



Philadelphia Gas Works Customer Responsibility Program Analysis and Recommendations

Final Report

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Executive Summary

PGW's Customer Responsibility Program provides discounted gas bills to low-income customers to improve energy affordability and bill payment. PGW is currently considering modifications to the program to reduce program costs and the subsidy that non-participating customers pay for the program.

Introduction

PGW needed to consider significant program modifications because of recent developments that greatly increased the cost of the CRP. These changes include the following.

- 1) CRP participation has increased and will probably increase even more, given the current state of the economy. Despite increases in participation, PGW's preferred approach does not include a cap on program enrollment.
- 2) LIHEAP grants were previously used to help cover the cost of the CRP. However, Pennsylvania has recently changed program requirements and now requires PGW to apply LIHEAP to the CRP asked to pay amount. This policy increases the cost of the CRP, may reduce customer payment consistency (because when LIHEAP grants are credited to the customer's bill, the customer may go several months without needing to make a payment), and may reduce the customer's ability to receive LIHEAP crisis grants.

APPRISE has undertaken research to compare different program models and make recommendations to PGW for revising their CRP model.

Current CRP Model

PGW introduced a Percentage of Income Plan Program (PIPP) in 1989, and revised the program as the Customer Responsibility Program (CRP) in 1994.

Eligibility

Residential customers with income at or below 150 percent of the Federal Poverty Level are eligible to participate in the CRP. Customers are not required to be payment-troubled to join the program.

Subsidy

Customers who participate in the CRP pay a fixed monthly amount. The amount is calculated so that customers pay 8, 9, or 10 percent of their income, based on their poverty level. There is a minimum payment amount of \$25 per month.

Arrearage Forgiveness

Customers who have a pre-program arrearage are eligible for forgiveness of 1/36 of those arrearages each month. The requirements for the monthly arrearages are that the bill must be paid on time and in full and that the customer must not have a current balance past due. If customers participate in the CRP and pay their bills diligently for three years, they will eliminate all of their pre-program arrears.

LIHEAP Grant Application

Until this year, PGW credited LIHEAP cash grants received by CRP participants to the burden born by other ratepayers to cover the cost of the CRP discount. This policy has the advantage of helping to reduce the cost of the CRP for other ratepayers and of maintaining a constant monthly payment amount for CRP participants. However, beginning this year, the Pennsylvania Department of Public Welfare (DPW) decided that PGW could no longer apply LIHEAP grants in this way. Until more information is received, PGW must apply the LIHEAP cash grants to the customer's asked to pay amount.

CRP Participation and Costs

Monthly average CRP participation increased from 58,100 in FY 2004 to 80,891 in FY 2009, an average annual increase of seven percent. The cost of the CRP discount increased from \$58 million in FY 2004 to \$117 million in FY 2009. The average annual cost increase between FY 2004 and FY 2009 was 16 percent. The average annual net discounts per participant were \$1,447 in FY 2009.

All Low-Income Program Investments

PGW provides other benefits to low-income customers in addition to the CRP discounts. These include arrearage forgiveness and the Conservation Works Program. They also provide a Senior Discount to senior households (a grandfathered program that is no longer offered) whether or not the household is low-income. The annual cost of all low-income programs and the Senior Discount was \$140.55 million in FY 2009.

Gas Usage Comparison

There has been concern that gas consumption may increase when customers enroll in the CRP, as their monthly bills are not related to the amount of natural gas that they consume. APPRISE's 2004 evaluation of PGW's CRP included an analysis of the change in customer gas usage from the year before they began participating in the program to the year after they enrolled. The analysis showed that current CRP participants used approximately the same amount of gas as later CRP participants and that CRP participants did not significantly increase the amount of gas they used between the year before enrollment and the year after program enrollment.

The finding that energy consumption does not increase after customers enroll in affordability programs is consistent with other studies that APPRISE has conducted. APPRISE evaluated the PECO CAP, the PG Energy CAP, the NJ USF, and the PPL CAP between 2004 and 2008. With one exception, all of these studies found no significant change in energy consumption following enrollment in the CAP. The one exception was for PECO's electric heaters who increased their electric consumption by four percent following

enrollment in the CAP. However, PECO's gas customers and their electric non-heaters also did not increase consumption following enrollment in the CAP.

Risks and Uncertainties

There are many uncertainties and risks that PGW must consider when determining how to update the CRP design. These factors include uncertainty as to how LIHEAP payment application rules may change, how the PUC CAP Policy Statement may change, changes in CRP program participation, fluctuating commodity prices, whether CRP participants would default if charges were increased, and to what extent other ratepayers can continue to bear increasing CRP costs.

LIHEAP Payment Application

The Pennsylvania Department of Public Welfare (DPW) has issued new requirements with respect to the way utilities can apply LIHEAP to customer bills. Previously, PGW used cash LIHEAP grants to help cover the CAP shortfall, the difference between the customer's full bill and what the customer is billed under the CRP. This benefitted ratepayers because it allowed PGW to reach a constant net energy burden (the percentage of income spent on gas costs) by poverty level for all CRP customers, regardless of whether or not they received LIHEAP.

For example, customers who had income below 50 percent of poverty have a CRP bill that is equal to 8 percent of their income. If they receive the LIHEAP grant, this will reduce the energy burden below 8 percent. Customers who receive LIHEAP will have lower energy burdens than those who do not. However, if PGW credits the LIHEAP grant to cover the cost of the CRP subsidy, then all customers in this poverty level group will remain at an 8 percent energy burden.

The payment method also had the benefit of maintaining a constant monthly asked to pay amount for CRP participants, which has been shown to be favorable to customers and increase payment regularity. At this point, it is uncertain as to whether the change in requirements will be maintained.

PUC CAP Policy Statement

The Pennsylvania Public Utility Commission (PUC), Bureau of Consumer Services (BCS), began a process to modify the CAP Policy Statement in 2005. Several changes to the program rules were considered. The revisions to the CAP Policy Statement have been assigned to the Commission's Law Bureau and are currently pending further Commission action.

CRP Participation

Another uncertainty for the program is how CRP participation will grow over time. CRP participation has increased dramatically over the past five years, but there has been slowdown in growth more recently and then a slight upturn in the most recent Fiscal Year. Therefore, it is uncertain how participation will change in the coming years. Variation in

CRP participation growth rate can have great implications for the cost and sustainability of the program.

Gas Rates

Another uncertainty for CRP costs is gas rates. If the program continues as a fixed percentage of income with no limit on the subsidy, increases in gas rates can have a large impact on program costs. Gas rates are expected to decline by five percent over the next year, and then increase by between one and five percent each year over the following several years.

Tradeoff Between Affordability for Lowest-Income Households and Other Ratepayers

Over the years, PGW has worked to balance affordability for CRP participants with the cost that the program imposes on other ratepayers. There is a question as to whether PGW's program is more generous than it needs to be or more generous than what is sustainable for other ratepayers to continue to subsidize. The average PGW customer pays an additional \$300 per year in Universal Service Charges, \$220 of which is for the CRP program. This is a large cost for the non-CRP customers, many of whom are close to low-income, but not eligible for assistance.

On the other hand, the advantage of shifting costs to non-CRP PGW ratepayers through the CRP is that it is an automatic adjustment, like the pass-through of the Gas Cost Rate; PGW does not need to go through a rate case filing to recover increased non-gas costs. To date, most of the non-CRP customers have continued to pay their bills, even when the gas prices increased above their current level. In re-designing the CRP, PGW needs to consider the potential impact of any changes in costs on both CRP participants and on all ratepayers. It is difficult to predict what level of cost will be unaffordable for either group and push either group into arrearages and uncollectables.

Opportunities

PGW faces challenges in balancing affordability for the lowest income customers and other customers due to the large percentage of customers who have very low incomes and the somewhat limited incomes of many of their other customers. However, there are two potential opportunities to improve affordability for all customers. One opportunity is to provide energy efficiency services to PGW customers. These services will reduce the amount of energy needed to keep the home comfortable and safe, and increase energy affordability. The second opportunity for increased affordability for PGW customers is to alter program funding so that there is statewide funding for all low-income assistance programs.

Weatherization

PGW's Conservation Works Program improves energy efficiency for CRP participants and reduces the cost of the CRP subsidy. PGW is proposing to implement additional DSM programs and to work with the Philadelphia Housing Development Corporation to coordinate delivery of efficiency services with American Recovery and Reinvestment Act

(ARRA) funding.¹ The potential annual reduction in the CRP subsidy from these combined program investments over the next several years is over \$10 million annually.

Statewide Program Funding

The statewide program model may be a more beneficial model for PGW ratepayers than the current model where programs are designed, operated, and funded by individual utilities. Such a program can provide affordable gas to low-income participants while restricting the burden that is placed on other low income customers and customers who are just above the program income limit. While such a model may not be politically feasible in Pennsylvania, it is an approach that should be considered, given the overwhelming percentage of customers in PGW's service territory who are low-income and the need for a redistribution of program subsidy costs within the state. We believe that this change would require legislative action.

Comparison Programs

We compared PGW's CRP to other gas utility CAPs in Pennsylvania and to gas utility programs in other major cities in the U.S. PGW's program stands out from the other PA programs in many respects. The program serves many more customers, has a higher participation rate, and has higher expenditures. PGW's annual CAP credits averaged \$1,167 in 2008, compared to an average of \$552 across the other gas utilities. PGW's CAP costs averaged \$103 million in 2008, compared to an average of \$10 million across the other gas utilities. PGW customers paid an average of \$220 toward the CRP cost, compared to an average of \$40 across the other gas utilities in PA.

Data on other gas utility affordability programs in cities outside of Pennsylvania showed that the program size, average program expenditures and customer discount were much smaller for these other gas utilities than for PGW's CRP.

Program Alternatives

Projections of the cost of the Current CRP Model and two other program models, given current program participation, projected increases in participation, projected increases in gas rates, and potential increases in customer income are presented in this report.

Model 1: Current CRP Model

Cost projections for the Current CRP Model, given projected gas price changes, three percent annual increases in income, and various increases in program participation are

¹ The American Recovery and Reinvestment Act (ARRA) of 2009 provided additional funding for the National Low-Income Weatherization Assistance Program and for additional energy grants under the Energy Efficiency and Conservation Block Grant (EECBG) Program that provides funds to units of local and state government, Indian tribes, and territories to develop and implement projects to improve energy efficiency and reduce energy use and fossil fuel emissions in their communities. Philadelphia has been awarded almost \$30 million in ARRA funding for the Weatherization Assistance Program. The Philadelphia Housing Development Corporation has also applied for a grant to implement additional weatherization services in coordination with PGW and other utilities.

shown below. Table ES-1 shows that projected costs are \$100 million in FY 2014 given a one percent annual increase in participation, and are \$122 million in FY 2014 given a five percent annual increase in participation.

Table ES-1
Model 1: Current CRP Model
Projected Annual Costs (\$ Millions)
Projected Gas Rates and 3% Annual Income Increases

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$97.83	\$86.58	\$93.20	\$95.87	\$99.56	\$100.27
2.5%	\$97.83	\$87.87	\$95.99	\$100.20	\$105.61	\$107.94
5%	\$97.83	\$90.01	\$100.73	\$107.72	\$116.30	\$121.77

There are several alternatives for how PGW could adjust the CRP credit to account for LIHEAP benefits. One alternative is to add the full amount of the projected LIHEAP grant to the customer's asked to pay amount. Under this approach, PGW would adjust the calculation of the CRP payment by adding 1/12 of the customer's potential LIHEAP grant, based on PA's LIHEAP matrix, to the customer's monthly payment. The payment could be calculated as:

$$\text{Monthly CRP Payment} = \{ [.08 * \text{Annual Household Income}] / 12 \} + [\text{LIHEAP} / 12]$$

This would result in a net bill for the customer who received LIHEAP that is equal to 8, 9 or 10 percent of income. This program model would provide an incentive for the customer to apply for LIHEAP and would reduce the cost of the CRP subsidy by \$23 million in FY 2009 and between \$24 and \$29 million in FY 2014, depending on the CRP participation growth rate. These assumptions are factored into the costs of the CRP model shown in the above table.

Another alternative is to adjust the monthly payment by adding some percentage of the projected LIHEAP grant. This percentage could be based on historical levels of LIHEAP grant receipt by CRP participants. For example, if 55 percent of CRP participants historically received LIHEAP, the calculation could be done as follows:

$$\text{Monthly CRP Payment} = \{ [.08 * \text{Annual Household Income}] / 12 \} + .55 * [\text{LIHEAP} / 12]$$

The percentage LIHEAP factor could be adjusted as the percent of CRP participants who receive LIHEAP changes. This percentage is expected to increase over time as participants learn how the new calculation and LIHEAP crediting process affects their gas bill.

PGW could maintain equal monthly payments for CRP participants who receive a LIHEAP cash grant by crediting the LIHEAP grant over 12 months, rather than immediately crediting the entire grant to the customer's bill. This change would maintain an equal monthly bill for the customer and may be the simplest option for PGW to implement.

Conservation Incentive Mechanism

Another adjustment to the Current CRP Model is to add a Conservation Incentive Mechanism. Under an incentive mechanism, the customer would receive a financial reward for reducing usage over the previous year by a certain amount. The incentive mechanism may cause some customers, who do have the ability to make positive changes in their energy usage behavior, to reduce their gas consumption. To the extent that this does occur, the reduction in the CRP subsidy will benefit other ratepayers.

To determine the change in usage, PGW would run a query each April to compare gas consumption of CRP customers for the November to April period, with the usage during that time period the previous year. Usage during both periods would be weather normalized to allow for an accurate comparison, and only those customers who were on the CRP for the entire November to April time period would be eligible for the incentive.

PGW would provide outreach on this new conservation incentive mechanism at the time of CRP enrollment, recertification, and when outreach for LIHEAP is conducted in the fall of each year. Education would be provided to current and new CRP participants to make them aware of this new benefit for reduced consumption.

Analysis of a mechanism that would provide a \$100 incentive to customers who reduce usage by ten percent or more showed that potential ratepayer benefits of such a mechanism range from about one to two million dollars annually, depending on the percentage of customers who reduce their usage.

Model 2: Targeted Energy Burden Model

The New Jersey Universal Service Program and FirstEnergy (in Pennsylvania) have created low-income subsidy programs that target the customer's post-LIHEAP energy burden to a certain level. If PGW decided to target a burden of eight percent, the calculation would be done as follows:

$$\begin{aligned} \text{Annual Household Income} * 8\% &= \text{Targeted Net Energy Bill} \quad (\$10,000 * 8\% = \$800) \\ \text{Current Gas Burden} &= \text{Annual Gas Bill} - \text{LIHEAP Benefit} \quad (\$2,200 - \$350 = \$1850) \\ \text{CAP pays the difference:} &\quad \$1850 - \$800 = \$1050 \\ \text{Monthly credit} &= \$1050/12 = \$87.50 \end{aligned}$$

A disadvantage of this design is that it does not result in equal monthly bills for the customer. The customers' bills fluctuate due to monthly fluctuations in gas usage and LIHEAP credits to the customers bills. This problem could be addressed by requiring these customers to have a budget bill and applying the LIHEAP grant over 12 months.

An advantage of this design is that it reduces the risk for ratepayers (although it increases the risk for CRP participants). This is because the CRP benefit is set once per year and the benefit does not vary over the year if gas rates change or the customer increases gas usage. Additionally, the model provides an incentive for customers to apply for LIHEAP.

Cost projections for the Targeted Energy Burden Model, given projected gas price changes, three percent annual increases in income, and various increases in program participation are shown below. Table ES-2 shows that projected costs are \$101 million in FY 2014 if there is a one percent annual participation increase and to be \$123 million in FY 2014 if there is a five percent annual participation rate increase.

Table ES-2
Model 2: Targeted Energy Burden
Projected Annual Costs (\$ Millions)
Projected Gas Rates and 3% Annual Income Increases

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.70	\$87.82	\$94.34	\$97.03	\$100.72	\$101.49
2.5%	\$98.70	\$89.12	\$97.17	\$101.42	\$106.84	\$109.26
5%	\$98.70	\$91.29	\$101.96	\$109.02	\$117.64	\$123.25

Model 3: Bill Discount Model

Another option for a low-income affordability program is to provide a discount to the customer on the energy bill. The Bill Discount Model splits the risk between the ratepayers and the CRP participant. If gas costs increase, the increase will be split between the customer's portion of the bill and the discounted portion of the bill.

Advantages of the Bill Discount Model are that it provides an incentive for customers to apply for LIHEAP and that it is a straightforward model to implement. A disadvantage is that it does not provide a constant monthly payment. However, PGW could achieve a constant monthly payment for the participant by utilizing the budget billing method with the LIHEAP grant credited over 12 months.

Another disadvantage of the Bill Discount Model is that it is an inefficient way to reach a targeted energy burden. Some customers will receive a discount that is greater than what is needed to achieve the targeted burden level and some customers will receive a discount that is lower than what is needed to achieve the targeted burden.

Cost projections for the Bill Discount Model with limits on the amount of gas discounted, given projected gas price changes and various increases in program participation are shown below. Table ES-3 shows that projected FY 2014 costs are \$136 million if there is a one percent annual rate of increase in participation and \$165 million if there is a five percent annual rate of increase in participation.

Table ES-3A
Model 3A: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
After Projected LIHEAP Grant is Subtracted
With Limits on The Amount of Usage Discounted
Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$123.03	\$118.08	\$124.32	\$128.18	\$132.75	\$135.53
2.5%	\$123.03	\$119.83	\$128.04	\$133.97	\$140.81	\$145.89
5%	\$123.03	\$122.75	\$134.37	\$144.02	\$155.06	\$164.58

The analysis of the Model 3A: Bill Discount Model shown above set the discounts to keep at least 90 percent of program participants within the PUC targeted energy burden guidelines. Table ES-3B displays the projected costs for a modified Model 3B: Bill Discount Model that would have the same projected costs as those for the Current CRP Model.

Table ES-3B
Model 3B: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Maximum Discounts for Same Cost as Current CRP Model
Projected Gas Rates

Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$97.58	\$93.64	\$98.60	\$101.66	\$105.29	\$107.50
2.5%	\$97.58	\$95.03	\$101.55	\$106.26	\$111.69	\$115.72
5%	\$97.58	\$97.34	\$106.56	\$114.22	\$122.99	\$130.54

Summary and Recommendations

The three models discussed in this report should be compared on several dimensions shown in Table ES-4 and described below.

- *Equal Monthly Payments* – The Current CRP Model is the only design that provides equal monthly payments (with the allocation of the LIHEAP grant over a 12-month period.) The Targeted Energy Burden and Bill Discount Models require a budget bill arrangement to equalize the asked to pay amount. Because of the unpredictability of energy usage, the PUC requirement for periodic budget bill adjustments, and the need to avoid large make-up payments, frequent adjustments to the budget bill may result in somewhat irregular payments for program participants.
- *LIHEAP Application Issue* – The Bill Discount Model is the only design that completely removes the LIHEAP payment issue because it does not integrate the discount with the LIHEAP cash grant. The other models, however, provide more equitable net payments because they do take account of LIHEAP.
- *Conservation Incentive* – The modified CRP Model has a new proposed Conservation Incentive Mechanism. The Targeted Energy Burden Model provides an incentive for conservation because the customer's program credit is determined at the beginning of the year and fixed over the year. The Bill Discount Model provides an incentive for conservation because the customer pays a portion of the energy bill.
- *Targets Energy Burden* – The Current CRP Model and the Targeted Energy Burden Model target a set energy burden level, as opposed to the Bill Discount Model which indirectly attempts to reach a set energy burden. The Current CRP and the Targeted Energy Burden Models are more efficient at reaching the targeted energy burden level.
- *Administrative Simplicity* – The Current CRP Model is simplest for PGW because it is the model that is currently programmed into their system. The Bill Discount Model is a simple program to administer, as it only involves applying different rates for CRP customers. However, the program becomes more complex when the budget bill is included and when there are limits on the amount of gas that is discounted. The Targeted Energy Burden Model is the most complicated to explain to customers and to implement.

Cells in the table are highlighted that correspond to advantageous characteristics to make it easy to see which programs are advantageous in each area.

Table ES-4
Advantages and Disadvantages of Assistance Models

	Assistance Model		
	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3: Bill Discount

	Assistance Model		
	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3: Bill Discount
Equal Monthly Payments	Yes	No	No
Resolves LIHEAP Application Issue	Partially	Partially	Yes
Conservation Incentive	Yes	Yes	Yes
Targets Energy Burden	Yes	Yes	No
Administrative Simplicity	Yes	No	Yes

Table ES-5 compares the monthly customer asked to pay amount under the three assistance models, and two versions of the Bill Discount Model. The table demonstrates that while the Current CRP and Targeted Energy Burden Models have very similar bills, the Bill Discount Model that was designed to reach the PUC burden targets has much lower projected bills. The Bill Discount Model that was designed to match the CRP cost has monthly asked to pay amounts that are lower than the other models for the lower income groups and higher than the other models for the higher income groups, but are about the same on average for participants as a whole.

Table ES-5
Comparison of Assistance Models
Customer Monthly Asked to Pay Amount

	October 2009 Participation	Assistance Model			
		Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3A: Bill Discount To Reach PUC Target	Model 3B: Bill Discount To Match CRP Cost
		Average Monthly Asked to Pay Amount			
<=25%	5,061	\$87	\$83	\$59	\$56
26-50%	16,023	\$79	\$80	\$58	\$69
51-75%	25,559	\$94	\$94	\$70	\$88
76-100%	18,753	\$108	\$108	\$80	\$111
101-125%	10,680	\$136	\$136	\$95	\$146
126-150%	5,178	\$153	\$154	\$113	\$187
Total	81,254	\$103	\$103	\$75	\$101

Table ES-6 compares the costs of the three models, and two versions of the Bill Discount Model. The table demonstrates that while the Current CRP and Targeted Energy Burden Models are very close in cost, the Model 3A: Bill Discount Model that was designed to reach the PUC targeted energy burden has much higher projected costs. The Model 3B: Bill Discount Model that was designed to match the CRP has lower costs than the Current CRP Model when gas prices increases in the future are taken into account, because the Bill

Discount Model program participants share the price increase on the part of the gas that they are paying for. However, the cost of the Bill Discount Model does not decline when the customer's income increases as it does with the other models.

Table ES-6
Cost Comparison of Assistance Models
Annual Subsidy Cost (\$ Millions)

Year	Parameters			Assistance Model			
	Participation Growth	Gas Cost Increase	Income Increase	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3A: Bill Discount	Model 3B: Bill Discount
						To Reach PUC Target	To Match CRP Cost
2009	--	--	--	\$97.83	\$98.70	\$123.03	\$97.58
2014	1%	Yes	No	\$112.90	\$113.65	\$135.53	\$107.50
2014	5%	Yes	No	\$137.10	\$138.01	\$164.58	\$130.54
2014	1%	Yes	Yes	\$100.27	\$101.49	\$135.53	\$107.50
2014	5%	Yes	Yes	\$121.77	\$123.25	\$164.58	\$130.54

Recommendation

The examination of the advantages and disadvantages of the three models showed that each design has reasons to be considered in this review. While, the analysis of program costs and energy burdens provides a clear display of the inefficiency of the Bill Discount Model, the Bill Discount Model has other advantages that the others do not, resolving the important issue of the application of LIHEAP benefits. The Bill Discount Model can be designed to have the same costs as the other models. While some households will have energy burdens that exceed the PUC targeted levels, these households can be targeted for conservation services that bring their bills more in line with the PUC targets.

However, because the Current CRP Model and the Targeted Energy Burden Model are so close in projected costs and reach targeted energy burdens more efficiently than the Bill Discount Model, they should be compared on the substantive advantages and disadvantages of the approaches. The areas where the programs differ are included in the table below to make it clear which characteristics are under consideration. When the table is reduced in this way, it becomes apparent that the Current CRP model is preferred because it provides the customers with equal monthly payments and is administratively simpler.

Table ES-6
Advantages and Disadvantages of Assistance Models

	Assistance Model	
	Model 1: Current CRP	Model 2: Targeted Energy Burden
Equal Monthly Payments	Yes	No

	Assistance Model	
	Model 1: Current CRP	Model 2: Targeted Energy Burden
Administrative Simplicity	Yes	Least

This result points to a recommendation that PGW retain the Current CRP Model with the revisions discussed earlier.

- The CRP payment formula is revised to include the LIHEAP matrix benefit as shown below for the eight percent group, or with some percentage of the LIHEAP grant factored into the customer's payment.

$$\text{Monthly CRP Payment} = \{[.08 * \text{Annual Household Income}] / 12\} + [\text{LIHEAP} / 12]\}$$

- The LIHEAP grant is applied to the customer bill over a 12-month period.
- The Conservation Incentive Mechanism is included in the revised program.

However, if it becomes apparent that the proposed means of dealing with the LIHEAP application issue under the Current CRP Model or Targeted Energy Burden Model are not acceptable to DPW, PGW could adopt the Bill Discount Model and work to provide conservation services to those households who are then faced with gas bills significantly above the PUC targets.

I. Introduction

PGW's Customer Responsibility Program provides discounted gas bills to low-income customers to improve energy affordability and bill payment. PGW is currently considering modifications to the program to reduce program costs and the subsidy that non-participating customers pay for the program. APPRISE has been asked to evaluate various alternatives to the current model that will benefit program participants and all ratepayers. The alternative program models must comply with PUC guidelines, address volatility in commodity cost, and consider PGW's financial status.

A. *Research Issues*

PGW needed to consider significant program modifications because of recent developments that greatly increased the cost of the CRP. These changes include the following.

- 1) CRP participation has increased and will probably increase even more, given the current state of the economy. Despite increases in participation, PGW's preferred approach does not include a cap on program enrollment.
- 2) LIHEAP grants were previously used to help cover the cost of the CRP. However, Pennsylvania has recently changed program requirements and now requires PGW to apply LIHEAP to the CRP asked to pay amount. This policy increases the cost of the CRP, may reduce customer payment consistency (because when LIHEAP grants are credited to the customer's bill, the customer may go several months without needing to make a payment), and may reduce the customer's ability to receive LIHEAP crisis grants.²

PGW will consider keeping the program a PIPP, using a percent of bill plan, using a rate discount plan, as well as hybrid models. PGW will be required to meet the PUC policy statement or apply for waivers and to file proposed program changes for approval by the PUC.

B. *Research Activities*

APPRISE has undertaken four key research activities to develop the information that is included in this report.

² Customers must have a shutoff notice or have their service terminated to receive a LIHEAP crisis grant. DPW issues crisis grants in the amount requested on the customer's termination notice. If the customer uses the LIHEAP cash grant to cover the monthly asked to pay amount, the customer is less likely to receive the termination notice and be eligible for the LIHEAP crisis grant.

- 1) **CRP Review and Update** – APPRISE conducted an evaluation of PGW’s CRP in 2004. Since that time, PGW has made some minor changes to the program. We reviewed the 2004 program design and met with PGW to discuss changes that have been made to the program since that time. We also discussed goals and requirements for the revised program design.
- 2) **Program Review** – APPRISE conducted a review of other gas utility affordability programs both in Pennsylvania and in major Northeastern and Midwestern cities. APPRISE developed information to compare the design and costs of these different programs.
- 3) **Program Options Memo** – APPRISE prepared a memo that provided an analysis of the program options that may best meet PGW’s goals within the PUC regulatory requirements. The program options memo described options for reducing program costs, reducing uncertainty about program costs, and maximizing the probability that customers meet their payment obligations. APPRISE made recommendations for the program options that appeared to best meet PGW’s requirements and have the greatest probability of success.
- 4) **Data Analysis** – APPRISE discussed the program options memo with PGW and developed proposed specifications for three alternative program designs. Using these specifications, APPRISE modeled the program costs for the different program options, given projected changes in program participation, gas rates, and customer income.

C. Organization of the Report

Six sections follow this introduction.

- 1) *Section II – Current Customer Responsibility Program Model:* Provides a detailed description of the current design of PGW’s CRP, analyzes program participation and costs, and describes gas usage for CRP participants and non-participants.
- 2) *Section III – Risks and Uncertainties:* Provides analysis of the risks and uncertainties that could affect the implementation and costs of the CRP. These include changes to requirements as to how LIHEAP cash grants can be applied to customer bills, changes to the CAP policy statement, program participation levels, gas rates, and potential customer payment response to changes in CRP subsidy levels.
- 3) *Section IV – Opportunities:* Provides an analysis of two potential opportunities for PGW to reduce the cost of the CRP subsidy to other ratepayers – weatherization and statewide program funding.
- 4) *Section V – Bill Payment Program Parameters in Comparison Programs:* Provides an analysis and comparison of bill payment programs implemented by other PA gas utilities and bill payment programs run by gas utilities in other major cities.

- 5) *Section VI – Program Alternatives: Options, Costs, Opportunities, and Risks:* Provides a description and analysis of two program alternatives and provides cost projections for the current model and the two other models given potential changes in program participation, gas costs, and customer income.
- 6) *Section VII – Summary and Recommendations:* Compares the advantages, disadvantages, and costs of the three program models and makes recommendations for a refined CRP model.

APPRISE prepared this report under contract to PGW. PGW facilitated this research by furnishing data and information 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 PGW.

II. Current Customer Responsibility Program Model

PGW introduced a Percentage of Income Plan Program (PIPP) in 1989, and revised the program as the Customer Responsibility Program (CRP) in 1994. The current program was approved by the PUC in 2003. The program was designed to provide affordable gas bills to low-income households, avoid loss of service for vulnerable customers, improve payment patterns, reduce collection costs, and minimize the burden placed on other ratepayers. This section describes the program's design, including program eligibility and benefits, CRP participation over the past several years, CRP discount costs, and gas usage for CRP and non-CRP customers.

A. *Eligibility*

Residential customers with income at or below 150 percent of the Federal Poverty Level are eligible to participate in the CRP. Customers are not required to be payment-troubled to join the program. They are not required to have an arrearage, to have a broken payment agreement, or to have utility and housing costs that exceed a certain percentage of income.

There is no limit on the number of participants in the CRP, and program participation has grown significantly over the past decade.

B. *Bill Discount*

Customers who participate in the CRP pay a fixed monthly amount. The amount is calculated so that customers pay 8, 9, or 10 percent of their income, based on their poverty level. The table below shows the relationship between the customer's poverty level and the annual bill. The customer pays 1/12 of the listed percentage of income each month. There is a minimum payment amount of \$25 per month.

Table II-1
CRP Payment Percentage

Federal Poverty Level	Customer Payment Percent of Gross Income
0% - 50%	8%
51% - 100%	9%
101% - 150%	10%

Note: the Federal Poverty Level for a family of four in FY 2009 is \$22,050.

The CRP discount is calculated as the actual monthly bill minus the percentage of income payment. Customers receive a negative discount in months where their actual bill is less than their percentage of income payment. PGW ratepayers subsidize an average of 53

percent of CRP participants' gas bills, before taking into account LIHEAP grants the participants may receive.

Customers who have an arrearage at the time that they join the CRP, a "pre-program arrearage", have an additional charge of \$5 per month added to the bill to contribute towards the reduction of the arrearages.

There are no limits on the annual maximum CAP credit or on consumption.

C. Arrearage Forgiveness

Customers who have a pre-program arrearage are eligible for forgiveness of 1/36 of those arrearages each month. The requirements for the monthly arrearage forgiveness are as follows.

- The bill must be paid on time and in full.
- The customer must not have a current balance past due.

If customers participate in the CRP and pay their bills diligently for three years, they will eliminate all of their pre-program arrears.

D. LIHEAP Grant Application

The Federal LIHEAP program, administered through the Department of Public Welfare in Pennsylvania, provides grants to low-income households to help cover their utility bills. These grants are sent directly to the utility that the customer designates. The Crisis component of LIHEAP provides additional assistance to low-income customers who receive termination notices to help these customers avoid loss of utility service and to terminated customers to help these customers restore service.

Until this year, PGW credited LIHEAP cash grants received by CRP participants to the burden born by other ratepayers to cover the cost of the CRP discount.³ This policy has the advantage of helping to reduce the cost of the CRP for other ratepayers and of maintaining a constant monthly payment amount for CRP participants. Previous research with low-income households has shown that customers prefer a predictable monthly payment obligation and that the predictable payment helps to increase payment compliance.

However, beginning this year, the Pennsylvania Department of Public Welfare (DPW) decided that PGW could no longer apply LIHEAP grants in this way. The Federal Department of Health and Human Services, Office of Family Services, Division of Energy Assistance has sent the matter to their legal counsel for review and is waiting to receive a decision on whether or not LIHEAP funds can be used in this way. Until more information

³ A similar practice was followed by the five other gas utilities in Pennsylvania with PIPP Programs. However, these other utilities applied the benefit to the individual customer's subsidy, rather than to the program as a whole.

is received, PGW must apply the LIHEAP cash grants to the customer asked to pay amount. This report provides recommendations for modifying the current design to maintain revenue neutrality and equal monthly customer asked to pay amounts under the new LIHEAP application rules.

LIHEAP Crisis grants and other customer assistance payments such as UESF are credited to the customer's account in the same manner as customer cash payments and are used to offset the monthly payment, the CRP balance, and arrears.

E. CRP Participation and Costs

Table II-2 shows how year-end CRP participation has increased from 2004 through 2008, from the annual PUC Reports on Universal Service Programs. The table shows the number of CRP participants, the number of identified low-income customers, the percent of PGW customers who are identified low-income, and the CRP participation rate. While there has been some fluctuation in the number of identified low-income customers and the CRP participation rate, there has been a large increase in the number of CRP participants since 2004, from just over 60,000 participants to nearly 78,000 participants at the end of 2008, an increase of 28 percent, or an average annual increase of 7 percent. However, after large increases in participation in 2005 and 2006, the rate of increase has slowed and almost stopped increasing in calendar years 2007 and 2008.

Table II-2
CRP Participation

	2004	2005	2006	2007	2008
CRP Participants	60,621	67,120	76,045	76,235	77,749
% Increase in CRP Participation from Previous Year	--	11%	13%	0%	2%
Identified Low-Income Customers	156,723	155,308	139,303	146,836	153,239
Percent of Customers who Are Low-Income	32.9%	32.6%	29.1%	30.5%	31.8%
CRP Participation Rate	39%	43%	55%	52%	51%

Source: Reports on Universal Service Programs & Collections Performance, Pennsylvania Public Utility Commission, Bureau of Consumer Services, 2004-2008.

Table II-3 displays annual average CRP participation by CRP tier, as reported in PGW's annual CRP participation reports. Rather than end-of-year participation, this table shows the monthly average over the fiscal year, and data are available through 2009.⁴ These data show the greatest participation growth in FY 2006 and FY 2007, a decrease in FY 2008, and an upturn in CRP participation growth in FY 2009, probably due to the current recession. The average annual participation increase between FY 2004 and FY 2009 was seven percent.

⁴ Fiscal years run from September through August.

**Table II-3
CRP Participation
By CRP Tier**

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Minimum (\$25/Month)	2,111	2,426	2,716	2,714	2,827	3,665
8%	12,950	14,111	15,780	16,508	15,944	16,000
9%	30,409	32,760	37,592	40,917	41,899	43,429
10%	12,630	11,811	14,533	16,746	17,080	17,798
Total	58,100	61,108	70,621	76,885	77,749	80,891
Annual % Increase		5%	16%	9%	1%	4%

Source: PGW Annual CRP Reports.

Table II-4 displays the total annual CRP net discounts for FY 2004 through FY 2009. The table shows that the cost of the discount increased from \$58 million in FY 2004 to \$117 million in FY 2009. These discounts represent a subsidy of 53 percent of the average participant's yearly usage prior to the LIHEAP grant application. The average annual cost increase between FY 2004 and FY 2009 was 16 percent.

**Table II-4
CRP Net Discounts (\$ Millions)
By CRP Tier**

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Minimum (\$25/Month)	\$3.13	\$3.88	\$5.08	\$4.85	\$4.77	\$7.15
8%	\$18.03	\$21.29	\$28.22	\$28.22	\$27.42	\$30.48
9%	\$30.29	\$37.18	\$51.01	\$50.98	\$52.10	\$62.58
10%	\$6.67	\$7.97	\$13.13	\$12.52	\$12.65	\$16.85
Total	\$58.12	\$70.32	\$97.44	\$96.57	\$96.95	\$117.07
Annual % Increase		21%	39%	-1%	0%	21%

Source: PGW Annual CRP Reports.

Table II-5 displays the average annual net discounts per participant. The table shows that annual discounts averaged \$1,447 per participant in FY 2009.

**Table II-5
CRP Average Annual Net Discounts
Per Participant
By CRP Tier**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Minimum (\$25/Month)	\$1,601	\$1,871	\$1,787	\$1,687	\$1,950
8%	\$1,509	\$1,788	\$1,710	\$1,720	\$1,905

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
9%	\$1,135	\$1,357	\$1,246	\$1,243	\$1,441
10%	\$675	\$903	\$748	\$741	\$947
Total	\$1,151	\$1,380	\$1,256	\$1,247	\$1,447
Annual % Increase		20%	-9%	-1%	16%

Source: PGW Annual CRP Reports.

Data for September 2004 net discount is not available so the annual net discount is not shown for FY 2004.

Table II-6 displays PGW's fiscal year average gas prices. The table shows that the large increase in the average discount in FY 2006 is related to the large increase in gas prices that year. The increase in the discount in FY 2009 is likely related to economic conditions, as there was a slight decline in gas prices in FY 2009.

Table II-6
Average PGW Gas Prices
FY 2004 – FY 2009

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Cost per Mcf	13.4182	14.6903	18.7135	17.7297	18.5374	18.2676
Annual % Increase		9%	27%	-5%	5%	-1%

F. All Low-Income Program Investments

PGW provides other benefits to low-income customers in addition to the CRP discounts. These include:

- Arrearage forgiveness: CRP participants can have arrearages forgiven each month that they pay bills on time and in full.
- Senior Discount: a program that is only for seniors who enrolled prior to September 1, 2003. This program provides a 20 percent discount on customers' bills. This program is not considered part of PGW's Universal Service Programs and is not restricted to low-income seniors, but PGW believes that a significant percentage of the participants are low-income.
- Conservation Works Program (CWP): provides weatherization improvements in CRP participants' homes to improve energy efficiency and comfort.

Table II-7 displays the annual cost of all of these programs and the total low-income program investment made by PGW from FY 2005 through FY 2009. The table shows that total program investments were \$140.55 million in FY 2009.

Table II-7
All Low-Income Investments
(\$ Millions)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
CRP	\$70.32	\$97.44	\$96.57	\$96.95	\$117.07
Arrearage Forgiveness	\$8.41	\$10.12	\$9.34	\$8.22	\$8.05
Senior Discount	\$16.92	\$16.48	\$14.51	\$13.00	\$13.15
CWP	\$1.87	\$2.11	\$2.05	\$2.38	\$2.28
Total	\$97.52	\$126.15	\$122.47	\$120.55	\$140.55

Source: PGW Reports.

G. CRP Usage Comparison

Table II-8 displays average monthly usage (ccf) for CRP participants by CRP tier from PGW's monthly CRP reports. The table shows that there has been some fluctuation in usage over time. Usage averaged 101 ccf per month in FY 2009.

Table II-8
CRP Average Monthly Usage (ccf)
By CRP Tier

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Minimum (\$25/Month)	97.81	93.94	83.65	86.91	82.89	93.30
8%	107.14	103.90	91.93	96.41	95.58	101.42
9%	104.99	104.38	90.22	96.08	93.42	99.72
10%	111.66	112.58	97.42	102.62	100.38	107.12
Total	106.66	105.44	91.83	97.25	95.01	101.39
Annual % Increase		-1%	-13%	6%	-2%	7%

Source: PGW Annual CRP Reports.

There has been concern that gas consumption may increase when customers enroll in the CRP, as their monthly bills are not related to the amount of natural gas that they consume. APPRISE's 2004 evaluation of PGW's CRP included an analysis of the change in customer gas usage from the year before they began participating in the program to the year after they enrolled.

Table II-9 displays the results from the analysis. The table shows two types of usage in two time periods for three groups of customers. The two types of usage shown are as follows.

- *Day Adjusted Usage:* The day adjusted usage is the customer's annual usage, adjusted to 365 days of usage.

- *Weather Normalized Usage*: The weather normalized usage is annualized usage that has been adjusted to control for the weather, by modeling the relationship between the average daily temperature and the customer's gas usage, and then predicting the customer's usage in an average weather year.

The three groups of customers shown are as follows.

- Treatment group: Customers who enrolled in the CRP in 2003 and did not participate in the CRP in the year prior to enrollment. We compare their usage in the year prior to enrollment to their usage in the year following enrollment. This comparison shows how usage changed for this group after they enrolled in the CRP compared to their usage when they were not participating in the program.
- Comparison group 1 – low-income non-participants: These are customers who have been identified as low-income because they received an energy assistance grant, but who did not participate in the CRP between 2001 and 2004. Their change in usage between the two time periods is an indication of the impact on factors outside of the program such as the economy or gas rates on gas usage.
- Comparison group 2 – later program participants: These are customers who did not participate in the pre or post period shown in the table, but who enrolled in the CRP the following year. Their change in usage between the two time periods is an indication of the impact of factors outside of the program such as the economy or gas rates on gas usage.

The table provides information to assess whether the CRP impacts participants' gas usage.

- Comparison of usage for the three different groups. The table shows that the current CRP participants and the customers who later enroll in the CRP have higher usage than the low-income non-participants. The fact that the low-income non-participants have lower usage than the current participants may lead some to argue that the program increases usage. However, there are a few reasons that this does not appear to be the case.
 - The participants may have joined the program because their higher usage, related to home and demographic characteristics, made the full bill unaffordable. The non-participants may not have joined because they did not need additional assistance or because the CRP was not beneficial to them due to their lower usage.
 - The fact that the customers who later joined the program also have higher usage than those who were non-participants leads to the conclusion that there is something about these customers that both make their usage higher and make them have need for the CRP.

- Comparison of usage across the two different time periods. The table shows that the customers who enrolled in the CRP did not increase their usage. Both the raw change in usage and the weather normalized change in usage were very small, less than two percent of pre enrollment usage.
 - *Day Adjusted Usage:* Customers used an average of 1,203 ccf in the year preceding CRP enrollment, and an average of 1,180 ccf in the year following CRP enrollment, a decline of 23 ccf, or two percent of pre-enrollment usage. The net change (average of difference between the two comparison groups) in day adjusted usage was a decline of 33 ccf.
 - *Weather Normalized Usage:* Customers had an average weather-normalized usage of 1,184 ccf in the year preceding enrollment and usage of 1,199 ccf in the year following enrollment, an increase of 15 ccf, or one percent of pre-enrollment usage. The net change in weather normalized usage was an increase of 8 ccf.

The data show that customers do not increase their usage after enrolling in the CRP.

Table II-9
CRP Usage Impacts
All Customers (ccf)
From APPRISE 2004 CRP Evaluation

	TREATMENT GROUP			CONTROL GROUP 1 LOW-INCOME NOT CRP PARTICIPANTS				CONTROL GROUP 2 LATER CRP PARTICIPANTS			
	Pre	Post	Change	Pre	Post	Change	Net Change	Pre	Post	Change	Net Change
Number of Customers	7,136			82,251				5,214			
Day Adjusted Usage	1,203	1,180	-23**	920	874	-47**	24**	1,060	1,127	67**	-90**
Weather Normalized Usage	1,184	1,199	15**	908	891	-17**	32**	1,097	1,128	31**	-16**

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

The finding that energy consumption does not increase after customers enroll in affordability programs is consistent with other studies that APPRISE has conducted. APPRISE evaluated the PECO CAP, the PG Energy CAP, the NJ USF, and the PPL CAP between 2004 and 2008. With one exception, all of these studies found no significant change in energy consumption following enrollment in the CAP. The one exception was for PECO's electric heaters who increased their electric consumption by four percent following enrollment in the CAP. However, PECO's gas customers and their electric non-heaters also did not increase consumption following enrollment in the CAP.

PGW provided another data set of monthly usage from September 2008 through August 2009 for all PGW accounts. We conducted analyses of these data to provide another

comparison of gas usage for CRP participants and CRP non-participants. The analysis includes 312,815 residential accounts after elimination of extreme outliers.

Table II-10 shows that CRP customers have higher average monthly gas usage than non-CRP customers. While CRP participants have mean monthly usage of 97 ccf, non-participants have mean monthly usage of 65 ccf. However, there are demographic differences between these two groups of households that impact usage.

Table II-10
Average Monthly Usage (ccf)
By CRP Participation
September 2008 through August 2009

	Number of Accounts	Mean Usage	25 th Percentile	Median	75 th Percentile
CRP Participants	80,796	97	68	91	119
Non-CRP Participants	232,019	65	42	60	80
All Customers	312,815	73	46	66	92

Table II-11 displays statistics on average monthly usage for heating customers by CRP participation. The table shows the same large difference in consumption between CRP heating and non-CRP heating customers. While CRP heating customers have average monthly usage of 98 ccf, non-CRP heating customers have average monthly usage of 67 ccf.

Table II-11
Average Monthly Usage (ccf)
By CRP Participation
Heating Customers
September 2008 through August 2009

	Number of Accounts	Mean Usage	25 th Percentile	Median	75 th Percentile
CRP Participants	77,832	98	69	92	120
Non-CRP Participants	210,708	67	45	62	81
All Customers	288,540	75	49	68	93

Table II-12 displays statistics on average monthly gas consumption for CRP and non-CRP participants by the whether the home was built before or after 1950. The table shows a much greater difference in usage between CRP and non-CRP participants for homes built prior to 1950 (difference is 32 ccf) than for homes built after 1950 (difference is 20 ccf). This is consistent with the hypothesis that CRP customers use more gas because their homes are in poor condition. The older homes are more likely to be in worse condition for CRP participants than for non-CRP participants because they have not been able to invest in

renovation and upgrades. The table also shows that 93 percent of the CRP participants live in these older homes compared to 72 percent of the non-CRP participants.

Table II-12
Average Monthly Usage (ccf)
By CRP Participation and Home Age
Heating Customers
September 2008 through August 2009

	Number of Accounts	Mean Usage	25 th Percentile	Median	75 th Percentile
Homes Built in 1950 or Earlier					
CRP Participants	71,573	100	70	93	121
Non-CRP Participants	149,779	68	44	61	83
Homes Built in 1951 or Later					
CRP Participants	5,446	84	60	80	102
Non-CRP Participants	58,863	64	48	62	78
All Customers	285,661	75	49	68	93

Table II-13 displays gas consumption by CRP participation and home type. Most of the customers are classified as living in condominiums or PUDs, the designation used for row homes. Differences in usage between CRP and non-CRP participants is greatest for single family residences and least for multi-family residences.

Table II-13
Average Monthly Usage (ccf)
By CRP Participation and Home Type
Heating Customers
September 2008 through August 2009

	Number of Accounts	Mean Usage	25 th Percentile	Median	75 th Percentile
Condominium, PUD					
CRP Participants	67,639	95	68	90	116
Non-CRP Participants	147,971	60	42	56	74
Single Family Residence					
CRP Participants	8,576	120	84	111	147
Non-CRP Participants	58,943	81	59	75	95
Multi-Family Residence (5+units)					
CRP Participants	1,617	127	81	118	165
Non-CRP Participants	3,794	102	58	87	129

	Number of Accounts	Mean Usage	25th Percentile	Median	75th Percentile
All Customers	288,540	75	49	68	93

Table II-14 displays results from regression analysis that shows the difference between CRP and non-CRP customer gas consumption after all available explanatory factors are controlled for. These factors include whether the customer has gas heat, whether the home was built before or after 1950, the square footage of the home, and the type of home. The second column also controls for the zip code where the home is located, which is likely to be correlated with other characteristics of the home that are related to energy usage. The table shows that after controlling for all of these factors, CRP participants use an average of 29 more ccf per month than non-CRP participants. However, as noted previously, the regression does not control for the condition or energy-efficiency of the home.

Table II-14
Regression Analysis
Average Monthly Consumption (ccf)
September 2008 through August 2009

	Regression 1: Without Zip Code Controls	Regression 2: With Zip Code Controls
CRP	34	29
Heating	28	32
Built after 1950	13	8
Sq. Footage		
1001-1500	12	11
1501-2000	27	24
2001-2500	38	35
2501 or more	62	57
Multi-family	14	13
Single family	10	15

Note: all variables are statistically significant at the 99 percent level, except zip code dummies.

This analysis shows that CRP customers consume more gas than non-CRP customers, even after controlling for several home characteristics. However, the analysis does not show that these customers are using more gas due to the CRP program. It is likely that higher usage customers join the CRP precisely because the program is most needed by and most beneficial to customers who use more gas. The lowest usage customers would not benefit from the program because their actual monthly gas cost, together with a LIHEAP grant, may be less costly than the fixed percentage of income that CRP participants pay.

III. Risks and Uncertainties

There are many uncertainties and risks that PGW must consider when determining how to update the CRP design. These factors include uncertainty as to how LIHEAP payment application rules may change, how the PUC CAP Policy Statement may change, changes in CRP program participation, fluctuating commodity prices, whether CRP participants would default if charges were increased, and to what extent other ratepayers can continue to bear increasing CRP costs.

A. LIHEAP Payment Application

The Pennsylvania Department of Public Welfare has issued new guidelines with respect to the way utilities can apply LIHEAP to customer bills. Previously, PGW used cash LIHEAP grants to help cover the CAP shortfall, the difference between the customer's full bill and what the customer is billed under the CRP. This benefitted ratepayers because it allowed PGW to target a constant net energy burden by poverty level for all CRP customers, regardless of whether or not they received LIHEAP. The payment method also had the benefit of maintaining a constant monthly asked to pay amount for CRP participants, which has been shown to be favorable to customers and increase payment regularity.

At this point, it is uncertain whether the change in requirements will be maintained. DHHS has referred this issue to legal counsel for an opinion on whether or not this application of LIHEAP violates the Federal LIHEAP Statute. Therefore, it is unclear how PGW should address these issues. If the decision holds, PGW should consider the following:

- 1) Whether and how to modify the CRP to maintain current costs, given that CRP costs are now increased by the LIHEAP grants that were previously used to offset the CAP shortfall.
- 2) Whether and how to modify the CRP in an attempt to maintain a constant monthly asked to pay amount, given that LIHEAP grants will now be credited directly to CRP participants' asked to pay amount. Depending on the size of the LIHEAP grant relative to the CRP monthly payment, customers may have several months where no bill payment is required, unless PGW changes the CRP payment structure to address this issue.

B. PUC CAP Policy Statement

The Pennsylvania Public Utility Commission (PUC), Bureau of Consumer Services (BCS), began a process to modify the CAP Policy Statement in 2005. Several changes to the program rules were considered, including changing the targeted energy burden for natural gas heating customers to six percent for all customers (currently targeted energy burdens are 5%-8% for households below 50% of poverty, 7%-10% for households between 51% and 100% of poverty, and 9%-10% percent for households between 101% and 150% of poverty).

The revisions to the CAP Policy Statement have been assigned to the Commission's Law Bureau and are currently pending further Commission action.

Conversation with PUC staff have indicated that this should be an area of less concern for PGW for the following reasons.

- 1) There have been several countervailing factors since the process began in 2005, including the economic downturn, rate caps expiring for 85% of the customers in PA, and potential changes from DPW. There is concern that changes to make the CAP more affordable for participants will make it more expensive for other ratepayers.
- 2) While the entire CAP Policy Statement is under consideration for changes, it appears that the PUC is reconsidering continuation on the path of revision.
- 3) The PUC appears to feel that PGW has obtained good results with their CAP and a workable balance between affordability for CAP and the subsidy that other ratepayers are asked to pay. PGW has been relatively successful at getting their CAP participants to pay their CAP bills as their collection has improved. It appears that the PUC looks at PGW's CAP as a success.
- 4) The PUC does not agree with the new LIHEAP rules. The PUC is trying to make the argument that utilities should be able to spread the LIHEAP grant over the year, so the customer has a constant monthly payment. The PUC understands that if the customer does not have a bill to pay for several months, it will be very difficult to get the customer to start paying again. They also understand that if the utility cannot credit the LIHEAP payment to the CAP subsidy, there will be pressure to drive up the CAP bill (the amount that the participant is asked to pay).

C. CRP Participation

Another uncertainty for the program is how CRP participation will grow over time. Data in the previous section showed that CRP participation has increased dramatically over the past five years, but that there has been slowdown in growth more recently and then a slight upturn in the most recent Fiscal Year. Therefore, it is uncertain how participation will change in the coming years. Variation in the CRP participation growth rate can have great implications for the cost and sustainability of the program.

Table III-1 displays projected CRP participation over the next five fiscal years, assuming annual participation growth rates of 1%, 2.5%, and 5%. If the program grows at one percent each year, participation will reach 85,000 by 2014. However, if the program grows at 5% each year, there will be over 100,000 CRP participations by 2014. Any projection of program costs needs to take account of this risk.

**Table III-1
CRP Participation Projections**

Annual Participation Increase	Actual FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	80,891	81,700	82,517	83,342	84,175	85,017
2.5%	80,891	82,913	84,986	87,111	89,289	91,521
5%	80,891	84,936	89,182	93,641	98,324	103,240

D. Gas Rates

Another uncertainty for CRP costs is gas rates. If the program continues as a fixed percentage of income with no limit on the subsidy, increases in gas rates can have a large impact on program costs. Table III-2 shows current gas rates and PGW projections over the next five years. The table shows that gas rates are expected to decline by five percent over the next year, and then increase by between one and five percent each year over the following years.

**Table III-2
Current and Projected Gas Rates
(\$/ Mcf)**

	Actual 9/09	Projected				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
GCR	\$10.7871	\$9.0448	\$9.6858	\$10.0490	\$10.5183	\$10.7232
Distribution	\$7.4805	\$8.2528	\$8.3983	\$8.4363	\$8.4682	\$8.4817
Total per Mcf	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual % Increase		-5%	5%	2%	3%	1%

E. Tradeoff Between Affordability for Lowest Income Households and Other Ratepayers

Over the years, PGW has worked to balance affordability for CRP participants with the cost that the program imposes on other ratepayers. Because such a high percentage of PGW customers are low-income (32 percent compared to an average of 14 percent over the other gas companies in PA), and because PGW has a high CRP participation rate (51% compared to an average of 41% across the other gas utilities), the program has imposed high costs on other ratepayers. CRP spending averages \$220 per residential customer for PGW, compared to \$40 for the other natural gas companies in PA.⁵

⁵ This amount does not include the other Universal Service Program costs or the cost of PGW's Senior Discount Program.

There is growing concern about the size of the subsidy and how nonparticipants are affected by the program cost. The cost of the subsidy has increased with increased CRP participation, gas prices, and the new LIHEAP rules. There is a question as to whether PGW's program is more generous than it needs to be or more generous than what is sustainable for other ratepayers to continue to subsidize.

On the other hand, the advantage of shifting costs to non-CRP PGW ratepayers through the CRP is that it is an automatic adjustment, like the pass-through of the Gas Cost Rate; PGW does not need to go through a rate case filing to recover increased non-gas costs. To date, most of the non-CRP customers have continued to pay their bills, even when the gas prices increased above their current level.

In re-designing the CRP, PGW needs to consider the potential impact of any changes in costs on both CRP participants and on all ratepayers. It is difficult to predict what level of cost will be unaffordable for either group and push either group into arrearages and uncollectables.

IV. Opportunities

PGW faces challenges in balancing affordability for the lowest income customers and other customers due to the large percentage of customers who have very low incomes and the somewhat limited incomes of many of their other customers. However, there are two potential opportunities to improve affordability for all customers. One opportunity is to provide energy efficiency services to PGW customers. These services will reduce the amount of energy needed to keep the home comfortable and safe, and increase energy affordability. The second opportunity for increased affordability for PGW customers is to alter program funding so that there is statewide funding for all low-income assistance programs. These two opportunities are explored in this section of the report.

A. *Weatherization*

PGW has had their Conservation Works Program to improve efficiency for CRP participants for 20 years. They are also proposing to implement additional DSM programs and to work with the Philadelphia Housing Development Corporation to coordinate delivery of efficiency services with American Recovery and Reinvestment Act (ARRA) funding. This section describes the programs and analyzes the potential CRP subsidy cost reduction due to the three programs.

1. **Conservation Works Program**

PGW initiated the Conservation Works Program (CWP) in 1990 to provide conservation services to high usage CRP participants. This program benefits CRP participants by increasing the safety and comfort of their home and it benefits all PGW ratepayers by reducing the usage of CRP participants, and therefore reducing the CRP subsidy. Recent evaluation of this program has found that average program savings are 146 ccf per year per participant. This translates into a reduction in the CRP subsidy of approximately \$250 per year, depending on current gas rates. Given that 2,500 customers are served each year with the CWP, this will reduce the CRP subsidy by approximately \$625,000 for each cohort of customers served.

PGW began piloting more comprehensive energy efficiency service delivery as part of the CWP in 2006. They will determine whether to continue the more comprehensive treatments after evaluating the cost-effectiveness of these services. These expanded services have the potential to reduce the CRP subsidy for the highest usage customers by even greater amounts. However, the tradeoff will be that a lower number of customers can be served each year. Given current program funding of \$2.3 million, only about 2,500 customers or three percent of the CRP population can be served each year.

2. Five-Year Gas Demand Side Management Plan

PGW has worked with a consultant to put together a plan, which has been submitted to the PUC, to provide conservation services to all customers. The plan includes seven demand-side management (DSM) programs to reduce energy consumption with a \$58 million dollar investment over the next five years. They calculated a net benefit/cost ratio of 1.96 for these programs. The cost of these programs will be higher gas rates in the short-term, but lower energy costs over the longer term. Additionally, they project that the gas savings will reduce greenhouse gas emissions by one million tons of carbon dioxide and that these programs will directly and indirectly create 600 to 1,000 net additional jobs in Pennsylvania over the next five years.

The programs include an enhanced low-income program. Proposed expenditures for this program are \$50,000 in 2010 and approximately \$6.7 million each year in 2011 through 2013. They plan to serve 3,834 customers in each year from 2011 to 2014 and estimate that annual savings will be 263 ccf per customer served. This program will encompass the CWP, with additional investments and additional customers served.

3. Philadelphia Housing Development Corporation Plan

PGW has coordinated with the Philadelphia Housing Development Coordination (PHDC) to develop a plan to utilize expanded WAP funding through ARRA to provide additional weatherization services, coordinated with PGW's CWP to CRP participants.⁶ They plan to serve 2,161 households by March 2012. They note that it is expected that the majority of these households will be CRP participants.

PGW has worked with PHDC and other utilities to develop a coordinated approach to implementing whole house energy efficiency measures. They plan to blend funds from the PHDC with those from CWP and other utility programs when the WAP funding is not sufficient to provide all energy efficiency services needed in the home. Expected program savings would reduce the CRP subsidy by about \$450 for each CRP customer treated.

4. Estimated Program Savings

Table IV-1 displays the estimated gas usage and CRP subsidy savings from the programs over the current and next five fiscal years. Only the new DSM program and the PHDC programs are shown once the DSM programs are implemented, as the CWP program is incorporated into the new DSM program for the years that this new DSM program is operating. The table shows quite significant potential reductions in the subsidy. The CWP savings are based upon recent evaluation results, and are projected to reduce the subsidy by \$1.2 million annually from the investments made between FY

⁶ WAP is the Federal Low-Income Weatherization Assistance Program that provides no-cost weatherization services to low-income households across the country. LIURP is the Low Income Usage Reduction Program that the PUC requires all utilities in PA to deliver. LIURP is implemented as the Conservation Works Program (CWP) by PGW.

2009 and FY 2010. The new PGW DSM program for low-income customers savings are based upon planning projections and the new PHDC program, with more comprehensive services than the current PGW CWP is projected to have the same level of savings. The new PGW DSM program is projected to reduce the subsidy by \$7.7 million annually by FY 2014 and the PHDC program by nearly \$1 million.⁷ Total annual CRP savings from the three programs together are estimated to be over \$10 million.

**Table IV--1
Estimated Program Savings**

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$1.82676	\$1.72976	\$1.80841	\$1.84853	\$1.89865	\$1.92049
CWP						
Participants	2500	2500				
Average Savings (ccf)	146	146				
Annual Savings for Current Participants (ccf)	365,000	365,000				
Total Annual Savings (ccf)	365,000	730,000	730,000	730,000	730,000	730,000
Annual Reduction in Subsidy	\$666,767	\$1,262,725	\$1,320,139	\$1,349,427	\$1,386,015	\$1,401,958
PGW DSM						
Participants			3834	3834	3834	3834
Average Savings (ccf)			263	263	263	263
Annual Savings for Current Participants (ccf)			1,008,342	1,008,342	1,008,342	1,008,342
Total Annual Savings (ccf)			1,008,342	2,016,684	3,025,026	4,033,368

⁷ We assume that all customers treated by the new PGW DSM program and the PHDC program are CRP participants. Treatment of non-CRP customers would lessen the subsidy reduction.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Annual Reduction in Subsidy			\$1,823,496	\$3,727,901	\$5,743,466	\$7,746,043
PHDC						
Participants	--	670	670	670	--	--
Average Savings (ccf)	--	263	263	263	--	--
Annual Savings for Current Participants (ccf)	--	176,210	176,210	176,210	--	--
Total Annual Savings (ccf)	--	176,210	352,420	528,630	528,630	528,630
Annual Reduction in Subsidy	--	\$304,801	\$637,320	\$977,188	\$1,003,683	\$1,015,229
Total Annual Subsidy Reduction	\$666,767	\$1,567,526	\$3,723,540	\$5,967,814	\$8,133,163	\$10,163,229

The impact of the reduction in gas consumption on the cost of the low-income subsidy program will vary, depending on the design of the program. If the program appropriately targets the services to customers with the highest usage who have energy costs significantly above the percent of income payments that they are required to make under the CRP and Targeted Energy Burden Models, then the full benefit of the conservation savings will accrue to the ratepayers by reducing the cost of the subsidy. Under the Bill Discount Model, only the percentage of the bill that is subsidized will be reduced. Table IV-2 shows that under the Bill Discount Model, 75 percent of the reduced energy costs will accrue to the ratepayers and the other 25 percent will accrue to the program participants.

Table IV-2
Impact of Conservation Savings on Subsidy Cost
Percent of Savings Impacting Subsidy Cost and Dollar Reduction in Subsidy Cost

	Assistance Model		
	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3: Bill Discount
Percent of Savings	100%	100%	75%
Cost Reduction (\$ Millions)	\$10.2	\$10.2	\$7.7

B. Statewide Program Funding

Universal Service Programs in Pennsylvania are designed and implemented by the individual utility companies, under the direction and oversight of the Pennsylvania Public Utility Commission, Bureau of Consumer Services. The programs are funded through the individual utilities' customer bases.

Low income programs in Illinois, New Jersey, Ohio (electric only), Maryland, and Wisconsin are statewide, run by a statewide program office or utility commission. Utility customers throughout the state receive the same program services and benefits. In some cases the benefits are distributed to customers throughout the state as needed, regardless of where the funding came from. In other cases, the funding must be spent in the utility territories where it was obtained.

Potential advantages of a uniform statewide program include:

- **Equity:** A uniform statewide program provides the same benefits for customers, regardless of where they reside.
- **Integration:** A statewide program may allow for easier integration between ratepayer funded programs and state weatherization and LIHEAP programs. There is currently some coordination between LIHEAP and CRP, in that customers are encouraged to apply for LIHEAP when applying for the CRP. However, a statewide program would allow for easier integration between the programs, such as by making the ratepayer-funded program benefit take into account the LIHEAP benefit. A statewide program may also allow for easier integration between utility LIURP and state weatherization programs.
- **Funding:** A statewide program allows for redistribution of ratepayer funds from more affluent to less affluent areas. For example, New Jersey has implemented a statewide system benefits charge that distributes benefits as needed to residential customers throughout the state. This model reduces the overwhelming burden for some territories, while placing only a modest increase in rates on those in more affluent territories.

Potential disadvantages of a uniform statewide program are:

- **Not tailored:** A statewide program cannot take into account the needs of a specific utility company's customers.
- **Potential for less utility involvement:** In some instances, utilities are less involved when programs are administered by the state, and there is less knowledge about current utility practice and experience in the program design and implementation team.

The statewide program model may be a more beneficial model for PGW ratepayers. Such a program can provide affordable gas to low-income participants while restricting the burden that is placed on other low income customers and customers who are just above the program income limit. While such a model may not be politically feasible in Pennsylvania, it is an approach that should be considered, given the overwhelming percentage of customers in PGW's service territory who are low-income and the need for a redistribution of program subsidy costs throughout the state. We believe that this change would require legislative action.

V. Affordability Program Parameters in Comparison Programs

This section provides information on gas utility CAPs in Pennsylvania and low-income customer assistance programs in other major cities.

A. *Pennsylvania Gas Customer Assistance Programs*

Table V-1 provides information on CAPs run by the gas distribution companies in PA. The table shows that PGW's program stands out from the other PA programs in many respects.

- *Size:* PGW's program serves many more customers. PGW's program served nearly 80,000 customers in 2008 compared to an average of less than 15,000 customers for the other gas utilities.
- *Participation Rate:* PGW has a higher percentage of low-income customers participating in their CRP than any other gas utility except PECO. Participation rates for the other companies average 41 percent, compared to PGW's 51 percent, even when the 100% participation rate for PECO is included.
- *Percent of Residential Customers:* PGW has a much greater percentage of residential customers who participate in CAP compared to other gas utilities in PA. Sixteen percent of PGW's residential customers participate in the CRP, compared to an average of five percent across the other gas utilities. Participation rates for the other gas utilities range from two to nine percent.
- *Gross CAP Costs:* PGW's gross CAP costs are significantly greater than the other gas utilities in PA. PGW's costs averaged \$103 million in 2008, compared to an average of \$10 million across the other gas utilities.
- *Residential Customer Spending:* PGW's customers bear a much greater subsidy cost than the residential customers of other gas utilities in PA. While PGW customers paid an average of \$220 toward the CRP cost, the average across the other gas utilities in PA was \$40.

**Table V-1
Pennsylvania Gas CAPs
2008 Data**

	PG W	Other PA Gas Utilities							Ave rag e Ove r Oth er PA Gas Util ities
		Colu mbia	Domi nion	Equi table	NF G	PE C O	U GI	U GI Pe nn	
Particip ants	78 ,4 90	24,6 75	14,4 25	20,7 33	12 ,3 12	20 ,6 67	8, 29 2	3, 05 1	14,879
Particip ation Rate	51 %	39%	25%	42%	44 %	10 0 %	27 %	12 %	41%
Residen tial Custom ers	481,218	369,922	326,622	239,185	197,850	438,232	298,547	143,718	287,725
% of Residen tial Custom ers in Progra m	16%	7%	4%	9%	6%	5%	3%	2%	5%
Percent age of CAP Bill Paid	90 %	94%	83%	91%	76 %	79 %	88 %	85 %	85%
Gross CAP Costs (\$Millio ns)	\$1 03	\$24	\$9	\$16	\$8	\$8	\$5	\$2	\$10
Univers al Service Spendi ng per Residen tial Custom er	\$2 20	\$70	\$29	\$70	\$4 8	\$2 2	\$1 9	\$2 1	\$40

Table V-2 provides information on monthly CAP bills, CAP credits, and percent of total bills charged to CAP customers for the gas utilities in PA. The table shows that PGW's program pays a higher percentage of the total gas costs than the other utility programs.

- *Residential Rates:* PGW's gas rates are higher than all of the other gas utilities in PA. While PGW's rates are \$50 for a monthly bill of 2 MCF, the other utilities average \$41 for the same usage. The higher rates relate to the cost of providing the large CRP subsidy.
- *Annual CAP Credits:* PGW's annual CAP credits are higher than many other utilities, averaging \$1,167 in 2008 compared to an average of \$552 across the other gas utilities.
- *Percent of Bills Charged to Customers:* PGW customers are charged for an average of 47 percent of their usage. This compares to an average of 65 percent for the other utilities. Note that when the LIHEAP subsidies are added in, the customer charges and the LIHEAP subsidies cover an average of 55 percent of the customer gas charges. The comparison for the other gas utilities that also credit LIHEAP to the shortfall is a 61 percent average (not including the LIHEAP grants).

Table V-2
Pennsylvania Gas CAPs
Average CAP Bills and Credits
2008 Data

	P G W	Other PA Gas Utilities							Ave rag e Ove r Oth er PA Gas Util ities
		Colu mbia	Domi nion	Equit able	NF G	PE C O	U G I	U G I Pe nn	
Residen tial Monthl y Bill for Usage of 2 MCF⁸	\$ 50 . 33	\$41. 98	\$37. 43	\$44. 81	\$4 3. 42	\$3 8. 35	\$ 37 . 22	\$ 47 . 06	\$41.47

⁸ Source: PA PUC Rate Comparison Report, April 15, 2009.

	P G W	Other PA Gas Utilities							Ave rag e Ove r Oth er PA Gas Util ities
		Colu mbia	Domi nion	Equit able	NF G	PE C O	U G I	U G I Pe nn	
Averag e Monthl y CAP Bill	\$ 8 7	\$47	\$81	\$79	\$9 2	\$8 2	\$ 9 7	\$ 1 1 2	\$84
Averag e Annual CAP Credits	\$ 1 , 1 6 7	\$883	\$583	\$737	\$6 14	\$1 83	\$ 4 3 1	\$ 4 3 6	\$552
Percent of Total Bills Charge d to Custom ers	47%	39%	63%	56%	64%	84%	73%	76%	65%

Table V-3 displays information about the type of payment plan provided by PA gas utilities, and the application of LIHEAP dollars. The table shows that in addition to PGW, four other utilities use a PIPP model for their CAP program. One has the same percentage of income payment and the other three have lower percentage of income payments for at least 2 of the three income groups. Two gas utilities provide a discounted bill, and one utility provides a variety of options for calculating the subsidy. Two of the gas utilities have maximum CAP credits. Five of the other seven gas utilities restrict participation to payment troubled customers.

The table also shows that with the exception of the two utilities that have a discount model, all of the other gas utilities in PA use the LIHEAP grant to help cover the cost of the CAP discount. However, these utilities apply the LIHEAP grant to individual CAP customers' subsidies, rather than to the program as a whole.

Table V-3
Pennsylvania Gas CAPs
2008 Data

	PGW	Columbia	Dominion	Equitable	NFG	PECO	UGI	UGI Penn
Type of Plan	PIPP	Options ¹	PIPP	PIPP	Discount	Discount	PIPP	PIPP
Percentage of Income Payment	<=50%: 8% 51-100%:9% 101-150%:10%	<110%: 7% 110%-150%:9%	<=50%: 8% 51-100%: 9% 101-150%: 10%	<=50%: 7% 51-100%: 8% 101-150%: 10%	--	--	<=50%: 7% 51-100%:8% 101-150%:9%	<=50%: 7% 51-100%: 8% 101-150%: 9%
Maximum CAP Credit	--	--	--	--	--	--	Heating : \$1,146 Non-heating: \$640	\$1140
Restricted to Payment Troubled	No	Termination notice or at least one failed payment agreement, or identified through cross utility referral and credit scoring.	Failed to maintain one or more payment arrangements.	Failed to maintain one or more payment arrangements.	Arrange or at least one current, canceled, or defaulted arrangement.	No.	No.	Receipt of a termination notice.
LIHEAP Application	CAP Credit	CAP Credit	CAP Credit	CAP Credit	Budget Bill	Monthly Payment	CAP Credit	CAP Credit

¹PIPP, Discount, or average of last 12 months of payments.

B. Gas Customer Assistance Programs in Other Cities

This section examines some of the parameters of gas programs run by utilities in other major cities. Much of these data were difficult to obtain. However, the table shows that the program size, average program expenditures and customer discount were much smaller for these other utilities than for PGW's CRP. The table shows that all of the programs studied with data reported apply the LIHEAP cash grant to the customer's monthly bill.

**Table V-3
Major City Gas Affordability Plans**

	Balti more	Colu mbus	DC	Indiana polis	St. Lou is
Manage ment	BG &E	Colu mbia Gas	Washi ngton Gas	Citizen 's Gas	Lac led e Gas
Particip ants	33,0 00 (200 8)			17,700 (2006)	2,1 48 (20 06)
Averag e Annual CAP Credits	\$82 (200 8, gas and elect ric)		\$226 (2009)	\$121 (2006)	\$17 8 (20 06)
Gross CAP Costs (\$Millio ns)	\$1.1 (200 8)			\$2.1 (2006)	\$0. 4 (20 06)
Progra m Type	Fixe d Mon thly Cred it base d on pove rty level	PIPP	Disco unt	Discou nt	Mat rix – Fix ed cre dit
LIHEA P	Mon thly bill	Mont hly bill	Month ly Bill	Monthl y bill	

VI. Program Alternatives: Options, Costs, Opportunities and Risks

In this section we present projections of the cost of the Current CRP Model and two other program models, given current program participation, projected increases in participation, projected increases in gas rates, and potential increases in customer income. The projections presented here utilize 2009 gas data for approximately 70,000 of the 81,000 CRP participants who were in the program in October 2009. The data were weighted upward by the number of CRP participants in each CRP tier or poverty level in October 2009.

A. Model 1: Current PGW CRP Model

This section presents current and projected costs for the present design of the CRP model. The section also discusses adjustments to the Current CRP Model that may be desired, given changes that have been imposed on PGW with respect to the way LIHEAP is credited to CRP participants' accounts.

1. Current and Projected Costs

Table VI-1 displays costs for the Current CRP Model, based first on FY 2009 PGW reports and then on projections using 2009 usage data and FY 2009 average gas rates. The table shows that actual costs for FY 2009 for the CRP discount were \$117 million and the average annual discount was \$1,447. The projected costs were \$120 million and the projected average annual discount was \$1,483. The total projected costs is somewhat higher due to the fact that we are looking at a slightly larger population and a different population than the actual group of households who came on and off the CRP in FY 2009. The average monthly asked to pay amount is \$80.

Table VI-1
Model 1: Current CRP Model
Actual and Projected 2009 Discounts

	FY 2009 Program Statistics (From PGW Annual Report)				Projections Based on 2009 Usage Data And FY 2009 Gas Rates			
	Average Monthly Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
Minimum (\$25/Month)	3,665	\$7.15	\$1,950	\$25	3,963	\$7.50	\$1,892	\$25
8%	16,000	\$30.48	\$1,905	\$45	16,302	\$29.40	\$1,804	\$45
9%	43,429	\$62.58	\$1,441	\$80	43,647	\$62.90	\$1,441	\$79
10%	17,798	\$16.85	\$947	\$136	17,342	\$20.67	\$1,192	\$128
Total	80,891	\$117.07	\$1,447	\$83	81,254	\$120.48	\$1,483	\$80

Table VI-2 displays projected costs for the Current CRP Model, given three different scenarios for annual CRP participation increases, a one percent increase each year, a 2.5 percent increase each year, and a five percent increase each year. The previous analysis of CRP participation between FY 2004 and FY 2009 showed that there was an average annual participation increase of seven percent. However, if the outlier of 16 percent from FY 2005 to FY 2006 is removed, the average is five percent. The table below shows that if participation increases by one percent annually, the program cost would be \$127 million in FY 2014 and if it increases by five percent annually, the program cost would be \$154 million in FY 2014. This analysis holds gas prices constant at the 2009 level.

Table VI-2
Model 1: Current CRP Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Constant Gas Rates

Annual Participation Increase	FY 2009 Projected Cost	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$120.48	\$121.68	\$122.90	\$124.13	\$125.37	\$126.62
2.5%	\$120.48	\$123.49	\$126.58	\$129.74	\$132.98	\$136.31
5%	\$120.48	\$126.50	\$132.82	\$139.47	\$146.44	\$153.76

Table VI-3 displays projected costs of the Current CRP Model given projected gas rates over the next five years. The cost per ccf is increased or decreased, but the customer charge of \$12 per month is held constant. These rate projections were provided by PGW. Costs increase to \$137 million by FY 2014 with a one percent annual increase in participation and increase to \$166 million with a five percent annual increase in participation.

Table VI-3
Model 1: Current CRP Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$120.48	\$111.71	\$120.99	\$126.42	\$133.02	\$136.70
2.5%	\$120.48	\$113.37	\$124.61	\$132.14	\$141.10	\$147.16

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
5%	\$120.48	\$116.13	\$130.76	\$142.05	\$155.38	\$166.00

The previous analysis held customer income constant. However, as customers' income increase, the cost of the subsidy should be lower because customers would pay the fixed percentage on a greater amount of income. Table VI-4 displays projected costs of the CRP with increased gas rates and annual increases in income of three percent, based on average increases in the Consumer Price Index (CPI) over the past several years. While we increase participant incomes, we do not move them into higher poverty level groups, as the poverty level cutoff also increases by approximately three percent each year.

Table VI-4 shows how the projected increase in customer incomes affects the projected subsidy level. However, it is unclear whether the low-income population can be expected to receive annual increases in income that are equal to the CPI. The table shows that projected costs are \$124 million in FY 2014 given a one percent annual increase in participation, and are \$151 million in FY 2014 given a five percent annual increase in participation.

Table VI-4
Model 1: Current CRP Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Using Projected Gas Rates
Annual Income Increases of 3%

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$120.48	\$109.45	\$116.30	\$119.20	\$123.13	\$124.07
2.5%	\$120.48	\$111.08	\$119.78	\$124.59	\$130.61	\$133.56
5%	\$120.48	\$113.79	\$125.70	\$133.94	\$143.83	\$150.67

2. Revisions to Accommodate LIHEAP Changes

PGW's Current CRP Model has the benefits of targeting a set energy burden level and providing customers with a constant monthly asked to pay amount that does not vary even when the customer receives LIHEAP. This plan has worked well for PGW, and it should remain one of the options that PGW considers. However, changes in the way that PGW must credit LIHEAP to customer accounts would create significant changes for the program that PGW may want to address. Therefore, to maintain the status quo, PGW may have to make some changes to the CRP design. These changes would

involve increasing the CRP asked to pay amount to account for the LIHEAP revenue that is not credited to the shortfall, and adjusting the monthly CRP asked to pay amounts to maintain constant bills in the presence of LIHEAP payments.

- a) **Maintain Constant CRP Costs With Change in LIHEAP Payment Application**
Table VI-5 displays the LIHEAP revenue that was obtained from CRP participants to help cover the CAP shortfall in the past three fiscal years. The amount ranged from \$9.3 to \$16.2 million, an average of \$200 per CRP participant in FY 2009.

Table VI-5
PGW LIHEAP Grants From CRP Customers

	FY 2007	FY 2008	FY 2009
LIHEAP Cash Grants	\$10,153,059	\$9,297,514	\$16,203,722
Number of CRP Participants	76,885	77,749	80,891
Average Grant Per CRP Participant	\$132	\$120	\$200

Pennsylvania's LIHEAP benefits are based upon region, fuel, household income gross income, and number of people in the household. Using the LIHEAP table from 2009-2010 and characteristics of the 2009 population, we projected the total LIHEAP benefits across the 2009 LIHEAP population. Table VI-6 shows that the total LIHEAP benefit for all participants in 2009 would be \$22.65 million if all CRP participants received LIHEAP. Note that the total LIHEAP funding available and the benefit amount is dependent on the Federal LIHEAP appropriation for the year.

Table VI-6
LIHEAP Benefits
From 2009-2010 Pennsylvania LIHEAP Table

	Projections Based on October 2009 Number of Participants		
	October 2009 Participation	Average LIHEAP Benefit	Total Benefits (\$ Millions)
Minimum (\$25/Month)	3,963	\$821	\$3.25
8%	16,302	\$401	\$6.54
9%	43,647	\$239	\$10.43
10%	17,342	\$139	\$2.42
Total	81,254	\$279	\$22.65

PGW could use potential LIHEAP benefits based on the PA LIHEAP table to adjust CRP subsidies. For example, instead of calculating the monthly CRP payment as:

$$\text{Monthly CRP Payment} = [.08 * \text{Annual Household Income}] / 12$$

The payment could be calculated as:

$$\text{Monthly CRP Payment} = \{ [.08 * \text{Annual Household Income}] / 12 \} + [\text{LIHEAP} / 12]$$

This would result in a net bill for the customer who received LIHEAP that is equal to 8, 9 or 10 percent of income. This program model would provide an incentive for the customer to apply for LIHEAP because the customer would need to receive the LIHEAP grant to achieve the targeted energy burden.

Another option is to partially adjust the payment by adding a fraction of the projected LIHEAP grant, based on the historical percentage of CRP participants who receive LIHEAP. For example, if 55 percent of CRP participants receive LIHEAP, the formula could be adjusted as follows:

$$\text{Monthly CRP Payment} = \{ [.08 * \text{Annual Household Income}] / 12 \} + .55 * [\text{LIHEAP} / 12]$$

The percentage LIHEAP factor could be adjusted as the percent of CRP participants who receive LIHEAP changes. This percentage is expected to increase over time as participants learn how the new calculation and LIHEAP crediting process affects their gas bills.

Table VI-7A displays the increase in LIHEAP benefits across the CRP population given various increases in CRP participation rates. If PGW employed the method described above to provide adjusted CRP benefits with the full LIHEAP grant, the amounts in the table below could be subtracted from the subsidy costs shown in the previous projections. The bottom portion of the table shows the net cost of the CRP after subtracting these LIHEAP amounts.

Table VI-7A
Total Annual LIHEAP Benefits (\$ Millions)
For All CRP Participants
From 2009-2010 Pennsylvania LIHEAP Table
And Net CRP Discount Cost (\$ Millions) After LIHEAP Subtraction

PROJECTED LIHEAP BENEFITS FOR ALL PARTICIPANTS BASED ON PA LIHEAP MATRIX						
Annual Participation Increase	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$22.65	\$22.87	\$23.10	\$23.33	\$23.57	\$23.80
2.5%	\$22.65	\$23.21	\$23.79	\$24.39	\$25.00	\$25.62
5%	\$22.65	\$23.78	\$24.97	\$26.22	\$27.53	\$28.90

NET CRP DISCOUNT COST AFTER SUBTRACTING LIHEAP						
Annual Participation Increase	FY 2009 ⁹	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$97.83	\$86.58	\$93.20	\$95.87	\$99.56	\$100.27
2.5%	\$97.83	\$87.87	\$95.99	\$100.20	\$105.61	\$107.94
5%	\$97.83	\$90.01	\$100.73	\$107.72	\$116.30	\$121.77

Table VI-7B displays the projected average monthly customer asked to pay amount by current CRP group and by poverty level under the Current CRP Model with projected LIHEAP benefits added to the customer's asked to pay amounts. The table shows that the average monthly asked to pay amount is \$103. Customers' net asked to pay amounts will be lower if they receive the LIHEAP grant.

Table VI-7B
Customer Monthly Asked to Pay Amount
Model 1: Current CRP Model, With LIHEAP Adjustment
By CRP Group and Poverty Level

Current CRP Groups			Poverty Level Group		
	October 2009 Participation	Average Monthly Asked to Pay Amount		October 2009 Participation	Average Monthly Asked to Pay Amount
Minimum (\$25/Month)	3,963	\$90	<=25%	5,061	\$87
			26-50%	16,023	\$79
8%	16,302	\$78	51-75%	25,559	\$94
9%	43,647	\$99	76-100%	18,753	\$108
10%	17,342	\$139	101-125%	10,680	\$136
			126-150%	5,178	\$153
Total	81,254	\$103	Total	81,254	\$103

If PGW is not permitted to implement the program by calculating the subsidy as described above, PGW could adjust the percent of income payment to cover the LIHEAP benefit. This method would not be as equitable, because the subsidy could not be adjusted to equal the potential LIHEAP benefit exactly for all households,

⁹ Note that the net CRP cost will be slightly more (\$98.37 Million instead of \$97.83 Million) after subtracting LIHEAP because some customers will have a LIHEAP grant that is greater than their pre-LIHEAP subsidy and no longer benefit from participating in the program after this change in formula. For example, one customer originally had a subsidy of \$242 and a projected LIHEAP benefit of \$430. Therefore, the customer's new subsidy would be less than \$0 so the customer would not participate in this redesigned program. However, only about five percent of participants would be in this circumstance, so it does not have a large impact on the calculations, and we make the simplification of subtracting the full LIHEAP projected benefits here.

but it would be revenue neutral and approximate the LIHEAP benefit that could be obtained.

Table VI-8A shows the revised payment amounts that would make up for the LIHEAP revenue. For example, customers who have income at or below 50 percent of poverty would have a new percent of income payment equal to 13.9 percent of income, instead of the previous payment of 8 percent of income and customers with income between 100 and 150 percent of poverty would have a payment equal to 10.9 percent of income instead of the previous payment of 10 percent of income.

Table VI-8A
Revised Payment Percentages
To Account for LIHEAP Matrix Benefit

	Projections Based on October 2009 Number of Participants			
	October 2009 Participation	Average LIHEAP Benefit	Mean Annual Income	Revised Payment
Minimum (\$25/Month)	3,963	\$821	\$2,594	\$93
8%	16,302	\$401	\$6,797	13.9%
9%	43,647	\$239	\$10,564	11.3%
10%	17,342	\$139	\$15,318	10.9%

While this approach may be more likely to be accepted by DPW, it has the disadvantage that it uses the average LIHEAP benefit to target the post-LIHEAP burden, rather than the projected LIHEAP benefit based on household size and income. Table VI-8B shows how energy burdens vary due to this discrepancy. The table shows that the strategy does not work well for the minimum payment group. Their average energy burden is 11 percent. While the average energy burdens, if the customer receives the projected LIHEAP grant, is close to the original targeted level of eight to ten percent, the table shows that ten percent of the customers in the original eight percent group would have an energy burden above 12 percent if they received the projected LIHEAP grant.

Table VI-8B
Projected Energy Burden Distribution
With Revised Payment Percentages
To Account for LIHEAP Matrix Benefit

	Mean	Percentile			Maximum
		10	50	90	
Minimum (\$25/Month)	11%	11%	11%	13%	100%

	Mean	Percentile			Maximum
		10	50	90	
8%	7%	0%	8%	12%	14%
9%	9%	7%	9%	11%	11%
10%	10%	9%	10%	10%	11%

b) Maintain Equal Monthly Asked to Pay Amounts

One way that PGW could maintain equal monthly payments for CRP participants who receive a LIHEAP cash grant is to credit the LIHEAP grant over 12 months, rather than immediately crediting the entire grant to the customer's bill. This change would maintain an equal monthly bill for the customer and may be the simplest option for PGW to implement, but may not be acceptable to DPW, as the 8/12/09 letter from Linda Blanchette states that "a LIHEAP cash grant must be used to meet the household's immediate energy needs".

However, the National Fuel Gas Distribution Corporation (NFG) currently has a similar policy where they adjust the customer's annual budget bill when a LIHEAP grant is received. The following is from their 2008-2010 Universal Service and Energy Conservation Plan.

When LIHEAP payments are posted to LIRA (Low-Income Residential Assistance Program) customers' accounts, the payments are applied to the Budget Plan balance. The system reviews the status of the Budget Plan and lowers the monthly payment amount according to the amount credited to the Budget Plan balance. The Budget Plan is restarted for a full year.

Therefore, this adjustment may be an option that PGW should consider.

3. Conservation Incentive Mechanism

Analysis of PGW customers' gas consumption shows that CRP participants consume significantly more gas than non-CRP participants. Experience in the CWP revealed that the condition of participants' homes and the need for significant weatherization services is at least part of the cause of the higher usage. Study of PGW's CRP participants and studies of other low-income affordability programs show that customers do not increase their usage after enrolling in an affordability program. Despite these findings, there has been concern that there is a need to provide an incentive for PGW CRP participants to conserve.

PGW has considered two types of mechanisms – a penalty mechanism and an incentive mechanism. Under a penalty mechanism, there would be a limit on the total amount of the customer's annual CRP credit or the customer would be charged for exceeding the previous year's usage by a certain amount. Under an incentive mechanism, the customer would receive a financial reward for reducing usage over the previous year by a certain amount. The disadvantage of the penalty mechanism is that some customers are not able to reduce usage, due to the condition of their homes. Increasing their bill payment

responsibility could result in high energy burdens, unaffordable bills, and payment noncompliance. This could also result in increased collections costs and an increased burden on other ratepayers. The incentive mechanism, on the other hand, may cause some customers, who do have the ability to make positive changes in their energy usage behavior, to reduce their gas consumption. To the extent that this does occur, the reduction in the CRP credit will benefit other ratepayers.

Under one potential incentive design, PGW would run a query each April to compare gas consumption of CRP customers for the November to April period, with the usage during that time period the previous year. Usage during both periods would be weather normalized to allow for an accurate comparison, and only those customers who were on the CRP for the entire November to April time period would be eligible for the incentive. The usage reduction that would qualify CRP participants for the incentives is as follows.

- CRP participants who did not have CWP services completed between the previous April current November and reduced their usage by more than 10% would receive the incentive.
- CRP participants who had CWP services completed between the previous April and current November and reduced their usage by more than 20% would receive the incentive.

CWP participants are required to reduce their consumption by a greater amount because their gas consumption should decline based on the conservation services they received in their homes.

Customers who reduced gas consumption by the percentages shown above would receive a \$100 credit on their PGW bill.

PGW would provide outreach on this new conservation incentive mechanism at the time of CRP enrollment, recertification, and when outreach for LIHEAP is conducted in the fall of each year. Education would be provided to current and new CRP participants to make them aware of this new benefit for reduced consumption.

Table VI-9 displays the projected ratepayer savings from this Conservation Incentive Mechanism. The table shows that if ten percent of CRP participants reduce annual usage by ten percent, the CRP subsidy will be reduced by \$1.84 million. After subtracting the subsidy cost, the net savings to ratepayers is \$1.03 million. If 20 percent of CRP participants reduce annual usage by ten percent, the net decline in the subsidy cost will be \$2.09 million.

Table VI-9
Projection of Ratepayer Benefits (\$Millions)
From Conservation Incentive Mechanism

	Current Usage	10% Usage Reduction 10% of CRP Participants	10% Usage Reduction 20% of CRP Participants
Subsidy Cost	\$120.48	\$118.64	\$116.77
LIHEAP Grants	\$22.65	\$22.65	\$22.65
Subsidy Cost with LIHEAP Adjustment	\$97.83	\$95.99	\$94.12
Ratepayer Savings Over Current Usage Cost		\$1.84	\$3.71
Number of Customers with Incentive		8,099	16,247
Incentive Cost		\$0.81	\$1.62
Net Savings		\$1.03	\$2.09

B. Model 2: Targeted Energy Burden Model

This section describes the bill payment assistance model that is used by the New Jersey Universal Service Program and FirstEnergy. Projections of program costs are also furnished.

1. Program Description

The New Jersey Universal Service Program and FirstEnergy have created low-income subsidy programs that target the customer's post-LIHEAP energy burden to a certain level. This design may be unacceptable to HHS or DPW since they may consider the program to be "using LIHEAP as a resource". However the 8/12/09 letter from Linda Blanchette of DPW states that "a past or current LIHEAP cash grant cannot be used to formulate a household's CAP credit or "asked to pay" amount, so it may be possible to use the PA LIHEAP matrix rather than an actual grant to formulate the credit. This method would not treat LIHEAP recipients differently than non-LIHEAP recipients.

Under this plan, a certain energy burden is targeted. FirstEnergy targets a post-LIHEAP burden of three percent for electric non-heating customers and six percent for electric heating customers. The NJ USF targets a post-LIHEAP burden of three percent for electric, three percent for gas, and six percent for electric heating customers. While these programs do not vary the burden based on the customer's poverty level, PGW

could choose to target different burden levels based on household poverty level. Both programs have a maximum subsidy amount.

If PGW decided to target a burden of eight percent, the calculation would be done as follows:

*Annual Household Income * 8% = Targeted Net Energy Bill (\$10,000 * 8%=\$800)*

Current Gas Burden = Annual Gas Bill – LIHEAP Benefit (\$2,200 - \$350 = \$1850)

CAP pays the difference: \$1850 - \$800 = \$1050

Monthly credit = \$1050/12 = \$87.50

A disadvantage of this design is that it does not result in equal monthly bills for the customer. The customers' bills fluctuate due to monthly fluctuations in gas usage and LIHEAP credits to the customers bills. This problem could be addressed by requiring these customers to have a budget bill and applying the LIHEAP grant over 12 months.

An advantage of this design is that it reduces the risk for ratepayers (although it increases the risk for CRP participants). This is because the CRP benefit is set once per year and the benefit will not vary over the year if gas rates change or the customer increases gas usage. Additionally, the model provides an incentive for customers to apply for LIHEAP.

2. Projected Costs

Costs are projected under this model, assuming targeted energy burden levels of eight percent for customers with income below 50 percent of poverty, nine percent for customers with income between 51 and 100 percent of poverty, and ten percent for customers with income between 100 and 150 percent of poverty.

Table VI-10A displays projections of the cost of the Targeted Energy Burden Model. The table shows that the FY 2009 projected costs of this program are \$99 million and the average customer subsidy is \$1,215. The average monthly asked to pay amount is \$103.

Table VI-10A
Model 2: Targeted Energy Burden Model
Projected 2009 Costs

	Projections Based on 2009 Usage Data and FY 2009 Gas Rates			
	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
8%	20,264	\$27.69	\$1,367	\$80
9%	43,648	\$52.69	\$1,207	\$99
10%	17,342	\$18.31	\$1,056	\$139

	Projections Based on 2009 Usage Data and FY 2009 Gas Rates			
	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
Total	81,254	\$98.70	\$1,215	\$103

Table VI-10B displays the projected average monthly customer asked to pay amount by poverty level under the Targeted Energy Burden Model, for comparison with other analyses conducted by poverty level.

Table VI-10B
Model 2: Targeted Energy Burden Model
Customer Monthly Asked to Pay Amount
By Poverty Level

Poverty Level Group		
	October 2009 Participation	Average Monthly Asked to Pay Amount
<=25%	5,061	\$83
26-50%	16,023	\$80
51-75%	25,559	\$94
76-100%	18,753	\$108
101-125%	10,680	\$136
126-150%	5,178	\$154
Total	81,254	\$103

Table VI-11 displays the projected costs of the Targeted Energy Burden Model given various assumptions about increases in customer participation. Gas rates are kept constant in this simulation. The table shows that given an annual participation growth rate of one percent, the projected cost of the program is \$104 million in FY 2014, and given an annual participation growth rate of five percent, the projected cost of the program is \$126 million in FY 2014.

Table VI-11
Model 2: Targeted Energy Burden Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Constant Gas Rates

Annual Participation Increase	FY 2009 Projected Cost	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.70	\$99.69	\$100.68	\$101.69	\$102.71	\$103.73

Annual Participation Increase	FY 2009 Projected Cost	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
2.5%	\$98.70	\$101.17	\$103.70	\$106.29	\$108.95	\$111.67
5%	\$98.70	\$103.64	\$108.82	\$114.26	\$119.97	\$125.97

Table VI-12 displays projected costs of the Targeted Energy Burden Model given various increases in participation and projected gas rates. The table shows that the projected FY 2014 costs are \$114 million for a one percent annual participation rate increase and \$138 million for a five percent annual participation rate increase.

Table VI-12
Model 2: Targeted Energy Burden Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.70	\$89.95	\$98.81	\$103.94	\$110.23	\$113.65
2.5%	\$98.70	\$91.29	\$101.77	\$108.64	\$116.93	\$122.35
5%	\$98.70	\$93.52	\$106.80	\$116.78	\$128.76	\$138.01

Table VI-13 displays projected costs of the Targeted Energy Burden Model given various participation rate increases, gas rate increases, and annual income increases of three percent. The table shows that with the income adjustment, the cost is projected to be \$101 million in FY 2014 if there is a one percent annual participation increase and to be \$123 million in FY 2014 if there is a five percent annual participation rate increase.

Table VI-13
Model 2: Targeted Energy Burden Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Using Projected Gas Rates
Annual Income Increases of 3%

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.70	\$87.82	\$94.34	\$97.03	\$100.72	\$101.49
2.5%	\$98.70	\$89.12	\$97.17	\$101.42	\$106.84	\$109.26
5%	\$98.70	\$91.29	\$101.96	\$109.02	\$117.64	\$123.25

C. Model 3: Bill Discount Model

The Bill Discount Model is used by PECO and many other affordability programs around the country. This section describes the program and provides projections of the program cost.

1. Program Description

Another option for a low-income affordability program is to provide a discount to the customer on the energy bill. There are several options for the way the discount is applied.

- The discount can be applied on the full gas bill or on one type of charge.
- The discount can be applied on the full gas usage or gas usage up to a certain threshold.
- The discount can be constant or can vary with usage.
- The discount can be the same for all participants or can be greater for lower income or lower poverty level households.

The Bill Discount Model splits the risk between the ratepayers and the CRP participant. If gas costs increase, the increase will be split between the customer's portion of the bill and the discounted portion of the bill.

Advantages of the Bill Discount Model are that it provides an incentive for customers to apply for LIHEAP and that it is a straightforward model to implement. This model may also provide an incentive for reduced consumption, as costs are directly related to the amount of gas consumed. A disadvantage is that it does not provide a constant monthly payment. However, PGW could achieve a constant monthly payment for the participant

by utilizing the budget billing method with the LIHEAP grant credit averaged over 12 months.

Another disadvantage of the Bill Discount Model is that it is an inefficient way to reach a targeted energy burden. Some customers will receive a discount that is greater than what is needed to achieve the targeted level and some customers will receive a discount that is lower than what is needed to achieve the targeted burden.

2. Projected Costs

This section models the cost of the Bill Discount Model. The simulations provided here model the discount on the full bill—both the rate and the monthly fee are discounted.

Initial Bill Discount Model Projections

Table VI-14 shows the projected costs of providing a 75 percent discount to customers with income at or below 50 percent of poverty, a 50 percent discount to customers with income between 51 and 100 percent of poverty, and a 25 percent discount to customers with income between 101 and 150 percent of poverty. The table shows that the projected 2009 cost of this program is \$98 million. The average monthly asked to pay amount is \$101.

Table VI-14
Model 3: Bill Discount Model
Projected 2009 Costs

		Projections Based on 2009 Usage Data and FY 2009 Gas Rates			
Poverty Level	Discount	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
<=50%	75%	20,264	\$34.91	\$1,723	\$48
51%-100%	50%	43,648	\$51.63	\$1,183	\$99
101%-150%	25%	17,342	\$11.64	\$671	\$168
Total		81,254	\$98.19	\$1,208	\$101

Table VI-15 displays the projected costs of the Bill Discount Model given various participation rate increases. The table shows that the FY 2014 projected costs are \$103 million for a one percent annual increase and \$125 million for a five percent annual increase in participation. Gas rates are held constant in this table.

Table VI-15
Model 3: Bill Discount Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Constant Gas Rates

Annual	FY 2009	Projected
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Participation Increase	Projected Cost	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.19	\$99.17	\$100.16	\$101.16	\$102.17	\$103.20
2.5%	\$98.19	\$100.64	\$103.16	\$105.74	\$108.38	\$111.09
5%	\$98.19	\$103.10	\$108.25	\$113.66	\$119.35	\$125.31

Table VI-16 displays the projected costs of the Bill Discount Model given various participation rate increases and projected gas rates. The table shows that projected costs are \$108 million with a one percent annual increase in participation and are \$131 million with a five percent annual increase in participation.

Table VI-16
Model 3: Bill Discount Model
Projected Annual Costs (\$ Millions)
By Annual Participation Increase
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$98.19	\$94.22	\$99.21	\$102.29	\$105.95	\$108.17
2.5%	\$98.19	\$95.62	\$102.18	\$106.92	\$112.39	\$116.44
5%	\$98.19	\$97.95	\$107.23	\$114.94	\$123.76	\$131.35

Bill Discount Model Projections to Reach PUC Targeted Burden

A disadvantage of the Bill Discount Model is that it cannot directly target the discount needed by each customer to reach a targeted energy burden. Table VI-17 displays the discount needed to reach the Pennsylvania Public Utilities Commission (PUC) targeted burden levels. The PUC has set target ranges for three different poverty level groups, shown in the table below. We used the top of the range to determine the discount necessary to bring the customer to the targeted burden level. For example, the PUC set a targeted energy burden of five percent to eight percent for customers with income at or below 50 percent of the poverty level. The table shows the discount needed to reach an eight percent burden for households with income at or below 25 percent of poverty and for households with income between 26 and 50 percent of poverty. The mean discount needed by customers with income at or below 25 percent of poverty is 86 percent. Half of these customers will reach this burden target if a discount of 88 percent is provided, 75 percent will reach the burden target if a 92 percent discount is provided, and 90 percent will reach the target if a 94 percent discount is provided.

Table VI-17
Model 3: Bill Discount Model
Discount Needed to Reach PUC Burden Target
By Poverty Level

Poverty Group	PUC Burden Target	Target Used	Discount Needed to Reach Target							
			Mean Discount	Min	Percentiles					Max
					10%	25%	50%	75%	90%	
<=25%	5%-8%	8%	86%	11%	75%	83%	88%	92%	94%	100%
26%-50%	5%-8%	8%	72%	1%	52%	65%	75%	83%	87%	96%
51%-75%	7%-10%	10%	53%	0%	23%	41%	57%	68%	76%	92%
76%-100%	7%-10%	10%	45%	0%	11%	29%	48%	62%	71%	89%
101%-125%	9%-10%	10%	39%	0%	12%	25%	40%	54%	64%	87%
126%-150%	9%-10%	10%	34%	0%	9%	19%	34%	48%	59%	85%

Table VI-18 displays the projected 2009 costs of the Bill Discount Model if the discounts in the table above to bring 90 percent of the participants to the PUC burden level are used. This table shows that the projected FY 2009 cost of this program is \$147 million and the average discount is \$1,814. The average monthly asked to pay amount is \$50.

Table VI-18
Model 3: Bill Discount Model
Projected 2009 Discount Costs
Discount that Gets 90% to PUC Burden Target

		Projections Based on 2009 Usage Data and FY 2009 Gas Rates			
Poverty Level	Discount	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
<=25%	94%	5,061	\$10.73	\$2,121	\$11
26%-50%	87%	16,023	\$32.25	\$2,013	\$25
51%-75%	76%	25,559	\$45.52	\$1,781	\$47
76%-100%	71%	18,753	\$32.17	\$1,716	\$58
101%-125%	64%	10,680	\$18.11	\$1,696	\$80
126%-150%	59%	5,178	\$8.57	\$1,654	\$96
Total		81,254	\$147.36	\$1,814	\$50

Table VI-19 displays the costs of the projected discounts to get 90 percent of the CRP participants in each poverty level group to the targeted PUC burden level, given various annual participation rate increases. The table shows that costs in FY 2014 are \$155

million if the annual participation rate increase is one percent, and are \$188 million if the annual participation rate increase is five percent.

Table VI-19
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
Constant Gas Rates

Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$147.36	\$148.83	\$150.32	\$151.82	\$153.34	\$154.87
2.5%	\$147.36	\$151.04	\$154.82	\$158.69	\$162.65	\$166.72
5%	\$147.36	\$154.72	\$162.46	\$170.58	\$179.11	\$188.07

Table VI-20 displays the projected costs of the discount needed to get 90 percent of participants to the targeted energy burden level, given projected increases in participation rates and gas rates. The table shows that the projected FY 2014 costs are \$162 million if there is a one percent annual rate of increase in participation and \$197 million if there is a five percent annual rate of increase in participation.

Table VI-20
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$147.36	\$141.40	\$148.90	\$153.52	\$159.01	\$162.34
2.5%	\$147.36	\$143.50	\$153.35	\$160.46	\$168.67	\$174.76
5%	\$147.36	\$147.00	\$160.93	\$172.49	\$185.74	\$197.14

Bill Discount Model Projections to Reach PUC Targeted Burden
With Limits on the Amount of Gas Consumption that is Discounted

Another option for the discount model is to provide the discounted rate on a limited amount of gas consumption, and then charge the regular gas rate for gas consumption

above that level. This approach has the advantages of providing additional incentives to conserve to participating customers and of reducing the cost of the program. Customers who have usage above the level that was discounted could be targeted for conservation services through PGW's CWP.

In this section, we propose some initial limits, above which gas usage would not be discounted for program participants. The limits were chosen with the following principles.

- Program participants will not have the ability to limit their usage to reach a set discount limit. Rather, they may be encouraged to restrict their usage through the understanding that there is some limit placed on the amount of gas that is discounted. Therefore, as an incentive mechanism, it is not of great importance where the limit is set. Rather, it is of more importance that customers are educated so that they understand they need to conserve gas, because if their usage is too high, it will get very expensive.
- Customers have greater opportunity to reduce gas consumption in the winter when they have greater usage, so more customers should reach the limit in the winter.
- The CWP should be able to treat most customers who reach the limit over a period of a few years, to assist these customers to reduce their usage to an affordable level.
- Simpler approaches, with less variation in the limits, are preferred.

Table VI-21 displays the proposed consumption levels, above which gas consumption would not be discounted, and the percent and number of CRP participants in each poverty group who are projected to have gas consumption above these levels. On average, about 10,000 customers have usage above the limit in the winter months. As the CWP treats approximately 2,500 customers each year, these customers could be treated over a four to five year period.

Table VI-21
Model 3: Bill Discount Model
Proposed Limits on Discounted Usage
Number and Percent of CRP Participants With Usage Over Discount Limit
By Poverty Level

Month		January		February		March		April		May		June	
Discount Limit		375		275		250		135		60		60	
Number and Percent of CRP Participants With Usage Over the Discounted Level													
Povety Level	CRP Total	%	#	%	#	%	#	%	#	%	#	%	#

Month		January		February		March		April		May		June	
Discount Limit		375		275		250		135		60		60	
Number and Percent of CRP Participants With Usage Over the Discounted Level													
<=25%	5,061	13%	676	13%	652	11%	538	11%	553	13%	640	2%	94
26-50%	16,023	13%	2,065	12%	1,985	10%	1,655	10%	1,681	13%	2,112	2%	327
51-75%	25,559	13%	3,226	12%	3,085	10%	2,443	10%	2,546	12%	3,029	2%	401
76-100%	18,753	13%	2,485	12%	2,327	10%	1,858	10%	1,898	11%	2,155	2%	296
101-125%	10,680	16%	1,683	15%	1,612	12%	1,282	12%	1,261	13%	1,381	1%	151
126-150%	5,178	18%	924	17%	865	13%	670	12%	635	13%	676	2%	82
Total	81,254	14%	11,067	13%	10,531	10%	8,450	11%	8,572	12%	9,986	2%	1,349

Month		July		August		September		October		November		December	
Discount Limit		60		60		60		135		200		300	
Number and Percent of CRP Participants With Usage Over the Discounted Level													
Povety Level	CRP Total	%	#	%	#	%	#	%	#	%	#	%	#
<=25%	5,061	1%	45	1%	37	1%	58	4%	220	14%	690	12%	594
26-50%	16,023	1%	175	1%	170	1%	178	4%	604	14%	2,166	11%	1,774
51-75%	25,559	1%	207	1%	220	1%	276	4%	1,004	13%	3,343	11%	2,781
76-100%	18,753	1%	173	1%	206	1%	173	4%	773	14%	2,535	11%	2,147
101-125%	10,680	1%	74	1%	101	1%	105	5%	512	16%	1,722	13%	1,432
126-150%	5,178	1%	44	1%	55	1%	65	5%	268	17%	898	14%	740
Total	81,254	1%	715	1%	788	1%	853	4%	3,388	14%	11,359	12%	9,474

Table VI-22 displays statistics on the amount by which customers exceed the limited usage discount. The table shows that there are over 19,000 customers who exceed the limited amount in at least one month. However, 25 percent of these customers have total use over the year that exceeds the limits by only 17 ccf. The average amount by which these customers exceed the usage limits over the year is 254 ccf. Evaluation of the CWP has shown that this program reduces customer usage by an average of 146 ccf and PGW's new DSM program is projected to reduce customer usage by an average of 263 ccf. Therefore, these programs will help customers to reduce their usage to an affordable level.

Table VI-22
Model 3: Bill Discount Model
Amount of Usage Over the Discount Limit (ccf)
By Poverty Group

Poverty Group	Number of CRP Participants	Total Annual Amount Over the Discount (ccf)						
		Mean	Percentile					Maximum
			10	25	50	75	90	
<=25%	1,119	257	5	18	94	350	787	2,781
26-50%	3,645	228	4	15	79	303	671	3,023
51-75%	5,587	246	4	16	83	322	735	2,955
76-100%	4,321	261	5	17	94	348	746	2,984
101-125%	3,103	270	5	20	105	362	775	2,862
126-150%	1,786	285	6	21	113	369	822	2,987
TOTAL	19,562	254	5	17	91	338	742	3,023

Table VI-23 displays the projected 2009 costs of the Bill Discount Model with the proposed discount limits. This table shows that the projected FY 2009 cost of this program is \$141 million and the average discount is \$1,731. The average monthly asked to pay amount is \$57.

Table VI-23
Model 3: Bill Discount Model
Projected 2009 Discount Costs
Discount that Gets 90% to PUC Burden Target
With Limits on The Amount of Usage Discounted

		Projections Based on 2009 Usage Data and FY 2009 Gas Rates			
Poverty Level	Discount	October 2009 Participation	Total Net Discount (\$ Millions)	Average Annual Net Discount	Average Monthly Asked to Pay Amount
<=25%	94%	5,061	\$10.24	\$2,023	\$19
26%-50%	87%	16,023	\$30.93	\$1,930	\$32
51%-75%	76%	25,559	\$43.62	\$1,707	\$53
76%-100%	71%	18,753	\$30.71	\$1,638	\$65
101%-125%	64%	10,680	\$17.14	\$1,604	\$87
126%-150%	59%	5,178	\$8.02	\$1,549	\$105
Total		81,254	\$140.65	\$1,731	\$57

Table VI-24 displays the costs of the projected discounts with the limits on the amount of gas that is discounted, given various annual participation rate increases. The table

shows that costs in FY 2014 are \$148 million if the annual participation rate increase is one percent, and are \$180 million if the annual participation rate increase is five percent.

Table VI-24
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
With Limits on The Amount of Usage Discounted
Constant Gas Rates

Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$140.65	\$142.05	\$143.47	\$144.91	\$146.36	\$147.82
2.5%	\$140.65	\$144.16	\$147.77	\$151.46	\$155.25	\$159.13
5%	\$140.65	\$147.68	\$155.06	\$162.81	\$170.96	\$179.50

Table VI-25 displays the projected costs of the discount needed with limits on the amount of gas that is discounted, given projected increases in participation rates and gas rates. The table shows that the projected FY 2014 costs are \$155 million if there is a one percent annual rate of increase in participation and \$188 million if there is a five percent annual rate of increase in participation.

Table VI-25
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
With Limits on The Amount of Usage Discounted
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$140.65	\$134.98	\$142.12	\$146.53	\$151.75	\$154.93
2.5%	\$140.65	\$136.99	\$146.37	\$153.15	\$160.97	\$166.78
5%	\$140.65	\$140.33	\$153.60	\$164.63	\$177.26	\$188.13

**Bill Discount Model Projections to Reach PUC Targeted Burden
After LIHEAP Grant is Received
With Limits on the Amount of Gas Consumption that is Discounted**

The other models incorporated the projected LIHEAP benefit amount when calculating the subsidy needed to bring the customer to the targeted energy burden level. In the following analysis, we incorporate the projected LIHEAP benefit when determining what discount the customer would need to reach the targeted burden. Table VI-26 displays the discount needed to reach the Pennsylvania Public Utilities Commission (PUC) targeted burden levels after the projected LIHEAP benefit has been subtracted from the customer's projected costs. The table compares the discount needed prior to and after incorporating the LIHEAP benefit. The table shows that taking LIHEAP into account reduces the discount needed from 94 percent to 72 percent for the group with income at or below 25 percent of the poverty level and reduced the discount needed from 59 percent to 55 percent for the group with income between 126 and 150 percent of the poverty level. Note that this discount would be applied to the full amount of gas usage (up to any discount limit imposed), but the amount of discount needed is lower because the LIHEAP benefit is taken into account.

**Table VI-26
Model 3: Bill Discount Model
Discount Needed to Reach PUC Burden Target
By Poverty Level**

Poverty Group	PUC Burden Target	Target Used	Discount Needed to Reach Target for 90 Percent	
			Without LIHEAP	With LIHEAP
<=25%	5%-8%	8%	94%	72%
26%-50%	5%-8%	8%	87%	73%
51%-75%	7%-10%	10%	76%	67%
76%-100%	7%-10%	10%	71%	63%
101%-125%	9%-10%	10%	64%	60%
126%-150%	9%-10%	10%	59%	55%

Table VI-27 displays the average monthly customer asked to pay amount when the LIHEAP grant is factored in. The table shows that the mean monthly asked to pay amount is now \$74.

Table VI-27
Model 3: Bill Discount Model
LIHEAP Grant Subtracted When Calculating Needed Discount
Customer Monthly Asked to Pay Amount
By Poverty Level

Poverty Level Group		
	October 2009 Participation	Average Monthly Asked to Pay Amount
<=25%	5,061	\$59
26-50%	16,023	\$58
51-75%	25,559	\$70
76-100%	18,753	\$80
101-125%	10,680	\$95
126-150%	5,178	\$113
Total	81,254	\$75

Table VI-28 displays the projected costs of the discount needed after the LIHEAP benefit is received with limits on the amount of gas that is discounted, given projected increases in participation rates and gas rates. The table shows that the projected FY 2014 costs are \$136 million if there is a one percent annual rate of increase in participation and \$165 million if there is a five percent annual rate of increase in participation.

Table VI-28
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Discount that Gets 90% to PUC Burden Target
After Projected LIHEAP Grant is Subtracted
With Limits on The Amount of Usage Discounted
Using Projected Gas Rates

	FY 2009	Projected				
		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Gas Rate	\$18.2676	\$17.2976	\$18.0841	\$18.4853	\$18.9865	\$19.2049
Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$123.03	\$118.08	\$124.32	\$128.18	\$132.75	\$135.53
2.5%	\$123.03	\$119.83	\$128.04	\$133.97	\$140.81	\$145.89
5%	\$123.03	\$122.75	\$134.37	\$144.02	\$155.06	\$164.58

Bill Discount Model Projections With Cost Held at Current CRP Model Costs

The previous versions of the Bill Discount Model set the discounts to keep at least 90 percent of program participants within the PUC targeted energy burden guidelines. In this section, we examine the characteristics and costs of a discount that would have the same initial costs as the projected costs for the Current CRP Model.

Table VI-29 displays discount levels, monthly asked to pay amounts, and pre and post-LIHEAP energy burdens for a Bill Discount Model that would have the same projected costs as those for the Current CRP Model. The table shows that discounts would range from 70 percent for participants with household income at or below 25 percent of the poverty level to 20 percent for participants with household income between 126 and 150 percent of the federal poverty level. The table shows that the average energy burden for the lowest poverty group would be 23 percent if they did not receive LIHEAP and would be three percent if they did receive LIHEAP. The average energy burden for households with income between 26 and 50 percent of poverty would be 13 percent if they did not receive LIHEAP and six percent if they did.

Table VI-29
Model 3: Bill Discount Model
Maximum Discounts for Same Cost as Current CRP Model
Discount Percentage, Asked to Pay Amount, and Energy Burden

Poverty Group	Discount	Average Monthly Asked to Pay Amount	Average Pre LIHEAP Energy Burden¹⁰	Average Post LIHEAP Energy Burden
<=25%	70%	\$56.42	23%	3%
26-50%	64%	\$69.42	13%	6%
51-75%	55%	\$87.92	12%	9%
76-100%	45%	\$110.75	12%	10%
101-125%	34%	\$145.75	12%	11%
126-150%	20%	\$186.92	13%	13%

Table VI-30 displays the projected costs of the discounts displayed in the previous tables. The projected 2009 cost is \$97.58 Million as these costs were targeted to be the same as the projected 2009 cost for the Current CRP Model (\$97.83 Million). Projected costs in FY 2014 are also approximately the same as projected 2004 costs for the Current CRP Model.

¹⁰ The Pre-LIHEAP energy burden for the group with income between 126 and 150 percent of poverty is 13.36 percent and the Post-LIHEAP energy burden for that group is 12.65. Both are rounded to 13 percent.

Table VI-30
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Maximum Discounts for Same Cost as Current CRP Model
Constant Gas Rates

Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$97.58	\$98.56	\$99.54	\$100.54	\$101.54	\$102.56
2.5%	\$97.58	\$100.02	\$102.52	\$105.08	\$107.71	\$110.40
5%	\$97.58	\$102.46	\$107.58	\$112.96	\$118.61	\$124.54

Table VI-31 displays the projected costs of the discounts displayed in the previous tables, with projected changes in gas rates. The 2014 costs are slightly lower than for the Current CRP Model, because Bill Discount Model program participants share the price increase on the part of the gas that they are paying for. However, the cost of the Bill Discount Model does not decline when the customer's income increases as it does with the other models.

Table VI-31
Model 3: Bill Discount Model
Projected Annual Discount Costs (\$ Millions)
Maximum Discounts for Same Cost as Current CRP Model
Projected Gas Rates

Annual Participation Increase	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
1%	\$97.58	\$93.64	\$98.60	\$101.66	\$105.29	\$107.50
2.5%	\$97.58	\$95.03	\$101.55	\$106.26	\$111.69	\$115.72
5%	\$97.58	\$97.34	\$106.56	\$114.22	\$122.99	\$130.54

VII. Summary and Recommendations

This section provides a brief description of the three models considered, a summary of the advantages and disadvantages of the three models, a comparison of the program costs, and a recommendation for PGW's program.

A. Models Considered

The three models analyzed in this report are described briefly below.

- *Model 1: Current CRP Model with LIHEAP Modification* – Customers who participate in the CRP pay a fixed monthly amount. The amount is calculated so that customers pay 8, 9, or 10 percent of their income, based on their poverty level. There is a minimum payment amount of \$25 per month.

The first model revision adjusts the calculation of the CRP payment by adding 1/12 of the customer's potential LIHEAP grant, based on PA's LIHEAP matrix, to the customer's monthly payment, or by adding some percentage of the potential LIHEAP grant. The payment could be calculated as:

$$\text{Monthly CRP Payment} = \{[.08 * \text{Annual Household Income}] / 12\} + [\text{LIHEAP} / 12]\}$$

Or can be calculated as:

$$\text{Monthly CRP Payment} = \{[.08 * \text{Annual Household Income}] / 12\} + .55 * [\text{LIHEAP} / 12]\}$$

The second model revision credits the LIHEAP grant to the customer's account over 12 months, to maintain an equal monthly bill for the customer.

The third model revision adds in a Conservation Incentive Mechanism to encourage participants to reduce their gas consumption.

- *Model 2: Targeted Energy Burden Model* – This model targets the customer's post-LIHEAP energy burden to a certain level. If PGW decided to target a burden of eight percent, the calculation would be done as follows:

$$\text{Annual Household Income} * 8\% = \text{Targeted Net Energy Bill } (\$10,000 * 8\% = \$800)$$

$$\text{Current Gas Burden} = \text{Annual Gas Bill} - \text{LIHEAP Benefit } (\$2,200 - \$350 = \$1850)$$

$$\text{CAP pays the difference: } \$1850 - \$800 = \$1050$$

$$\text{Monthly credit} = \$1050 / 12 = \$87.50$$

- *Model 3: Bill Discount Model* – This model provides a discount to the customer on the energy bill. It is essentially a different rate that the program participant pays for gas usage.

The three models are compared in the next section.

B. Model Comparison

Table VII-1 compares the three models on several program characteristics. The table demonstrates that each model has advantages in different areas.

- *Equal Monthly Payments* – The Current CRP Model is the only design that provides equal monthly payments (with the allocation of the LIHEAP grant over a 12-month period.) The Targeted Energy Burden and Bill Discount Models require a budget bill arrangement to equalize the asked to pay amount. Because of the unpredictability of energy usage, the PUC requirement for periodic budget bill adjustments, and the need to avoid large make-up payments, frequent adjustments to the budget bill may result in somewhat irregular payments for program participants.
- *LIHEAP Application Issue* – The Bill Discount Model is the only design that completely removes the LIHEAP payment issue because it does not integrate the discount with the LIHEAP cash grant. The other models, however, provide more equitable net payments because they do take account of LIHEAP.
- *Conservation Incentive* – The modified CRP Model has a new proposed Conservation Incentive Mechanism. The Targeted Energy Burden Model provides an incentive for conservation because the customer's program credit is determined at the beginning of the year and fixed over the year. The Bill Discount Model provides an incentive for conservation because the customer pays a portion of the energy bill.
- *Targets Energy Burden* – The Current CRP Model and the Targeted Energy Burden Model target a set energy burden level, as opposed to the Bill Discount Model which indirectly attempts to reach a set energy burden. The Current CRP and the Targeted Energy Burden Models are more efficient at reaching the targeted energy burden level.
- *Administrative Simplicity* – The Current CRP Model is simplest for PGW because it is the model that is currently programmed into their system. The Bill Discount Model is simple to administer, as it only involves applying different rates for CRP customers. However, the program becomes more complex when the budget bill is included. The Targeted Energy Burden Model is the most complicated to explain to customers and to implement.

Cells in the table are highlighted that correspond to advantageous characteristics to make it easy to see which programs are advantageous in each area.

Table VII-1
Advantages and Disadvantages of Assistance Models

	Assistance Model		
	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3: Bill Discount
Equal Monthly Payments	Yes	No	No
Resolves LIHEAP Application Issue	Partially	Partially	Yes
Conservation Incentive	Yes	Yes	Yes
Targets Energy Burden	Yes	Yes	No
Administrative Simplicity	Yes	No	Yes

Table VII-2 compares the monthly customer asked to pay amount under the three assistance models, and the two versions of the Bill Discount Model. The table demonstrates that while the Current CRP and Targeted Energy Burden Models have very similar bills, the Model 3A: Bill Discount Model that was designed to reach the PUC burden targets has much lower projected bills. The Model 3B: Bill Discount Model that was designed to match the CRP cost has monthly asked to pay amounts that are lower than the other models for the lower income groups and higher than the other models for the higher income groups, but they are about the same as the other models on average for participants as a whole.

Table VII-2
Comparison of Assistance Models
Customer Monthly Asked to Pay Amount

	October 2009 Participation	Assistance Model			
		Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3A: Bill Discount To Reach PUC Target	Model 3B: Bill Discount To Match CRP Cost
		Average Monthly Asked to Pay Amount			
<=25%	5,061	\$87	\$83	\$59	\$56
26-50%	16,023	\$79	\$80	\$58	\$69
51-75%	25,559	\$94	\$94	\$70	\$88
76-100%	18,753	\$108	\$108	\$80	\$111
101-125%	10,680	\$136	\$136	\$95	\$146
126-150%	5,178	\$153	\$154	\$113	\$187
Total	81,254	\$103	\$103	\$75	\$101

Table VII-3A compares the Pre-LIHEAP energy burden under the three assistance models, and the two versions of the Bill Discount Model. The Bill Discount Model designed to reach the PUC targeted energy burden has the lowest energy burdens because it is designed to meet the PUC target for 90 percent of participants after receipt of the LIHEAP grant. All

of the models have higher pre-LIHEAP energy burdens for the lower poverty groups because these models are designed to reach energy burdens after receipt of LIHEAP and the lower poverty groups have greater projected LIHEAP benefits.

Table VII-3B compares the Post-LIHEAP energy burden. The Current CRP and Targeted Energy Burden Models reach the energy burden that they target for each program participant, because of the model design. The exception for the Current CRP group is the lowest poverty level group because some of these participants have the minimum payment instead of the percentage of income payment. The Model 3A: Bill Discount Model that was designed to meet the PUC targets meets the PUC target for 90 percent of participants, but is below that level on average. The Model 3B: Bill Discount Model that was designed to match the CRP cost has Post-LIHEAP energy burdens that are lower than the other models for the lower income groups and higher than the other models for the higher income groups.

However, it is also important to examine the distribution of the energy burden. As designed, the Current CRP Model and the Targeted Energy Burden Model reach the energy burden that is targeted for all program participants (with the exception of a small number of minimum payment group customers in the Current CRP Model.) However, the Bill Discount Model has a range of energy burdens that are achieved. Table VII-3B shows that 25 percent of customers with income between 26 and 50 percent of poverty have an energy burden above 9 percent and 25 percent of customers with income between 126 and 150 percent of poverty have an energy burden above 15 percent after receipt of LIHEAP. This is a key disadvantage of the Bill Discount Model.

**Table VII-3A
Comparison of Assistance Models
Pre-LIHEAP Energy Burden**

	Assistance Model															
	Model 1: Current CRP				Model 2: Targeted Energy Burden				Model 3A: Bill Discount To Reach PUC Target				Model 3B: Bill Discount To Match CRP Cost			
	Mea n	Percentile			Mea n	Percentile			Mea n	Percentile			Mea n	Percentile		
		2 5	5 0	7 5		2 5	5 0	7 5		2 5	5 0	7 5		2 5	5 0	7 5
<=25%	39%	26%	47%	47%	36%	26%	42%	42%	24%	13%	20%	28%	23%	14%	21%	29%
26-50%	15%	11%	14%	18%	15%	11%	14%	18%	11%	6%	9%	13%	13%	8%	12%	17%
51-75%	12%	11%	12%	13%	12%	11%	12%	13%	9%	6%	8%	11%	12%	8%	10%	14%
76-100%	11%	10%	11%	12%	11%	10%	11%	12%	9%	5%	7%	10%	12%	8%	11%	14%
101-125%	11%	11%	11%	12%	11%	11%	11%	12%	8%	5%	7%	9%	12%	9%	11%	14%
126-150%	11%	11%	11%	11%	11%	11%	11%	11%	8%	6%	7%	9%	13%	10%	12%	15%

Table VII-3B
Comparison of Assistance Models
Post-LIHEAP Energy Burden

	Assistance Model															
	Model 1: Current CRP				Model 2: Targeted Energy Burden				Model 3A: Bill Discount To Reach PUC Target				Model 3B: Bill Discount To Match CRP Cost			
	Mea n	Percentile			Mea n	Percentile			Mea n	Percentile			Mea n	Percentile		
		2 5	5 0	7 5		2 5	5 0	7 5		2 5	5 0	7 5		2 5	5 0	7 5
<=25%	11%	8%	12%	12%	8%	8%	8%	8%	5%	0%	0%	3%	3%	0%	0%	4%
26-50%	8%	8%	8%	8%	8%	8%	8%	8%	5%	0%	3%	5%	6%	3%	6%	9%
51-75%	9%	9%	9%	9%	9%	9%	9%	9%	6%	3%	5%	7%	9%	5%	7%	11%
76-100%	9%	9%	9%	9%	9%	9%	9%	9%	7%	4%	5%	8%	10%	6%	9%	12%
101-125%	10%	10%	10%	10%	10%	10%	10%	10%	7%	4%	6%	8%	11%	8%	10%	13%
126-150%	10%	10%	10%	10%	10%	10%	10%	10%	7%	5%	6%	8%	13%	9%	11%	15%

Table VII-4 compares the costs of the three models and the two versions of the Bill Discount Model. Note that the Current CRP costs assume that the new formula is used that adds 1/12 of the LIHEAP matrix benefit to the customer's payment each month, the Targeted Energy Burden Model takes the projected LIHEAP benefit into account in the formula, and the Model 3A: Bill Discount Model calculates the discount needed after the LIHEAP benefit is received. The table demonstrates that the Current CRP and Targeted Energy Burden Models are very close in cost in all of the projections. The Model 3A: Bill Discount Model designed to reach the PUC targeted energy burdens has much higher projected costs. The Model 3B: Bill Discount Model designed to match the CRP costs are lower than for the Current CRP Model when gas prices increases in the future are taken into account, because Bill Discount Model program participants share the price increase on the part of the gas that they are paying for. However, the cost of the Bill Discount Model does not decline when the customer's income increases as it does with the other models.

Table VII-4
Cost Comparison of Assistance Models
Annual Subsidy Cost (\$ Millions)

Year	Parameters			Assistance Model			
	Participation Growth	Gas Cost Increase	Income Increase	Model 1: Current CRP	Model 2: Targeted Energy Burden	Model 3A: Bill Discount	Model 3B: Bill Discount
						To Reach PUC Target	To Match CRP Cost
2009	--	--	--	\$97.83	\$98.70	\$123.03	\$97.58
2014	1%	Yes	No	\$112.90	\$113.65	\$135.53	\$107.50
2014	5%	Yes	No	\$137.10	\$138.01	\$164.58	\$130.54
2014	1%	Yes	Yes	\$100.27	\$101.49	\$135.53	\$107.50
2014	5%	Yes	Yes	\$121.77	\$123.25	\$164.58	\$130.54

The higher costs for the Model 3A: Bill Discount Model relates to the inefficiency of this program design in reaching a targeted energy burden level and the fact that the cost projections were made to bring 90 percent of the participants to the PUC targeted burden.¹¹ The Bill Discount Model is an inefficient way of reaching the targeted energy burden level, because to reach the level for 90 percent of the participants, many participants receive a greater discount than what is needed to reach the targeted burden.

C. Recommendation

The examination of the advantages and disadvantages of the three models showed that each design has reasons to be considered in this review. While, the analysis of program costs and

¹¹ The discounts were set to reach the targeted energy burden level for 90 percent of participants in each poverty group because another utility in PA who implemented the Bill Discount model in PA reached an agreement with the PUC to set their discounts in this manner.

energy burdens provides a clear display of the inefficiency of the Bill Discount Model, the Bill Discount Model has other advantages that the others do not, resolving the important issue of the application of LIHEAP benefits. The Bill Discount Model, as shown in the analysis of Model 3B, can be designed to have the same costs as the other models. While some households will have energy burdens that exceed the PUC targeted levels, these households can be targeted for conservation services that bring their bills more in line with the PUC targets.

However, because the Current CRP Model and the Targeted Energy Burden Model are so close in projected costs and reach targeted energy burdens more efficiently than the Bill Discount Model, they should be compared on the substantive advantages and disadvantages of the approaches. The areas where the programs differ are included in the table below to make it clear which characteristics are under consideration. When the table is reduced in this way, it becomes apparent that the Current CRP model is preferred because it provides the customers with equal monthly payments and it is simpler for PGW to implement.

Table VII-4
Advantages and Disadvantages of Assistance Models

	Assistance Model	
	Model 1: Current CRP	Model 2: Targeted Energy Burden
Equal Monthly Payments	Yes	No
Administrative Simplicity	Yes	No

This result points to a recommendation that PGW retain the Current CRP Model with the three revisions discussed earlier.

- The CRP payment formula is revised to include the LIHEAP matrix benefit (or some percentage of the benefit) as shown below for the eight percent group.

$$\text{Monthly CRP Payment} = \{[.08 * \text{Annual Household Income}] / 12\} + [\text{LIHEAP} / 12]\}$$

- The LIHEAP grant (or some fraction of the grant) is applied to the customer bill over a 12-month period.
- The Conservation Incentive Mechanism is added.

However, if it becomes apparent that the proposed means of dealing with the LIHEAP application issue under the Current CRP Model or Targeted Energy Burden Model are not acceptable to DPW, PGW could adopt the Bill Discount Model and work to provide conservation services to those households who are then faced with gas bills significantly above the PUC targets.