

**THE CONTRIBUTION OF UTILITY BILLS
TO THE UNAFFORDABILITY OF LOW-INCOME
RENTAL HOUSING IN PENNSYLVANIA**

June 2009

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**THE CONTRIBUTION OF UTILITY BILLS TO THE
UNAFFORDABILITY OF LOW-INCOME RENTAL HOUSING IN PENNSYLVANIA:
An Empirical Review and Policy Evaluation**

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The role of home utility bills in causing the unaffordability of overall shelter costs to low-income households has not frequently been analyzed. In reviewing annual Consolidated Plans prepared by Pennsylvania's state and local jurisdictions receiving federal Community Development Block Grant (CDBG) and/or Home Investment Partnership (HOME) funds, the size of utility bills is not generally cited as a barrier to housing affordability.¹ At most, participating jurisdictions note in their Consolidated Plans how the disconnection of service for nonpayment frequently results in homelessness and how, therefore, crisis grants directed toward paying utility arrears that might lead to disconnections are often viewed as a homelessness prevention tactic.

The analysis below considers a broader question. This analysis considers the extent to which, if at all, home utility bills are a factor contributing to low-income households experiencing overall shelter costs beyond those levels generally deemed to be affordable. The analysis below focuses on rental units in Pennsylvania. It concludes that home utility bills substantially contribute to the unaffordability of low-income rental units. This conclusion flows from the data even before the fly-up in home energy prices subsequent to the year 2004.

THE OVERALL APPROACH TO THE STUDY

To consider the question of whether home utility bills contribute to unaffordable housing burdens, this study examined Pennsylvania Census tract information from the 2000 Decennial Census. Data was obtained for 3,035 Census tracts throughout Pennsylvania.² Those tracts were reviewed to determine which tracts had a concentration of poverty. Tracts were defined to present a concentration of poverty if they met any one of the following three criteria:

- The percentage of the tract's renter population living with income at or below 50% of the Federal Poverty Level ("FPL") was 1.5x the percentage of the renter population living at or below 50% of Poverty Level for the county in which the tract is located; or
- The percentage of the tract's renter population living with income at or below 100% of the Federal Poverty Level ("FPL") was 1.5x the percentage of the renter population living at or below 100% of Poverty Level for the county in which the tract is located; or
- The percentage of the tract's renter population living with income at or below 150% of the Federal Poverty Level ("FPL") was 1.5x the percentage of the renter population living at or below 150% of Poverty Level for the county in which the tract is located.

Thus, for example, if 12% of the renter population in a Census tract lived at or below 50% of the Federal Poverty Level, and 8% of the renter population in the county did so, the Census tract would be considered to demonstrate a concentration of poverty. While there is an overlap of

¹ Throughout this discussion, any reference to "utility bills," unless otherwise specifically noted, or unless the context otherwise clearly indicates to the contrary, is intended to encompass home utility bills (e.g., electricity, piped natural gas), fuel bills (e.g., fuel oil, LPG, wood), and water/sewer bills.

² Census tracts missing data for particular factors studied (e.g., contract rents, gross rents) were excluded from the analysis.

Census tracts with a concentration of low-income persons as determined by the three tests identified immediately above, the overlap is by no means complete. Just over one-quarter of the Census tracts had a concentration of Poverty defined in this way.

	# of Tracts with LI Concentration	Percent of tracts with LI Concentration
Concentrated Poverty under all three tests	342	11.3%
Concentrated for 50% & 100%, but not 150%	7	0.2%
Concentrated at 50% and 150%, but not 100%	136	4.5%
Concentrated at 50%, but not 100% or 150%	149	4.9%
Concentrated at 100% and 150%, but not 50%	76	2.5%
Concentrated at 100%, but not 50% or 150%	58	1.9%
Concentrated at 150%, but not 50% or 150%	33	1.1%
Not concentrated at 50%, 100% or 150%	2,234	73.6%
Grand Total	701	26.4%

Each group of Census tracts determined to have a concentration of low-income renters was then separately examined to determine whether they *also* had a concentration of unaffordable housing. Housing unaffordability was tested in the same fashion. A “concentration” of unaffordable housing was defined to include all Census tracts where the percentage of low-income renters with an unaffordable Gross Rent was 1.5x higher than the county average in which the Census tract is located. For example, if the proportion of low-income renters in a county with an unaffordable Gross Rent was 20%, any Census tract in that county with 30% or more of its low-income renters having an unaffordable Gross Rent was defined to present a concentration of housing unaffordability.

The unaffordability of housing was defined in two alternative ways. First, housing unaffordability was triggered when Gross Rent as a percentage of household income exceeded 35% of household income. Second, housing unaffordability was triggered when Gross Rent as a percentage of household income exceeded 50% of household income. These definitions of housing unaffordability are consistent with the policy of the U.S. Department of Housing and Urban Development (HUD) that households are “cost-burdened” when their shelter burdens exceed 35% of income; households are “severely cost burdened” when their shelter burdens exceed 50% of income.

Overall, in general, Census tracts could thus be categorized in any one of the ways presented in Figure 1. In reality, the matrix is somewhat more complicated than this because “low-income” status was defined in three different ways (below 50% Federal Poverty Level; below 100% Federal Poverty Level; below 150% of Federal Poverty Level). Moreover, housing

unaffordability was defined in two different ways (Gross Rent exceeds 35% of income; Gross Rent exceeds 50% of income).

	Low-Income Concentration	No Low-Income Concentration
Concentration of Unaffordable Housing	<p>% LI in tract = or > 1.5x % LI in county.</p> <p style="text-align: center;">* * *</p> <p>% LI renters in tract with unaffordable housing burden = or > 1.5x % LI renters in county with unaffordable housing burden.</p>	<p>% LI in tract < 1.5x % LI in county.</p> <p style="text-align: center;">* * *</p> <p>% LI renters in tract with unaffordable housing burden < 1.5x % LI renters in county with unaffordable housing burden.</p>
No Concentration of Unaffordable Housing	<p>% LI in tract = or > 1.5x % LI in county.</p> <p style="text-align: center;">* * *</p> <p>% LI renters in tract with unaffordable housing burden < 1.5x % LI renters in county with unaffordable housing burden.</p>	<p>% LI in tract < 1.5x % LI in county.</p> <p style="text-align: center;">* * *</p> <p>% LI renters in tract with unaffordable housing burden < 1.5x % LI renters in county with unaffordable housing burden.</p>

Figure 1

Requiring a multiplier of 1.5x the county average to demonstrate a “concentration” of either poverty level status or housing unaffordability severely limits the number of Census tracts to be considered in this discussion. Had a concentration of low-income households been set at 1.25x the county average instead, 1,138 Census tracts (rather than 802) would have been identified as “concentrated.” Had the test of concentration been set at 1.10x the county average, 1,427 Census tracts would have been identified rather than 802. The same is true, of course, for the concentration of housing affordability. Defining Census tracts with a housing unaffordability rate of 1.25x that of the county average would have identified 628 Census tracts as having a concentration of housing unaffordability (rather than 308). Defining a concentration of housing unaffordability as 1.10x the county average would have identified 923 Census tracts as having a concentration of housing unaffordability.

The Relationship between Poverty Status and Housing Unaffordability

As with the measure of low-income status, while there was considerable overlap between the two measures of the concentration of unaffordable low-income housing, the overlap was not complete. Nor did the distribution exhibit the characteristics one might expect. There were instances, for example, where there was a concentration of unaffordable housing as measured by the 50% Gross Rent burden standard, but not as measured by the 35% Gross Rent burden standard.

Table 2 shows that the concentration of unaffordable housing at both the 35% burden and the 50% burden is about 2.5x greater in Census tracts that *also* have a concentration of Poverty Level households, irrespective of which of the three tests of Poverty are used (i.e., 50% Federal

Poverty Level, 100% Federal Poverty Level, 150% Federal Poverty Level). While only 4% of all Census tracts experience a concentration of housing unaffordability above both the 35% and 50% burdens, the concentration of housing unaffordability in Census tracts that also have a concentration of Poverty Level households ranges from 10% to 11%. The same result appertains when housing unaffordability is limited only to the 35% burden. While 6% of all Census tracts have a concentration of housing unaffordability at the 35% Gross Rent burdens, the percentage with this housing unaffordability ranges from 10% to 13% in Census tracts that also have a concentration of Poverty Level households.

Table 2. Census Tracts by Concentration of Poverty Status and Concentration of Housing Unaffordability (Pennsylvania: 2000 Census) /a/

Concentration of Housing Unaffordability	Total Census Tracts /b/	Concentration < 50% FPL		Concentration < 100% FPL		Concentration < 150% FPL	
		Yes	No	Yes	No	Yes	No
Both >35% & >50%	120 (4%/100%)	61 (10%/51%)	59	51 (11%/43%)	69	64 (11%/53%)	56
>50%, not >35%	26 (1%/100%)	8 (1%/31%)	18	7 (1%/27%)	19	9 (2%/35%)	17
>35%, not >50%	188 (6%/100%)	79 (13%/42%)	109	50 (10%/27%)	138	72 (12%/38%)	116
No concentration	2,701 (89%/100%)	486 (78%/18%)	2,215	375 (78%/14%)	2,326	442 (75%/16%)	2,259
Total	3,035 (100%/100%)	634 (100%/21%)	2,401	483 (100%/16%)	2,552	587 (100%/19%)	2,448

NOTES:

/a/ A concentration of poverty status exists when the percentage of renters at the designated Poverty Level for the Census tract exceeds 1.5x that percentage in the county in which the tract is located. A concentration of housing unaffordability exists when the percentage of renters at the designated Poverty Level with Gross Rents as a percentage of income for the Census tract exceeds 1.5x that percentage in the county in which the tract is located.

/b/ The first percentage stated in each cell is the percentage to the column total. The second percentage stated in each cell is the percentage to the row total.

The same conclusion can be drawn from a somewhat different perspective of the same data. While 51% of Census tracts with a concentration of housing unaffordability above both 35% and 50% also had a concentration of renters with income below 50% of Poverty Level (61 of 120), only 21% of all Census tracts had a concentration of renters at that Poverty Level (634 of 3,035).

Measuring the concentration of Poverty by reference to the other two Poverty Levels yields the same results. While 43% of Census tracts with a concentration of housing unaffordability above both the 35% and 50% Gross Rent burdens also had a concentration of renters below 100% of Poverty Level (51 of 120), only 16% all Census Tracts had a concentration of households at that Poverty Level (483 of 3,035). While 53% of renters with a concentration of households with Gross Rent burdens exceeding both 35% and 50% (64 of 120) also had a concentration of renters with income below 150% of Poverty Level, only 19% of all census tracts had a concentration of renters at that Poverty Level (587 of 3,035).

In sum, in assessing housing affordability by three different tests of Gross Rent burdens, Census tracts that also had a concentration of Poverty Level renters were disproportionately represented.

Housing Unaffordability: The Interrelationship of Contract Rents and Gross Rent Burdens

The unaffordability of housing cannot be attributed exclusively to the level of contract rents relative to income. Table 3 below disaggregates the concentration of housing unaffordability by the ratio of the median contract rent to the median gross rent in the tract. The “contract rent” is defined to be the cash rent paid for the housing.³ The “gross rent” is the contract rent plus all utility costs (except telephone).⁴ The difference between the gross rent and the contract rent, in other words, can be attributed to the sum of the household’s home energy and home water/sewer costs.

The ratio of the contract rent to the gross rent was divided into two categories. On the one hand, the group of Census tracts in which the median contract rent was equal to or less than 80% of the gross rent was deemed to be the “low contract rent” category. All other Census tracts (i.e., those with contract rents greater than 80% of gross rents) were placed in the residual category.

Table 3 shows that Census tracts with low contract rents can nonetheless have unaffordable overall shelter burdens. All Census tracts were again disaggregated into those with concentrations of poverty by the designated levels of Poverty previously used (i.e., below 50% Federal Poverty Level, below 100% Federal Poverty Level, below 150% Federal Poverty Level). Within the group of Census tracts determined to have “low contract rents,” of those tracts with a concentration of tenants below 50% of the Federal Poverty Level, 27% also had a concentration of housing unaffordability, compared to 11% for all Census tracts. For Census tracts with a concentration of tenants with income below 100% of Federal Poverty Level, 24% also had a concentration of housing unaffordability, while 29% of tracts with a concentration of tenants with income below 150% of Federal Poverty Level did.

Not only do the levels of contract rents not drive whether low-income households have *any* housing unaffordability, they do not drive whether low-income households face extreme housing unaffordability. Between 12% (tracts with poverty concentrations at 50% FPL and 100% FPL) and 14% (tracts with poverty concentrations at 150% FPL) have concentrations of housing unaffordability at the 50% gross rent burden level.

³ The Census Bureau defines the “contract rent” to include the cash rent paid to a property owner as rent for housing.

⁴ The Census Bureau defines the “gross rent” to include the contract rent plus home utility costs (i.e., piped natural gas and electricity), fuel costs (e.g., fuel oil, LPG, wood), and home water/sewer costs.

Table 3. Concentration of Housing Unaffordability by Concentration of Low-Income Status Disaggregated by Ratio of Median Contract Rent to Median Gross Rent by Census Tracts (Pennsylvania 2000 Census)

Concentration of Rent Burden by Gross Rent Above Selected Percentage of Income	Total		Concentration of Renters Below 50% FPL			
			Tracts with Low Contract Rent /a/		Residual Tracts	
	No.	Pct.	No.	Pct.	No.	Pct.
> 35% and > 50%	120	4%	23	10%	38	9%
> 50% but not > 30%	26	1%	4	2%	4	1%
> 35% but not > 50%	88	6%	34	15%	45	11%
> neither 35% nor 50%	2,701	89%	162	73%	324	79%
Total Census Tracts	3,035	100%	223	100%	411	100%
Concentration of Rent Burden by Gross Rent Above Selected Percentage of Income	Total		Concentration of Renters Below 100% FPL			
			Tracts with Low Contract Rent		Residual Tracts	
	No.	Pct.	No.	Pct.	No.	Pct.
> 35% and > 50%	120	4%	19	11%	32	10%
> 50% but not > 30%	26	1%	2	1%	5	2%
> 35% but not > 50%	88	6%	20	12%	30	10%
> neither 35% nor 50%	2,701	89%	132	76%	243	78%
Total Census Tracts	3,035	100%	173	100%	310	100%
Concentration of Rent Burden by Gross Rent Above Selected Percentage of Income	Total		Concentration of Renters Below 150% FPL			
			Tracts with Low Contract Rents		Residual Tracts	
	No.	Pct.	No.	Pct.	No.	Pct.
> 35% and > 50%	120	4%	25	12%	39	10%
> 50% but not > 30%	26	1%	4	2%	5	1%
> 35% but not > 50%	88	6%	31	15%	41	11%
> neither 35% nor 50%	2,701	89%	148	71%	294	78%
Total Census Tracts	3,035	100%	208	100%	379	100%
NOTES: /a/ A tract with a "low contract rent" is a tract where the median contract rent is equal to or less than 80% of the gross rent in the tract.						

Remember, an identification of a “concentration” of housing unaffordability does not refer simply to a Census tract that has some households with unaffordable housing. A Census tract with a concentration of housing unaffordability is a tract where the percentage of households with gross rent burdens exceeding 50% of income (or 35% if that is the concentration being examined) is at least 1.5x higher than the percentage of households with those burdens in the county in which the tract is located.

Overall, a significant number of low-income households can have unaffordable total shelter burdens even though having low contract rents.

- One-in-four tenants (27%) in Census tracts with a concentration of tenants with income below 50% of Poverty;
- One-in-four tenants (24%) in Census tracts with a concentration of tenants with income below 100% of Poverty;
- Three-in-ten (29%) tenants (29%) in Census tracts with a concentration of tenants with income below 150% of Poverty.

In these tracts, the unaffordability of housing can be attributed to the home utility bill, not to the contract rent for housing.

Housing Unaffordability: The Interrelationship between Utility Bills and Gross Rent Burdens

Home utility bills play a substantial role in the unaffordability of energy to low-income households, particularly those households with low contract rents. Census tracts with low median contract rents often have noticeably higher home utility bills. Table 4 presents the data.

This discussion will focus on the group of Census tracts with a concentration of poverty at or below 50% of FPL. The observations below nonetheless also hold true for the other two levels of Poverty as well.

Even where contract rents are lower, housing is often unaffordable to low-income renters because of the corresponding home utility costs. Because of those utility costs, total gross rents remain high and impose unaffordable shelter burdens on low-income households. Consider, for example, the group of Census tracts with a concentration of both unaffordable 35% rent burdens and unaffordable 50% gross rent burdens. The low-rent Census tracts experiencing these unaffordable rent burdens experience noticeably higher home utility costs. While the average contract rent in these tracts with low contract rents but a high concentration of unaffordability is \$356 (compared to \$442 in the remaining tracts), the corresponding home utility cost of \$133 is more than twice as high as the \$61 utility cost in the residual Census tracts. As a result, even though the contract rent is considerably lower (\$356 vs. \$442), the total gross rent is virtually identical (\$490 vs. \$502).

**Table 4. Contract Rents by Concentration of Poverty (1.5x) and Concentration of Housing Unaffordability (1.5x)
By Low-Contract Rents as a Percentage of Gross Rents
(Pennsylvania 2000 Census)**

		Concentration: <50% FPL			Concentration: <100% FPL			Concentration: <150% FPL		
		< 80% Gross Rent	Residual	Total	< 80% Gross Rent	Residual	Total	< 80% Gross Rent	Residual	Total
Concentration of both >35% and >50%	Count of Census tracts	23	38	61	19	32	51	25	39	64
	Average of median gross rent	\$490	\$502	\$498	\$475	\$490	\$485	\$481	\$503	\$495
	Average of median contract rent	\$356	\$442	\$410	\$339	\$427	\$394	\$345	\$442	\$404
	Avg median gross rent - avg median contract rent	\$133	\$61	\$88	\$135	\$63	\$90	\$135	\$62	\$90
Concentration of > 35% but not >50%	Count of Census tracts	4	4	9	2	5	7	4	5	10
	Average of median gross rent	\$492	\$500	\$496	\$495	\$487	\$489	\$492	\$487	\$489
	Average of median contract rent	\$373	\$415	\$350	\$361	\$402	\$390	\$373	\$402	\$350
	Avg median gross rent - avg median contract rent	\$119	\$86	\$91	\$134	\$85	\$99	\$119	\$85	\$139
Concentration of >50% but not >35%	Count of Census tracts	34	45	79	20	30	50	31	41	72
	Average of median gross rent	\$474	\$478	\$477	\$471	\$444	\$455	\$488	\$486	\$487
	Average of median contract rent	\$351	\$427	\$394	\$348	\$392	\$374	\$362	\$435	\$403
	Avg median gross rent - avg median contract rent	\$124	\$51	\$82	\$123	\$52	\$80	\$127	\$51	\$84
No concentration of unaffordable housing burden	Count of Census tracts	162	324	486	132	243	375	148	294	442
	Average of median gross rent	\$437	\$476	\$463	\$418	\$448	\$437	\$439	\$455	\$450
	Average of median contract rent	\$326	\$416	\$386	\$312	\$389	\$362	\$328	\$396	\$374
	Avg median gross rent - avg median contract rent	\$111	\$60	\$77	\$106	\$59	\$75	\$111	\$59	\$76
Total Census Tracts with LI Concentration	Count of Census tracts	223	411	635	173	310	483	208	379	588
	Average of median gross rent	\$449	\$479	\$469	\$431	\$452	\$445	\$452	\$464	\$460
	Average of median contract rent	\$334	\$420	\$389	\$320	\$394	\$367	\$336	\$405	\$380
	Avg median gross rent - avg median contract rent	\$115	\$59	\$79	\$111	\$59	\$78	\$116	\$59	\$80

The same holds true for other Census tracts with a concentration of high shelter burdens. In those tracts with a concentration of gross rent burdens above 50% (but not above 35%) of income, the average median contract rent in the low-rent tracts is \$76 lower than in the residual Census tracts (\$351 vs. \$427). The average monthly utility bill in these low-rent/high shelter burden Census tracts, however, is more than two times that of the lower rent Census tracts (\$124 vs. \$51), yielding a total gross rent that is nearly the same (\$474 vs. \$478).

Similar observations can be made for the Census tracts with a concentration of poverty as measured by other groupings of Poverty Level. Within the Census tracts with a concentration of poverty below 100% of Poverty Level, combined with a concentration of housing unaffordability at both the 50% and 35% gross rent burdens, the difference between the average contract rent in the low-rent Census tracts (\$339) and the average contract rent in the residual tracts (\$427) is offset by a utility cost that is more than double (\$135 in the tracts with concentrated unaffordability and low rents vs. \$63 in the tracts with concentrated unaffordability and non-low-rents). As a result, the overall gross rent is virtually the same (\$475 vs. \$490).

The above analysis does not support the conclusion that all Census tracts with “low-rents” have correspondingly high utility bills that contribute to across-the-board unaffordable gross rent burdens. To test that proposition, the analysis below disaggregates Pennsylvania’s Census tracts into quartiles based on their median contract rents. The Census tracts in each quartile were then further evaluated for a concentration of poverty-level tenants (at three levels) and for housing affordability (at two different levels). The data for Census tracts having a concentration of poverty level tenants and housing unaffordability is presented in Table 5 below.

The differences between Census tracts with a concentration of housing unaffordability and those without such a concentration are striking. The base line data is found in the data for all tracts exhibiting a concentration of low-income tenants without regard to the further concentration of housing unaffordability. We find that:

- For all Census tracts with a concentration of low-income tenants at or below 50% of Poverty Level, the average utility bill (i.e., gross rent minus the contract rent) is virtually identical for all four quartiles of contract rents. The utility bills ranged from a low of \$73 (1st quartile) to a high of \$88 (2nd quartile), with the other two quartiles at \$76 (3rd quartile) and \$79 (4th quartile) respectively. For the Census tracts with a concentration of low-income tenants below 50% FPL, in other words, no substantial difference in utility bills is evident.
- For all Census tracts with a concentration of low-income tenants at or below 100% of Poverty Level, the distribution of utility bills was even tighter. The lowest utility bill (\$74) was again found in the 1st quartile of contract rents, while the highest was again found in the 2nd quartile (\$82). The other two quartiles had identical utility bills (\$79/month).

**Table 5. Contract Rents (quartiles) by Concentration of Poverty (1.5x) and Concentration of Housing Unaffordability (1.5x)
(Pennsylvania 2000 Census)**

		Concentration: <50% FPL by Quartile					Concentration: <100% FPL by Quartile					Concentration: <150% FPL by Quartile				
		1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total
Concentration of >35% burden	Count of Census tracts	14	29	21	5	69	15	21	19	3	58	17	29	21	6	73
	Average of median gross rent	\$391	\$488	\$544	\$654	\$498	\$392	\$478	\$540	\$655	\$485	\$403	\$483	\$539	\$648	\$494
	Average of median contract rent	\$292	\$388	\$465	\$606	\$408	\$279	\$389	\$458	\$596	\$394	\$290	\$385	\$461	\$600	\$402
	Avg median gross rent - avg median contract rent	\$99	\$100	\$79	\$48	\$90	\$113	\$89	\$81	\$58	\$91	\$113	\$98	\$78	\$48	\$92
Concentration of >50%	Count of Census tracts	35	61	30	14	140	29	45	21	6	101	33	61	27	15	136
	Average of median gross rent	\$371	\$479	\$538	\$693	\$486	\$376	\$469	\$535	\$698	\$470	\$387	\$478	\$535	\$689	\$490
	Average of median contract rent	\$282	\$382	\$465	\$642	\$401	\$280	\$382	\$458	\$650	\$385	\$287	\$382	\$465	\$638	\$404
	Avg median gross rent - avg median contract rent	\$88	\$96	\$73	\$51	\$85	\$96	\$87	\$77	\$48	\$85	\$100	\$96	\$71	\$51	\$87
Total Census Tracts with LI Concentration	Count of Census tracts	245	186	125	78	634	218	144	82	39	483	224	196	109	58	587
	Average of median gross rent	\$351	\$467	\$547	\$711	\$468	\$351	\$461	\$550	\$690	\$445	\$351	\$468	\$550	\$684	\$460
	Average of median contract rent	\$278	\$379	\$471	\$633	\$389	\$277	\$379	\$471	\$611	\$367	\$278	\$379	\$474	\$610	\$381
	Avg median gross rent - avg median contract rent	\$73	\$88	\$76	\$79	\$79	\$74	\$82	\$79	\$79	\$78	\$73	\$89	\$76	\$75	\$79

- For all Census tracts with a concentration of low-income tenants at or below 150% of Poverty Level, the utility bills for the 1st, 3rd and 4th quartiles (\$73, \$76 and \$75 respectively) was tight, again with the bill for the 2nd quartile being somewhat higher (\$89).

Once you overlay the further test for housing unaffordability, however, differences appear. The utility bills in Census tracts with a concentration of housing unaffordability and 1st quartile contract rents are noticeably higher than for those tracts with 1st quartile contract rents for tracts tested only for low-income concentrations. With the 50% FPL concentrations, utility bills in the 1st quartile of rents with unaffordable shelter burdens reached \$99 (burden > 50%) and \$88 (burden > 35%), compared to \$73 on average. For the 100% FPL concentration tracts, utility bills reached \$113 (burden > 50%) and \$96 (burden > 35%), compared to \$74 on average. For the 150% FPL concentration, utility bills reached \$113 (burden > 50%) and \$100 (burden > 35%) compared to \$73 on average.

Similar results appertain to the Census tracts with both a concentration of low-income tenants and a concentration of housing unaffordability. For the 50% FPL concentration, the 2nd quartile utility bills for tracts with concentrated unaffordable housing reached \$108 (burden > 50%) and \$96 (burden > 35%) compared to \$88 for the 2nd quartile contract rents on average. For the tracts with low-income concentrations below 100% FPL, the 2nd quartile utility bills reached \$89 and \$87 in tracts with housing unaffordability (at 50% and 35% shelter cost burdens).

Clearly, low contract rents cannot ipso facto be associated with low overall shelter burdens. When one looks at the data, a substantial number of Census tracts with a concentration of low-income tenants also have not merely *some* low-income housing, but a concentration of low-income housing as well. Indeed, more than 20% of the Census tracts with a concentration of the lowest income households (below 50% Federal Poverty Level) and with the lowest quartile of contract rents nonetheless still have not merely *some* unaffordable housing, but a concentration of unaffordable housing at either or both the 35% rent burden or 50% rent burden level. More than 20% of Census tracts with a concentration of low-income tenants below 100% of the Federal Poverty Level and with the lowest quartile of contract rents nonetheless still have unaffordable housing at either or both the 35% rent burden or 50% rent burden.

ENERGY AND HOUSING POLICY IMPLICATIONS

The empirical discussion above has several layers of policy significance to it. First and foremost, the discussion identifies in a dramatic fashion the connection between affordable energy and affordable housing policy. Substantial effort goes into the provision of affordable rental housing in Pennsylvania (and elsewhere). This effort is particularly needed because low-income households are disproportionately renters. Addressing only the rent aspect of total shelter costs, however, will ultimately be unsuccessful at delivering affordable housing. In a large minority of cases, even when contract rents are low, high utility costs push total shelter expenses into an affordable range.

This recognition carries with it several policy implications:

- Affordable housing planning documents such as Consolidated Plans should contain a discussion of energy affordability and the factors that influence energy affordability, including energy consumption, in each participating jurisdiction. If old and energy inefficient homes are contributing to high shelter burdens through high energy bills, the presence of such housing units should be identified and addressed for the market barriers to affordable housing that they represent. If, in contrast, unaffordable utility bills can be attributed to prices rather than to usage, the barrier to affordable housing would be different and the remedy would be different as well.
- The affordable housing industry should be solicited as active participants in developing and implementing Pennsylvania's Act 129 plans and processes.⁵ The affordable housing industry includes those state and local agencies that administer public funds such as the federal Home Investment Partnership Program (HOME), Community Development Block Grant (CDBG), and Low-Income Housing Tax Credit (LIHTC). The Act 129 processes should, however, also include the *developers* building housing using programs such as HOME, CDBG and LIHTC. In addition to involving Community Action Agencies (CAAs) (as the primary delivery vehicle for the U.S. Department of Energy's Weatherization Assistance Program, WAP), the Act 129 plans should involve the state's Community Development Corporations (CDCs) as the primary delivery vehicle for affordable housing production.

Given these policy implications, the discussion above further highlights the need for an independent third party administrator, at least for low-income Act 129 programs. Pennsylvania utilities unquestionably have a long and successful history of delivering services through the Low-Income Usage Reduction Program (LIURP). What the utilities do *not* do so well, however, is to combine their utility dollars with other public funds where the utility dollars are only one of many sources of funding (and may not even be the primary source). This need to mix and match funding sources, and to treat utility Act 129 dollars as one of multiple leveraged resources, requires an expertise that extends beyond that reasonably expected from Pennsylvania's utilities.

Finally, this empirical discussion highlights a need for new market research to underlie a utility's low-income usage reduction program. For example, according to HUD's most recent Resident Characteristics Report (RCR) for Pennsylvania, Pennsylvania had 52,989 tenant-based vouchers as of May 31, 2009. Pennsylvania had 84,399 tenants subsidized through the combination of all voucher-based assistance through the federal Section 8 housing program. While HUD does not report how many Pennsylvania Section 8 tenants have tenant-paid utilities, 84% of all Section 8 tenants nationwide pay their own utilities. Through the introduction of energy efficient utility

⁵ In advancing this recommendation, we acknowledge the participation of some housing-related organizations in the Keystone Energy Efficiency Alliance, but note that KEEA is primarily an energy-driven, not a housing-driven, coalition.

allowances, and even moderate efficiency incentives, it may be possible to reach not thousands, but tens of thousands of low-income Pennsylvania tenants.⁶

The pursuit of affordable housing has been kept in a silo apart from the pursuit of efficient energy use for too long. Pennsylvania has a unique opportunity, through Act 129, to extend low-income usage reduction well beyond the existing LIURP initiatives. That opportunity should not be lost.

⁶ See generally, Colton (June 2009). Energy Efficient Utility Allowances as a Usage Reduction Tool in Pennsylvania, Pennsylvania Utility Law Project (PULP): Harrisburg (PA).