

REVIEW OF PECO ENERGY'S
REPORT ON ALTERNATIVE MODELS FOR THE
DELIVERY OF CUSTOMER ASSISTANCE BENEFITS

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PECO's September 30, 2013 report (hereafter "PECO Options Report"), along with the data that is implicit (whether or not explicit) in that report,¹ provides a reasonable basis for assessing the structure of a low-income rate affordability program for PECO.² The CAP Rate models assessed in the PECO Options Report include the following:

- The Status Quo, a tiered discount program with seven tiers,³ with the discounted usage set at the population average within each tier (hereafter "Status Quo" model);⁴
- A modification of the Status Quo, keeping the seven-tier discount program structure, but making three adjustments: (1) redeploying benefits from the highest tiers to the lowest tiers; (2) seasonally-adjusting discounts; and (3) increasing the usage subject to a discount from the population average to the population average plus one standard deviation⁵ (hereafter "7-Tier R/S/SD" model);
- The percentage of income plan (hereafter "PIP" model); and
- The fixed credit option (hereafter "FCO" model).⁶

The Status Quo and 7-Tier R/S/SD models are fundamentally the same, with both using a tiered discount approach to benefit calculation without consideration of individual home energy burdens. Likewise, the FCO and PIP are fundamentally the same, with both tying benefits to a determination of what bills are affordable to individual PECO customers at defined energy burdens.

It is important to note at the outset that the FCO analyzed by PECO is not the FCO model recommended for consideration by OCA in the underlying proceeding. As such, some of the results reported by PECO do not accurately reflect the outcomes to be expected by the OCA's recommended FCO. I will address some of these impacts when I examine the individual metrics.

¹ These comments also rely on data from PECO's Supplemental Filing of October 15, 2013. That October 15, 2013 filing will henceforth be referred to as PECO's "Supplemental Filing."

² PECO has previously indicated that while the economics of the CAP Rate program are assessed on the electric side of the company, the conclusions would be applied equally to the natural gas side as well.

³ The tiers are as follows: Tier B: income at or below 25% of Poverty; Tier C: income between 26% and 50% of Poverty; Tier D: income between 51% and 75% of Poverty; Tier D1: income between 76% and 100% of Poverty; Tier E: Income between 101% and 125% of Poverty; and Tier E1: income between 126% and 150% of Poverty. "Tier A" provides a special discount to customers with special circumstances and is not considered a part of the "tiered" rate discount structure.

⁴ The usage in the Status Quo model varies by whether a customer is a heating or a non-heating customer.

⁵ The usage in the 7-Tier R/S/SD model also varies by whether a customer is a heating or a non-heating customer. The usage limits for the 7-Tier R/S/SD model are set forth in the PECO Options Report (footnote 8, page 13).

⁶ To facilitate the Commission's review of these comments, these comments will use the same nomenclature as PECO used in its report. PECO referred to (1) the Status Quo, (2) the 7-Tier R/S/SD, (3) the PIP, and (4) the FCO alternatives.

The comments below will examine the ten metrics that have been identified to measure the efficacy of the four alternative affordable rate models.⁷ After that examination, this review concludes with a brief Summary and Recommendation.

Measuring Program Outcomes: Ten Metrics.

The following ten metrics were identified in the PECO Options Report as relevant to a discussion of what rate affordability model PECO should implement.⁸

1. The “breadth” of unaffordability;
2. The “depth” of unaffordability;
3. The total dollars of unaffordability;⁹
4. The payment coverage rate;
5. The dollar cost of the rate affordability “shortfall;”
6. The incentive to conserve provided by price signals;
7. The number of customers receiving \$0 benefits;
8. The impact on the bad debt write-off from CAP participants;
9. The impact on the number of service disconnections for nonpayment for CAP participants; and
10. The IT costs of implementing the revised alternative means of delivering rate affordability assistance.¹⁰

Each of these metrics is defined and explained in the specific sub-sections below examining each individual metric.¹¹

⁷ The impact on bad debt and disconnections for nonpayment (DNP) are considered in the same section below.

⁸ The PUC has determined that changes, if any, to the PECO CAP Rate would be implemented in 2016. PECO Options Report, at 10.

⁹ This metric was not explicitly recognized in the PECO Options Report, but is the way in which one can assess the combined impacts of the first two metrics.

¹⁰ Clearly, if the Status Quo is retained, the IT costs would be \$0, so this metric applies only to the three new alternatives.

A. The “Breadth” of Unaffordability.¹²

The breadth of unaffordability measures the incidence of unaffordable bills within the PECO low-income population, after the application of rate affordability assistance, without taking into consideration the magnitude or extent of the unaffordability. This measure uses a toggle: either a bill is unaffordable or it is not. A customer whose bill is unaffordable by one dollar (\$1), in other words, is counted the same as a customer whose bill is unaffordable by one hundred dollars (\$100).

PECO sets forth its breadth of unaffordability analysis in Table 6 of the Options Report. As expected, the PIP has virtually no extent of unaffordable bills since it explicitly involves setting a payment equal to the established affordable burden as a percentage of income. For that reason, the PIP will not be further considered in the discussion below. For the remaining three models, the breadth of unaffordability was found to be as follows:

Breadth of Unaffordability: PECO Findings by Option			
Rate Class	Status Quo	7-Tier R/S/SD	FCO
R (non-heating)	35%	27%	39%
RH (heating)	25%	21%	26%
SOURCE: PECO Options Report, Table 6, page 18.			

As explained above, “unaffordability” for this analysis is a yes/no toggle. A bill is either unaffordable or it is not; the amount of unaffordability is not considered. According to PECO (informal discovery), the fact of unaffordability for the FCO was largely driven by the seasonality of bills.¹³ In modeling the FCO, the fixed credit was calculated on an annual basis and delivered on a levelized monthly basis.¹⁴ In contrast, monthly bills were not levelized and affordability was assessed on a monthly basis. Under such an approach, while the seasonality of bills will never improve affordability, it can reduce affordability.

¹¹ To the extent that the definition and/or explanation of the metric differs from that provided in the PECO Options Report, that difference will be explicitly noted in these comments. Without such an explicit notation, it should be assumed that the comments adopt and use PECO’s description of the nature of the metric (aside from any differences about the interpretation or significance of the metric).

¹² The PECO Options Report refers to the “breadth” and “depth” of *affordability*. While it would appear that the references are intended to be to the same impact, the correct reference should be to the breadth and depth of *unaffordability*.

¹³ PECO indicated in response to informal discovery that affordability (or, conversely, unaffordability) was assessed on a monthly basis.

¹⁴ The levelized monthly basis was achieved simply by dividing the annual figure by twelve months.

It is possible to illustrate why this is so: Assume that a fixed credit of \$50 a month (\$600 a year) is needed to bring a bill to an affordable level of \$720 (annual) (\$60 per month). On a levelized basis, in other words, the total levelized undiscounted monthly bill is \$110 (\$50 fixed credit + \$60 affordable payment = \$110 total bill). In months where the actual seasonal bill is less than \$110, affordability does not increase; affordability is a yes/no toggle, with the dollar amount having no impact. Whether the discounted bill is an affordable \$60 bill or an affordable \$40 bill does not change the fact that the bill is “affordable.” In contrast, in months where the actual seasonal bill is *more* than \$110, the bill will be deemed “unaffordable” (e.g., a seasonal bill of \$130 minus the \$50 fixed credit yields a customer bill of \$80, which exceeds the \$60 affordable amount). PECO did not carry forward any credits from an affordable month to a future month; each month was considered on a stand-alone basis.¹⁵

In contrast to the FCO modeled by PECO, both the Status Quo and the 7-Tier R/S/SD alternatives seasonally adjust their benefits by applying the discount to a higher usage amount in months with weather-sensitive usage. As a result, the PECO Options Report indicates only that a non-seasonally adjusted benefit yields a greater number of unaffordable bills on a monthly basis than does a seasonally-adjusted benefit. The conclusion is *not* what PECO asserts, that “the FCO has degraded the breadth of unaffordability.” Rather the conclusion is that the elimination of seasonality in the distribution of benefits across the year as modeled by PECO will adversely affect consumers who have seasonal differences in their bills.¹⁶

The appropriate response to this observation involves one of two straightforward decisions:

- Either, the FCO should be delivered on a seasonally-adjusted basis;¹⁷ or
- Program participants taking service under the FCO alternative should be required to enroll in a levelized budget-billing program to eliminate the seasonality of billing.¹⁸

The bottom line is that the degradation in the breadth of unaffordability occurs not from a move to the FCO from the Status Quo, but rather from PECO’s choice to eliminate any seasonality in

¹⁵ For example, a Month 1 bill of \$90 and a Month 2 bill of \$130 would yield 50% unaffordability under PECO’s approach, even though the two months, on a levelized basis, would both be an affordable \$110 (\$220 / 2).

¹⁶ This was not the FCO model recommended in my testimony in the Spring 2013 litigation. I recommended a PECO model that was guided by the Colorado program, which requires participation in budget billing. Budget billing would eliminate the seasonality of bills included in the PECO analysis as improve the breadth of affordability.

¹⁷ The fact that the credit is “fixed” does not necessarily imply that the credit must be levelized on a monthly basis. The “fixed credit” simply means that the credit does not vary based on usage or price.

¹⁸ While PECO said that it structured its FCO option on the FCO program used by Public Service Company of Colorado (PSCO), in fact, it did not. PSCO required its FCO customers to enroll in budget billing. Moreover, the Colorado PUC regulations establishing a low-income FCO “safe harbor” program require program participants to enroll in budget billing. 4 Code of Colorado Regulation 723-3.3412h(II)(E) (“A utility shall, unless infeasible, enroll safe harbor participants in its levelized budget billing program as a condition of participation in safe harbor.”)

the distribution of benefits (or, conversely, to avoid requiring budget bill participation). The depth of unaffordability in the FCO modeled by PECO does not counsel against the FCO relative to the Status Quo.¹⁹

B. The “Depth” of Unaffordability.

The PECO Options Report notes that “on the depth of affordability, the FCO fares well.” (PECO Options Report, at 19). It is not merely the observation that the “FCO fares well” that is significant, however. On the depth of affordability, the Status Quo fares quite poorly. The average dollar amount by which a non-heating bill is unaffordable under the Status Quo is \$447, while the average dollar amount by which a heating bill is unaffordable is \$652. These are not the average bills, but rather the average amount, on an annual basis, by which the bill exceeds an “affordable bill” *even after the CAP Rate discount is applied*.

An examination of the depth of unaffordability also helps to place in context the impact of the various alternatives on the breadth of unaffordability. The data is set forth in the Table below.

Depth of Unaffordability: Status Quo and FCO by Tier and Heating/Non-heating Status								
Tier	Non-Heating				Heating			
	Percent Unaffordable		Mean \$s Above Affordable		Percent Unaffordable		Mean \$s Above Affordable	
	Status Quo	FCO	Status Quo	FCO	Status Quo	FCO	Status Quo	FCO
B	85%	99%	\$383	\$215	83%	98%	\$594	\$384
C	52%	88%	\$483	\$117	43%	75%	\$757	\$184
D	36%	43%	\$472	\$75	23%	21%	\$595	\$107
D1	27%	27%	\$443	\$64	17%	9%	\$660	\$125
E	19%	5%	\$489	\$76	11%	2%	\$722	\$96
E1	16%	3%	\$492	\$80	4%	1%	\$921	\$193
Total	35%	39%	\$447	\$124	25%	26%	\$652	\$253
SOURCE: Appendix C, PECO Options Report.								

Conclusions about the impact of the various alternatives on “affordability” become somewhat clearer when considering the depth of affordability in addition to the breadth of affordability.

¹⁹ Nor does the breadth of unaffordability counsel against the FCO relative to the 7-Tier R/S/SD option. PECO’s Appendix C (PECO Options Report) (hereafter “Appendix C”) shows that while, relative to the 7-Tier R/S/SD option, the FCO results in somewhat of an increase in the breadth of unaffordability in the lower income tiers; it results in an improvement in the upper income tiers. The same analysis of why a degradation occurs not because of the FCO but because of the elimination of seasonality of the discount applies with even greater force to the 7-Tier R/S/SD alternative given that option’s greater seasonal difference in discounts.

- For *non-heating* customers, while the percentage of Tier B program participants with an “unaffordable” bill increases from 85% (Status Quo) to 99% (FCO), the dollars of unaffordability per participant are reduced to almost half (\$383 vs. \$215). While the percentage of Tier C customers with “unaffordable bills” increases from 52% (Status Quo) to 88% (FCO), the dollars of unaffordability per participant are reduced by more than 75% (from \$483 for the Status Quo to \$117 for the FCO).
- Even more dramatic reductions occur for *heating* customers. While the percentage of Tier C program participants with an unaffordable bill increases from 43% (Status Quo) to 75% (FCO), the dollars of unaffordability per participant decrease by more than 75% (from \$757 to \$184). Starting with Tier D heating customers, not only is the breadth of unaffordability reduced, but the depth of unaffordability is reduced by tremendous amounts (between 80% and nearly 90% reductions in depth of affordability for Tiers D, D1, E and E1).

Overall, for non-heating customers, while the breadth of unaffordability increases a small amount (from 35% in the Status Quo to 39% in the FCO), the depth of unaffordability decreases substantially (72%, from \$447 per participant to \$124 per participant). Overall, for heating customers, while the breadth of unaffordability remains virtually constant (25% for the Status Quo and 26% for the FCO), the depth of unaffordability decreases substantially (61%, from \$652 for the Status Quo to \$253 for the FCO). For both heating and non-heating customers, the FCO improves BOTH the breadth AND the depth of affordability relative to the Status Quo.

C. Total Dollars of Unaffordability

It is possible to combine the breadth and depth of unaffordability into a single weighted factor in order to determine the overall impact of various program design alternatives on home energy affordability. In informal discovery, PECO agreed that the following calculation would be an appropriate way to determine the TOTAL DOLLARS OF UNAFFORDABLE BILLS tendered to low-income program participants:

$$\text{Percent of Unaffordability} \times \text{Number of Participants} \times \text{Average Unaffordable Bill per Participant} \\ = \text{Total Dollars of Unaffordable Bills}$$

The discussion below uses data provided by PECO in its Supplemental Filing to show the number of participants in each income tier. By inserting this participant data, it is possible to determine the relationship between program alternatives. The results for the Status Quo and FCO options are presented in the Table below.

Total Dollars of Unaffordable Bills										
Non-Heating										
	Status Quo Alternative					FCO Alternative				Ratio: FCO to Status Quo Total Unaffordable
Income Tier	# of Participants	Pct Unaffordable	Avg Unaffordable Bill	Total Unaffordable Dollars		# of Participants	Pct Unaffordable	Avg Unaffordable Bill	Total Unaffordable Dollars	
B	9,809	85%	\$383	\$3,193,320		9,809	99%	\$215	\$2,087,846	65%
C	17,462	52%	\$483	\$4,385,756		17,462	88%	\$117	\$1,797,888	41%
D	25,261	36%	\$472	\$4,292,349		25,261	43%	\$75	\$814,667	19%
D1	33,313	27%	\$443	\$3,984,568		33,313	27%	\$64	\$575,649	14%
E	23,056	19%	\$489	\$2,142,133		23,056	5%	\$76	\$87,613	4%
E1	18,478	16%	\$492	\$1,454,588		18,478	3%	\$80	\$44,347	3%
Total	xxx	35%	\$447	xxx		xxx	39%	\$124	xxx	
Sum				\$19,452,714					\$5,408,009	28%
Heating										
	# of Participants	Pct Unaffordable	Avg Unaffordable Bill	Total Unaffordable Dollars		# of Participants	Pct Unaffordable	Avg Unaffordable Bill	Total Unaffordable Dollars	FCO High / (Lower) than Status Quo
B	975	83%	\$594	\$480,695		975	98%	\$384	\$366,912	76%
C	1,531	43%	\$757	\$498,356		1531	75%	\$184	\$211,278	42%
D	2,275	23%	\$595	\$311,334		2275	21%	\$107	\$51,119	16%
D1	3,360	17%	\$660	\$376,992		3360	9%	\$125	\$37,800	10%
E	2,382	11%	\$722	\$189,178		2382	2%	\$96	\$4,573	2%
E1	2288	4%	\$921	\$84,290		2288	1%	\$193	\$4,416	5%
Total	xxx	25%	\$652	xxx		xxx	26%	\$253	xxx	
Sum				\$1,940,844					\$676,099	35%
Source of participant distribution: PECO Supplemental Filing: October 15, 2013.										

Two critical conclusions flow from this Table:

- First, despite the results that PECO identified with respect to the breadth of unaffordability between the Status Quo and the FCO, in every income tier, a move to the FCO option reduces the dollars of unaffordable bills rendered to low-income PECO customers. Indeed, for non-heating (R) customers, the dollars of unaffordable bills rendered to Tier B customers is reduced by 35%; to Tier D and D1 customers by 81% or more; and to Tier E and E1 customers by more than 95%. For heating (RH) customers, the dollars of unaffordable bills rendered to Tier B customers is reduced by 24%; to Tier D and D1 customers by 85% to 90%; and to Tier E and E1 customers by 95% or more.²⁰
- Second, in addition to the impacts in each individual income tier, a move to the FCO (relative to the Status Quo) would reduce the dollars of unaffordable bills rendered to PECO's low-income non-heating customers by more than 70%, and would reduce the dollars of unaffordable bills rendered to PECO's heating customers by 65%. Overall, a move to the FCO from the Status Quo would reduce unaffordable bills by more than \$6.0 million (\$5.408 million for R; \$0.676 million for RH = \$6.084 million total).

PECO asserts in its Options Report that the “depth of affordability . . . is not one of the measures historically used by the Commission to evaluate CAP programs. . .” (PECO Options Report, at 19). Nevertheless, the Commission has always considered the efficiency and effectiveness of utility expenditures in achieving their ends. The Commission should not ignore the conclusion that the FCO could reduce the dollars of unaffordable bills rendered to low-income customers solely because the specific metric that shows the improvement in performance has never been calculated and presented to the Commission before. This conclusion is even more appropriate given the fact that, as discussed in more detail below, this reduction in dollars of unaffordability could occur while also reducing the total cost of the program.

D. Payment Coverage Ratio.

Under the Commission's CAP regulations, the “payment coverage ratio” metric measures the percentage of total billed revenue actually paid by a low-income participant.²¹ PECO's Options Report does not present any empirical evaluation of the impact of the various affordable rate

²⁰ The Table shows the ratio of the amount of unaffordable bills under the FCO alternative to the amount of unaffordable bills under the Status Quo. The percentage reduction in unaffordable bills, therefore, would be one (1) minus the stated ratio.

²¹ See also, Supplemental Filing, at 5 – 6 (TURN 4).

options on payment coverage ratios. The PECO Options Report states that “PECO did not model potential payment coverage rates for the various alternatives.” (PECO Options Report, at 17).²²

Before turning to an analysis of the available data, however, the Commission should consider the following: PECO states that “When a CAP program alternative provides a customer with additional benefits compared to the Status Quo, PECO expects that customer’s bad debt profile to improve.” (PECO Options Report, at 21). As was shown in the immediately preceding section, the amount of unaffordable dollars billed to PECO’s low-income customers decreases in every income tier (and for both heating and non-heating customers); in many tiers, the decrease in unaffordable dollars is substantial. Based on PECO’s statement, therefore, it would be reasonable to expect that PECO’s payment coverage ratio would not simply remain constant; rather, it would be reasonable to expect the payment coverage rate to improve, perhaps significantly under the FCO alternative (compared to the Status Quo). In contrast, it would be unreasonable to conclude, as PECO did, that the FCO might generate payment coverage rates of “at or slightly below the Status Quo,” (PECO Options Report, at 17), even though the amount of unaffordable bills is reduced.

In examining the difference between the Status Quo and the FCO alternatives, PECO provides no reason to conclude that by decreasing the dollars of unaffordable bills that are rendered to its low-income customers, the dollars that customers actually pay toward those bills would decrease. Decreasing the amount of an unaffordable bill actually rendered to these low-income customers should, accordingly, be expected to increase the payment coverage ratio.

This expectation that the payment coverage rate would increase is based on empirical data. PECO’s evaluation supports the conclusion that improving affordability will result in improved bill payment coverage rates. The APPRISE Evaluation of PECO’s CAP Rate (the “Status Quo”) stated that PECO’s data:

[S]hows that bill coverage rates improved for CAP enrollees in the year after they enrolled in the program. The percent that paid 90 percent or more of the bill increased from 59% in the year prior to enrollment to 70 percent in the year following enrollment. The nonparticipant comparison group experienced an improvement in coverage rates, but the 2011 enrollee comparison group had a large decline in the percent of customers who paid at least 90 percent of their bill,

²² PECO notes that the Colorado PEAP evaluation that I authored states that “low-income customers who had participated in PEAP for more than 12 months had customer payment coverage ratios of roughly 80%.” PECO compared this “roughly 80%” to PECO’s calculated payment coverage ratio of 82% and concluded based only on that observation that “it is clear that the overall Colorado program, which includes the FCO, has a coverage ratio at or slightly below the PECO Status Quo.” (PECO Options Report, at 17).

from 86 percent two years prior to CAP enrollment to 60 percent one year prior to CAP enrollment.²³

According to PECO's program evaluation, improved affordability from enrolling in the CAP Rate resulted in a 17% increase in the cash payment coverage rates and a six percent (6%) increase in the total coverage rate.²⁴

Given the substantial increase in overall affordability, as documented in the immediately preceding section, it should be concluded that the FCO will result in improved payment coverage rates relative to the Status Quo. PECO's conclusion that the FCO would yield a payment coverage rate that is less than the Status Quo is unsupported.

E. Dollar Cost of the Affordability Shortfall.

There is no identified basis upon which to assess the information provided by PECO as to the dollar cost of the affordability shortfall. PECO states that the CAP Shortfall Costs (million \$s) would be as follows under the four alternative program designs:

Comparison of CAP Shortfall Costs (millions)			
Status Quo	7-Tier R/S/SD	PIP	FCO
\$76.4	\$85.4	\$76.8	\$70.6
SOURCE: Table 4, PECO Options Report.			

The FCO is the least expensive of the four alternatives studied. The Status Quo and PIP have roughly the same shortfall costs. The 7-Tier R/S/SD alternative costs somewhat more than the other three alternatives.

PECO presented a comparison of CAP shortfall costs assuming that 30% of CAP participants shop and pay 5% more than the June 2013 default service generation price. As would be expected, under this scenario, the PIP (which has a fixed customer payment) would experience the greatest increase in cost, the FCO (which has a fixed credit) would experience the least increase in cost, and the two tiered discount alternatives (the Status Quo and the 7-Tier R/S/SD models) would have shortfall volatility.

PECO did not examine the impact on the CAP Shortfall Costs if 30% of CAP customers shop and pay 5% less than the June 2013 default service generation price. It would be reasonable to expect the same results, in the opposite direction, under such circumstances, with the PIP having

²³ APPRISE (October 2012). PECO Universal Service Program: Final Evaluation Report, at 109. (hereafter "APPRISE").

²⁴ The total coverage rate is the cash payments plus LIHEAP plus other assistance. APPRISE, at 112.

the greatest decrease in shortfall, the FCO having the least decrease in shortfall, and the two tiered discount models falling in between.

A second aspect of the total amount of shortfall costs amongst the four program alternatives is the extent to which those shortfall costs are capable of being reduced through targeted energy efficiency measures through LIURP. According to the APPRISE evaluation of PECO's universal service programs, "LIURP targets *high-usage* low-income CAP customers."²⁵ (emphasis added). APPRISE reported that 97% of PECO's LIURP jobs were directed to CAP customers.²⁶ Moreover, APPRISE reported that 78% of PECO's LIURP jobs were baseload jobs, while 2% were electric heating jobs; the remainder were gas heating jobs.²⁷

The usage reduction generated by these targeted LIURP usage reduction "jobs" is substantial for PECO. According to the APPRISE evaluation, PECO's "baseload jobs had average savings of approximately 1,223 kWh or 10.8 percent of treatment usage."²⁸ The APPRISE evaluation said that "[e]lectric heat jobs had average savings of approximately 1,128 kWh, or 5.7 percent of pre-treatment usage."²⁹ In addition, on a program-wide basis, these savings accumulate over time. When PECO treats 7,000 CAP participants with LIURP in Year 1; 7,000 more in Year 2; and 7,000 more in Year 3, the total usage reduction in Year 3 will be from 21,000 LIURP participants.

The LIURP usage reduction generated in the PECO's CAP population has policy significance from a program cost perspective. Under the PIP and FCO rate affordability models, each dollar of bill reduction generated by the 5.7% usage reduction in electric heating jobs and 10.8% usage reduction in electric baseload jobs will be a reduction in the total shortfall costs for the program.³⁰ Under the Status Quo and 7-Tier R/S/SD models, the LIURP usage reduction would result in no program cost savings unless the LIURP savings reduced consumption below the ceiling on the usage that is made subject to the discount.

With LIURP targeted to "high-usage low-income CAP customers," as reported by APPRISE,³¹ this is not likely to happen. The usage reduction generated by LIURP will, in other words, be at usage levels to which no discount is applied; a reduction in that consumption, therefore, will likely yield no program cost savings.

²⁵ APPRISE, at 32.

²⁶ APPRISE, at Table III-9C, page 41.

²⁷ APPRISE, at Table III-9A, page 40.

²⁸ APPRISE, at 41.

²⁹ APPRISE, at 42.

³⁰ Under the FCO, the customer would be allowed to keep the savings during Year 1 of the savings. In the next year, however, the base consumption is re-established and the savings inures to the benefit of the program.

³¹ See, footnote 25, and accompanying text.

While the PECO Options Report did not provide consumption and billing data to allow an examination of this result, the data provided by PECO in the Spring of 2013 does support such a conclusion. The Company provided the “mean CAP bill” for “all customers” (referring to all CAP participants) and for all CAP participants having an unaffordable bill. In the seven tier scenario with 90%/88% affordability goals, seasonality and 1 standard deviation of usage, the mean CAP bills are presented in the Table below. As can be seen, the high-use CAP participants (i.e., those with unaffordable bills) have bills (and thus usage) exceeding the mean CAP participant bills (and thus usage) that far exceed the usage amounts that are subject to discounts.³² For the five higher income tiers (C, D, D1, E, E1), high usage CAP participants that are referred to LIURP (according to the APPRISE evaluation) have consumption that runs from 1.8x (Rate R, Tier E1) to more than two times (2.0x) higher than the average CAP bill. The usage reductions found to be generated by PECO’s LIURP initiative (5.7% heating; 10.8% baseload) would be insufficient to bring usage for these high use customers down to a level to which a CAP Rate discount would apply.

Accordingly, unlike the FCO and PIP programs, LIURP would not likely generate program shortfall cost savings for either the Status Quo or the 7-Tier R/S/SD models.

Ratio of Mean CAP Bills for CAP Participants with Unaffordable Bills to Mean CAP Bills for All Participants 7-Tiers with 90%/88% Affordability Goals and 1 Standard Deviation						
Income Tier	Rate R: Mean CAP Bill			Rate RH: Mean CAP Bill		
	All Participants	Participants with Unaffordable Bills	Ratio of Unaffordable to All	All Participants	Participants with Unaffordable Bills	Ratio of Unaffordable to All
B	\$279	\$329	1.179	\$542	\$596	1.100
C	\$361	\$772	2.139	\$762	\$1,513	1.986
D	\$498	\$1,008	2.024	\$977	\$2,046	2.094
D1	\$517	\$1,042	2.015	\$1,043	\$2,307	2.212
E	\$831	\$1,561	1.878	\$1,625	\$3,151	1.939
E1	\$1,005	\$1,794	1.785	\$1,669	\$3,973	2.380
Total	\$585	\$885	1.513	\$1,150	\$1,498	1.303
SOURCE: PECO to OCA, Additional Information, March 2013.						

In addition to this billing analysis, in its Supplemental Filing, PECO provided the number of CAP Rate participants whose usage exceeded the usage limits on which a discount is provided. The Table below shows the number and percentage of CAP Rate participants, by income tier and by heating/non-heating status, whose usage exceeds the usage limits on which discounts are provided. Nearly 40% of all Rate R CAP Rate participants have consumption in excess of the

³² By definition under the CAP Rate program, if a customer were consuming at a level that would all be subject to the CAP Rate discount, the bill would be affordable.

usage limit. More than 40% of all heating (Rate RH) CAP Rate participants have summer usage in excess of the usage limits, while more than half of all heating CAP Rate participants have winter usage in excess of the usage limits. Overall, the ability of LIURP to reduce PECO's program costs is limited for the Status Quo. Given that PECO's LIURP serves high-use CAP customers; that PECO's LIURP treats 7,000 customers per year; and that more than 55,000 CAP participants have usage above the usage limits on which the Status Quo discount is provided, LIURP is unlikely, at best, to be able to reduce program costs by reducing discounted consumption.

Number and Percentage of CAP Rate Participants Exceeding Discount Limits (by Tier and Heating Status)									
Income Tier	Rate R			Rate RH					
	# Parts	Exceeds 650 kWh	% Exceeds 650 kWh	# Parts	Exceeds 650 kWh /a/	% Exceeds 650 kWh	# Parts	Exceeds 1,500 kWh /b/	% Exceeds 1,500 kWh
B	9,809	4,927	50%	975	532	55%	975	667	68%
C	17,462	7,392	42%	1,531	719	47%	1,531	848	55%
D	25,261	8,933	35%	2,275	917	40%	2,275	1,101	48%
D1	33,313	13,178	40%	3,360	1,352	40%	3,360	1,624	48%
E	23,056	7,727	34%	2,382	966	41%	2,382	1,181	50%
E1	18,478	7,424	40%	2,288	928	41%	2,288	1,135	50%
Total	127,378	49,581	39%	12,811	5,414	42%	12,811	6,556	51%
SOURCE: PECO Supplemental Filing, Appendix A.									
NOTES:									
/a/ Summer									
/b/ Winter									

The real significance of the discussion of shortfall costs does not lie in the total dollar amount of shortfall presented in the PECO Options Report. One of the primary problems of a tiered discount program identified through the years involves the mis-targeting of benefits. The mis-targeting occurs because some program participants get a level of benefits that is higher than is required to reduce their bills to an affordable burden while other customers get a level of benefits that is lower than is required to reduce their bills to an affordable burden.

The impact of the PIP and the FCO is to address that mis-targeting of benefits.³³ This impact is evident from an examination of the impact of the reduction in the total dollars of unaffordable bills combined with the impact on dollars of shortfall. The sections above document that a move

³³ PECO's Supplemental Filing indicates that the Status Quo provides nearly \$11 million of benefits to customers who, given their energy burdens, do not qualify for benefits under a PIP or an FCO (Rate R: \$9,945,685; Rate RH: \$1,031,144; Total: \$10,976,829). (Supplemental Filing, Appendix B).

from the Status Quo to the FCO model would reduce the overall dollar amount of unaffordable bills by \$5.5 million (\$4.9 RH; \$0.6 R) while at the same time reducing the overall shortfall cost by roughly \$6 million. It would be “easy” to reduce the dollar amount of unaffordable bills simply by increasing the amount of benefits paid (such as is done through the 7-Tier R/S/SD model). In contrast, the FCO reduces the total dollars of unaffordable bills while reducing the overall program costs.

Moreover, even at this reduced program shortfall cost, the shortfall costs under the FCO option can be expected to be reduced even further over time through PECO’s targeting of LIURP investments to high-use CAP participants. Because such a high percentage of Status Quo CAP Rate participants exceed the usage limits on which discounts are provided, LIURP would be unlikely to reduce CAP Rate costs over time.

F. Incentive to Conserve

PECO argues in its Options Report that the Status Quo provides substantial “price signals” to low-income program participants that are not provided under the FCO or PIP models and that are provided to a much lesser extent under the 7-Tier R/S/SD program alternative. According to PECO:

1. Under the Status Quo, “this price signaling helps the customer to make decisions to conserve energy (if usage will exceed 650 kWh per month). . .” (PECO Options Report, at 22).
2. “At the other end of the spectrum is the full PIP, in which the low-income customer is given no price signals and is not responsible for either increased usage or for good shopping decisions.” (PECO Options Report, at 22).
3. The 7-Tier R/S/SD option “provides price signals similar to the Status Quo,” while acknowledging that, due to the higher consumption levels,³⁴ “the signal to conserve, and to shop well, is not as pronounced as in the Status Quo program.” (PECO Options Report, at 23).
4. “[T]he FCO price signals [are] present, but somewhat muted as compared to the Status Quo” since because “the FCO is designed to make service affordable as long as the customer’s price and usage parallels the prior year’s usage, the price signals simply drive

³⁴ Under the 7-Tier R/S/SD option, discounts would be provided to the following usage levels: Rate R—1125 kWh for winter (Nov, Dec, Jan, Feb, Mar), 815 kWh for shoulder months (Apr, May, Oct) and 1300 for summer (Jun, Jul, Aug, Sep). Rate RH—2500 kWh for winter, 1300 for shoulder months, and 1300 for summer. (PECO Options Report, at note 8, page 13).

the customer to try to match their prior year's usage and price, not to improve upon them.” (PECO Options Report, at 23).

PECO mis-analyzes price signals between the four options. The price signaling under the Status Quo is limited, except for those instances in which the consumption exceeds the usage amounts on which PECO provides discounts. For the most part, non-heating consumption subject to a discount is set at 650 kWh per month; cooling consumption is increased to 750 kWh per month during the months of July through September for Tiers B and C; heating consumption is increased to 1,500 kWh per month during the months of November through April for Tiers B, C, D, D1 and E. If consumption is within the usage subject to discount, any “price signal” under the Status Quo is muted, since the price of the consumption within those limits is offset by the various discounts by tier.

The consumption of PECO CAP customers, on average, falls at or below the usage made subject to the CAP Rate discounts.³⁵ According to data provided by PECO, as presented and discussed above:

- 50% of CAP Rate Tier B customers (R) have usage at or below 650 kWh;
- 58% of CAP Rate Tier C customers (R) have usage at or below 650 kWh;
- 65% and 60% of CAP Rate Tier D and D1 customers (R), respectively, have usage at or below 650 kWh;
- 66% and 60% of CAP Rate Tier E and E1 customers (R), respectively, have usage at or below 650 kWh.

Similar figures can be seen for CAP Rate RH customers. As this data shows, the “conservation incentives” provided by PECO rates are severely limited when discounts offset customer consumption. It is not reasonable to conclude that the CAP Rate discount provides significant “price signals” that would result in the pursuit of usage reduction to generate substantive bill reductions.

The same analysis applies to the 7-Tiered R/S/SD discount, except the usage limits are even higher. By definition, and using the simplifying assumption that usage is normally distributed, roughly 68% of all CAP participants would have usage at or below the mean plus one standard

³⁵ This observation is not inconsistent with the discussion above relating to the limited ability of LIURP to reduce program costs under the Status Quo. On page 15, for example, I note that 40% of Rate R and Rate RH customers have usage in *excess* of the Status Quo usage limits. In this discussion, I note that between 50% and 66% of Rate R and Rate RH customers have usage *below* the Status Quo usage limits. These observations have significance in two different ways, as explained in the text.

deviation. More than two-thirds of CAP Rate participants in the 7-Tiered R/S/SD discount, by design, would receive insubstantial “price signals” under this program option.³⁶

PECO also mis-states the operation of the FCO program option. Under the FCO, the credit provided to a customer is fixed, not the customer payment. If a customer increases his or her consumption, that customer pays the full amount of the bill increase. However, if a customer decreases his or her consumption, he or she gets to pocket the savings in that year. Contrary to PECO’s assertion that the FCO only drives the customer to match his or her prior year’s usage, not to improve upon it, the FCO has a strong and ongoing incentive to reduce the consumption *below* the amount used to set the fixed credit amount. Moreover, the FCO creates an annual incentive for the customer to continue to improve from year-to-year. If a customer reduces their consumption from “x” to “y” in Year 1, the “y” becomes the base in Year 2 and the CAP participant under the FCO has the same incentive to reduce his or her consumption from “y” to “z” in Year 2. Each time consumption is reduced below the prior year’s level, the CAP participant under the FCO experiences increased money in his or her pocket.

The primary difference in “price signals” between the FCO and the Status Quo (and the 7-Tier R/S/SD option) is that the price signals provided under the FCO apply to all program participants, not merely to program participants with consumption that exceeds specified levels. Contrary to PECO’s analysis, in other words, the FCO delivers much stronger price signals than either the Status Quo or the 7-Tier R/S/SD option. Not only are the price signals delivered to far more program participants, but the price signals delivered through the FCO are not diluted by the extent of the price discount provided at each income tier.

Finally, at a high level of theory, a PIP provides no price signal given that the payment amount is set rather than the discount level or credit. In making this observation, however, PECO fails to note the empirical observation of its consultant that:

Energy affordability programs reduce the cost of using energy, and therefore program managers are often concerned that they may result in increased energy usage. However, evaluation results show that this does not occur. Program evaluations find small and insignificant increases in energy usage, or sometimes even find declines in energy usage.³⁷

PECO’s consultant goes on to find:

³⁶ In fact, low-income usage is not normally distributed, with equal numbers of customers having “high” usage and “low” usage. Instead, a disproportionate proportion of low-income customers have low usage. The percentage of CAP Rate participants falling under the consumption limits for this program option would thus exceed the 68% occurring under a normal distribution.

³⁷ APPRISE, Inc. (July 2007). Ratepayer-Funded Low-Income Energy Programs: Performance and Possibilities: Final Report, at 95 (prepared in collaboration with Roger Colton, OCA’s consultant in this proceeding).

Some analysts are concerned that having a fixed payment will encourage clients to “waste” energy. However, as discussed in Section V, evaluations of fixed payment programs have consistently demonstrated that program participants do not increase usage.³⁸

APPRISE made similar findings explicitly for PECO in its evaluation of PECO’s universal service programs. Noting that “one concern that program stakeholders often have is that reducing the cost of energy will result in increased energy usage,” APPRISE found that 45% of PECO’s participants reported that their usage had not changed, 36% said it was lower, and only 15% said it was higher.³⁹ When compared with other Pennsylvania utilities, while more of PECO’s CAP participants reported that their usage was “lower,” more of PECO’s customers also reported that their usage was “higher” compared to what it was before their program participation.⁴⁰

The findings by APPRISE, which stand in contrast to PECO’s assertion in its Options Report, are actually more consistent with price theory. PECO’s conclusions about price signals are unsupported.⁴¹ The strongest and most prevalent price signaling function is provided by the FCO option. The price signals provided by the Status Quo are limited by the extent to which CAP Rate participants experience usage at or below the amount on which PECO provides rate discounts. Since the 7-Tier R/S/SD option expands those discounted usage levels, the price signal in this option will be even more limited than in the Status Quo. Price signals have no impact, one way or the other, in a PIP.

³⁸ Id., at 72.

³⁹ APPRISE, at 79.

⁴⁰ APPRISE, at 80

⁴¹ See generally, Colton. (1990). "Customer Consumption Patterns within an Income-Based Energy Assistance Program." 24 *Journal of Economic Issues* 1079 (explaining the pricing theory resulting in the expectation, an expectation borne out by empirical evaluations since, that utility customer consumption will not increase under a percentage of income program).

G. Customers Receiving \$0 Benefits.

PECO reports that one problem with the PIP and FCO options is the extent to which these options would yield a \$0 benefit to CAP participants. In its Options Report, PECO states that the Status Quo, as well as the 7-Tier R/S/SD alternatives:

will provide a small benefit to such a customer. Often, this small benefit will leave the customer's affordability within the Commission-defined acceptable range of affordability. This is an intentional outcome of the tiered approach, and it reflects the judgment that, for many low-income customers, it is appropriate to give them a benefit that takes them beyond the lowest edge of affordability.⁴²

PECO argues that the precision of the PIP and FCO approaches does not allow for this flexibility in approach to affordability. According to the Company:

The PIP and FCO, on the other hand, are designed to provide precisely the dollar amount of benefit that is necessary to achieve the targeted affordability level . . . One of the effects of this precision is that, if a customer achieves the targeted level of affordability based upon their income level (and, in the case of the FCO, prior usage and price), then they will receive no CAP benefit.⁴³

PECO is incorrect when it asserts that a CAP participant "will receive no CAP benefit." A CAP participant under the circumstances described by the Company may generate a \$0 shortfall. That participant, however, would nonetheless still receive the shutoff protections offered by CAP, and would receive the arrearage forgiveness benefits should the customer make the required payments. It is an error, however, to assert that someone "will receive no CAP benefit" if they generate a \$0 CAP shortfall. This is correct for the Status Quo as well. Under the Status Quo, Tier E and E1 program participants receive a 0% discount, but nonetheless still receive program benefits.

Having said that, PECO's concern about reducing CAP shortfall benefits to \$0 for 44,000 (a net of 40,000) CAP Rate customers is not unreasonable.⁴⁴ PECO correctly notes that the Commission has determined that affordability is a range and not a single point. Moreover, it is reasonable to accept PECO's suggestion that there can (and should) be some flexibility built into

⁴² PECO Options Report, at 20.

⁴³ PECO Options Report, at 20.

⁴⁴ While PECO noted the difference between 44,000 customers receiving a \$0 benefit and a "net" of 40,000 receiving a \$0 benefit in its Options Report, it provided greater detail in its Supplemental Filing. Appendix B of the Supplemental Filing notes that 44,699 CAP Rate participants would receive \$0 benefits. However, Appendix B also notes that, even under the Status Quo, 2,120 Tier E (Rate RH) customers already receive a 0% discount, and 2,196 Tier E1 (Rate RH) customers currently receive a 0% discount (4,316 total). So, the net change in participants receiving a \$0 benefit would be 40,383.

a program, which flexibility responds to the fact that reducing a burden to the “lowest edge of affordability” does not fully reflect this principle of affordability being a range.⁴⁵

Accordingly, should PECO move to the FCO option, it would be reasonable also to adopt the Colorado design which commits to delivering a minimum benefit. For example, a minimum benefit of \$5 per month for non-heating participants (\$8 for heating participants) might be considered.⁴⁶ Further analysis may be needed to determine what minimum benefit levels are appropriate for PECO customers. Using the \$5 / \$8 levels for illustrative purposes, however, it is possible to calculate the cost of providing such a minimum benefit from the data provided in Appendix B to PECO’s Supplemental Filing. The calculation of the total cost (\$2,557,656) is set forth in the Table below.

Cost of Providing a Minimum Benefit to CAP Participants with a \$0 Shortfall under FCO but not the Status Quo							
Rate R				Rate RH			
Income Tier	# Participants /a/	Minimum Benefit per Month	Total Cost /b/	Income Tier	# Participants /a/	Minimum Benefit per Month	Total Cost /b/
B	49	\$5	\$2,940	B	10	\$8	\$960
C	175	\$5	\$10,500	C	107	\$8	\$10,272
D	2,273	\$5	\$136,380	D	1,138	\$8	\$109,248
D1	7,329	\$5	\$439,740	D1	2,486	\$8	\$238,656
E	13,142	\$5	\$788,520	E /c/	2,120	\$0	\$0
E1	13,674	\$5	\$820,440	E1 /c/	2,196	\$0	\$0
Total	36,642	---	\$2,198,520	Total	8,057 /d/		\$359,136
NOTES:							
/a/ Source: Appendix B, PECO Supplemental Filing.							
/b/ Minimum benefit per month x 12 months x Number of participants.							
/c/ These income tiers receive a \$0 benefit under the Status Quo.							
/d/ The total number receive \$0 benefits under FCO but not Status Quo is 3,741 (Tiers B, C, D, D1).							

With a net of 40,000 program participants who would generate a \$0 shortfall under the FCO, but who would have received “a small benefit” under the tiered discount programs (the Status Quo and the 7-Tier R/S/SD options), a minimum benefit of \$5/\$8 a month would cost the Company roughly \$2.6 million.⁴⁷ Through such a minimum benefit, PECO would be able to retain the flexibility it recognizes in its tiered discount program, would generate the improved affordability discussed above, would generate the reduction in the amount of unaffordable dollars, and the FCO option could still be designed to cost less than either the Status Quo or the 7-Tier R/S/SD alternatives.

⁴⁵ PECO applies this notion of flexibility only to the Status Quo. The discussion above extends the notion to the FCO and PIP as well.

⁴⁶ This is an instance where, even though PECO states in its Options Report that it reflected the Colorado program in its modeling of the FCO alternative, PECO varied its program in important attributes from the FCO program operated in Colorado.

⁴⁷ This figure would vary based on the total number of CAP participants, on the distribution of CAP participants between the R and RH classes, and on the specific months in which participants take service.

While providing a minimum benefit would, in fact, result in some PECO customers with energy burdens that are less than the PUC-defined targets, the extent to which this occurs would nonetheless still be much less than currently occurs in the PECO CAP Rate. According to the APPRISE evaluation of PECO’s CAP Rate program, a full 53% of CAP Rate participants had energy burdens below the PUC-defined target, including 49% of electric baseload participants, 68% of electric heating participants, and 69% of electric and gas participants.⁴⁸ The APPRISE data on the extent of CAP Rate participants with burdens below the PUC-defined affordability range is set forth in the Table below.

Energy Burdens Relative to PUC Target (2011 Full Year CAP)									
By Income Tier					By Service Type				
Income Tier	Obs.	Below Target	Within Target Range	Above Target	Service Type	Obs.	Below Target	Within Target Range	Above Target
B	1,504	5%	11%	84%	Electric baseload	38,801	49%	18%	33%
C	3,171	15%	34%	50%					
D	11,211	41%	22%	36%	Electric heating	3,546	68%	15%	17%
D1	15,415	50%	23%	27%					
E	10,648	71%	7%	22%	Electric and gas	7,495	69%	15%	17%
E1	7,891	76%	6%	17%					
Total	49,842	53%	17%	30%	Total	49,842	53%	17%	30%
SOURCE: APPRISE, at Tables V-10B and V-10C, pages 100 and 101.									

There is no empirical basis to support a minimum benefit of \$5 (Rate R) and \$8 (Rate RH). These figures are used for purposes of analysis. The principle to be adopted is that a minimum benefit should be provided. What the precise level of that minimum benefit might be should be subject to further deliberation.

In sum, the observation that PECO makes about delivering “no CAP benefit” to 40,000 CAP customers is in error. Even if CAP generates a \$0 shortfall, CAP participants would receive all of the other benefits of CAP participation. However, if the conclusion that a move to an FCO (or PIP) would generate a \$0 CAP shortfall is found to be of particular concern, the program could be designed to respond to that concern by reflecting the Colorado design decision to deliver a minimum monthly benefit.

H. Impact on Bad Debt / Service Terminations for Nonpayment.

⁴⁸ APPRISE, at Table V-10C, page 101.

PECO bases its “analysis” of impacts of program alternatives on the following incorrect assumption: “When a CAP program alternative provides a customer with additional benefits compared to the Status Quo, PECO expects that customer’s bad debt profile to improve. Conversely, when a customer loses some of their existing benefits, PECO expects that customer’s bad debt profile to degrade.”⁴⁹

The correct formulation of what affects bad debt (and service terminations for nonpayment) is as follows: “When a CAP program alternative reduces the level of unaffordable bills to a customer, PECO should expect that customer’s bad debt profile to improve. Conversely, when a CAP program alternative increases the level of unaffordable bills to a customer, PECO should expect that customer’s bad debt profile to degrade.”

This construct of the governing proposition differs from PECO’s in an important way: Under PECO’s proposition, even if bills are made affordable by delivering \$200 in CAP rate assistance, PECO would nonetheless further reduce its bad debt by delivering \$500 in CAP rate assistance. Conversely, if PECO is now delivering \$500 in CAP rate assistance, even if only \$200 is needed to achieve affordability, reducing the amount of assistance down from the \$500 toward the \$200 would degrade the Company’s bad debt profile.

This proposition, however, analyzes the wrong thing. It is reasonable to expect that increased rate assistance once a bill reaches an affordable level will reduce the amount of the remaining bill to participants that goes unpaid. However, it also increases the CAP shortfall paid for by program nonparticipants (including low-income and near-low-income nonparticipants), perhaps significantly and perhaps unnecessarily. Conversely, simply reducing the amount of assistance, but retaining an affordable bill, will not necessarily mean that customers will stop paying their bills.

As documented earlier in these comments, the key is to reduce the amount of the unaffordable bill. A move to the FCO would reduce the dollars of unaffordable bills rendered to PECO’s CAP customers at every income tier and for both heating and non-heating customers. Accordingly, it is to be expected that PECO’s bad debt profile would improve under the FCO relative to the Status Quo.

In contrast to its analysis of bad debt, PECO’s only discussion of the impact on service terminations for nonpayment states that “when customer bad debt increases, PECO must increase its service termination activity to control that bad debt.” As just demonstrated, however, PECO mis-analyzed the impact of program design on bad debt and reached erroneous conclusions about the bad debt impacts. As a result, PECO’s conclusions about the impact on service terminations is similarly in error.

⁴⁹ PECO Options Report, at 21.

I. IT Transition Costs.

PECO asserts in its Options Report that the IT transition costs for the various alternatives of delivering rate affordability assistance would be as follows:

Comparison of IT Transition Costs (million \$s)			
Status Quo	7-Tier R/S/SD	PIP	FCO
\$0	\$0	\$6.8 - \$11.4	\$6.8 - \$11.4
SOURCE: PECO Options Report, at 14.			

There is no current basis upon which to judge the accuracy of PECO's estimate of its IT transition costs.⁵⁰ In any event, however, the question of which alternative PECO should adopt through which to deliver its rate affordability assistance should not turn on the magnitude of the IT transition costs, irrespective of the magnitude currently identified by PECO. The total shortfall cost of the FCO, for example, is nearly \$5.8 million a year less than the total shortfall cost of the Status Quo. Even if PECO's IT transition costs were at the high end of its estimate, in other words, PECO would nonetheless experience a payback of less than two years ($\$11.4 / \$5.8 = 1.97$). This payback would be extended to the extent that the Commission approves a minimum benefit for customers who would otherwise qualify for \$0 in shortfall benefits.

Summary and Recommendation

Based on the data and discussion above, the positive/negative impacts of a move to various program options would be as follows:

Summary of Four Options by Outcome Metrics											
	Unaffordability			Pymnt Covrge	Shortfall		Price Signals	\$0 Benefits	Bad Debt	DNP ⁵¹	IT Costs
	Breadth	Depth	Total \$s		Total	LIURP Impact					
Status Quo	+	-	-	-	N/I	-	-	+	-	-	+
7-Tier R/S/SD	++	-	-	-	-	-	-	+	+	+	+
PIP	-	+	++	+	+	+	N/I	+ /a/	+	+	-
FCO	-	+	++	+	+	+	+	+ /a/	+	+	-
NOTES:											

⁵⁰ This statement is made without prejudice to asserting the right to review, and challenge if appropriate, all or part of PECO's claim for cost recovery if and when such a claim is made in the future.

⁵¹ DNP is the acronym for "disconnect nonpayment."

+: Positive impacts relative to the alternatives.

-: Negative impacts relative to the alternatives.

N/I: No Impact

/a/ The positive impact conclusion assumes adoption of a minimum benefit, which would result in an improvement (relative to the Status Quo) of the percentage of customers who receive a benefit that reduces burdens to less than the range defined to be affordable by the Commission.