

**IN THIS ISSUE**

**The Need for Low-Income Energy Efficiency Investments can be Determined on a Geographic Basis.**

**NOTE TO READERS**

**ON-LINE DELIVERY**

This document presents the bi-monthly electronic newsletter of Fisher, Sheehan & Colton: *FSC's Law and Economics Insights*. Previous issues of the newsletter can be obtained at FSC's World Wide Web site:

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Fisher, Sheehan & Colton  
Public Finance and General Economics  
34 Warwick Road, Belmont, MA 02478  
(voice) 617-484-0597 \*\*\* (fax) 617-484-0594  
(e-mail) [roger@fsconline.com](mailto:roger@fsconline.com)

**Reasonable Ways Exist by which to Determine whether to Geo-Target Low Income Energy Efficiency Investments to Areas of Particular Need.**

In the Spring of 2022, Evergy (KS) proposed to implement a low-income energy efficiency program in Kansas, which included a set of targeted assistance to multi-family housing in geographic areas found to be in need. Next month's issue of FSC's Law & Economic Insight will examine FSC's recommended alternative mechanism for identifying geographic areas in need specifically for multi-family housing.

The discussion below, however, assesses the underlying value of considering the geo-targeting of low-income energy efficiency investments generally. The discussion begins with FSC's discussion in Kansas and then moves to its discussion of geo-targeting in Wisconsin.

**Four Factors Indicating a Need for Energy Efficiency Investments.**

In making an assessment of need based on geographies, FSC identified and applied a series of four (4) factors that reasonably indicate a greater need for low-income efficiency investments in particular geographic areas of the Evergy service territory. The analysis was based on Census data for Evergy's communities; communities are referred to as "places" in Census data.

The FSC testimony began with the communities that comprise the Evergy service territory as a

whole (i.e., no distinction was made between Evergy Metro and Evergy Central).

Having identified the communities which comprise the Evergy service territory, FSC then examined each community by the following factors:

1. Whether the percentage of population with income at or below 200% of Poverty is more than 25% higher than the average percentage for the Evergy service territory as a whole;
2. Whether the percentage of SNAP recipients in the community is more than 25% higher than the percentage in the Evergy service territory as a whole;
3. Whether the percentage of households with annual income below \$15,000 is more than 25% higher than the percentage in the Evergy service territory as a whole; and
4. Whether the percentage of housing units built before 1970 is more than 25% higher than the percentage in the Evergy service territory as a whole.

Metric 1 measures the extent of low-income households, while Metric 3 measures the prevalence of *very* low-income households. Metric 2 measures the potential presence of food insecurity, while Metric 4 measures the potential need for energy efficiency investments (and health and safety repairs).

### Applying the Four Metrics

Of the 298 communities within the Evergy service territory, 42 met the vulnerability indicator for all four indicators studied. An additional 48 of the 298 communities met the

vulnerability indicator for three of the four factors studied.<sup>1</sup> In contrast to those communities meeting either three or four indicators, there are 55 communities that meet none of the four indicators, 77 that meet only one of the four indicators, and 76 that meet only two of the four indicators. The Table below presents the distribution of the total number of vulnerability indicators met and by which indicators appear in the total.

# Indicators Met	Number of Evergy Census Tracts by Number of Vulnerability Indicators Present								Total
	<200% FPL <sup>2</sup>		With SNAP		Income <\$15K		Hsg Built Before 1970		
	No	Yes	No	Yes	No	Yes	No	Yes	
0	54	0	55	0	55	0	55	0	55
1	71	6	65	12	70	7	25	52	77
2	38	38	51	25	47	29	16	60	76
3	6	42	13	35	20	28	9	39	48
4	0	42	0	42	0	42	0	42	42
<b>Total</b>	<b>169</b>	<b>128</b>	<b>184</b>	<b>114</b>	<b>192</b>	<b>106</b>	<b>105</b>	<b>193</b>	<b>298</b>

FSC noted that communities where these vulnerability indicators exist overlap with communities having high energy burdens. FSC selected seven of communities which met all four vulnerability characteristics (and which have populations exceeding 5,000) to examine the underlying energy burdens in the Census Tracts in and immediately around those communities. An energy burden for *total* home

<sup>1</sup> Different communities would meet different combinations of the indicators of vulnerability. This reference to meeting three indicators does not mean that one was excluded one the remaining three were tested.

<sup>2</sup> One community had no population with income below 200% of Poverty.

energy is generally defined to be affordable if it does not exceed 6.0% of income, and an affordable electricity burden is frequently set at 3.0%. It is evident that electricity is significantly unaffordable in these Evergy communities that exhibit the four vulnerability factors defined above.

The communities selected include Fort Scott (Bourbon County); Arkansas City (Cowley County); Pittsburgh (Crawford County); Ottawa (Franklin County); Parsons (Labette County); Independence (Montgomery County); and Kansas City (Wyandotte County). These communities consistently have high electricity burdens for low-income households:<sup>3</sup>

- Fort Scott had three Census Tracts in and around the community (9558, 9559, 9560). The low-income electricity burdens in those Census Tracts were 10.1%, 9.9% and 11.7% respectively;
- Arkansas City had five Census Tracts in and around the community (4937, 4938, 4939, 4940, 4941). The low-income electricity burdens in these Census Tracts were 8.6%, 9.4%, 8.7%, 10.4%, and 10.0% respectively;
- Pittsburgh had seven Census Tracts in and around the community (9569, 9570, 9571, 9572, 9573, 9575, 9576). The electricity burdens for low-income households in those Census Tracts ranged from a low of 8.2% [9572], up to 9.2%, 9.3% and 9.7% [9576, 9570, 9575], up to 10.9%, 12.0% and 12.4% [9573, 9569, 9571];

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<sup>3</sup>Available at: <https://public.tableau.com/app/profile/brendan.pierpont/viz/EnergyBurdenIndicators/EnergyBurdenandRelatedIndicators>.

- Ottawa had five Census Tracts in and around the community (9541, 9542, 9543, 9544, 9545). The low-income electricity burdens for those Census Tracts ranged from a low of 9.8% (9542, 9544), to a high of 13.7% (9545), with the burdens of Tract 9541 (10.2%) and Tract 9543 (10.7%) falling in between;
- Parsons had four Census Tracts, with electricity burdens for low-income households ranging from a low of 8.2% (9504), up to 9.8% (9503), 10.0% (9502), and 10.5% (9501);
- Independence had four Census Tracts (9501, 9503, 9505, 9506), with electricity burdens for low-income households ranging from a low of 9.0% (9506) to a high of 13.0% (9505).

Finally, Kansas City (Wyandotte County) had 13 Census Tracts with high electricity burdens for low-income households. While two of these Census Tracts (405, 418) have electricity burdens for low-income households of between 8.0% and 9.0% (8.4%, 8.9%), seven Census Tracts (402, 404, 408, 409, 410, 411 and 412) have low-income electricity burdens between 12% and 14%. One more Census Tract (407) has an average electricity burden for low-income households of 18.0%.

### **An Alternative to Identifying Communities in Particular Need.**

Communities that have high energy burdens within their low-income population are also communities that have faced historic discriminatory practices in housing-related financial services. This practice, called “redlining,” is relevant to energy efficiency investment in Kansas because the lack of access

to capital not only restricts the ability of residents to improve their homes, and thus reduce their home energy bills to more affordable levels, but it also restricts the ability of residents to purchase quality homes. Those with the least ability to pay are thus forced into homes that require them to pay the highest energy bills.

FSC examined the Evergy communities of Topeka and Wichita. Topeka has three Census Tracts (Tracts 5, 6, and 11) that have an average home energy burden of 6% or higher. In these Census Tracts, 7,000 people live with an average home energy burden of 6.9%. This burden, however, is for the whole population. Low-income energy burdens are much higher. While Census Tract 6 has an average energy burden of 6.3%, it has an average low-income energy burden of 15.6%. While Census Tract 5 has an average energy burden of 7.3%, it has an average low-income energy burden of 13.6%. Census Tract 11 has an average energy burden of 7.0% and an average low-income energy burden of 13.8%.

There are distinct racial and ethnic compositions to the areas of Topeka with energy burdens above and below 6% of income. The Table below presents the data. While 8.4% of the population in low burden Census Tracts is Black, 20.9% of the population in high burden Census Tracts is Black. While 73.1% of the population in low burden Census Tracts is White, 37.2% of the population in high burden Census Tracts is White. While 12.4% of the population in low burden Census Tracts is Hispanic/Latinx, 34.7% of the population in high burden Census Tracts is Hispanic/Latinx. The disparate racial and ethnic composition between low burden and high burden Census Tracts in Topeka is evident.

	Below 6%	Above 6%
Black	8.4%	20.9%
White	73.1%	37.2%
Hispanic/Latinx	12.4%	34.7%
Other/Multiple	3.8%	6.8%
Asian/Native American	2.3%	0.4%

The overlap with historically redlined neighborhoods is considerable as well. Maps comparing the historically redlined neighborhoods in Topeka to the Census Tracts with high home energy burdens are available in FSC’s testimony to the Kansas Corporation Commission.

Wichita shows similar characteristics. Wichita has 14 Census Tracts with an average home energy burden exceeding 6% of income. These areas have a combined population of 30,000 people. The Census Tract with the lowest average energy burden amongst these 14 Census Tracts has an average energy burden of 6.1%, while the Census Tract with the highest average energy burden has an average energy burden of 8.6%.

As in Topeka, however, the low-income burdens in these neighborhoods are much higher. A comparison of the average home energy burden for the total population to the average home energy burden for the low-income population is presented in the Table above

The low-income energy burdens in these Census Tracts can be more than three times higher than the home energy burden for the total population.

For example, Census Tract 24 has an average energy burden of 7.0%, and an average low-income energy burden of 23.4%. It is not uncommon for the low-income energy burdens to be roughly 2.5 times higher than the burdens for the population as a whole (*see, e.g.*, Census Tracts 4, 6, 8, 9, 32, 65).

Census Tract	Avg Home Energy Burden	Avg Low-Income Home Energy Burden	Census Tract	Avg Home Energy Burden	Avg Low-Income Home Energy Burden
3	6.1%	12.6%	24	7.0%	23.4%
4	7.0%	17.0%	26	9.2%	17.0%
6	7.2%	17.8%	32	6.8%	17.4%
7	7.7%	15.2%	37	7.0%	14.5%
8	6.7%	17.7%	65	6.7%	16.3%
9	6.5%	16.6%	75	6.1%	13.6%
18	8.6%	18.1%	78	7.7%	18.0%

Again, as in Topeka, the racial composition of the low burden neighborhoods and the high burden neighborhoods is substantially different. While the population of the low burden neighborhoods is 8.0% Black, the population of the high burden neighborhoods is 35.0% Black. While the population of the low burden Census Tracts is 15.0% Hispanic/Latinx, the high burden Census Tracts have a Hispanic/Latinx population of twice that size (30.7%). In contrast, while the population of the low burden Census Tracts is 68.0% White, the population of the high burden Census Tracts is 25.2% White. The data is set forth in the Table below.

	Below 6%	Above 6%
Black	8.0%	35.0%
White	68.0%	25.2%
Hispanic/Latinx	15.0%	30.7%
Asian	4.7%	4.9%
Other/Multiple	3.7%	3.7%
Native American	0.6%	0.5%

Maps of the high burden Census Tracts in Wichita and the historically redlined neighborhoods of Wichita, again, are presented in FSC’s testimony to the KCC.

### ***Kansas Conclusions***

FSC drew several conclusions from the data and analysis discussed above. First, there are concentrated areas of need within the Evergy service territory. Where there are disproportionately high percentages of population with income below 200% of Poverty (more than 25% higher than the Evergy service territory), there are also disproportionately high percentages of *very* low-income households.

Second, these lower income households are important to target with energy efficiency investments because they also have housing characteristics that lend themselves to energy efficiency improvements.

Third, geographic areas of concentrated need clearly exist in the Evergy service territory. Highly vulnerable Census Tracts can be beneficially targeted with a high degree of electric investments in major energy efficiency

measures. The delivery of major measures to households in these areas would not only help reduce Evergy's system-wide energy usage, but would also help address the affordability problems (and associated payment difficulties) associated with the vulnerability indicators.

Finally, the historically redlined neighborhoods are identified not to indicate that Evergy was responsible for that discriminatory treatment. Rather, the comparisons demonstrate there is a historical reason why the homes in these neighborhoods would benefit from energy efficiency upgrades funded through Evergy's energy efficiency programs and that there is an embedded discrimination in the housing in these areas of Evergy's service territory.

If Evergy structures its low-income energy efficiency programs as though these neighborhoods are the same as other neighborhoods, the programs simply continue that embedded discrimination. For Evergy to adequately and appropriately serve these low-income neighborhoods through its low-income energy efficiency programs, and to not perpetuate the housing discrimination that has been identified, the utility needs to structure its programs to address the market barriers that are unique to the low-income households in these communities.

#### **HUD's R/ECAP Areas (Wisconsin).**

In Wisconsin, FSC focused on geographic areas designated by the U.S. Department of Housing and Urban Development (HUD) as "Racially or Ethnically Concentrated Areas of Poverty" (R/ECAP). FSC's Wisconsin discussion considered characteristics in those R/ECAP areas that would affect their ability to participate in energy efficiency or electrification initiatives in the absence of utility or state assistance.

FSC's discussion in Wisconsin focused on the City of Milwaukee.

HUD explains why it developed the R/ECAP construct:

*To assist communities in identifying racially/ethnically-concentrated areas of poverty (R/ECAPs), HUD has developed a census tract-based definition of R/ECAPs. The definition involves a racial/ethnic concentration threshold and a poverty test. The racial/ethnic concentration threshold is straightforward: R/ECAPs must have a non-white population of 50 percent or more. Regarding the poverty threshold, Wilson (1980) defines neighborhoods of extreme poverty as census tracts with 40 percent or more of individuals living at or below the poverty line. Because overall poverty levels are substantially lower in many parts of the country, HUD supplements this with an alternate criterion. Thus, a neighborhood can be a R/ECAP if it has a poverty rate that exceeds 40% or is three or more times the average tract poverty rate for the metropolitan / micropolitan area, whichever threshold is lower. Census tracts with this extreme poverty that satisfy the racial/ethnic concentration threshold are deemed R/ECAPs.*

\* \* \*

*While this definition of R/ECAP works well for tracts in CBSAs, places outside of these geographies are unlikely to have racial or ethnic concentrations as high as 50 percent. In these areas, the racial/ethnic concentration threshold is set at 20 percent.<sup>4</sup>*

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<sup>4</sup> HUD (2022). Racially or Ethnically Concentrated Areas of Poverty, available at <https://hudgis->

Wisconsin has 62 Census Tracts that are currently identified as R/ECAP Tracts. That is a substantial expansion over the past 20 years. In 2000, Wisconsin had 26 R/ECAP Census Tracts, while in 2010, Wisconsin had 50 R/ECAP Census Tracts. Of Wisconsin’s 62 “current” R/ECAP Census Tracts, three (3) are in Racine County, one (1) is in Kenosha County, and one (1) is in Menominee County. The remaining 57 are in Milwaukee County. The discussion below focuses on the 57 (of 62 total) R/ECAP Census Tracts in Milwaukee County. The data on energy burdens for those Census Tracts is set forth in the Table below.

For residential customers as a whole, 26 Census Tracts have home energy burdens above 6% of income. The lowest burden amongst the 57 Census Tracts is 3.1% of income, while the highest is 9.6% (with the median being 6.0%). Low-income energy burdens in the Milwaukee County R/ECAP Census Tracts are considerably higher. The lowest low-income burden amongst the 57 Census Tracts is 8.3%, while the highest is 19.3% (with the median being 12.8%). The distribution of home energy burdens for both residential customers as a whole, and for low-income residential customers in particular, is set forth in the Table.<sup>5</sup>

Residential Energy Burdens/Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts			
	Residential	Low-Income	
Over 6%/12%	26	39	
Minimum	3.1%	8.3%	
Maximum	9.6%	19.3%	
Median	6.0%	12.8%	
Distribution of Residential Energy Burdens and Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts			
Distribution of Residential Burdens		Distribution of Low-Income Burdens	
<3%	0	<9%	4
3% - <6%	28	9% - <12%	14
6% - <7%	14	12%-<14%	19
7% - <8%	10	14%-<16%	11
8% - <9%	3	16%-<18%	7
9% or more	2	18% or more	2
Sum	57	Sum	57

The extent to which the Milwaukee energy burdens are high can be seen by comparing the Milwaukee R/ECAP Census Tracts to the State of Wisconsin as a whole. In Wisconsin, the Census Tract with the lowest energy burden has a burden of 1.0%, while the Census Tract with the highest burden statewide is the Milwaukee R/ECAP Census Tract with a burden of 9.6%. The weighted average home energy burden statewide is 2.9% of income, less than half of the median residential burden in the Milwaukee County R/ECAP Census Tracts (of 6.0%) and less than one-quarter of the median low-income burden in the Milwaukee County R/ECAP Census Tracts (12.8%).

Milwaukee County’s Census Tracts that have home energy burdens at or above 6% of income have a distinctly different racial and ethnic make-up than the Census Tracts with burdens below 6% of income.

The 57 R/ECAP Census Tracts in Milwaukee County have very high home energy burdens.

- The population of Milwaukee County Census Tracts with burdens less than

[hud.opendata.arcgis.com/datasets/HUD::racially-or-ethnically-concentrated-areas-of-poverty-ecaps/about](http://hud.opendata.arcgis.com/datasets/HUD::racially-or-ethnically-concentrated-areas-of-poverty-ecaps/about).

<sup>5</sup> Note there is a difference in data in the Table above. There are 26 Census Tracts with burdens above 6% of income. There are 29 Census Tracts with burdens *at or* above 6% of income.

6% is comprised of 22.3% Blacks, while the Census Tracts with burdens at or above 6% is 67.4% Black.

- The population of Milwaukee County Census Tracts with burdens less than 6% is comprised of 55.7% White, while the Census Tracts with burdens at or above 6% is 8.7% White.
- The population of Milwaukee County Census Tracts with burdens less than 6% is comprised of 14.4% Hispanic/Latinx, while the Census Tracts with burdens at or above 6% are 18.4% Hispanic/Latinx.

It seems clear from the Milwaukee data that identification of a Census Tract as a R/ECAP Census Tract is a good metric to use in engaging in the geo-targeting of a utility's low-income energy efficiency investments. Not only are R/ECAP Census Tracts clearly in financial stress, they also have high energy burdens. By design, the R/ECAP Census Tracts also identify geographic areas where racial disparities clearly exist.

### **Summary**

For a complete copy of the FSC's testimony examining Evergy's (KS) proposed low-income energy efficiency programs, or presenting FSC's Wisconsin analysis (and geo-targeting recommendations), please write:

roger [at] fsconline.com

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.