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November 15, 2012

Pennsylvania Public Utility Commission
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M-2012-2290911

My comments are offered as the independent comments of a public individual with over two decades of experience studying low-income payment assistance and weatherization assistance programs, including, over the years since 1988 studies for most of the Pennsylvania natural gas, electric and combined utilities. My understanding of the PECO approach and programs developed as the evaluator prior to APPRISE for PECO Energy's low-income programs from approximately 1998 through 2003. Currently, I serve as evaluator for the State of Nevada low-income payment assistance and weatherization assistance programs (10 yearly evaluations from 2003 to the present), serve as a DSM Evaluation Advisor to New York Commission staff and as the DSM Savings Verification Consultant for the Nova Scotia Commission. Since 1985, I have developed low-income program designs for utilities in the Midwest and Southeast as they have ramped-up their program efforts and I conduct examinations and evaluations of programs in other states.

My comments are limited to five areas.

1. Percentage of Income Payment Program

Page 7 of the Tentative Order in Docket No. M-2012-2290911 PECO Energy Company Universal Service and Energy Conservation Plan for 2013-2015 Submitted in Compliance with 52 Pa. Code §§ 54.74 and 62.4 reports that on October 31, 2012, PECO submitted the APPRISE six-year evaluation report in compliance with 52 Pa. Code § 54.76.¹ One of the sub-programs described in this report is the *In Program Arrearage Forgiveness Program (IPAF)*; this is a one-time program introduced by PECO in 2011 to forgive accumulated "in program arrearage"

¹ Applied Public Policy Institute for Research and Evaluation, *PECO Energy Universal Services Program Final Evaluation Report*. Princeton, NJ: October 2012 (http://www.puc.pa.gov/General/pdf/USP_Evaluation-Peco.pdf).

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amounts over \$1,000 for program participants in PECO's Customer Assistance Program (CAP).² According to APPRISE, approximately 16,000 program participants took advantage of this one-time debt relief and the aggregate amount forgiven was approximately \$25 million dollars.

This is debt accumulated by customers *since entering* PECO's CAP program. This fact indicates that there is a problem with the basic mechanism and structure of PECO's program. Such a pattern of continuing debt-creation represents an on-going build-up for a large aggregate of household over many months. Logically, it is caused by a billing structure that asks households to "please pay" an amount more than they can afford. An IPAF is a "safety value" that reduces or provides a one-time release of debt. But it does not address the underlying structure that generates the ongoing and increasing creation of debt among households served by the program.

The fact of the introduction of an IPAF is a statement that there is a serious *structural problem* with PECO's tiered CAP design. As is common knowledge, tiered designs have three problems:

- (1) They prevent the Commission's targets from being individually implemented for each household because they work on the basis of blocks of homes.
- (2) They cause many customers to be presented with monthly bills *that exceed the Commission targets*. Somewhat less than one-half of the customers are asked to pay too much.
- (3) They also cause many customers to be presented with monthly bills that are less than the Commission targets. Somewhat less than one-half of customers are asked to pay too little.

As the APPRISE evaluation notes, "***[m]any customers continue to face difficulties paying their energy bills even while receiving CAP discounts, and they build up additional arrearages while on the program.***"³ That is clearly not the intent of the Commission's payment targets, which, instead, are intended to provide bills that low-income households can afford to pay.

Further, the APPRISE 2012 evaluation finds that payment problems are disproportionately experienced in the lower income households of those low income households eligible for the program. APPRISE states this as a key finding: "***One of the key findings in this report was that a significant percentage of lower tier CAP participants do not reach the PUC affordability targets after receiving the CAP discount.***"⁴

² Ibid., Pp. xvii-xviii.

³ Ibid., P. vii (emphasis added).

⁴ Ibid., P. 117, Key Findings, 2. CAP Affordability (emphasis added).

APPRISE finds two reasons that many participating customers are required by PECO to pay more than the PUC target percentage of their household income:

- (1) Structure of the CAP discount – “[T]he customer may have an energy burden that is below, within, or above the PUC energy burden target.”⁵ As discussed above, this is an artifact of the program’s structure (in the form of rate tiers through which discounts are applied on the basis of averages rather than exactly to each household according to Commission targets).
- (2) Cost controls – In order to limit spending on the low-income program, PECO only permits the rate discount for participating customers to be applied to a first amount of energy used by the household, up to a usage limit. Beyond that limit, the full retail rate applies.

APPRISE also asserts the necessary conditions that would permit realization of the PUC target for each CAP customer (Figure 1):⁶

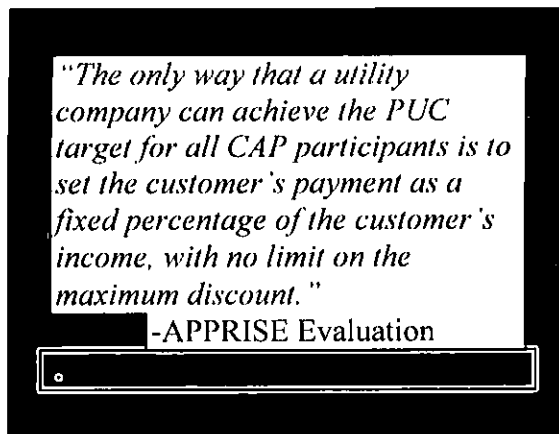
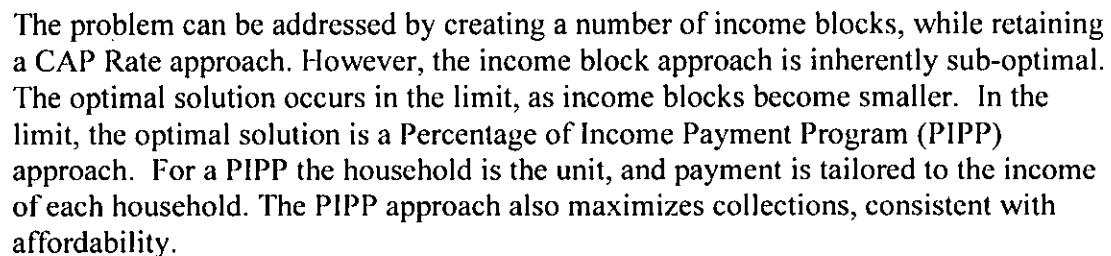


Figure 1: Necessary Conditions

⁵ Ibid.

⁶ Ibid., Pp. 227-118.

This APPRISE 2012 finding is important because matches the same finding in the 2001 special examination of PECO's CAP customers in the range of 0-50% of the federal poverty level.⁷ In this special examination, limited to PECO's CAP customers in the range of 0-50% of poverty, a percentage of income design was demonstrated to provide the optimal solution based on the reasoning outlined in Figure 2:⁸



The problem can be addressed by creating a number of income blocks, while retaining a CAP Rate approach. However, the income block approach is inherently sub-optimal. The optimal solution occurs in the limit, as income blocks become smaller. In the limit, the optimal solution is a Percentage of Income Payment Program (PIPP) approach. For a PIPP the household is the unit, and payment is tailored to the income of each household. The PIPP approach also maximizes collections, consistent with affordability.

- Peach, 2001 0-50% of Poverty Study

Figure 2: What a Percentage of Income Plan is the Optimal Solution.

In the 2001 study, these facts led to the formal recommendation for PECO to replace the tiered CAP structure by a percentage of income payment plan for customers in the range of 0-50% of the federal poverty level (Figure 3):⁹

⁷ Peach, H. Gil, Anne West, Howard Reichmuth, Marcia Lehman, *Customers with Incomes to 50% of the Federal Poverty Level in PECO Energy's Customer Assistance Program*. Beaverton, Oregon: H. Gil Peach & Associates, LLC, May 22, 2002, Monograph 0205-1.

⁸ Ibid., P. 1-2.

⁹ Ibid., P. 1-3.

(1) Replace the "CAP Rate" approach by a Percentage of Income Payment Plan (PIPP) for households with income in the range of 1% to 50% of the Federal Poverty Level.

- Peach, 2001 0-50% of Poverty Study

Figure 3: Formal 2001 Recommendation to move to Percentage of Income Payment Plan.

In the subsequent 2003 full evaluation of PECO's CAP,¹⁰ this recommendation was repeated.¹¹ More importantly, a general analysis of the economic inefficiency of the tiered structure of CAP was carried out.

Figure 2 (above) provides a brief demonstration of why the tiered approach is inherently economically inefficient compared with the percentage of income payment plan (PIPP) approach. To elaborate, suppose we begin with a three tier design or a seven tier design. Then, within any particular tier, billing is set as an average, presumably the median (midpoint) income of the cases within a tier or the arithmetic average of the incomes included in the tier.

Because the method of setting the rate is depending on the average household for the particular tier, those households below the average pay too much and those households above the average pay too little. The design creates a situation of over-billed and under-billed customers in relation to the Commission's percentage of income targets. In fact, only a relatively few customers are correctly billed according to the targets. The problem can be addressed by creating an ever increasing number of tiered income blocks. For example, the current seven tier design (CAP A through CAP E1) is more economically efficient than a three tier design.

However, the tiered structure for CAP is in itself inherently sub-optimal. The optimal solution occurs in the limit, as tiered income blocks become smaller and smaller. In the limit, the optimal solution is a percentage of income payment plan (PIPP) approach. For the case of a CAP that offers bills exactly congruent with the affordability criteria, the under billed portion of every household bill is equal to zero and the over-billed portion of every household bill is equal to

¹⁰ Peach, H. Gil, Anne West, Howard Reichmuth, Marcia Lehman, Ryan Miller, and Ayala Cnaan, *Evaluation of the PECO Energy Delivery Company Universal Service Program*. Beaverton, Oregon: H. Gil Peach & Associates, 2003, Monograph 0301-1, January 2003.

¹¹ *Ibid.*, P. III-9.

zero. This congruent rate also represents the highest aggregate billing that can be associated with a fully affordable rate. This is the rate tailored to each household, the PIPP.

The APPRISE 2012 study, unfortunately for the capabilities of its analysis, does not include usage information. For this reason, APPRISE is able to identify the problem of non-compliance with the Commission's targets and state that only a PIPP structure is fully capable of providing a program implementation in full conformance with Commission targets. However, it is incapable of fully quantifying the extent of the problem (in dollars). The APPRISE 2012 evaluation cannot optimize for the least cost rate design. It does not include the necessary customer (household) level of usage and income information.

However, both the special 2001 study and the 2003 evaluation were based on individual customer energy burdens and included individual customer usage. With this more detailed level of information, these evaluations both use a modeling tool by which alternative rate designs can be competitively tested to develop an optimal (least cost) design that fully implements the Commission targets. Figure 4 shows the rather dismal performance in meeting Commission targets of PECO's 2001 tiered and capped structure for customers from 0-50% of poverty.

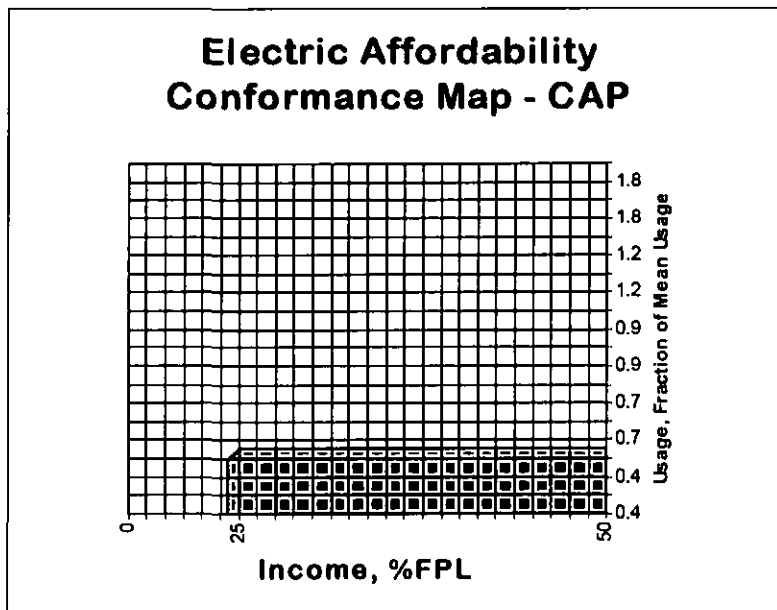


Figure 4: Lowest Income CAP Participants billed in conformance with Commission Targets.

Each square in the grid contains 74 households. The darkened squares show households for which PECO's bill is in conformance to Commission guidance.

Figure 5 is a similar graphic for all CAP customers from the 2003 study (CAP customer households from 0-150% of poverty). The darkened squares are CAP households for which customer billing is in conformance with Commission targets.

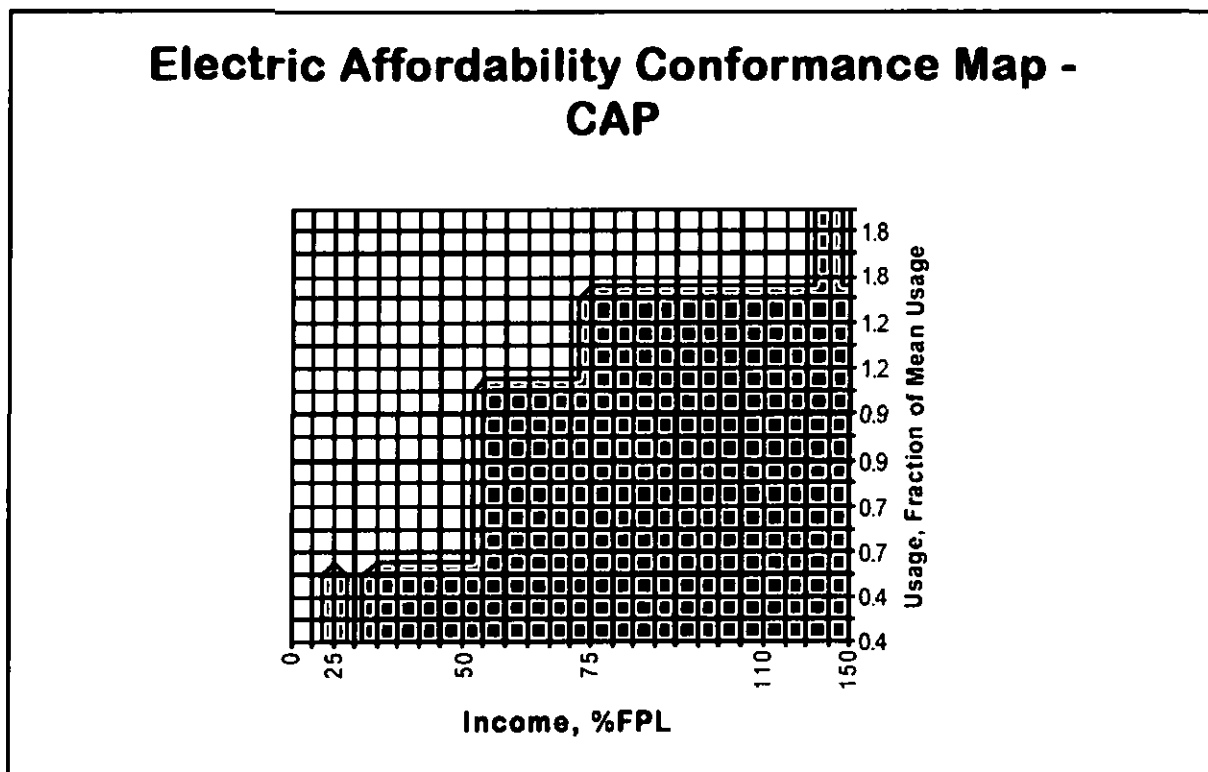


Figure 5: Conformance for CAP, 0-150% of Poverty.

These results show overbilling for the lower of the low income customers towards the left, and problems for higher use customers upwards towards the top of the diagram. These graphs demonstrate that the relative size of the problem is large, especially for customers from 0-50% of poverty (Figure 4). These are the same problems found by APPRISE 2012. The problems are not new. The problems persist because they are inherent in a tiered CAP design.

The rate design problem is easily modeled using Excel™ as a problem of optimization subject to specific constraints. Moving to a percentage of income payment plan (PIPP) lowers monthly bills to the lower income of the low income households within each of the pre-existing tiers. It increases monthly bills to customers above the middle of each former tier who have been riding at the payment percentage for the midpoint of their tier while actually having higher incomes. The first part of the solution raises the cost of the CAP program. The second part produces a large cost-offset generated by moving from a tiered CAP to a full PIPP.

Here are two examples:

- (1) For example, on the electric side, in the modeling of rate designs in the 2003 study, a combination of more aggressive discounting of bills plus extending coverage of the discount to the first 1000 kWh would permit 98% conformance at a cost of \$27,000,000. But a full PIPP yields 100% conformance for a cost of \$11,000,000, less than one-half of the cost of continuing a tiered design but extending the coverage cap and deepening discounts.¹² The difference is due to the cost-offset.
- (2) On the gas side, more aggressive discounting with other adjustments would have permitted 93% conformance for a cost of \$800,000 or \$1,350,000 depending on pathway selected. Implementation of a full PIPP would have generated a negative cost to PECO of \$1,400,000.¹³

These examples illustrate why the PIPP is an optimal solution compared with simply extending a discount or making tiered discounts deeper.

Based on this review, I recommend:

- (R1) Improvements in CAP rate design should be modeled showing various alternatives, including rising the caps on the amount of energy subject to discounting vs. a PIPP with more moderate rising of the caps. In particular, the cost-offset associated with moving from a tiered CAP design to a PIPP should be modeled.
- (R2) PECO should move to a Percentage of Income Payment Plan design to fully implement Commission targets.

¹² Ibid., P. XI-12, Figure XI-8 Alternative Paths to Electric Affordability.

¹³ Ibid., P. XI-16, Figure XI-11 Alternative Gas Rate Designs.

2. Statement of Need

The APPRISE Evaluation followed the appropriate Commission determination of need using the criterion of eligibility at 150% of poverty.

However, need goes considerably beyond 150% of the federal poverty level. The federal poverty metric is highly in error compared with actual experience of families and households. In Pennsylvania, Universal Service payment assistance programs are keyed to the 150% of federal poverty and below. However, it would be more realistic to use the Pennsylvania Self-Sufficiency Standard, which varies by family type and by county (Table 1).¹⁴

Table 1: Need based on the Pierce Family Budget Studies for Pennsylvania Counties.

Family Type	Current Program	Alternative Income Insufficiency Criterion	
	Poverty Level Eligibility Criterion	Poverty Level Equivalent (Lowest Pennsylvania County)	Poverty Level Equivalent (Highest Pennsylvania County)
One adult, one school age child	150%	165%	298%
One adult, one pre-school and one school age child	150%	177%	320%
Two adults, one pre-school and one school age child	150%	186%	300%

To put the matter directly, the official federal statistics for poverty, unemployment and inflation are fatally flawed. This problem obfuscates the intensity of unemployment, the degree erosion of pay by inflation, and of experience of poverty as experienced by households.

The virtue of the poverty statistic is that there is a poverty statistic instead of nothing at all. The drawback is that the statistic is fatally flawed. Not even the federal government uses the federal poverty level for program eligibility. Instead, eligibility is usually set at a multiple of the poverty level such as 150% or 200%.

¹⁴ Pierce, Diana M., *The Self-Sufficiency Standard for Pennsylvania 2008* (Sixth Edition). University of Washington School of Social Work, Prepared for PathWays PA, PA Department of Labor and Industries and United Way of Southeastern PA. See Table A, Pp. 4-5. Also see: Pierce, Diana, *Overlooked and Undercounted: Struggling to Make Ends Meet in Pennsylvania*. University of Washington School of Social Work, Prepared for PathWays PA and the Pennsylvania Department of Labor and Industries.

As shown in Table 1, from the Pierce study for the PA Department of Labor and Industries, income insufficiency (a more adequate statistic of poverty than the official federal poverty level) is dependent on county and on family type. Pierce has several additional family types beyond those shown here. But for these examples need runs from the equivalent of 165% of the federal poverty level to the equivalent of 300% of the federal poverty level.

Accordingly, when it becomes possible, I recommend an overall review of CAP in Pennsylvania to look at moving to the family budget method for calculating need. CAP programs should be designed to provide some supports up to these levels, which vary by county.

3. CAP Rate A

CAP Rate A is designed for PECO's most impoverished customers with special circumstances. It is an important and progressive rate modality. But, over the years, customers seem rarely placed in CAP Rate A, suggesting that the Company keeps the rate open but does not do enough to help households know that it exists or to help place them on CAP Rate A when they qualify.

CAP Rate A is currently limited to an enrollment limit of 7,500 customers but as of October 1, 2012 PECO reported to BCS that only 88 customers were in its CAP Rate A.

Based on this performance over the years, I recommend:

(R3) A special study of how customers are informed about CAP Rate A, whether the CARES staff is given unambiguous and consistent direction to recruit participants for CAP Rate A, and whether and how CARES staff is rewarded for vigorous recruitment; what organizational and social barriers are preventing more vigorous recruitment. For example, a study of households terminated from service could objectively determine the percentage that qualified for CAP Rate A and could determine whether they were informed about the rate and helped to move over to it. A more intensive discussion with Universal Service and CARES staff could elicit information and perspectives on why PECO is not more fully using this rate modality. Is PECO simply waiting for most qualifying customers to discover "on their own" that CAP Rate A exists and go through the procedure of asking to be moved to CAP Rate A? Does PECO recognize an obligation to communicate about CAP Rate A, especially as the customers eligible are likely undergoing life changes and household troubles as well as payment trouble, and are unlikely to know the rate exists? What are these communications, how frequent and effective are they? Is some external standard required to insure that PECO uses the rate?

(R4) Expanding the CARES staff by three positions to enable more time to be spent developing relationships with qualifying households so that they do not disappear, but rather are helped more vigorously to placement in CAP Rate A.

4. Computer Programming

Since PECO will be doing computer programming to allow customers to shop, can PECO also insure that the inputs for the energy burden calculation are captured for each household, so that household size and household income are recorded and that household energy burden is recorded and kept as an individual value rather than as a group membership? Accordingly, the following recommendation is put forward:

(R5) Insure that the IT system maintains the data necessary to do full evaluations, including the information to independently compute energy burden and energy usage.

5. Social Security Numbers

Pennsylvanians have always valued independence and freedom, going back before the War of Independence. At the same time, Pennsylvania is also known for a concern for community and for education and improvement. Requiring social security numbers for every family member has been put forward as a way to reduce or eliminate fraud. But requiring social security numbers for all family members is not that different from requiring electronic hand prints or retinal scans or DNA samples. This does seem at variance with the way people from Pennsylvania would prefer to live.

At the same time, securing numbers takes time and not all members of a household may have social security numbers; and we need to work to remove barriers when people are older or have mobility problems. Accordingly, I recommend:

(R6) The requirement for all members of each household to provide social security numbers should be thoughtfully moderated by the Commission.



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