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**Monthly vs. Annual Affordability**

## NOTE TO READERS

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## Care must be taken in measuring affordability outcomes: distinguishing monthly vs. annual impacts.

Care must be taken in any assessment of the affordability of a particular low-income program to ensure that collection outcomes that occur on a _monthly_ basis (e.g., whether bills are paid in a full and timely fashion) are not attributed to factors that are determined on an _annual_ basis (e.g., the annual energy burdens).

Whether monthly bills are paid on a full and timely basis is one such example.[1] For example, the Pennsylvania PUC's 2019 Staff Report on natural gas and electric affordability[2] (p.52) said: "to assess whether monthly CAP bills are set at an amount that facilitates low-income customers to pay their _monthly_ electric and/or natural gas bills in-full, the Commission requested CAP billing data from the major EDCs and NGDCs for the years 2012-2016. The data requested included the number of _monthly_ CAP bills issued and the amount (in dollars) of those bills." (emphasis added).

The Staff Report noted that its data on bill payments looked, for each individual monthly in-

[1] A separate discussion of the appropriateness of measuring the adequacy of bill payment by examining whether bills are paid both on a full and on a timely basis is presented below.

[2] Pennsylvania PUC Staff (January 2019). Home Energy Affordability for Low-Income Customers in Pennsylvania, submitted for Docket M-2017-2587711.

stance, at whether a bill was paid in-full and on-time. According to the Staff Report, "the [Electric Distribution Companies] and [Natural Gas Distribution Companies] had no meaningful way to distinguish if 'payment in full' data exclusively included a full payment on current monthly charges or if 'payment in full' data included the full payment of current plus any delinquent or 'catch up' amounts." (Staff Report, p. 53). If a customer received a $100 bill in Month 1, and paid $50, and received a $100 bill in Month 2 and paid $150, in other words, the customer would be seen as having made only one complete payment (even though the entire two-month bill was paid by the end of the second month).

Setting aside the policy implications of measuring only whether bills have been paid both in-full ***and*** on-time, it is important to understand how CAP program implementation might affect this measurement. The Pennsylvania PUC's determination of energy bill affordability is based on ***annual*** bills as a percentage of ***annual*** income. The distribution of neither bills, nor income, within the year is taken into consideration. Accordingly, even if an ***annual*** burden is affordable, whether any given ***monthly*** bill is affordable or not cannot be determined.

The impact of this observation plays out when one realizes that Pennsylvania does not require its low-income customers to enter into levelized Budget Billing plans in order to participate in CAP. Those who do not enter into Budget Billing experience the same seasonality in bills as any other customer experiences. To the extent that percentage of income-based bill credits are distributed on a levelized basis, but bills are not rendered on a levelized basis, customers may in any given month receive a bill that exceeds an affordable percentage of income.[3] If monthly bills are not levelized, and if affordability is then assessed on a monthly basis as the metric of whether monthly bills are paid in-full and on-time, the seasonality of bills will ***never*** improve affordability, it can only reduce affordability.

It is possible to illustrate why this is so: Assume that a CAP 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). To the extent that incomplete, or late, payments are made in months when the monthly bill does not match the definition of affordability, measuring those months on a stand-alone basis yields a misleading result.

[3] This issue, of the difference between how bill credits are distributed and how bills are rendered, is one of the primary reasons that most Pennsylvania utilities have placed limits on whether and what circumstances customers may "voluntarily" exit CAP and then subsequently re-enter the program. Without such limits, customers were exiting CAPs in the months in which their bills were lower than their CAP payments only to re-enter a few months later when their bills again exceeded their CAP payments.

The above discussion supports the following conclusions:

- First, to the extent that the bill payment data is considered for each month on a stand-alone basis, the degree to which *monthly* bills are (or are not) paid in-full and on-time offers little, if any, insight into whether the underlying bill burdens are (or are not) affordable on an *annual* basis.

- Second, there is a policy basis for making bills affordable on an annual basis even if customers may miss, and then make-up, monthly bills. The important outcomes being sought through CAP are two-fold: (1) it is important to make *some* payment even if the customer cannot make the ENTIRE payment. If the customer cannot pay an entire $80 bill, he or she should make the $40 payment they *can* make, so that the first $40 in the next month brings their account up-to-date; (2) it is important to continue making regular payments even if those payments don't always cover the entire current month's bill. Both of these outcomes are directed toward teaching program participants the importance of avoiding falling into a hole they cannot climb out of. Both of these outcomes are supported by an affordable annual burden, even though they are not measured by whether payments are in-full and on-time for each month on a stand-alone basis.

**The interaction of bill payments and LIHEAP.**

A second problem posed by using a metric based on whether individual monthly bills, on a stand-alone basis, are paid on both a full and timely basis is that this metric fails to account for the interaction of CAP with LIHEAP. The Staff Report notes that: "From 2012 through most of 2016, the minimum amount of a LIHEAP Cash grant was $100, and the maximum amount was $1,000. For the 2016 - 2017 LIHEAP season (beginning November 2016), DHS increased the minimum Cash grant to $200." (Staff Report, p.32). The Staff Report observes further:

> Most utilities apply LIHEAP Cash grants directly to the CAP customer's "asked to pay" amount (ATP), in compliance with the Pennsylvania LIHEAP State Plan. This means that the grant is first applied to any in-program arrears, then the current bill. Any remaining amount is kept on the account as a credit toward the next month's bill.

(Staff Report, p.33). Either way in which the LIHEAP grant is applied causes distortions in using the number of in-full and on-time payments as a metric for assessing bill affordability.

In Pennsylvania, LIHEAP cash grants are provided on a lump-sum basis. For example, if a customer receives a $300 cash grant, the entire $300 is provided to the utility at one time to be applied against the customer's bill.[4]

[4] If nothing else, this is evident from the Staff Report's observation that grants are applied against arrears first, and then to the current bill. It is evident, too, from the Staff Report's observation that "any remaining amount" is kept on the account as a credit

This process of LIHEAP distribution may easily distort an assessment of "affordability" if one measures affordability by whether bills, on a stand-alone monthly basis, are paid in-full and on-time. On the one hand, an income-constrained customer may easily anticipate his or her receipt of LIHEAP in a particular year. A customer who has received LIHEAP in the past, may well have an expectation and understanding of the amount of LIHEAP benefit that he or she will receive, and when. This customer may easily forego paying one or more monthly bills knowing that the LIHEAP benefit, when received, will be "first applied to any in-program arrears." In such a situation, the nonpayment of bills says nothing about the overall affordability of the underlying bill. It instead merely reflects on the lack of coordination between CAP and LIHEAP.

Conversely, when a customer receives a lump-sum LIHEAP grant to be applied against an account that is current, as the Staff Report notes, to the extent that the LIHEAP grant exceeds the current CAP bill, "[a]ny remaining amount is kept on the account as a credit toward the next month's bill." When this occurs, in the months when CAP bills reflect credits, unless the billing and payment counts provided by utilities to the Staff define each of these accounts as having received a bill in that month, and then made a payment on-time and in-full in that month, the extent to which CAP bills are paid on-time and in-full is under-represented when bill credits exist.

Given that the Staff Report says that "the EDCs and NGDCs had no meaningful way to distinguish if 'payment in full' data exclusively included a full payment on current monthly charges or if 'payment in full' data included the full payment of current plus any delinquent or 'catch-up' amounts," it would appear that the utility data was insufficient to identify these accounts with credits as accounts with payments made in-full and on-time. In these circumstances, most likely, accounts with no payments made because of a credit balance are either excluded in their entirety, or they are counted as having received a bill without having made a payment. Either way, the affordability of the bill is understated.

**The way forward:**
**"Payment Coverage Ratios."**

One solution to both of the problems identified above, which would allow the Pennsylvania PUC to meaningfully assess the bill payment impacts associated with differing bill burdens, is to use an annual "payment coverage ratio" as the measure of complete bill payment. Annual bill payment coverage ratios, for example, were used in the evaluation of the Universal Service Fund ("USF") prepared by APPRISE, Inc. for the New Jersey Board of Public Utilities ("BPU"). Table 5-22B from that APPRISE report shows the following for gas or electric customers (target affordable bill burden of 3%).

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. However, as the bill burden increased, the bill payment coverage ratio significantly deteriorated.

Distribution of Effective Coverage Rate by Net Energy Burden
(New Jersey) (gas or electric: 3%)

toward the next month's bill.

| 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% |
| More than 8% | 1.0% | 25.6% | 16.1% | 57.4% |

A similar pattern can be seen in the combination gas/electric population. 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. When the burden exceeded 6%, the proportion paying 90% or more declined into the 70% range (18.5% + 58.8%; 21.7% + 56.4%), and when the burden exceeded 12%, the proportion of customers paying 90% or more of their bill was in the 65% range (21.8% + 43.2%).

Distribution of Effective Coverage Rate by Net Energy Burden (New Jersey) (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% |
| More than 12% | 3.8% | 31.1% | 21.8% | 43.2% |

The importance of the New Jersey data does not lie in the specific outcomes associated with specific "net energy burdens."[5] The importance for purposes here is the demonstration of how annual "payment coverage ratios" can be used as a more appropriate means of measuring bill payments than the use of in-full and on-time bill payments for individual, stand-alone months.

The conclusion here is that the use of in-full and on-time bill payments is an insufficient basis upon which to make decisions about whether the energy burdens currently in use in Pennsylvania CAPs are or are not "affordable." An additional conclusion is that the PUC should consider directing that bill payment coverage ratios should be utilized in future assessments and evaluations of Pennsylvania CAP programs. A final conclusion is that extreme care must be taken in combining monthly data (e.g., number of payments) with annual data (e.g., bill burdens). The factors at work on a monthly basis are substantively different from the factors at work on an annual basis.

**Summary**

For more information regarding how to measure affordability, or for a copy of Colton's Pennsylvania white paper on affordability, please write:

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Fisher, Sheehan and Colton, Public Finance and General Economics (FSC) provides economic,

[5] Remember, the New Jersey "net energy burden" of six percent (6%) cannot be compared to Pennsylvania. In New Jersey, the BPU combines the federal LIHEAP grant, the "Lifeline" grant (a state LIHEAP supplement funded through casino dollars), and ratepayer funds to achieve its affordable burden. In contrast, Pennsylvania's "affordable burdens" are determined <u>*prior*</u> to the application of LIHEAP benefits to an account.

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.