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**What Does a Utility “Buy” through a
Low-Income Rate Affordability
Program?**

NOTE TO READERS

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Low-Income Programs Cost Money, but Substantial Business Benefits are Purchased

The Maryland Public Service Commission (PSC) has been considering a legislative directive to make programmatic recommendations on how to address low-income home energy affordability. In work for the Maryland Office of Peoples Counsel (OPC), Fisher, Sheehan & Colton (FSC) was asked to assess what business improvements would be “bought” through implementation of a rate affordability program.

The proposed Affordable Energy Program (AEP) advanced by the Staff and Office of Peoples Counsel (OPC), FSC said, “unquestionably involves increasing charges to nonparticipating ratepayers.” In assessing what the expenditure of these funds “buys” for utilities and their ratepayers, FSC looked to the New Jersey Universal Service Fund (USF), the Pennsylvania Customer Assistance Program (CAP), and the Colorado low-income assistance program for assistance. The program proposed for Maryland is closely modeled on the rate affordability programs in these states.

Impact #1: Increased low-income payments.

One primary impact, perhaps *the* primary impact, of a low-income program such as AEP is to increase the payments made by low-income program participants.

The Maryland Baseline Performance

The “baseline” for Maryland may perhaps have been best provided by the Apprise impact evaluation of the Baltimore Gas and Electric (BGE) CAMP and GRAD pilot programs.¹ As the data

¹ “CAMP” and “GRAD” were two pilot low-income af-

from the Apprise evaluation shows, within the total CAMP/GRAD population, more than one-quarter made six or fewer payments in the year preceding participation in the low-income program, while nearly 40% made eight or fewer payments. Looking at the programs separately, the Evaluation reports that:

- One-third of CAMP participants made eight or fewer payments, while more than one-fifth made six or fewer;
- Nearly 45% of GRAD participants made eight or fewer payments, while roughly one-third made six or fewer.

In contrast, only 50% of the program participant population as a whole made 11 – 12 payments in the pre-program year, while 58% of CAMP participants and 43% of GRAD participants did. While the Evaluation (Table IV-8) speaks only of *on-time* payments –simply because a payment is not made “on-time” does not mean that it was not made at all—the Table is a clear indication that in the absence of the pilot programs, BGE would not have expected to collect its entire bill from a substantial proportion of the pilot population.

The Performance Under an AEP-type Program.

In contrast to this baseline performance currently existing in Maryland is the performance in the states with a percentage of income program. Consider the Apprise, Inc. evaluation of the New Jersey Universal Service Fund. Table 5-22B from that Apprise report shows the following for gas or electric customers (target affordable bill burden of 3%):

Table 5-22B. Distribution of Effective Coverage Rate by Net Energy Burden (gas or electric: 3%)

Burden	Coverage Rate			
	< 50%	50% - <90%	90% - <100%	100% or more
<2%	0.0%	2.7%	5.3%	92.0%
2% - 3%	0.0%	6.0%	11.5%	82.5%
3% - 4%	0.0%	10.0%	13.2%	76.9%
4% - 6%	0.0%	11.6%	16.6%	71.6%
6% - 8%	0.4%	16.6%	17.4%	65.6%
>8%	1.0%	25.6%	16.1%	57.4%

As can be seen in Table 5-22B, so long as the bill burden remained in the target range, having the bill payment coverage ratio over 90% stayed well in the 90% or more range. A similar pattern can be seen in the combination gas/electric population (with a bill target of 6% as proposed for Maryland). So long as the bill burden stayed at or below the 6% target, the proportion of the low-income population paying 90% or more of their bill was 90% or more.

Table 5-24B. Distribution of Effective Coverage Rate by Net Energy Burden (combination gas/electric: 6%)

Burden	Coverage Rate			
	< 50%	50% - <90%	90% - <100%	100% or more
<4%	0.0%	9.0%	12.2%	78.8%
4% - 6%	0.7%	19.7%	17.2%	62.4%
6% - 8%	0.7%	18.9%	18.5%	58.8%
8% - 12%	1.8%	21.4%	21.7%	56.1%
>12%	3.8%	31.1%	21.8%	43.2%

These 90%-plus payment rates stand in sharp contrast to the existing BGE payment compliance rates reported for the CAMP/GRAD program participants.

Similar results are achieved with the Pennsylvania CAP initiative. In Pennsylvania, the Public Utility Commission’s (PUC) Bureau of Consumer Services (BCS) publishes an annual report on the performance of the state’s “universal service” programs. According to the BCS: “The companies report on the annual total amount of payments by CAP customers. The Commission defines percentage of CAP bill paid as the total amount of payments by CAP customers divided by the total dollar amount of CAP billed. Based

fordability programs implemented by Baltimore Gas and Electric Company.

on history and successful CAP designs relating to default and payment plans, the Commission recommends that a percentage of bill paid of no less than 80 percent can be reasonably achieved – with a goal of 90 percent or better.”

The last three years of data from Pennsylvania show the following payment coverage rates for utilities with percentage of income (AEP-type) programs:

Bill Payment Coverage: Pennsylvania Utilities with Percentage of Income Plans			
	Percentage of Bill Paid		
Utility	2008	2009	2010
Allegheny	59%	86%	86%
Duquesne	92%	93%	91%
Met Ed	76%	85%	91%
Pennelec	77%	87%	90%
PennPower	76%	90%	90%
PPL	82%	86%	79%
Columbia Gas	94%	93%	90%
Peoples	83%	82%	81%
Equitable	91%	94%	97%
PGW	90%	84%	65% /a/
UGI-Gas	88%	89%	79%
UGI-Penn Natural	85%	78%	75%
/a/ According to BCS, in this year, PGW did not report LIHEAP payments credited against customer bills.			

As in New Jersey, payment performance by low-income customers participating in the Pennsylvania percentage of income plans dramatically exceeds the payment performance of Maryland low-income customers.

Finally, the impact of the Colorado low-income percentage of income program was portrayed in a graph of payment coverage ratios (i.e., customer payments / billed revenue = payment coverage ratio). The evaluation of the Public Service Company of Colorado (PSCO) program

found that the program participants substantially out-performed low-income customers who received LIHEAP –called “LEAP” in Colorado– but did not participate in the percentage of income program. In *Figure 1* below,² “PEAP Combo: 21-24 Months” represents those customers who were combination gas/electric customers who participated in the Pilot Energy Assistance Program (PEAP) for between 21 and 24 of months of the 24-month pilot program. By the end of the pilot, the payment coverage ratio of participants in the low-income rate affordability program (83%) was nearly 30% higher than the payment coverage ratio of low-income customers not participating in the program (55%).

Impact #2: Increased total revenue from low-income customers.

One corollary impact associated with the improved payment performance of low-income customers participating in a percentage of income plan is the increase in total revenue from those program participants. Stated conceptually, it is better for a utility to collect 90% of a \$70 bill ($\$70 \times 0.90 = \63) than it is for that utility to collect 60% of a \$100 bill ($\$100 \times 0.60 = \60). Under a percentage of income plan, in other words, even though a portion of the bill is discounted, the extent to which payments increase is such that *total revenue* goes up.

No baseline data is available for Maryland. However, this impact has been found for both the Colorado and Indiana low-income programs.

In assessing the impact of improved customer payment performance on total revenue, the Colorado evaluation reported as follows:

the PEAP program generated a revenue neutrality when PEAP participants were compared to other low-income customers,

² All Figures are appended at the end of this document. The reader can access each Figure by clicking on the Figure number holding the “control” key down.

but not when compared to the residential population as a whole. * * *

The lesson learned from [this data] is that PEAP generates a sufficiently substantial improvement in payment coverage ratios relative to the low-income (LEAP) population to more than offset the discount provided. To the extent that the low-income customers have a prior history of non-payment, the revenue neutrality will be somewhat (but not substantially) greater. However, because the payment coverage ratios of the residential population as a whole are higher with which to begin, the revenue that is being “lost” to nonpayment in the absence of the discount is smaller, and the increase in payment coverage ratios is insufficiently large to offset the effects of the discount.³

The same results were found for Indiana’s low-income programs. A 2007 evaluation of the Citizen Gas and Coke Utility low-income program found:⁴

Customers that participated in the Citizens Gas USP made substantively greater payments than did that company’s nonparticipant population. Over the months of January through March 2007, USP participants paid 79% of their current utility bill. While billed \$273,627 during those winter months, the USP participants paid \$215,897. In contrast, the Citizen Gas nonparticipants paid only 64% of their January through March billings. While billed \$304,072, these customers paid \$194,577. As can be seen, the USP was better than revenue neutral to Citizens Gas. While USP participants were billed 90% of what

nonparticipants were billed, they paid 111% what nonparticipants paid.

The revenue neutrality can be seen from a different perspective as well. Had USP nonparticipants paid at the same rate as USP participants did, they would have paid \$240,216, nearly \$46,000 more than they actually paid.⁵

As in the Colorado program, in other words, in Indiana, the increased payment performance was more than sufficient to offset the billing discount. As a result of the low-income discount, total revenues to the utility actually increased.

Impact #3: Improved collections productivity.

One expected impact of a low-income program is an improved productivity of utility collection efforts. Improvements in the productivity of collection activities can occur in either of two ways:

- The need for collection interventions can be reduced thus allowing an increased payment per each collection intervention performed. In this first instance, improvement can be seen even if total dollars collected remains the same (but the interventions needed to generate those dollars decreases); or
- The customer response to the collection activity can improve thus allowing an increased payment per each collection intervention performed. In this second instance, improvement can be seen if the total number of collections activities remains the same but the dollars generated by those activities increase.⁶

³ Colton (2012). Public Service Company of Colorado’s (PSCo) Pilot Energy Assistance Program (PEAP) and Electric Assistance Program (EAP):2011 Final Evaluation Report, prepared for Public Service Company of Colorado.

⁴ All dollar figures presented in this Indiana analysis, unless otherwise explicitly noted to the contrary, are associated with the sample population and not the total population.

⁵ Colton (2007). *An Outcome Evaluation of Indiana’s Low-Income Rate Affordability Programs*, prepared for Citizens Gas and Coke Utility, Vectren Energy, and Northern Indiana Public Service Company.

⁶ Productivity is measured by the ratio: DC / CE, where “DC” = dollars collected; and “CE” = collection effort. In

In essence, a low-income program can be expected to improve the effectiveness and efficiency of collection activities from two different but related perspectives. On the one hand, it will affect how much revenue is generated by each collection intervention. On the other hand, it will affect how many collection activities are associated with the generation of the revenue. The measures of effectiveness and efficiency are two-fold:

- The number of each collection activity per 1,000 customer payments (without regard to the size of the payment); and
- The number of each collection activity per \$1,000 in customer payments.

A lower number is “better” than a higher number. To the extent that the number of payments (or dollars of payments) occurs without need for a collection activity, the ratio of activities per result decreases.⁷

The evaluation of the Colorado low-income program found that the collection activities that Public Service directed toward PEAP non-participants were not as productive at generating payments as those collection activities directed toward PEAP participants. Public Service needed to engage in from three to five times more collection activities for each 1,000 customer payments it received.⁸ As shown in Figure 2 below, the Colorado evaluation found that low-income customers who receive only LEAP received, on a cumulative basis over the 24-month

the first illustration, “CE” (the denominator) is reduced. In the second illustration, “DC” (the numerator) is increased.⁷ The denominator (either the number of payments, or the dollars of payments) increases while the numerator stays the same.

⁸ As discussed in more detail above, this result might occur for one of two reasons. On the one hand, more PEAP participants might make payments without need of *any* disconnect notices being issued. On the other hand, more PEAP participants might respond to the receipt of a disconnect notice by making payments.

study period, more disconnect notices per 1,000 customer payments than did PEAP participants.

The results were the same when collections productivity was viewed in terms of dollars of payments rather than in terms of numbers of payments. Figure 3 shows that, in Colorado, the comparison of long-term PEAP participants to LEAP recipients shows that PEAP participation reduces the reliance on disconnect notices as a collection activity. While PEAP participants required between one (1) and two (2) disconnect notices for each \$1,000 in customer payments, LEAP recipients required between five (5) and seven (7).

Based on both measures of productivity, overall, not only did Public Service collect more revenue from its PEAP participants (as discussed above), but the Company was required to engage in fewer collection activities to generate those payments.

Impact #4: Improved collections effectiveness/collection “success.”

It would be unreasonable to expect even a low-income program to totally eliminate the need for all collections efforts directed toward program participants. However, a low-income program can be expected to help increase the success of those collection efforts that are required.

In this regard, a “successful” (or “effective”) collection activity is measured not merely by the extent to which customers make payments in the month in which the activity occurs, but also over a period of time immediately subsequent to that collection activity. A collection activity that generates a payment in the month of the activity, only to see the customer fall back into a pattern of nonpayment in the immediate subsequent months, is deemed to be “less effective” than a collection activity that generates a series of more timely (or more complete) payments over a period of months.

The Colorado program evaluation measured the success of collection efforts for low-income customers participating in the utility’s percentage of income program as compared to the success of collection efforts directed toward low-income customers receiving LIHEAP but not participating in the rate affordability program. The data examined the percentage of accounts receiving disconnect notices that have a customer payment coverage ratio of more than 1.0 in the ensuing four months. In this inquiry, a higher number is “more effective” while a lower number is “less effective.” A higher number indicates that a greater proportion of accounts having received a disconnect notice made customer payments greater than the level of their bill for current usage in the four months immediately following receipt of a disconnect notice. As can be seen from the Figure below, the proportion of PEAP participants making customer payments of more than 1.0 is consistently higher than the proportion of LEAP recipients doing so. A payment coverage ratio of greater than 1.0 means that the customer is paying more than his/her bill for current usage. That customer, in other word, is completely paying his/her bill for current usage and making some payment toward the arrears that was the reason for issuing the disconnect notice in the first instance.

As can be seen in Figure 4, the payment performance for participants in the low-income program improved over time, while the payment performance of LEAP participants NOT participating in the low-income program did not.

Summary

The data from the various jurisdictions discussed above indicate the utility-related impacts that are expected to be purchased through a low-income rate affordability program. The utility-related impacts of a low-income affordability program can be expected to include:

1. Substantial improvements in the percentage of billed revenue actually paid by low-income customers;
2. An increase in total revenue actually collected from low-income customers, not merely in percentage terms but in absolute dollar terms as well;
3. A reduction in the collection efforts needed to be exerted by a utility to collect revenue from low-income program participants; and
4. An increase in the effectiveness (or “success”) of collection efforts needed to be exerted by a utility to collect a certain level of revenue.

In short, using a low-income rate affordability program, a utility can be expected not only to collect more money, but to expend fewer resources in making those collections as well.

For more information on the costs and benefits of low-income rate affordability programs, readers may send requests to:

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Fisher, Sheehan and Colton, Public Finance and General Economics (FSC) provides economic, financial and regulatory consulting. The areas in which *FSC* has worked include energy law and economics, fair housing, affordable housing development, local planning and zoning, energy efficiency planning, community economic development, poverty and telecommunications policy, regulatory economics, and public welfare policy.

Figure 1. Cumulative Customer Payment Coverage Ratio for Combination PEAP (G/E) Participants (21 – 24 Months) Compared to LEAP Accounts

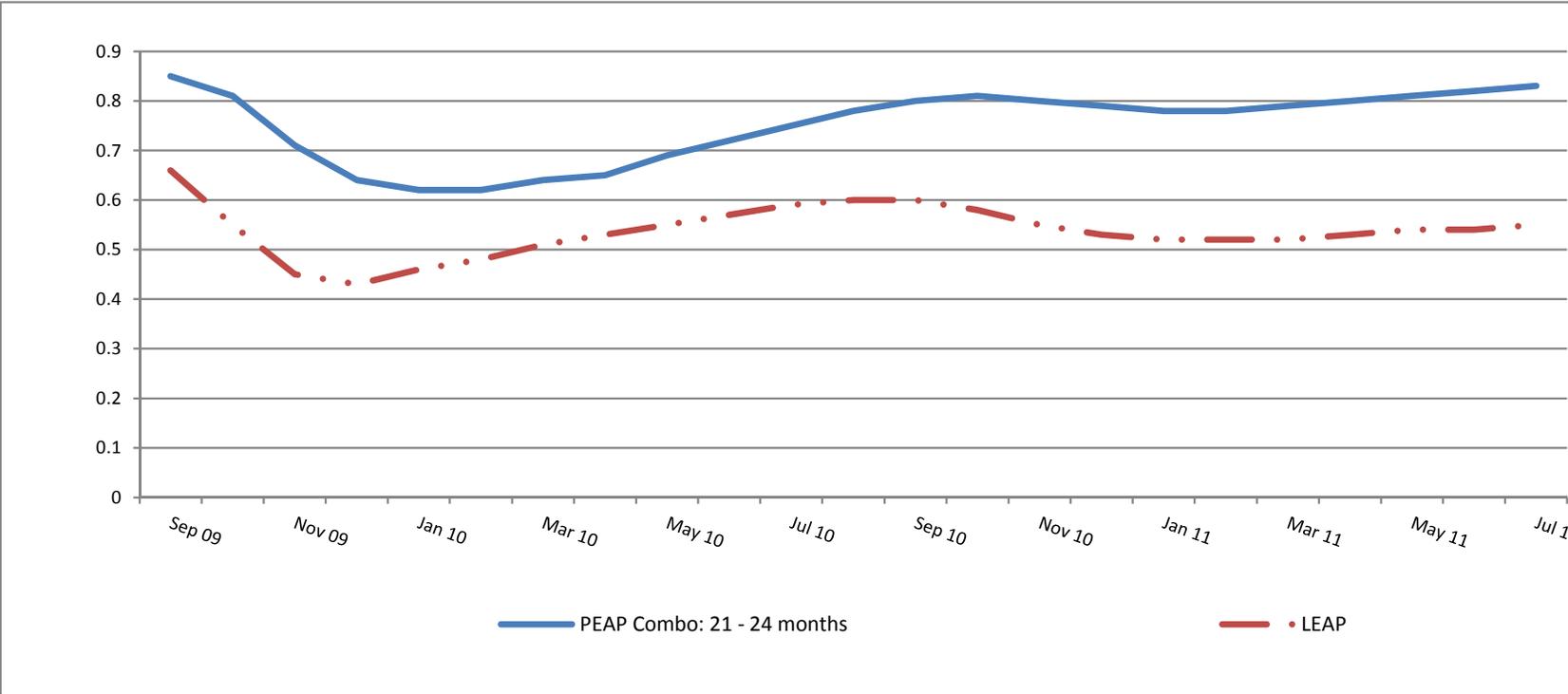


Figure 2. Cumulative Disconnect Notices per 1,000 Customer Payments for Combination (G/E) PEAP Participants (21 – 24 months) compared with LEAP Accounts by Month 1 Arrears

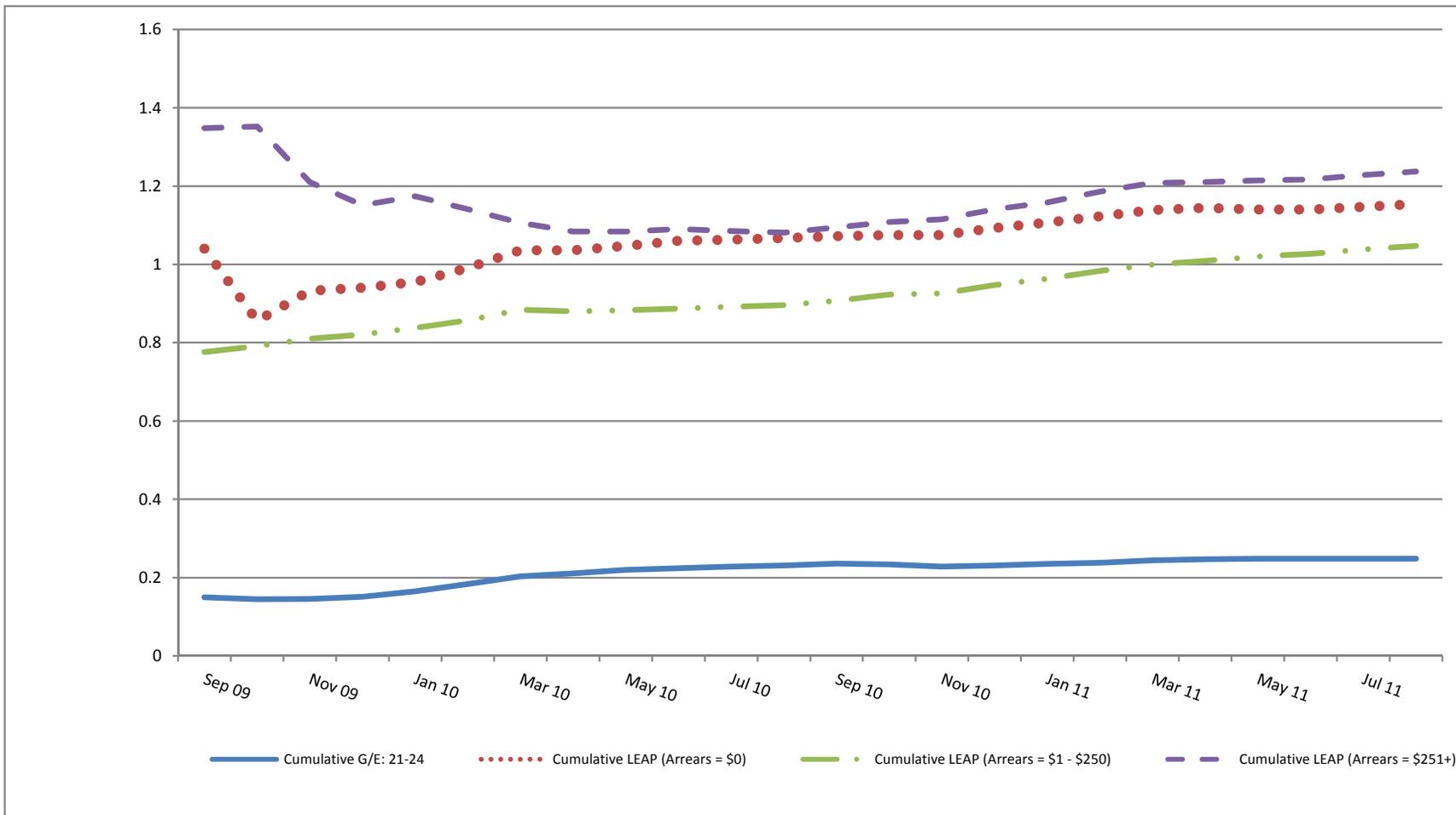


Figure 3. Cumulative Disconnection Notices for Nonpayment per \$1,000 in Customer Payments for Combination (G/E) PEAP (21 -24 months) compared to LEAP Accounts by Level of Month 1 Arrears.

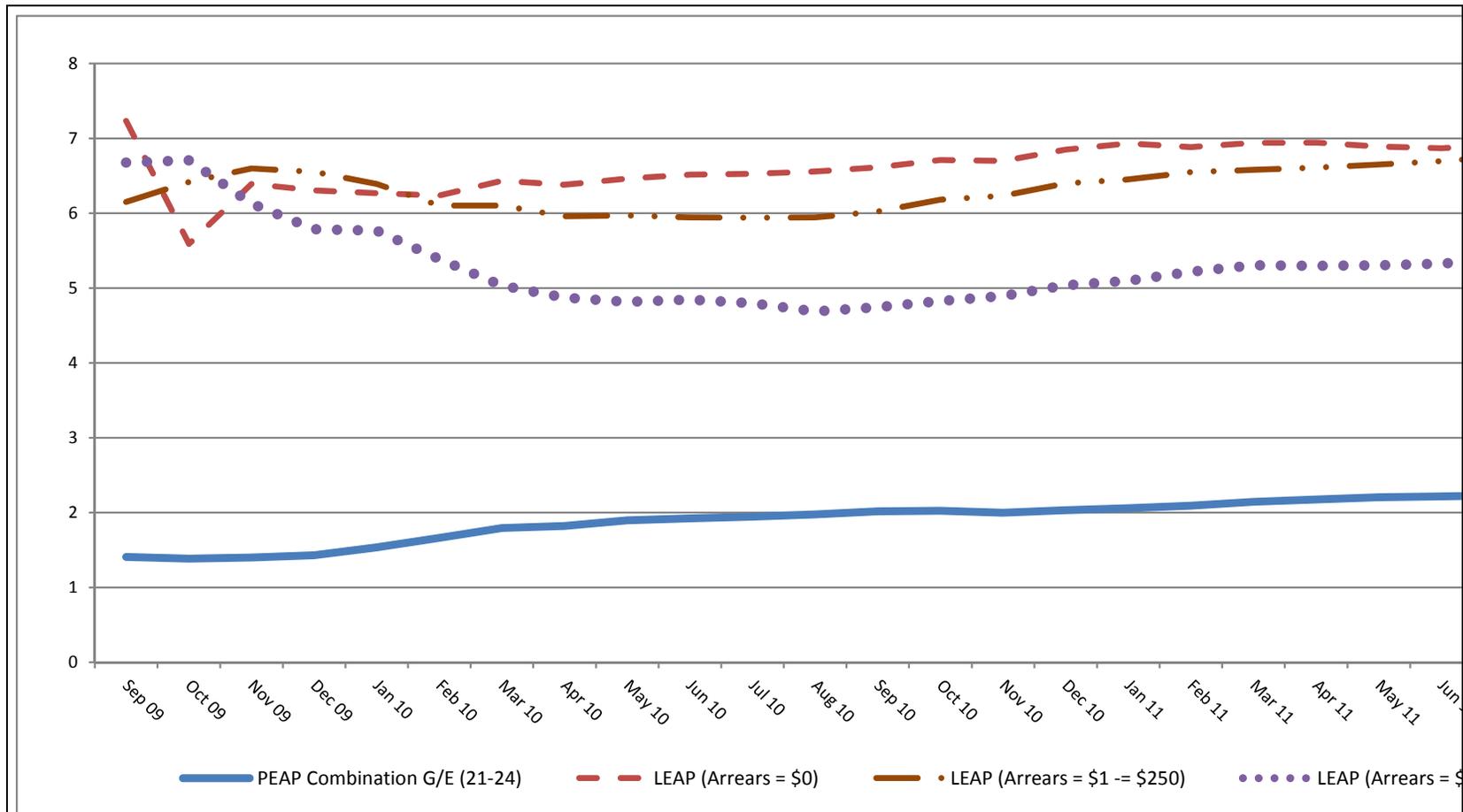


Figure 4. Percent of Customers Receiving DNP Notices with Customer Payment Coverage Ratio > 1.0 in 4-Months After DNP Notice

