had not changed.

Table IV-40
Current PECO Bill As Compared to Bill Prior to Enrollment

	CAP Rate B	CAP Rate C	Total
Lower	75%	65%	68%
Higher	10%	12%	11%
No Change	14%	16%	16%
Don't Know	2%	6%	5%

Respondents were also asked whether their energy usage had changed while they participated in the CAP. Table IV-41 shows that 34 percent reported that their energy usage was lower and 19 percent reported that their energy usage was higher. Forty-one percent of respondents reported no change in their energy usage while they participated in the CAP.

Table IV-41
Current Energy Usage as Compared to Usage Prior to Enrollment

	CAP Rate B	CAP Rate C	Total
Lower	29%	37%	34%
Higher	20%	18%	19%
No Change	45%	39%	41%
Don't Know	6%	6%	6%

Respondents who reported an increase in their energy usage while participating in the CAP were asked why it had increased. Respondents were likely to attribute their increase in energy usage to using an air conditioner or the hot weather. Respondents who reported a decrease in their energy usage while participating in the program were asked why it had decreased. Respondents were likely to attribute their energy usage decrease to their own efforts to reduce their energy usage. Respondents also reported reduced energy use, weatherization/LIURP, a decrease in family size, and other services received.

Respondents were asked whether there was a time when they could not use their main source of heat for one or more of the following reasons:

- Their heating system was broken and they were unable to pay for its repair or replacement.
- The utility company discontinued their electricity service because they were unable to pay their bill.
- The utility company discontinued their gas service because they were unable to pay their bill.

Table IV-42 shows that respondents were more likely to not use their main source of heat for one of the above reasons prior to enrolling in the CAP. Thirty-three percent of respondents reported that they were not able to use their main source of heat because their heating system was broken in the year prior to enrolling in the CAP and 23 percent of respondents reported that they faced this problem while they were enrolled in the program.

Twenty-two percent of respondents reported that they were not able to use their main source of heat because their gas service was discontinued in the year prior to enrolling in the program and nine percent of respondents reported experiencing this problem while enrolled in the program.

Twenty-three percent of respondents reported that they were not able to use their main source of heat because their electric service was discontinued in the year prior to enrolling in the CAP and four percent of respondents reported that they faced this problem while enrolled in the program.

Table IV-42
Reasons for Inability to Use Main Source of Heat

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Heating System	37%	31%	33%	28%	20%	23%
Gas Service Discontinued	18%	25%	22%	10%	8%	9%
Electricity Service Discontinued	24%	22%	23%	8%	2%	4%

Respondents were asked whether they used their kitchen stove or oven to provide heat in the past year, a dangerous practice that is sometimes used by low-income customers who cannot afford to pay their gas bills or service their heating systems. Table IV-43 shows that 45 percent of respondents reported that they used their kitchen stove or oven to provide heat in the year prior to enrolling in the CAP and 15 percent of respondents reported that they did so while participating in the CAP.

Table IV-43
Use of Oven or Stove to Provide Heat

	Prior to Enrollment			While Enrolled		
	CAP Rate B	CAP Rate C	Total	CAP Rate B	CAP Rate C	Total
Yes	37%	49%	45%	16%	14%	15%
No	63%	49%	54%	84%	86%	85%
Don't Know	0%	2%	1%	0%	0%	0%

Respondents who reported that they could not use their main source of heat because their gas service was discontinued were asked if they used more electricity to heat their home. Table IV-44 shows that approximately 70 percent of respondents reported that they used more electricity to heat their home when they could not use their main source of heat.

Table IV-44
Use of More Electricity to Heat Home

	Prior to Enrollment			While Enrolled		
	CAP Rate B[1]	CAP Rate C[2]	Total[3]	CAP Rate B[4]	CAP Rate C[5]	Total[6]
Yes	67%	67%	67%	60%	75%	69%
No	33%	33%	33%	40%	25%	31%

[1]9 respondents [2]12 respondents [3]22 respondents [4]5 respondents [5]4 respondents [6]9 respondents

Respondents who reported that they could not use their main source of heat because their gas service was discontinued but did not use more electricity to heat their home were then asked how they heated their home. Respondents reported that they used a kerosene heater, no heater, or a fireplace. These are safety hazards that PECO should be concerned about, as they may result in fires or other dangerous conditions.

Respondents were asked if they need additional assistance to pay their energy bill. Table IV-45 shows that 56 percent of respondents reported that they need additional assistance to pay their energy bills. CAP Rate C participants were more likely than CAP Rate B participants to report that they need additional assistance to pay their energy bill.

Table IV-45
Need Additional Assistance to Pay Energy Bill

	CAP Rate B	CAP Rate C	Total
Yes	45%	61%	56%
No	55%	39%	44%

Respondents were asked if they need additional assistance to pay other household bills. Table IV-46 shows that 57 percent of respondents reported that they needed additional assistance to pay other household bills.

Table IV-46
Need Additional Assistance to Pay Other Household Bills

	CAP Rate B	CAP Rate C	Total
Yes	57%	57%	57%
No	43%	43%	43%

Expectations for Future CAP Participation

This section examines customers' expected future participation. Respondents were asked how likely they were to continue participating in the CAP. Table IV-47 shows that 93 percent of respondents said that it is very likely that they will continue to participate in the CAP.

Table IV-47
Likelihood of Continued Participation

	CAP Rate B	CAP Rate C	Total
Very Likely	94%	92%	93%
Somewhat Likely	4%	6%	5%
Not Too Likely	0%	2%	1%
Not At All Likely	0%	0%	0%
Don't Know	2%	0%	1%

Table IV-48 shows how long the respondents expect to participate in the CAP. Sixty percent of respondents reported that they expected to participate in the CAP as long as they are low-income or as long as they need assistance. Respondents also stated that they expected to remain on the CAP as long as they can or until the program ends.

Table IV-48
Expected Length of Participation

	CAP Rate B	CAP Rate C	Total
< 6 months	2%	0%	1%
6 - 12 Months	8%	2%	4%
More Than 12 Months	6%	0%	2%
Until the Program Ends	10%	12%	11%
As Long As I Am Low-Income/ I Need Assistance	53%	63%	60%
As Long as I Can	6%	6%	6%
Unspecified Short Period of Time	4%	0%	1%
Don't Know	12%	16%	15%

CAP Importance and Satisfaction

This section examines customers' satisfaction with the CAP. Table IV-49 displays how important the CAP has been in meeting participants' needs. Overall, 91 percent of respondents reported that the CAP has been very important in meeting their needs.

Table IV-49
Importance of CAP in Meeting Participants' Needs

	CAP Rate B	CAP Rate C	Total
Very Important	88%	92%	91%
Somewhat Important	10%	2%	5%
Of Little Importance	0%	2%	1%
Not at All Important	0%	0%	0%
Don't Know	2%	4%	3%

Respondents were asked how satisfied they are with the CAP. Ninety-six percent of respondents reported that they are very or somewhat satisfied with the Program.

Table IV-50
Overall Satisfaction with CAP

	CAP Rate B	CAP Rate C	Total
Very Satisfied	77%	82%	80%
Somewhat Satisfied	20%	14%	16%
Somewhat Dissatisfied	2%	2%	2%
Very Dissatisfied	2%	0%	1%
Don't Know	0%	2%	1%

Table IV-51 shows respondents' recommendations for program improvement. Thirteen percent of respondents recommended improvements in program outreach while nine percent of respondents recommended an increase in program benefits. Other recommendations included improving the enrollment process, providing better customer service, providing energy efficiency education, and resuming utility service that had been discontinued. Answers total more than 100 percent because respondents could provide more than one answer.

Table IV-51
Recommendations for Improvements to the CAP

	CAP Rate B	CAP Rate C	Total
Better Program Outreach	20%	10%	13%
Increase Program Benefits	8%	10%	9%
Improve Enrollment Process	8%	6%	7%
Better Customer Service	4%	6%	5%
Provide Energy Efficiency Education	0%	4%	3%
Resume Service	4%	0%	1%
No Recommendations	88%	90%	89%
Other	0%	4%	3%
Don't Know	8%	6%	7%

C. Summary of CAP Survey Findings

Key findings from the customer survey are summarized below.

- *Demographic Characteristics:* Households that participate in CAP Rate B and CAP Rate C were likely to have at least one vulnerable member. Overall, 86 percent of respondents had at least one vulnerable member. Thirteen percent had an individual over the age of 65, 64 percent had at least one child under the age of 18, 46 percent had a disabled individual and 42 percent had someone who required the use of electricity or gas for medical reasons in their household.

  Only 16 percent of respondents reported that they earned any wages from employment and six percent of respondents reported that they received retirement income in the year preceding the survey. Conversely, 53 percent reported that they received public assistance, and 66 percent reported that they received food stamps.

  There were some indicators that households may temporarily be in a situation where there income is below 50 percent of the FPL. Fifty-five percent reported that someone in the home had been unemployed and looking for work in the past twelve months. Thirty-four percent reported that their income was less than it had been the previous year, compared to 18 percent who said it was higher than it had been the previous year. Thirty-six percent said that there was someone in the household who had left the workforce in the past twelve months. Most of these were due to a layoff or a medical condition. Forty-nine percent projected that they would have higher income the next year, compared to five percent who projected lower income, and 36 percent who projected that their income would be about the same.

- *Customer Assistance Program Outreach:* Twenty-eight percent of respondents reported that they heard about the CAP from a PECO representative. Other respondents reported that they heard about the CAP through a friend or relative, a PECO bill or flyer, or a social service or government agency.

- *Reasons for CAP Enrollment:* Fifty-two percent of respondents reported that they enrolled in the CAP to reduce their energy bills. Thirty-seven percent of respondents enrolled because they were low-income, had a fixed-income, or because of unemployment. Other respondents reported that they enrolled for general financial help or to reduce their arrearages.

- *Ease of Program Enrollment and Re-Certification:* The majority of respondents reported that Program enrollment and re-certification were generally not too difficult. However, 35 percent of respondents reported that they had to provide their income information during enrollment more than once.

- *Knowledge of CAP Benefits:* When asked to report what their responsibility was in order to obtain arrearage forgiveness, 32 percent of the respondents reported that they did not know. Twenty-one percent of respondents reported that they understood they had to pay their bill. Other respondents reported that their responsibility was to pay their bill on time for six consecutive months, pay their bill for six consecutive months, or pay their bill on time for a year.

  When asked to describe CAP benefits, respondents were most likely to refer to lower energy bills, budget billing, reducing arrearages, maintaining their utility service, and general financial help. Thirty-six percent of respondents identified lower energy bills as the most important benefit and 32 percent of respondents identified maintaining their utility service as the most important benefit. However, respondents were unlikely to know the percentage discount that the CAP provided.

- *CAP Impact on Bill Payment:* Twenty-six percent of respondents reported that they save $26 to $50 on a monthly PECO bill through the CAP program. Twenty-two percent reported that they save $51 to $100 and 12 percent reported that they save $101 or more.

  Respondents were asked how difficult it was for them to pay their bills prior to participating in the CAP and while participating in the CAP. Sixty-six percent of respondents reported that it was very difficult to pay their bills prior to CAP enrollment and only 11 percent reported that it was difficult to pay their bills while enrolled in the program. Fifty-six percent of respondents felt that they need additional assistance to pay their energy bills.

- *Financial Obligations and Bill Payment Difficulties:* Respondents were asked whether they had foregone or delayed spending on non-energy bills such as food, medicine, medical or dental service, mortgage or rent, telephone or cable, loan or credit card, car payments, and child care, before participating in the CAP and while participating in the CAP. Respondents were less likely to report that they had foregone or delayed these other bills while enrolled in the CAP than they were prior to participating in the Program.

For example, 43 percent said that they had delayed expenditures on medicine prior to enrolling in the CAP, compared to 20 percent who said they had delayed this expenditure while participating in the CAP.

- *Participants' Expectations for Future CAP Participation:* Ninety-eight percent of respondents reported that they were very or somewhat likely to continue to participate in the CAP and 60 percent of respondents said that they would continue to participate as long as they were eligible.

- *General Evaluation of Program Benefits:* Ninety-six percent of respondents reported that the CAP has been very or somewhat important in helping them to meet their needs. Ninety-six percent of respondents said that they were somewhat or very satisfied with the Program.

V. CAP Impacts Analysis

PECO provided APPRISE with household demographic data, CAP participation data, billing and payment data, and account balance data for 2005 and 2006 CAP participants. APPRISE used the data to analyze the impacts of the CAP on affordability, bill payment, account balances, and energy assistance. This section of the report describes the goals of the data analysis, the methodology that was used, and the results of the analyses.

A. Goals

The purpose of the data analysis is to develop quantifiable measures of CAP participant household demographics and account status, and to measure the impact of the Program. Below we describe the goals of the data analysis and the data that were used to conduct the analysis.

- *Universal Services Program Population Characteristics*: We examine the demographic and account characteristics of the CAP participants and the comparison group used in the analyses. Available PECO data allows us to examine whether there is an elderly individual in the household, whether there is a child in the household, annual household income, poverty level, utility service type (i.e., combination, electric only, or gas only), and arrears at the time of enrollment in the CAP.[14]

- *CAP Rate Tier*: We examine the CAP Rate tier for CAP customers.

- *CAP Retention Rates*: We analyze how long customers stay in the CAP and determine whether demographic variables, utility service type, arrears at enrollment, and CAP Rate are correlated with retention rates.

- *Arrearage Forgiveness*: We analyze the number of customers who received arrearage forgiveness and the amount of arrearage forgiveness received in the year after CAP enrollment, and determine whether these indicators are correlated with demographic variables, utility service type, arrears at enrollment, and CAP Rate.

When examining the following statistics, a comparison group is used to control for changes that are unrelated to the CAP.

- *Affordability Impacts*: We analyze the impacts of the CAP on the affordability of utility bills by comparing the asked to pay amount and energy burden in the year preceding CAP enrollment and the year following CAP enrollment.

- *Payment Impacts*: We compare payment behavior for CAP participants in the year preceding CAP enrollment and the year following CAP enrollment.

[14] PECO provided population characteristics current at the time of the data download.

- *Bill Coverage Impacts*: We compare coverage of the asked to pay amount for CAP participants in the year preceding CAP enrollment and the year following CAP enrollment.

- *Balance*: We compare customer balances just prior to CAP enrollment to those just after the customer has participated in the CAP for a full year.

- *Assistance Payments*: We compare assistance payments received by CAP participants in the year preceding CAP enrollment and the year following CAP enrollment.

B. Methodology

This section describes the evaluation data and the selection of the participant and comparison groups for the CAP operations and impact analysis.

Evaluation Data

PECO provided APPRISE with household demographic data, CAP participation data, billing and payment data, and account balance data for customers who enrolled in the CAP in January through June 2005 and in January through June 2006. These data were provided in electronic format. Customer household demographics, account characteristics, program participation data, and transactions data (i.e., billing and payment data and account balance data) were provided in stages between June and August 2006.

Selected Participants: Study Group

Customers who enrolled in CAP Rates A, B, and C between January 1, 2005 and June 31, 2005 were included as potential members of the study group. This group was chosen for the analysis, as one full year of post-program data is required for an analysis of program impacts. Customers in CAP Rates A, B, and C were included as this study was designed to examine the impact of CAP for those customers with income below 50 percent of the FPL.

Selected Participants: Comparison Group

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 changes for the comparison group are as similar as possible to those of the treatment 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.

In the evaluation of the CAP, we used the Q1 and Q2 2006 CAP Rate A, B, and C enrollees as a comparison group. We required that they have no discounted bills in the two years preceding enrollment to ensure that they are non-participants in both periods. These participants serve as a good comparison group because they are lower income households who were eligible for the program and chose to participate. We analyze data for these participants for the two years preceding CAP enrollment to compare their change in payment behavior prior to enrolling to the treatment group's change in payment behavior after enrolling. Because these customers did not participate in the CAP in both analysis years, changes in bills and behavior should be related to factors that are exogenous to the program.

For the CAP program impact analysis, we examine 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.

Customers who participated in the CAP in the year prior to enrollment were excluded from the treatment group, to allow for a comparison of data while not participating and while participating in the CAP. Customers who did not have a full year of data prior to joining the program or a full year of data following the program start date were not included in the impact analysis. The subject of data attrition is addressed more fully below.

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

- 2005 CAP enrollee treatment group data extended from one year before the customer joined the CAP to one year after the customer joined the CAP.

- 2006 CAP enrollee comparison group data extended two years before the customer joined the CAP.

Table V-1 describes the treatment and comparison groups that are included in the analyses in this section.

Table V-1
Treatment and Comparison Groups

	2005 CAP Enrollees Treatment Group	2006 CAP Enrollees Comparison Group
Group	2005 Q1 and Q2 CAP Enrollees	2006 Q1 and Q2 CAP Enrollees
Enrollment	Last enrollment date is in the first or second quarter of 2005	Last enrollment date is in the first or second quarter of 2006
CAP Participation	Did not participate in the CAP in the year prior to enrollment	Did not participate in the CAP in the two years prior to enrollment
Pre-participation Dates	1 year prior to enrollment	2 years prior to enrollment
Post-participation Dates	1 year after enrollment	1 year prior to enrollment

C. Data Attrition

Customers were divided into the treatment and comparison groups as described above. However, some of these customers were not included in the analyses in this section because they did not have adequate data available. We refer to all eligible customers (those who meet the enrollment and CAP participation requirements as described in Table V-1 above) in these groups as the original analysis groups and to those customers who have enough data to be included in the analysis as the final analysis group.

Table V-2 displays the number of customers in each group, the reasons why customers were not included in the analyses that follow, and the number of customers in each group that are included in the final analysis. Two factors must be weighed when selecting the sample for the final analysis. First, when conducting a program evaluation, the goal is always to include as much of the original analysis group in the research as possible, so that the estimated results are not biased due to elimination of distinctive subgroups. However, to provide good estimates of program impacts, it is also necessary to restrict the sample to those customers who have a minimum level and quality of data.

Customers were excluded from the final analysis group for the following reasons:

- *Full Year of Pre or Post Billing Data Not Available*: The analyses that are conducted require that customers have a full year of bills for the year prior to CAP enrollment and the year following CAP enrollment. Customers were excluded from the analyses if the pre or post year of billing data that could be constructed contained less than 330 days or more than 390 days.

- *Full Year of Pre or Post Payment Data Not Available*: The analyses also require that customers have a full year of payment data for the year prior to CAP enrollment and the year following CAP enrollment. Customers were excluded from the analyses if the pre or post year of payment data that could be constructed contained less than 330 days or more than 390 days.

Table V-2 shows that a significant percentage of the original analysis groups had to be eliminated. The primary cause of the attrition is that the data does not follow customers who receive a new account number during the analysis period. This factor would eliminate customers who have their account terminated for nonpayment and do not reconnect within ten days, customers who move, and customers who have requested a new account number because of an inability to meet past PECO bill obligations.[15] PECO was not able to provide a linkage for customers who opened new accounts, so these customers could not be included in the analysis.

Below we describe the percentage of original customers that remain in the analysis.

- *2005 CAP Enrollee Treatment Group*: 29 percent of the original analysis group was included in the final analysis sample.

- *2006 CAP Enrollee Comparison Group*: 31 percent of the original analysis group was included in the final sample.

Table V-2
Data Attrition

	2005 CAP Enrollees Treatment Group	2006 CAP Enrollees Comparison Group
All Eligible	2,625	1,872
Full Year of Pre Billing Data	901	577
Full Year of Pre Payment Data	901	577
Full Year of Post Billing Data	749	577
Full Year of Post Payment Data	749	577
Percent of Total	29%	31%

D. 2005 CAP Analysis

This section describes the results from the data analysis.

Household Demographic Characteristics

We analyzed demographic characteristics for customers in the 2005 CAP enrollee treatment group and the 2006 CAP enrollee comparison group. We compared the original and final analysis groups to determine if there is a bias from eliminating customers from the analysis. We compared the treatment and comparison groups to determine if the 2006 CAP enrollee

[15] The practice of payment-troubled customers signing up for new utility accounts in different names to avoid the requirement of past bill payment has been well documented, and utilities acknowledge that this is a serious bill payment problem.

group is similar enough to the 2005 CAP enrollee group to serve as a good comparison. Note that demographic data are missing for a large percentage of program participants because PECO only began collecting these data in 2004. Table V-3 shows that the customers had the following characteristics:

- *Elderly*: Four percent of the customers in the final treatment group had at least one person age 65 or older in the household, as compared to three percent in the original treatment group. This is very similar to the four percent of customers in the final comparison group and the two percent in the original comparison group that had at least one elderly household member.

- *Children*: Seventy percent of the original treatment group had at least one child 18 or younger in the household, which is similar to the 67 percent of the original comparison group with at least one child. While 63 percent of the final treatment group had at least one child 18 or younger, only 51 percent of the final comparison group had at least one child.

- *Young Children*: Twenty-eight percent of the customers in the final treatment group had at least one child age five or younger in the household, as opposed to 37 percent in the original treatment group. This is similar to the 21 percent in the final comparison group and 35 percent in the original comparison group who had at least one young child.

- *Household Size*: Thirty percent of the customers in the final treatment group resided in single-person households, as compared to 24 percent in the original treatment group. This is similar to the 39 percent of customers in the final comparison group and 27 percent of customers in the original comparison group who lived alone.

- *Annual Income*: Eighty-one percent of the customers in the final treatment group had annual household income of less than $10,000, as compared to 83 percent in the original treatment group. This is similar to the 81 percent of customers in the final comparison group and 87 percent in the original comparison group who had annual household income of less than $10,000.

- *Poverty Level*: Seventy-nine percent of the customers in the final treatment group had income less than or equal to 50 percent of the FPL, compared to 81 percent in the original treatment group. This is similar to the 81 percent of customers in the final comparison group and 88 percent in the original comparison group with income less than or equal to 50 percent of the FPL.

  All customers in the study had verified income at or below 50 percent of the FLP at the time of enrollment in CAP Rate A, B, or C. However, there many have been reported changes in customer income between the time of CAP enrollment and when the data were downloaded.

In summary, customers in the treatment group are somewhat more likely to have a child age 18 or under, and customers in the comparison group are somewhat more likely to live alone. The treatment group is very similar in all other characteristics to the comparison group.

Table V-3
Household Demographic Characteristics

	2005 CAP Enrollees Treatment Group		2006 CAP Enrollees Comparison Group	
	Original	Final	Original	Final
Observations	2,625	749	1,872	577
Observations with Demographic and Income Data Available	480	218	568	235
Age 65 or Older	3%	4%	2%	4%
Age 18 or Under	70%	63%	67%	51%
Age 5 or Under	37%	28%	35%	21%
Household Size				
1	24%	30%	27%	39%
2	24%	23%	24%	22%
3	21%	17%	20%	17%
4	17%	16%	14%	11%
5	9%	7%	9%	9%
6 or more	5%	6%	5%	2%
Annual Income				
≤ $10,000	83%	81%	87%	81%
$10,001 - $20,000	13%	12%	10%	13%
$20,001 - $30,000	3%	5%	3%	4%
>$30,000	< 1%	1%	<1 %	2%
Poverty Level				
≤ 50%	81%	79%	88%	81%
51% - 100%	11%	9%	4%	5%
101% - 150%	4%	6%	3%	5%
151% - 200%	1%	2%	3%	6%
>200%	3%	5%	1%	3%

Account Characteristics

This section examines the account characteristics for the customers in the 2005 CAP enrollee treatment group and the 2006 CAP enrollee comparison group. Table V-4 shows that the customers had the following characteristics:

- *Service Type*: Customers in the treatment group are very similar to those in the comparison group with respect to the services they receive from PECO. Seventy-six percent of customers in the final treatment group received electric only, non-heating service from PECO, compared to 73 percent in the final comparison group. Nineteen percent of customers in both groups received both electric and gas service.

- *Arrears at Enrollment or Start of Post-Treatment Analysis Period*: Customers in the final treatment group were less likely to have arrears between \$1 and \$250 and more likely to have arrears above \$500 at the time of CAP enrollment than the comparison group at the start of the comparable analysis period. At the time of CAP enrollment, two percent of customers in the final treatment group had no arrears; 10 percent had arrears between \$1 and \$100, 17 percent had arrears between \$101 and \$250; 21 percent had arrears between \$251 and \$500; 26 percent had arrears between \$501 and \$1,000; and 25 percent had arrears greater than \$1,000.

Table V-4
Account Characteristics

	2005 CAP Enrollees Treatment Group		2006 CAP Enrollees Comparison Group	
	Original	Final	Original	Final
Observations	2,625	749	1,872	577
Service Type[1]				
Combination	17%	19%	17%	19%
Electric Only –Heating	7%	6%	8%	7%
Electric Only –Non-heating	76%	76%	75%	73%
Gas Only	<1%	<1%	<1%	<1%
Arrears at Enrollment or Start of Post Period[2]				
≤ \$0	2%	2%	1%	2%
\$1 - \$100	11%	10%	22%	21%
\$101 - \$250	18%	17%	26%	26%
\$251 - \$500	22%	21%	21%	20%
\$501 - \$1,000	23%	26%	16%	16%
>\$1,000	25%	25%	14%	16%

[1] Original CAP treatment group is missing one observation that did not have service type data. Original CAP control group is missing two observations that did not have service type data.
[2] Original CAP treatment group has 2,233 observations with arrearage data. Original CAP control group has 974 observations with arrearage data.

CAP Rate

Effective February 2004, PECO has five CAP Rate tiers, which can be summarized as followed:

- *CAP Rate A*: Customers with household income less than or equal to 25 percent of the FPL with extenuating circumstances are eligible. Electric non-heating customers receive a minimum $12 per month bill and electric heating customers receive a minimum $30 per month bill.

- *CAP Rate B*: Customers with household income less than or equal to 25 percent of the FPL without extenuating circumstances are eligible. They receive an 85 percent discount on their first 500 kWh monthly.

- *CAP Rate C*: Customers with household income between 26 and 50 percent of the FPL are eligible. They receive a 75 percent discount on their first 500 kWh monthly.

- *CAP Rate D*: Customers with household income between 51 and 100 percent of the FPL are eligible. They receive a 50 percent discount on their first 500 kWh monthly.

- *CAP Rate E*: Customers with household income between 101 and 150 percent of the FPL are eligible. They receive a 25 percent discount on their first 500 kWh monthly.

CAP Rate customers with gas service also receive a discount on their gas variable distribution charge. The gas CAP Rate discount results in a discount of up to 28 cents per cubic foot (ccf) of monthly gas usage.

For the purposes of the under 50 percent evaluation, customers in the treatment and comparison groups were chosen from CAP Rates A, B, or C due to the FPL eligibility requirement. Table V-5 displays the distribution of the treatment and comparison groups among the CAP Rate tiers. Less than one percent of the customers in the final treatment group were enrolled in CAP Rate A, 41 percent received CAP Rate B, and 59 percent were in CAP Rate C. No customers in the final comparison group were enrolled in CAP Rate A, 45 percent received CAP Rate B, and 55 percent were in CAP Rate C.

Table V-5
CAP Rate Tier

	2005 CAP Enrollees Treatment Group		2006 CAP Enrollees Comparison Group	
	Original	Final	Original	Final
Observations	2,625	749	1,872	577
CAP Rate Tier				
A	< 1%	< 1%	< 1%	0%
B	34%	41%	36%	45%
C	65%	59%	64%	55%

<u>Retention Rates</u>
This section examines customers' retention in the CAP. We analyze the percent of CAP customers that remained on the program every month after enrollment, through months

three, six, and twelve. Customers are considered to have remained on the program if they received the CAP discount in that month's billing cycle.

Table V-6 shows that 94 percent of the original 2005 treatment group received a discount in each of the first three months after enrollment, 85 percent remained in the CAP for the first six months, and 71 percent remained on for the first twelve months. The final treatment group had a much greater half and full year retention rate, with 99 percent remaining on the CAP after six months, and 96 percent remaining enrolled for a full year.

Table V-6 also examines the retention rates by household demographic characteristics for the final treatment group. This table shows that households with elderly members, households with children, and households with four or more people had slightly higher 12-month retention rates.

Table V-6
Retention Rates by Household Characteristics
2005 CAP Enrollees

	Obs.[1]	Percent in the CAP Every Month 3, 6, and 9 Months After Enrollment		
		3 months	6 months	12 months
2005 CAP Participants (Original)	2,625	94%	85%	71%
2005 CAP Participants (Final)	749	100%	99%	96%
Elderly	9	100%	100%	100%
Not Elderly	209	100%	99%	95%
Children	137	100%	99%	96%
No Children	81	99%	98%	93%
1 Person HH	66	98%	98%	92%
2 – 3 Person HH	89	100%	99%	94%
4 or more Person HH	63	100%	100%	98%
Income				
≤ $10,000	177	100%	100%	98%
$10,001 - $20,000	27	100%	100%	93%
$20,001 - $30,000	11	91%	73%	55%
> $30,000	3	100%	100%	67%
Poverty Level				
≤50%	173	100%	100%	98%

	Obs.[1]	Percent in the CAP Every Month 3, 6, and 9 Months After Enrollment		
		3 months	6 months	12 months
51% - 100%	19	100%	100%	100%
101% - 150%	12	100%	100%	83%
151% - 200%	4	100%	100%	100%
>200%	10	90%	70%	40%

[1] Demographics and income data are available for 218 observations in the treatment group.

Table V-7 examines the retention rates by account characteristics for the final treatment group. Customers who receive both gas and electric service from PECO had slightly lower 12-month retention rates than those receiving other types of services. Retention rates are similar for all arrearage groups and CAP Rate tiers (with the exception of those of CAP Rate A, which does not have enough observations to be properly considered).

Table V-7
Retention Rates by Account Characteristics
2005 CAP Enrollees

	Obs.	Percent in the CAP Every Month 3, 6, and 9 Months After Enrollment		
		3 months	6 months	12 months
2005 CAP Participants (Original)	2,625	94%	85%	71%
2005 CAP Participants (Final)	749	100%	99%	96%
Service				
Combination	139	99%	97%	91%
Electric Only – Heating	42	100%	100%	100%
Electric Only – Non-heating	566	100%	99%	96%
Gas Only	2	100%	100%	100%
Arrears at Enrollment				
≤ $0	17	100%	100%	100%
$1 - $100	72	100%	97%	94%
$101 - $250	125	100%	100%	96%
$251 - $500	157	100%	99%	97%
$501 - $1,000	192	100%	99%	94%
>$1,000	186	99%	98%	96%
CAP Rate Tier				
A	2	100%	100%	50%

	Obs.	Percent in the CAP Every Month 3, 6, and 9 Months After Enrollment		
		3 months	6 months	12 months
B	308	99%	98%	94%
C	439	100%	100%	97%

Arrearage Forgiveness

PECO provides arrearage forgiveness to CAP customers who pay their bills on time and in full, and who are current with their CAP payment obligations for six consecutive months. Beginning in February 2004, customers received forgiveness for their full pre-program arrearages.

Table V-8 shows that 41 percent of the original 2005 treatment group and 60 percent of the final treatment group received arrearage forgiveness in the twelve months after CAP enrollment. It is expected that a larger percentage of the final treatment group would receive arrearage forgiveness because the final treatment group has a more stable account history (i.e., no moves or extended periods shut off for nonpayment).

Table V-8 also displays the median, mean, and range of arrearage forgiveness received. The median arrears forgiven for the final treatment group was $140, and the mean was $429. The considerable difference between the median and the mean is attributable to a small number of customers who had very high levels of arrearages forgiven. The median is less sensitive to extreme scores than the mean, which makes it a better measure than the mean for highly skewed distributions. Among the final treatment group, 40 percent did not receive any arrearage forgiveness, seven percent received between $1 and $100, 28 percent received between $101 and $500, and 26 percent received greater than $500 in arrearage forgiveness.

Table V-8 also displays the amount of arrearage forgiveness by household demographic characteristics. Households with no elderly members, households with children, and households of two or more people received greater forgiveness, although the likelihood of receiving forgiveness did not vary much depending on the presence of an elderly person or a child in the household.

Table V-8
Arrearage Forgiveness by Household Characteristics
2005 CAP Enrollees

	Obs.[1]	Received Forgiveness	Median	Mean	Percent in Each Range			
					$0	$1-$100	$101-$500	>$500
2005 CAP Participants (Original)	2,625	41%	$0	$258	59%	7%	19%	15%
2005 CAP Participants (Final)	749	60%	$140	$429	40%	7%	28%	26%
Elderly	9	56%	$84	$363	44%	11%	33%	11%

	Obs.[1]	Received Forgiveness	Median	Mean	Percent in Each Range			
					$0	$1-$100	$101-$500	>$500
Not Elderly	209	56%	$144	$388	44%	4%	27%	25%
Children	137	58%	$150	$410	42%	4%	29%	25%
No Children	81	54%	$93	$349	46%	6%	25%	23%
1 Person HH	66	52%	$49	$294	48%	6%	26%	20%
2 – 3 Person HH	89	63%	$197	$414	37%	6%	31%	26%
4 or more Person HH	63	52%	$144	$447	48%	2%	24%	27%
Income								
≤ $10,000	177	58%	$144	$354	42%	6%	30%	23%
$10,001 - $20,000	27	52%	$157	$663	48%	0%	15%	37%
$20,001 - $30,000	11	45%	$0	$299	55%	0%	27%	18%
> $30,000	3	33%	$0	$213	67%	0%	0%	33%
Poverty Level								
≤ 50%	173	58%	$134	$353	42%	6%	29%	23%
51% - 100%	19	58%	$368	$429	42%	0%	26%	32%
101% - 150%	12	50%	$79	$939	50%	0%	8%	42%
151% - 200%	4	25%	$0	$121	75%	0%	25%	0%
>200%	10	50%	$92	$344	50%	0%	20%	30%

[1] Demographics and income data are available for 218 observations in the treatment group.

Table V-9 displays the amount of arrearage forgiveness by account characteristics. Electric only, non-heating customers received less arrearage forgiveness than did other types of customers, and their likelihood of receiving arrearage forgiveness was lower. The amount of arrearages a customer had did not have a large impact on the likelihood of receiving arrearage forgiveness, although those customers with the greatest arrearages were less likely to receive forgiveness. Customers in CAP Rate B were more likely to receive forgiveness than customers in CAP Rate C.

Table V-9
Arrearage Forgiveness by Account Characteristics
2005 CAP Enrollees

	Obs.	Received Forgiveness	Median	Mean	Percent in Each Range			
					$0	$1 - $100	$101- $500	>$500
2005 CAP Participants (Original)	2,625	41%	$0	$258	59%	59%	7%	19%
2005 CAP Participants (Final)	749	60%	$140	$429	40%	40%	7%	28%
Service								
Combination	139	62%	$369	$675	38%	4%	14%	44%
Electric Only – Heating	42	76%	$434	$625	24%	0%	40%	36%
Electric Only – Non-heating	566	59%	$103	$354	41%	8%	30%	20%
Gas Only	2	100%	$400	$400	0%	0%	50%	50%
Arrears at Enrollment								
≤ $0	17	-	-	-	-	-	-	-
$1 - $100	72	60%	$35	$46	40%	47%	13%	0%
$101 - $250	125	66%	$119	$113	34%	9%	57%	0%
$251 - $500	157	66%	$255	$234	34%	2%	59%	5%
$501 - $1,000	192	63%	$366	$374	37%	2%	17%	44%
>$1,000	186	55%	$918	$1,051	45%	0%	1%	54%
CAP Rate Tier								
A	2	100%	$1,086	$1,086	0%	0%	0%	100%
B	308	65%	$191	$503	35%	5%	31%	29%
C	439	57%	$91	$374	43%	8%	25%	23%

Affordability

The purpose of the CAP is to make bills more affordable for low-income customers. The program achieves this goal by offering rate discounts depending on poverty level, heating status, and time of year (i.e., summer months versus non-summer months). This section analyzes the impacts of the CAP on bill affordability for program participants.

Table V-10 displays the gross impact on the final treatment group, the changes for the comparison group, and the net impacts for the treatment group as compared to the comparison group. The table shows that the CAP had a positive impact on affordability for program participants.

- *Asked to Pay Amount*: The asked to pay amounts are the bills that the customer was asked to pay. If the customer had been participating in the CAP, then the asked to pay amount would be his or her CAP Rate discounted bill. If the customer had not been participating in the CAP, the asked to pay amount would be a regular rate bill.

  The asked to pay amount decreased by $489 for the 2005 CAP enrollee treatment group and increased by $147 for the 2006 CAP enrollee comparison group. The net impact of the CAP on the asked to pay amount was therefore a decrease of $636.

- *Energy Burden*: The energy burden is the percentage of income that bills represent, and it serves as an indicator of the affordability of the customer's energy bills.[16] CAP participants experienced a decrease in energy burden, from 29 percent in the year prior to participating in the program to 18 percent in the first year of program participation, resulting in a gross decrease of 11 percentage points. The average net impact of the CAP on the energy burden was a decrease of 14 percentage points.

Table V-10
Affordability Impacts
All Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	749[1]			577[2]			
Asked to Pay Amount	$1,299	$810	-$489**	$1,263	$1,410	$147**	-$636**
Total Energy Burden[2]	29%	18%	-11%**	27%	30%	3%**	-14%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] The treatment and control groups each include two gas only accounts. Gas only accounts are not analyzed in a separate table due to their rarity.
[2] 218 observations in the treatment group and 235 observations in the comparison group had income data available.

Table V-11 isolates the CAP Rate B enrollees from the above table for further analysis. The table shows that the CAP had a positive impact on affordability for program participants enrolled in CAP Rate B.

- *Asked to Pay Amount*: The asked to pay amount decreased by $540 for the 2005 CAP enrollee treatment group and increased by $133 for the 2006 CAP enrollee comparison group. The net impact of the CAP on the asked to pay amount was therefore a decrease of $673.

- *Energy Burden*: CAP participants experienced a decrease in energy burden, from 38 percent in the year prior to participating in the program to, 25 percent in the first year of

[16] The income that is used in this calculation is the income that has most recently been collected from the customer, as of the time of the download (Q2 and Q3 2006) and does not differ between the two periods examined in the analysis. Therefore, the change in energy burden that is measured here results only from changes in energy costs.

program participation, resulting in a gross decrease of 13 percentage points. The average net impact of the CAP on the energy burden was a decrease of 17 percentage points.

Table V-11
Affordability Impacts
CAP Rate B Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	308[1]			258[2]			
Asked to Pay Amount	$1,378	$838	-$540**	$1,341	$1,474	$133**	-$673**
Total Energy Burden[2]	38%	25%	-13%**	31%	35%	4%**	-17%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] The treatment and control groups each include two gas only accounts. Gas only accounts are not analyzed in a separate table due to their rarity.
[2] 89 observations in the treatment group and 111 observations in the comparison group had income data available.

Table V-12 isolates the CAP Rate C enrollees from Table V-10 for further analysis. The table shows that the CAP had a positive impact on affordability for program participants enrolled in CAP Rate C.

- *Asked to Pay Amount*: The asked to pay amount decreased by $454 for the 2005 CAP enrollee treatment group and increased by $159 for the 2006 CAP enrollee comparison group. The net impact of the CAP on the asked to pay amount was therefore a decrease of $612.

- *Energy Burden*: CAP participants experienced a decrease in energy burden, from 23 percent in the year prior to participating in the program to, 14 percent in the first year or program participation, resulting in a gross decrease of 10 percentage points. The average net impact of the CAP on the energy burden was a decrease of 12 percentage points.

Table V-12
Affordability Impacts
CAP Rate C Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	439			319			
Asked to Pay Amount	$1,242	$788	-$454**	$1,200	$1,359	$159**	-$612**
Total Energy Burden[1]	23%	14%	-10%**	23%	26%	3%**	-12%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] 129 observations in the treatment group and 124 observations in the comparison group had income data available.

Table V-13 displays the affordability impacts for the final treatment group customers who receive a combination of both electric and gas utility service. These CAP customers are eligible to receive a discount on both their electric and gas charges.

- *Asked to Pay Amount*: The asked to pay amount decreased by $539 for the final treatment group, while the comparison group experienced an increase in the asked to pay amount by an average of $218. The average net impact of the CAP on the asked to pay amount for combination customers was a decrease of $757.

- *Energy Burden*: CAP combination customers experienced a gross decrease in total energy burden of nine percentage points, falling from 33 percent in the year prior to participating in the program, to 24 percent in the first year of program participation. The average net impact of the CAP on energy burden for CAP combination customers was a decrease of 13 percentage points.

Table V-13
Affordability Impacts
Combination Customers Only

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	139			110			
Asked to Pay Amount	$2,151	$1,611	-$539**	$2,210	$2,428	$218**	-$757**
Total Energy Burden[1]	33%	24%	-9%**	38%	42%	4%**	-13%**
Electric Energy Burden[1]	17%	11%	-6%**	16%	25%	9%**	-5%**
Gas Energy Burden[1]	16%	15%	-1%*	15%	17%	2%*	-3%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] 40 observations in the treatment group and 36 observations in the comparison group had income data available.

Table V-14 displays the affordability impacts for the final treatment group customers who receive only electric service from PECO and who heat their homes with electricity.

- *Asked to Pay Amount*: For electric only, electric heating customers in the treatment group, the average asked to pay amount decreased by $688. The same customers in the comparison group did not experience a significant change in their average asked to pay amount. The average net impact of the CAP on the asked to pay amount for electric only, electric heating customers was a decrease of $727.

- *Energy Burden*: CAP electric only, electric heating customers experienced a decrease in their average energy burden, from 34 percent in the year preceding CAP participation to 24 percent in the year following enrollment, a gross decrease of 10 percentage points. The same customers in the comparison group did not experience a significant change in their average energy burden due to the lack of a significant change in the amount of their bills. The average net impact of the CAP on average energy burden for CAP electric only, electric heating customers was a decrease of eight percentage points.

Table V-14
Affordability Impacts
Electric Service Only
Electric Heating Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	42			42			
Asked to Pay Amount	$1,757	$1,069	-$688**	$1,566	$1,605	$39	-$727**
Total Energy Burden[1]	34%	24%	-10%**	32%	30%	-2%	-8%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] 16 observations in the treatment group and 13 observations in the comparison group had income data available.

Table V-15 displays the affordability impacts for the final treatment group customers who receive only electric service from PECO and do not heat their homes with electricity.

- *Asked to Pay Amount*: For electric only, electric non-heating customers in the treatment group, the average asked to pay amount decreased by $464. The same customers in the comparison group experienced a gross increase in their average asked to pay amount of $139. The average net impact of the CAP on the asked to pay amount for electric only, electric non-heating customers was a decrease of $603.

- *Energy Burden*: CAP electric only, electric non-heating customers experienced a decrease in their average energy burden, from 28 percent in the year preceding CAP participation to 16 percent in the year following enrollment, a gross decrease of 11 percentage points. The same customers in the comparison group experienced an increase in their energy burdens of three percentage points as the result of a rise from 24 percent in the year before enrollment to 28 percent in the year following enrollment. The average net impact of the CAP on average energy burden for CAP electric only, electric non-heating customers was a decrease of 15 percentage points.

Table V-15
Affordability Impacts
Electric Service Only
Electric Non-heating Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	566			423			
Asked to Pay Amount	$1,059	$595	-$464**	$988	$1,127	$139**	-$603**

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Total Energy Burden[1]	28%	16%	-11%**	24%	28%	3%**	-15%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] [1]162 observations in the treatment group and 186 observations in the comparison group had income data available.

Table V-16 displays the percentage of customers with energy burdens below, within, and above the PUC affordability guidelines in the years prior to and following CAP enrollment.[17] This table shows that 88 percent of electric heating customers had energy burdens above the PUC target prior to CAP enrollment and that 71 percent had burdens above the target after enrollment. Seventy-four percent of PECO electric and gas customers had energy burdens exceeding the target in the year prior to CAP participation, and 64 percent had burdens exceeding the target in the year after enrollment. Ninety-three percent of electric only non-heating customers had burdens that exceeded the target in the year prior to CAP participation, and 78 percent had incomes that exceeded the target in the year following enrollment.

Table V-16
Affordability Impacts
Percent of Households with Energy Burdens
Below, Within, and Above the PUC-Defined Affordable Range
2005 CAP Enrollees

CAP Tier	N	Electric Heating					
		Pre CAP Participation			Post CAP Participation		
		Below	Within	Above	Below	Within	Above
B	6	17%	17%	67%	33%	0%	67%
C	11	0%	0%	100%	0%	27%	73%
Total	17	6%	6%	88%	12%	18%	71%

CAP Tier	N	Non Electric Heating – PECO Electric and Gas					
		Pre CAP Participation			Post CAP Participation		
		Below	Within	Above	Below	Within	Above
B	17	12%	35%	53%	35%	24%	41%
C	22	0%	9%	91%	5%	14%	82%
Total	39	5%	21%	74%	18%	18%	64%

CAP Tier	N	Non Electric Heating – PECO Electric Only					
		Pre CAP Participation			Post CAP Participation		
		Below	Within	Above	Below	Within	Above
B	66	3%	8%	89%	8%	15%	77%
C	96	0%	4%	96%	1%	21%	78%
Total	162	1%	6%	93%	4%	19%	78%

In general, CAP customers experienced approximately $600 in lower bills and a 14 percentage point reduction in energy burden in the year following CAP enrollment as a result of CAP participation. Net impacts were greater for CAP customers who received both electric and gas service.

Payment

This section examines the customers' payments and their coverage of the CAP bill. Customer payment behavior is examined in the year preceding CAP enrollment and the year following CAP enrollment.

- *Asked to Pay Amount*: These are the same data as are presented in the previous affordability analysis, but are shown in these tables as well for completeness. The asked to pay amount decreased by $489 for the treatment group. The average net impact of the CAP on the asked to pay amount was a decrease of $636.

- *Number of Cash Payments*: Cash payments are defined as payments that are made directly by the customers (as opposed to assistance payments). The number of cash payments is an indicator of payment regularity. Many payment-troubled customers miss bills and then make up payments in lump sums or with energy assistance payments when they are in danger of termination. This practice results in fewer than twelve cash payments made over the course of a year. The CAP is designed to increase payment regularity by providing an affordable monthly payment.

  Table IV-17 shows that treatment group customers made an average of eight payments in the year preceding CAP enrollment and an average of seven cash payments in the year following enrollment. This was a small but statistically significant decrease in the number of cash payments made by the treatment group. Customers in the comparison group on average made one less payment. Overall, the CAP did not have a substantial impact on the amount of payments made by the treatment group.

- *Total Cash Payments*: This is the dollar value of the cash payments made over the course of the year. Customers in the treatment group made a total of $943 in cash payments in the year preceding CAP enrollment and $567 in cash payments in the year following enrollment, for a gross decrease of $377. Customers in the comparison group experienced an average gross decrease of $66, falling from $1,140 to $1,074. The average net impact of the CAP on cash payments was a decrease of $310.

- *LIHEAP Payments*: LIHEAP assistance payments that customers can receive include LIHEAP cash and crisis payments. While participating in the CAP, LIHEAP cash grants are applied to a customer's account in the same manner as for non-CAP participants. LIHEAP cash payments are applied to the account balance, which includes pre-program arrears. LIHEAP crisis payments are applied to the account balance, and extra monies are listed as a credit because they are not applied to pre-program arrearages. Customers in the treatment group received an average of $69 in LIHEAP payments in the year preceding CAP enrollment and $104 in the year following enrollment, for a gross increase of $36. Customers in the comparison group received on average $30 in LIHEAP payments in the year before enrollment and $58 in the year after enrollment, for a gross increase of $28. The average net impact of the CAP on LIHEAP payments was not statistically significant.

- *Total Payments*: Total payments are the sum of cash and assistance payments made during the year. Total payments for customers in the treatment group were $1,012 in the year preceding enrollment and $671 in the year following enrollment, for a gross decrease of $341. Customers in the comparison group did not experience a statistically significant change in the average amount of their total payments. The average net of the CAP on total payments was a decrease in $303.

- *Cash Coverage Rate*: The cash coverage rate is defined as the total cash payments for the year divided by the asked to pay amount for the year. It is the average percentage of the asked to pay amount that was covered with cash payments. Customers in the treatment group had a cash coverage rate of approximately 75 percent in the year preceding and following enrollment. Customers in the comparison group had an average cash coverage rate of 92 percent in the year preceding enrollment and 78 percent in the year following enrollment, for a gross decrease of 14 percentage points. The average net impact of the CAP on the cash coverage rate was an increase of 17 percentage points.

- *Total Coverage Rate*: The total coverage rate is defined as total payments (cash payments plus assistance payments) divided by the asked to pay amount for the year. Customers in the treatment group had an average total coverage rate of 81 percent in the year preceding enrollment and 92 percent in the year following enrollment, a gross change of 11 percentage points. Comparison group customers experienced a gross decrease in average total cover rate of 14 percentage points, falling from 96 percent in the year before enrollment to 82 percent in the year after enrollment. The average net impact of the CAP on the total coverage rate was an increase of 25 percentage points.

- *Shortfall*: The shortfall is the asked to pay amount for the year minus the total payments for the year. A positive shortfall indicates that on average, customers did not pay their entire asked to pay amount. Treatment group customers had an average shortfall of $287 in the year preceding enrollment and of $139 in the year following enrollment, for a gross decrease of $148. Customers in the comparison group experienced a gross increase in shortfall of $185, rising from $93 in the year before enrollment to $278 in the year after enrollment. The average net impact of the CAP on shortfall was a decrease of $333.

- *Arrearage Forgiveness*: By paying their CAP bills and staying current with their CAP payment obligations for six consecutive months, treatment group customers received an average of $429 in arrearage forgiveness in the year following enrollment, for a gross and net increase of $429.

- *Balance*: Customers' balances are examined immediately prior to enrolling in the CAP and at the conclusion of one year of participation in the CAP. Successful CAP enrollees have decreasing balances. Treatment group customers experienced an average decrease of $317 in their balance, falling from $853 in the year preceding enrollment to $536 the year after. Customers in the comparison group had an average balance of $591 in the year before enrollment and of $970 in the year after enrollment, for an average gross increase of $379. The average net impact of the CAP on customer balances was a decrease of $696.

In summary, treatment group customers experienced large reductions in their asked to pay amounts and in their total payments. Coverage rates increased because the reductions in the asked to pay amounts were larger on average than the reductions of total payments. With the help of lower bills and arrearage forgiveness, the treatment group customers were, on average, able to reduce their balances.

Table V-17
Payment Impacts
All Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	749			577			
Asked to Pay Amount	$1,299	$810	-$489**	$1,263	$1,410	$147**	-$636**
Number Cash Payments	7.6	7.1	-0.5**	8.4	7.4	-1.0**	0.5**
Total Cash Payments	$943	$567	-$377**	$1,140	$1,074	-$66**	-$310**
LIHEAP Payments	$69	$104	$36**	$30	$58	$28**	$8
Total Payments	$1,012	$671	-$341**	$1,170	$1,132	-$38	-$303**
Cash Coverage Rate	75%	78%	3%	92%	78%	-14%**	17%**
Total Coverage Rate	81%	92%	11%**	96%	83%	-14%**	25%**
Shortfall	$287	$139	-$148**	$93	$278	$185**	-$333**
Arrearage Forgiveness	$0	$429	$429**	$0	$0	$0	$429**
Balance	$853	$536	-$317**	$591	$970	$379**	-$696**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.

Table V-18 and Table V-19 examine the impacts of the CAP on customers enrolled in CAP Rates B and C, respectively. The findings for the customers examined separately by tier are very similar to those resulting from analysis of all customers. Treatment group customers enrolled in both tiers experienced large net reductions in their asked to pay amounts and in the amounts of their total payments, but the proportion of these reductions caused these customers to have an overall net increase in total coverage rates. The average net impact of the CAP was greater for the CAP Rate B customers than for the CAP Rate C customers.

Table V-18
Payment Impacts
CAP Rate B Customers Only

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	308			258			
Asked to Pay Amount	$1,378	$838	-$540**	$1,341	$1,474	$133**	-$673**
Number Cash Payments	7.6	7.1	-0.4	8.4	7.4	-1.0**	0.6*
Total Cash Payments	$1,011	$589	-$422**	$1,232	$1,167	-$66	-$357**
LIHEAP Payments	$47	$105	$58**	$28	$53	$25*	$33
Total Payments	$1,058	$694	-$364**	$1,260	$1,219	-$41	-$323**
Cash Coverage Rate	76%	82%	6%	93%	79%	-14%**	20%**
Total Coverage Rate	80%	94%	14%**	99%	84%	-15%**	29%**
Shortfall	$320	$144	-$176**	$81	$255	$174**	-$349**
Arrearage Forgiveness	$0	$503	$503**	$0	$0	$0	$503**
Balance	$917	$534	-$382**	$567	$928	$361**	-$744**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.

Table V-19
Payment Impacts
CAP Rate C Customers Only

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	439			319			
Asked to Pay Amount	$1,242	$788	-$454**	$1,200	$1,359	$159**	-$612**
Number Cash Payments	7.6	7.1	-0.5**	8.5	7.5	-1.0**	0.4
Total Cash Payments	$895	$551	-$344**	$1,065	$998	-$67*	-$277**
LIHEAP Payments	$84	$104	$20	$32	$63	$31**	-$11

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Total Payments	$979	$655	-$324**	$1,097	$1,061	-$36	-$288**
Cash Coverage Rate	74%	75%	-1%	91%	76%	-15%**	16%**
Total Coverage Rate	81%	90%	9%**	94%	81%	-13%**	22%**
Shortfall	$263	$133	-$130**	$103	$298	$194**	-$324**
Arrearage Forgiveness	$0	$374	$374**	$0	$0	$0	$374**
Balance	$807	$537	-$270**	$611	$1,005	$393**	-$663**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.

A concern with the analysis above is the high attrition rate due to the lack of data for customers in the year prior to enrollment. Table V-20 shows payment statistics in the year following enrollment for all customers with complete post enrollment data. This analysis permits the inclusion of 1,449 customers (314 of whom have available demographic and income data), compared with the 749 customers included in the table above.

Table V-17 shows that the average asked to pay amount in the year following enrollment for the treatment group was $810 and that the total cash payments made were $567. Table V-20 shows that the average asked to pay amount in the year following enrollment was $818 and that the total cash payments made were $521. Total coverage rates and balances are also similar.

Table V-20 also shows how payment statistics differ by participant characteristics. Customers without children, those who live in single-person households, and those with household incomes below 50 percent of the FPL have the highest total coverage rates.

Table V-20
Payment Statistics
Customers with Complete Data in the Year Following Enrollment
2005 CAP Enrollees

	Obs.	Asked to Pay Amount (Post)	Cash Payments (Post)	Total Coverage Rate (Post)	Beginning Balance	Ending Balance
2005 CAP Participants Complete Post Data	1449	$818	$521	87%	$812	$618
Demographic and Income Data Available	314	$781	$565	95%	$821	$550
Elderly	9	$982	$633	93%	$691	$434
Not Elderly	305	$775	$563	96%	$825	$554

	Obs.	Asked to Pay Amount (Post)	Cash Payments (Post)	Total Coverage Rate (Post)	Beginning Balance	Ending Balance
Children	207	$888	$622	85%	$915	$698
No Children	107	$574	$453	115%	$639	$264
1 Person HH	89	$544	$429	119%	$593	$267
2-3 Person HH	138	$736	$542	86%	$685	$395
4 or more Person HH	87	$1,095	$740	86%	$1,271	$1,088
CAP Tier						
A	3	$1,168	$814	71%	$1,144	$304
B	540	$826	$543	88%	$839	$573
C	906	$813	$507	86%	$795	$646
Poverty Level						
≤ 50%	257	$696	$518	99%	$770	$474
51%-100%	28	$1,182	$696	69%	$805	$788
101%-150%	15	$1,088	$916	90%	$1,007	$405
151%-200%	4	$1,260	$476	67%	$2,501	$2,807
>200%	10	$1,200	$896	93%	$1,219	$1,161

The previous analysis showed that the 2005 CAP enrollees on average experienced reductions in their total cash payments in the year following enrollment. We take a closer look at CAP payment impacts in the following tables.

Table V-21 divides customers into three groups: those who paid less than 90 percent of their bill in the year prior to enrollment, those who paid between 90 and 100 percent of their bill in the year prior to enrollment, and those who paid 100 percent or more of their bill in the year prior to enrollment.

The table shows that all three groups of customers have reductions in the average asked to pay amount and reductions in the amount of total cash payments made. Customers with the lowest pre-enrollment average coverage rate have the largest average increase in the coverage rate following enrollment, those with pre-enrollment coverage rates between 90 and 100 percent experience a negligible increase in coverage rates, and those with the highest pre-enrollment coverage rates reduce their coverage rates in the year following enrollment.

Table V-21
Payment Impacts
By Pre-Participation Total Coverage Rates
2005 CAP Enrollees

	Coverage Rate in the Year Prior to Enrollment					
	<90%		90% - 100%		≥100%	
	Pre	Post	Pre	Post	Pre	Post
Number of Customers	432		111		206	
Percent of Total	58%		15%		28%	
Asked to Pay Amount	$1,397	$878	$1,205	$752	$1,143	$698
Total Cash Payments	$779	$553	$1,080	$608	$1,215	$574
Total Coverage Rate	60%	88%	95%	95%	116%	99%
Balance	$1,174	$788	$431	$181	$407	$197

Table V-22 separates treatment group customers into two groups: those who were asked to pay less in the year following enrollment than the amount of their total payments in the year prior to enrollment, and those who were asked to pay exactly or more in the year after CAP enrollment than the amount of their total payments in the year prior to enrollment. This table shows that 73 percent of customers were asked to pay less in CAP than the amount of their total payments in the year prior to enrollment. These customers made an average of $1,029 in cash payments and $1,100 in total payments in the year prior to enrollment and were asked to pay an average of $651 when they enrolled in the CAP. These customers reduced their cash payments to an average of $531 and their total payments to an average of $616. Their average total coverage rate rose from 93 percent of their full bill in the year prior to enrollment to 99 percent of their CAP bill in the year following enrollment.

Only 27 percent of customers were asked to pay greater than or equal to the amount of their total payments in the year prior to enrollment. These customers made an average of $718 in cash payments and $779 in total payments in the year preceding enrollment and were asked to pay $1,232 in the year following enrollment. They made an average of $661 in cash payments and $819 in total payments in the year following enrollment. Their average total coverage rate increased from 47 percent of their full bill in the year prior to enrollment to 72 percent of their CAP bill in the year following enrollment.

This analysis shows that most customers had some success in paying their bills in the year prior to enrollment. They had a 93 percent average coverage rate and an average balance of $554. These customers were asked to pay significantly less under CAP than they amount of their total payments prior to enrolling, and as a result they significantly reduced their cash payments. However, even with the large reduction in payments, they were able to cover 99 percent of their bill obligations on average, and significantly reduced their balance through arrearage forgiveness. The CAP may have enabled them to meet their other bill obligations, as shown in the customer survey.

Customers who had difficulty paying their bills in the year prior to enrollment, with an average total coverage rate of 47 percent and an average balance of $1,647, were asked to pay more under CAP than their total payments prior to CAP participation. Their average balance following CAP, however, fell by almost $300, and their average total cash payment fell by nearly $60. These customers increased their total payments by $40 after enrolling in the CAP, and increased their bill coverage rates to 72 percent.

Table V-22
Payment Impacts
By Asked to Pay Amount versus Total Payments
2005 CAP Enrollees

	Asked to Pay Amount on CAP < Total Payments Prior to CAP		Asked to Pay on CAP ≥ Total Payments Prior to CAP	
	Pre	Post	Pre	Post
Number of Customers	544		205	
Percent of Total	73%		27%	
Asked to Pay Amount	$1,191	$651	$1,584	$1,232
Total Cash Payments	$1,029	$531	$718	$661
Total Payments	$1,100	$616	$779	$819
Total Coverage Rate	93%	99%	47%	72%
Balance	$554	$225	$1,647	$1,360

Energy Assistance

CAP participants may receive additional energy assistance, including LIHEAP cash grants and LIHEAP crisis grants. This section examines energy assistance received by CAP participants.

- *Percent Received LIHEAP Cash*: This is the percent of customers in the group that received LIHEAP cash assistance. In the treatment group, 12 percent of customers received LIHEAP cash assistance in the year prior to enrollment compared to 20 percent in the year after enrollment, for an increase of eight percentage points.[18] In the year after enrollment, there was a four percentage point increase in the percentage of comparison group customers who received a LIHEAP cash grant. The average net impact of the CAP on the percent of customers who received LIHEAP cash grants was an increase of five percentage points.

[18] Customers must have income below 135 percent of the FPL to qualify for LIHEAP, so some of the CAP participants with income between 135 and 150 percent of the FPL would not qualify for LIHEAP.

- *Mean LIHEAP Cash Grant*: This is the mean LIHEAP cash grant for those customers who received LIHEAP cash assistance grants. Customers in the treatment group did not see, on average, a significant change in the amount of LIHEAP cash grants they received between the year prior to enrollment and the year after enrollment. Customers in the comparison group experienced an increase in their average LIHEAP cash assistance payments of approximately $100.

- *Percent Received Crisis*: This is the percent of customers in the group that received LIHEAP crisis assistance in the pre or post enrollment year. Approximately five percent of customers received crisis grants in the year preceding CAP enrollment and in the year following CAP enrollment. In the comparison group, three percent of customers received LIHEAP crisis grants in the year prior to enrollment, compared to five percent in the year following enrollment, an increase of two percentage points. The average net change was not statistically significant.

- *Mean Crisis Grant*: This is the mean LIHEAP crisis grant for those customers who received crisis grants. Neither the treatment group nor the comparison group customers experienced significant changes in their average LIHEAP crisis assistance grants. The average crisis grants were approximately $300.

- *Total LIHEAP Grants Received*: This is the sum of LIHEAP cash and crisis assistance received by all customers in the study group, including those who did not receive a grant. Customers in the treatment group received a total of $69 in LIHEAP assistance in the year prior to enrollment and $105 in the year following enrollment, for a gross increase of $35. Customers in the control group received a total of $30 in LIHEAP assistance in the year prior to enrollment and $58 in the year following enrollment, for a gross increase of $28. The average net change was not statistically significant.

Table V-23
Energy Assistance Impacts
All Customers

	2005 CAP Enrollees Treatment Group			2006 CAP Enrollees Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Number of Customers	749			577			
Percent Received LIHEAP Cash	12%	20%	8%**	6%	9%	4%**	5%*
Mean LIHEAP Cash Grant[1]	$431	$432	$1	$363	$470	$107	-$106**
Percent Received LIHEAP Crisis	5%	5%	<1%	3%	5%	2%*	-3%
Mean LIHEAP Crisis Grant[1]	$300	$351	$51	$294	$291	-$3	$54**
Total LIHEAP Grants Received	$69	$105	$35**	$30	$58	$28**	$8

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level.
[1] Does not include accounts that did not receive the grant.

The table above showed that only 20 percent of CAP participants received LIHEAP cash assistance. However, many of these customers are not PECO heating customers and would not be expected to assign a LIHEAP grant to PECO.

Table V-24 examines the percent of combination customers who receive LIHEAP assistance. This table shows that 22 percent received LIHEAP cash assistance in the year prior to enrollment and 45 percent in the year following enrollment. Although this is a large increase, PECO should work to further increase the percentage of combination customers who receive LIHEAP assistance.

Table V-24
Energy Assistance Impacts
Combination Customers

	2005 CAP Enrollees Treatment Group		
	Pre	Post	Change
Number of Customers	139		
Percent Received LIHEAP	22%	45%	24%**

**Denotes significance at the 99 percent level.

E. *Summary of CAP Data Analysis Findings*

This section summarizes findings from the data analysis.

- *Household Demographics*: Customers in the 2005 CAP enrollee treatment group are somewhat more likely to have at least one child age 18 or under in the household, and customers in the 2006 CAP enrollee comparison group are somewhat more likely to live alone. In all other household characteristics, the treatment group is very similar to the comparison group.

- *Account Characteristics*: The 2005 CAP enrollee treatment group is very similar to the 2006 CAP enrollee comparison group with respect to services and the CAP Rate tier. However, customers in the treatment group were less likely to have arrears between $1 and $250 and more likely to have arrears above $500 at the time of CAP enrollment than the comparison group at the start of the comparable analysis period. The fact that the 2006 CAP comparison group was twice as likely to have the lowest amount of arrears is attributable to the fact that it is the average amount of arrears two years before the group's actual CAP enrollment date; with higher arrears 2006 CAP participants may have enrolled earlier.

- *Retention Rates*: Ninety-four percent of the original 2005 treatment group received a discount in each of the first three months after enrollment, 85 percent remained in the CAP for the first six months, and 71 percent remained on for the first twelve months. The final treatment group had a much greater half and full year retention rate, with 99 percent remaining on the CAP after six months, and 96 percent remaining enrolled for at least a full year.

- *Arrearage Forgiveness*: PECO provides arrearage forgiveness to CAP customers who pay their bills on time and in full, and who are current with their CAP payment obligations for six consecutive months. Among the final treatment group, 40 percent did not receive any arrearage forgiveness, seven percent received between $1 and $100, 28 percent received between $101 and $500, and 26 percent received greater than $500 in arrearage forgiveness. Customers in CAP Rate B were more likely to receive forgiveness than customers in CAP Rate C, and received greater amounts of arrearage forgiveness than customers in CAP Rate C.

- *Affordability Impacts*: The CAP had a positive impact on affordability for program participants. The asked to pay amount decreased by $489 for the 2005 CAP enrollee treatment group and increased by $147 for the 2006 CAP enrollee comparison group. The net impact of the CAP on the asked to pay amount was therefore a decrease of $636. 2005 CAP participants experienced an 11 percentage point gross decrease in energy burden, falling from 29 percent in the year prior to participating in the program to 18 percent in the first year of program participation. The average net impact of the CAP on the energy burden was a decrease of 14 percentage points.

  The impact of the CAP on the asked to pay amount and energy burdens of customers differed by CAP Tier, as the discount percentage differs by CAP tier. Customers in the treatment group enrolled in CAP Rate B experienced an average net decrease in their asked to pay amounts of $673 and an average net decrease in their energy burdens of 17 percentage points. Customers in the treatment group enrolled in CAP Rate C had an average gross decrease in their asked to pay amounts of $612 and an average net decrease in their energy burdens of 12 percentage points.

  CAP customers are eligible for both electric and gas CAP Rate discounts. PECO CAP customers who received both electric and gas service experienced a net decrease in their asked to pay amounts of $727, the greatest net impact for all PECO service types. Electric service only, non-heating CAP customers had the greatest net impact of the CAP on their total energy burden with a net decrease of 15 percentage points. Electric service only, heating CAP customers felt the lowest net impact of the CAP on their total energy burdens with only an eight percentage point decrease in energy burden. This may be due the fact that they are more likely to exceed the 500 kWh discount limit, due to their use of electricity for heating and baseload uses.

  The PUC sets target ranges for low-income customers' energy burdens. The analysis showed that the CAP significant reduced the percentage of customers who exceeded the energy burden target. However, the majority of customers still exceeded the target after receiving CAP benefits. Eighty-eight percent of electric heating customers had energy burdens above the PUC target prior to CAP enrollment and 71 percent had burdens above the target after enrollment. Seventy-four percent of PECO electric and gas customers had energy burdens exceeding the target in the year prior to CAP participation, and 64 percent had burdens exceeding the target in the year after enrollment. Ninety-three percent of electric only non-heating customers had burdens that exceeded the target in the year prior to CAP participation, and 78 percent had incomes that exceeded the target in the year following enrollment.

- *Payment Impacts*: Customers experienced large reductions in their asked to pay amounts and their total payments. Coverage rates increased because the reductions in the asked to pay amounts were larger on average than the reductions of total payments. With the help of lower bills and arrearage forgiveness, the treatment group customers were able to reduce their balances.

  Customers in the treatment group had an average total coverage rate of 81 percent in the year preceding enrollment and 92 percent in the year following enrollment, a gross increase of 11 percentage points. The average net impact of the CAP on the total coverage rate was an increase of 25 percentage points.

  Treatment group customers had an average shortfall of $287 in the year preceding enrollment and of $139 in the year following enrollment, for a gross decrease of $148. The average net impact of the CAP on shortfall was a decrease of $333.

  By paying their CAP bills and staying current with their CAP payment obligations for six consecutive months, treatment group customers received an average of $429 in arrearage forgiveness in the year following enrollment. Treatment group customers experienced an average gross decrease of $317 in their balance, and an average net decrease of $696.

- *Assistance Impacts*: Approximately 12 percent of treatment group customers received LIHEAP cash assistance in the year prior to enrollment compared to 20 percent in the year after enrollment, for an increase of eight percentage points and an average net CAP impact of five percentage points. Twenty-two percent of combination customers received LIHEAP in the year preceding CAP enrollment, and 45 percent received LIHEAP in the year after CAP enrollment. PECO should work to increase the percentage of combination customers who receive LIHEAP assistance.

VI. Summary of Findings and Recommendations

This section of the report summarizes the key findings from the research and makes recommendations for program modifications.

A. *Key Findings*

This report, in conjunction with the 2006 Universal Services Program Evaluation report, found that the main accomplishments of PECO's CAP were as follows:

1. High levels of CAP participation by most groups.
2. High levels of customer satisfaction with the CAP.
3. Large CAP impacts on affordability.
4. Large increases in payment compliance.
5. Large reductions in customer balances.
6. No increase in energy usage.
7. Reduction in collections actions and service terminations.

The following improvements were found with the new CAP Rates A, B, and C.

1. The new CAP Rates have increased affordability for customers with income below 50 percent of the FPL. While the old discounts resulted in an average asked to pay amount of $892 for customers with income below 50 percent of the FPL, the new discounts resulted in an average asked to pay amount of $810 for this group.
2. The new CAP Rates have increased payment compliance for customers with income below 50 percent of the FPL. While the old discounts resulted in an average total coverage rate of 82 percent for customers in this group, the new discounts resulted in an average total coverage rate of 92 percent.

This report, in conjunction with the 2006 Universal Services Program Evaluation report, and additional research conducted by APPRISE, found the following issues in PECO's CAP:

1. Low CAP participation by customers with income below 25 percent of the FPL.
2. High participation by customers who have pre-CAP energy burdens that are below the affordable range defined by the PUC.
3. Energy burden that is not reduced to the PUC target for many customers with income below 50 percent of the FPL.

4. Reduction in payments after customers enroll in the CAP, and payment level below PECO's asked to pay amount.

B. Recommendations

This section provides recommendations for CAP improvement.

Issue 1: Low CAP participation by customers with income below 25 percent of the FPL. While 64 percent of those with income between 25 and 50 percent of the FPL and 73 percent of those with income between 50 and 100 percent of the FPL participate in PECO's CAP, only 16 percent of households with income below 25 percent of the FPL participate in the CAP. Furthermore, the research showed that 92 percent of customers with income below 50 percent of the FPL had energy burdens that exceeded the PUC target.

- **Conduct targeted CAP marketing to customers with income below 25 percent of the FPL.** The differential participation rates between the lowest income customers and the higher income-eligible customers shows that PECO needs to do targeted marketing to customers with income below 25 percent of the FPL. PECO may be able to reach some of these customers through their CARES program.

- **Conduct additional research to determine why CAP participation rates for households with income below 25 percent of the FPL are so low.** It may be possible to work with local CBO's to identify these customers, and conduct focus groups to determine whether these customers know about the program, and whether there are any barriers to program participation for this group. This information will help PECO to understand how to increase outreach for this group, how to provide CAP application assistance for this group, and whether they need to provide other interventions to increase participation among these customers.

Issue 2: Energy burden that is not reduced to the PUC target for many customers with income below 50 percent of the FPL. The analysis showed that despite the large reductions in energy burden, these customers were still likely to have energy burdens that exceeded the targets that were set by the PUC. While 88 percent of electric heating customers had energy burdens that exceeded the PUC target prior to CAP enrollment, 71 percent had such burdens after program participation. While 74 percent of combination customers had burdens that exceeded the PUC target prior to CAP enrollment, 64 had such burdens after program participation. While 93 percent of electric only non-heating customers had burdens that exceeded the PUC target in the year prior to CAP participation, 78 had burdens that exceeded the target in the year following enrollment.

- **Option 1: Administrative approach.** PECO could increase affordability for households with income below 50 percent of the FPL by taking the following actions:
  - **Target CAP Rate A, B, and C customers for LIURP.** Provision of LIURP services to this group will reduce their energy usage, reduce the amount by which they exceed 500 kWh per month, and increase bill affordability.

- **Accurately classify electric heaters.** Classifying default electric heaters in the electric heating category might change their LIHEAP status.

- **Referrals to increase income.** Use the CARES program to help these households increase their income, and therefore reduce their energy burden.

- **Option 2: Incremental Change to PECO's CAP.** PECO could remove or increase the 500 kWh limit for CAP discounts for those in the lowest poverty groups. APPRISE's earlier research showed that approximately 75 percent of PECO's CAP customers exceeded the 500 kWh monthly usage limit (after which the CAP discount declines and is then eliminated) for at least one month that they participated in CAP, and that customers, on average, exceeded the 500 kWh threshold in seven or eight months of the year that they participated in CAP. The threshold limit for the CAP discount, decreases the benefit that customers receive, as compared to a discount that is not restricted to a certain amount of electric usage.

- **Option 3: Change the PECO CAP structure.** With the implementation of a fixed credit program, PECO could provide greater benefits to customers who have a greater need for energy assistance, without increasing the total CAP subsidy costs. The fixed credit program could work in the following way:

  - Obtain the client's annual income at CAP intake.

  - Calculate the client's affordable energy bill as X percent of annual income.

  - Obtain the client's suggested annual budget from the billing system.

  - Compute the client's annual CAP credit = Annual Budget – Affordable Annual Energy Bill.

  - Apply a limit to the annual CAP credit if necessary.

  - Compute the monthly CAP credit = Annual CAP credit/12.

  - A budget bill would equalize the customer's payments over the year and allow the customer to budget for the monthly bill.

Issue 3: High participation by customers who have pre-CAP energy burdens that are below the affordable range defined by the PUC.

- **Remove eligibility for customers with affordable energy burdens.** While removing the 500 kWh discount limit for customers below 50 percent of the FPL would increase CAP costs, PECO could cover this increase by removing CAP eligibility for those customers whose energy burdens met the PUC target before receipt of CAP benefits. APPRISE's earlier research also showed that approximately half of the customers who participated in CAP rates D and E had energy burdens that were at or below the PUC's energy burden target prior to receiving the CAP discount.

Issue 4: Reduction in payments after customers enroll in the CAP, and payment level below PECO's asked to pay amount.

- **PECO should consider a pilot approach to serving households differentially based on their ability to meet their energy needs.**

Other issues:

- **PECO should consider the use of their CARES program to provide temporary assistance to the lowest income households who are facing temporary financial crises.** The customer survey showed that as many as half of the customers in CAP Rate B, those with income below 25 percent of the FPL, may be in a temporary financial crisis due to unemployment and reduction in household income. This suggests that such may be the case as well for many of the non-participating customers with income below 25 percent of the FPL.

- **PECO should increase outreach to combination customers to increase LIHEAP participation.** The analysis showed that customers were more likely to receive LIHEAP assistance after they began participating in CAP. While 22 percent of combination customers received LIHEAP in the year prior to CAP participation, 45 percent received LIHEAP in the year following program enrollment. However, this is still a low participation rate, given that these customers have income below 50 percent of the FPL.

- **The CAP is an important program that should be continued.** The customer survey showed that customers feel the CAP has had a large impact on their ability to pay their PECO bill and to meet their other needs. While 66 percent of CAP participants reported that it was very difficult to pay their PECO bills prior to CAP enrollment, only 11 percent said it was very difficult to do so while participating in the program. Most respondents reported that they planned to continue participating in the CAP and that the CAP was very or somewhat important in helping them to meet their needs.