THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.	)	Docket No. 22-EKME-254-TAR

DIRECT TESTIMONY
OF
ROGER COLTON

ON BEHALF OF:

Sierra Club and Kansas Appleseed Center for Law and Justice, Inc.

June 17, 2022

Table of Contents

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Roger Colton. My business address is 34 Warwick Road, Belmont, MA 02478.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on utility rates, and on customer service issues, involving water/sewer, natural gas and electric utilities.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. After receiving my undergraduate degree in 1975 from Iowa State University, I obtained further training in both law and economics. I received my law degree in 1981 from the University of Florida and I received my Master's Degree in Regulatory Economics from the MacGregor School, Antioch University, in 1993.

Q. ON WHOSE BEHALF IS THIS TESTIMONY BEING OFFERED?

A. I am testifying on behalf of Sierra Club and the Kansas Appleseed Center for Law and Justice, Inc. ("Kansas Appleseed").

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Maryland, Pennsylvania, Michigan, Ohio, Tennessee, Wisconsin and Washington. My clients include state agencies (*e.g.*, Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Illinois Ohio Office of the Consumers' Counsel), federal agencies (*e.g.*, the U.S. Department of Health and Human Services), community-based organizations (*e.g.*, New Hampshire Legal Assistance, Natural Resources Defense Council, Appalachian Voices), and private utilities (*e.g.*, Toledo Water, Entergy Services, Eversource). In addition to state- and utility-specific work, I engage in national work throughout the United States. For example, in 2011, I worked with the U.S. Department of Health and Human Services, the agency overseeing the federal Low Income Home Energy Assistance Program ("LIHEAP"), to create the Home Energy Insecurity Scale and to advance its utilization as an outcomes measurement tool for LIHEAP and other low-income utility bill affordability programs. In 2016, I was part of a team that engaged in a study for the Water Research Foundation on how to reach "hard to reach" customers. In 2020, I completed a study of the affordability of water service in twelve United States cities for the London-based newspaper The Guardian. A summary description of my professional background is provided in Appendix A.

Q. HAVE YOU TESTIFIED BEFORE THIS COMMISSION OR AS AN EXPERT IN ANY OTHER PROCEEDING?

A. I have not previously testified before the Kansas Corporation Commission ("Commission"). Over the past 35 years, however, I have testified in more than 300 regulatory proceedings in 43 states and four Canadian provinces. A summary of the jurisdictions in which I have testified is included in Appendix A.

Q. PLEASE EXPLAIN YOUR PREVIOUS WORK ON UTILITY INITIATIVES ADDRESSING INABILITY-TO-PAY.

A. Over the course of the past 35 years, I have frequently been involved with the planning, implementation, and evaluation of utility programs responding to the inability-to-pay of low-income households. At present, I am working with the New Hampshire Department of Energy in a review of the design and operation of that state's Electric Assistance Program, and with EarthJustice to review the proposed low-income programs of Puget Sound Energy (Washington State). In 2021, I designed a water affordability program for the City of Toledo (Ohio). In 2019, I worked for the Pennsylvania Office of Consumer Advocate in the Pennsylvania PUC's generic proceeding reviewing bill affordability programs in that state. In the past, I worked for the New Jersey Division of Ratepayer Advocate in that state's design of its Universal Service Fund, and for the staff of the Ontario Energy Board in that province's development of its Ontario Electricity Support Program. I have been retained by the Sierra Club to assist in the development of low-income affordability programs in Virginia pursuant to the Virginia Clean Economy Act (S.B. 851; H.B.

1526), which went into effect on July 1, 2020. I have been retained by the Maryland Office of Peoples Counsel to assist in the development of low-income affordability programs in Maryland pursuant to House Bill 606, An Act Relating to Electricity and Gas Limited-Income Mechanisms and Assistance.

Q. HAVE YOU PREVIOUSLY HAD OCCASION TO TESTIFY REGARDING UTILITY ENERGY EFFICIENCY PROGRAMS?

A. Yes, in recent years, I have testified in a variety of jurisdictions with respect to the design, funding and implementation of utility-funded energy efficiency programs. I testified on behalf of Action Centre for Tenants Ontario before the Ontario Energy Board regarding the energy efficiency programs of Ontario Hydro. I have testified before the New Hampshire PUC on at least three occasions regarding the "core" low-income energy efficiency programs funded through that state's System Benefits Charge. I have testified on multiple occasions before the Michigan Public Service Commission regarding both the natural gas and electric Energy Waste Reduction plans of DTE Energy and Consumers Energy, as well as the Integrated Resource Plan for Indiana and Michigan Power Company. I have testified on behalf of the Pennsylvania Office of Consumer Advocate regarding the energy efficiency plans of both gas and electric utilities. I testified before the North Carolina PUC regarding Duke Energy's energy efficiency programming. Aside from my regulatory work, in previous years, I sat on the Board of Directors of the Vermont Energy Investment Corporation and of Affordable Comfort, Inc., which at the time was the nation's largest conference on residential energy efficiency.

Q. HAVE YOU PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility issues. My most recent publication is a chapter in the book "Energy Justice: US and International Perspectives," published by Edward Elgar Publishing in London. My chapter was titled "The equities of efficiency: distributing usage reduction dollars." It offers an objective definition of "equity" based on legal and economic doctrine. A summary of my publications is included in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my Direct Testimony in this proceeding is as follows:

- First, I examine the reasons why there should be robust energy efficiency programs directed toward low-income households, with the programs funded through ratepayer dollars.

- Second, I identify the unique benefits provided to Evergy ratepayers, as well as to the utility, from appropriately designed, targeted, and funded low-income energy efficiency programs. These benefits far exceed the traditional benefits recognized as accruing from avoided energy and capacity costs.

- Third, I review data that identifies areas of particular need, and particular vulnerability, throughout the Evergy service territory. These areas represent geographic areas where Evergy could beneficially direct deep low-income energy savings to the extended mutual benefit of the residents of the neighborhoods and of the Company.

- Fourth, I evaluate the proposed low-income components of the Evergy KEEIA plan in light of the lessons supported and documented in Part 1 through Part 3 of this testimony. I find that while Evergy should be commended for much of what it proposes, its low-income KEEIA program components can be substantially strengthened.

- Fifth, I propose three "pilot" programs that Evergy should pursue through the Pilot Incubator Program described in its KEEIA plan. I recommend these three pilot programs so that Evergy can fund these three pilots independent of, and supplemental to, the Pilot Incubator Program it has proposed in its KEEIA plan.

- Finally, I examine Evergy' proposed cost recovery for its KEEIA programs. My testimony on cost recovery is limited to the key performance levels Evergy should attain regarding low-income energy efficiency investments in order to earn a performance bonus.

Summary of Recommendations.

Q. PLEASE SUMMARIZE THE RECOMMENDATIONS YOU MAKE BASED ON THE DATA AND DISCUSSION PRESENTED THROUGHOUT YOUR TESTIMONY BELOW.

A. I make the following recommendations based on my testimony:

- I recommend that Evergy's Hard-to-Reach Homes program be modified such that low-income spending is sufficient to generate MWh of energy savings that are proportionate to the percentage of low-income population in Evergy's entire service territory. As 30% of the total population in Evergy's service territory has income at or below 200% of Poverty Level, Evergy's low-income investments should be programmed such that 30% of the MWh savings are generated from low-income households.

- In making this recommendation, I understand that this objective may not be achievable in the first year of the KEEIA plan implementation. Accordingly, I recommend that Evergy be provided the leeway to ramp-up and achieve this objective by Year 3 of the four-year plan implementation.

- I recommend that Evergy provide its low-income efficiency contractors with the discretion to use a reasonable amount of money per participating home to engage in the health and safety remediation needed to allow a home to be treated with energy efficiency measures. I recommend an allowed health and safety allowance not to exceed $700, with a tracking of such expenditures and their impact on total program expenditures to be considered at Evergy's next KEEIA filing. These health and safety expenditures should supplement and not supplant funds otherwise made available for low-income energy efficiency investments.

- On pages 74 through 75 of my testimony, I recommend that Evergy commit to five sets of principles with respect to transparency and meaningful public involvement. Committing to each of the described principles incorporates equity considerations throughout the planning, design, and implementation of its income qualified programs. Moreover, direct input from the affected communities that directly benefit from energy efficiency programs maximizes the benefits on these communities.

- I recommend that Evergy commit to the pursuit of three different pilot programs:

  1. First, based on my discussion and data presented regarding the relationship of payment-troubled status and low-income status, the first pilot involves targeting low-income energy efficiency investments specifically and explicitly toward low-income customers who are facing payment-troubles.

  2. Second, based on my discussion and data presented regarding the relationship of the ability to identify specific geographic areas of need—which are areas with high concentrations of low-income customers who cannot pursue energy efficiency investments on their own without external assistance—I recommend adopting a community targeting initiative. This initiative involves special efforts to invest in both low-income households and in low-income neighborhoods which have demonstrated vulnerability. I identified and discussed two ways to determine these neighborhoods with demonstrated vulnerabilities.

  3. Third, based on my discussion and data presented regarding the market barriers that impede the ability of low-income customers to invest in energy efficiency measures on their own, even if cost-effective in the short- or medium-term, as well as the relationship between residency in multi-family buildings and the presence of those impediments, I recommend a pilot through which Every can improve its targeting of low-income efficiency to multi-family buildings. As part of this multi-family pilot, I recommend further that targeting of low-income customers in multi-family buildings be based on the intensity of usage on a square footage basis rather than on total consumption.

- On pages 94 through 96 of my testimony, I recommend that Evergy refines its definition of an "income-qualified multi-family building." I have no objection to the five criteria Evergy proposes to designate a building as an income-qualified multi-family building, however, I make modest recommendations for Criteria #1, #2, and #3, and propose a more substantive recommendation for Criterion #2.

- Evergy's recommendation that there be no separate metric for its low-income program should not be approved. The low-income programming of Evergy should be subject to separate performance reporting. Moreover, the specific "performance metric" that Evergy has proposed should be replaced with the set of proposed outcome measurements.

  On pages 103 through 104 of my testimony, I recommend a series of outcome measurements for use in ongoing evaluations and assessments of the performance of Evergy's low-income programs. Measuring outcomes is the most credible performance measurement when evaluating the effectiveness of a specific program as they measure for the accomplishment of a program objective attributable to the program. The performance metrics I present to measure the outcomes of Evergy's low-income programs will strengthen the Company's discussion on what is required to trigger the Earnings Opportunities for its low-income programs.

- Finally, in addition to the Key Performance Indicators measuring outcomes, I recommend that Evergy be directed to track and report the following data:

  1. The dollars of bills for current service by month.
  2. The dollars of actual receipts by month.
  3. The number of accounts receiving a bill by month.
  4. The number of accounts making a payment by month.
  5. The number of disconnect notices issued by month.
  6. The number of accounts in arrears;
  7. The dollars of arrears by month;
  8. The average arrears of accounts with arrears by month;
  9. Conversely, the number of accounts with a $0 balance by month;
  10. The number of Final Bills by month;
  11. Pre- and post-treatment energy burdens.

PART 1.The Need for a Ratepayer-Funded Low-Income Program.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain why there is a need for a robust ratepayer-funded low-income energy efficiency program in the Evergy service territory in Kansas. I examine the lack of low-income investment in energy efficiency measures in the absence of external assistance and explain why that lack of investment will occur.

Q. WHY SHOULD THERE BE A PARTICULAR FOCUS ON RATEPAYER-FUNDED LOW-INCOME ENERGY EFFICIENCY INVESTMENTS UNDER THE KANSAS ENERGY EFFICIENCY INVESTMENT ACT?

A. The Kansas Energy Efficiency Investment Act ("KEEIA") provides that "[i]t is the goal of the state to promote the implementation of cost-effective demand-side programs in Kansas. It shall be the policy of the state to value demand-side program investments equal to traditional investments in supply and delivery infrastructure as much as is practicable . . ." (K.S.A. § 66-1283(b)).

There is a need for robust rate-payer funded energy efficiency programs directed toward low-income customers because, in the absence of such programs, low-income customers will be excluded from deriving benefits from energy efficiency investments provided through KEEIA programs. In addition, the State will be deprived of the benefits derived from the efficient use of energy by low-income customers. Finally, the utility (and its non-low-income customers) will be deprived of the financial benefits arising from reducing the inefficient use of energy by low-income customers and the corresponding improvement in the affordability of low-income Evergy bills.

A. <u>Low-Income Investments in Energy Efficiency without External Assistance.</u>

Q. WOULD LOW-INCOME EVERGY CUSTOMERS BE EXCLUDED FROM INVESTING IN ENERGY EFFICIENCY IN THE ABSENCE OF A ROBUST EVERGY LOW-INCOME PROGRAM?

A. Yes. In my discussion below, I explain why low-income customers have a need for external assistance in making energy efficiency investments. Primarily, low-income households cannot generate substantial energy savings through changes in day-to-day behavior or decision-making. What is necessary, instead, is a financial investment in improving the housing infrastructure and appliances used by low-income households. Whether or not "energy education" is sufficient to generate market-driven efficiency investments by residential customers generally, energy education is <u>*not*</u> sufficient to generate energy efficiency investments by low-income households. Whether or not providing "rebates" and "incentives" are sufficient to generate market-driven efficiency investments by residential customers generally, providing rebates and incentives are <u>*not*</u> sufficient to generate energy efficiency investments by low-income households.[1]

[1] Throughout my testimony I will use the terms "low-income" and "income-qualified" interchangeably. A "low-income program" and an "income-qualified program," therefore, are intended to reference the same types of programs.

Due to market barriers, that present particular investment impediments, low-income households are prevented from investing in energy efficiency. These market barriers impact low-income households differently, and more extensively, than residential households generally. These market barriers impede the availability of energy efficiency to low-income customers, even if such efficiency would be an effective, and cost-effective mechanism to use in controlling home energy costs. These market barriers prevent low-income customers from realizing the bill reductions generated by energy efficiency without outside assistance.

Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU DISCUSS "MARKET BARRIERS" BELOW.

A. I will engage in an extensive discussion of "market barriers" in my testimony below. For these purposes, I define a "market barrier" as a market condition which stands as an obstacle to the implementation of cost-effective energy efficiency investments. A commonly recognized "market barrier," for example, is inadequate knowledge. Consumers may not make efficiency investments because they do not understand the economics of the investment return. In particular, I will further discuss "low-income market barriers." These are market barriers that either uniquely, or disproportionately, impede low-income households from investing in cost-effective energy efficiency. One such low-income market barrier that I will discuss below is the lack of investment capital for low-income customers. As I will discuss, it makes no difference if an energy efficiency investment is "cost-effective" is the household has insufficient money to make the investment in the first instance.

Q. IN DESIGNING ITS INCOME-QUALIFIED PROGRAM, DOES EVERGY TAKE INTO ACCOUNT MARKET BARRIERS WHICH IMPEDE LOW-INCOME INVESTMENT IN ENERGY EFFICIENCY IN PARTICULAR?

A. No. Evergy was explicitly asked to provide a copy of its most recent report prepared since January 2016 (*i.e.*, the last six years) "studying the market barriers that prevent or impede low-income residential investments in energy efficiency measures." Evergy responded that "there have been no studies that would specifically address customer 'market barriers' in KS. The previous MO appliance saturation study did include KS territories, but the survey wasn't designed to address the 'market barriers.'" (SC-1-22).[2]

Moreover, Evergy does not consider market potential for energy efficiency investments in the low-income population in deciding program design of, and the targeting of funding for, its low-income programs. When asked to provide "all written documents identifying, assessing or discussing the proposed spending on all income-qualified measures as a percentage of the spending needed to exhaust the efficiency potential for all income-qualified customers," Evergy responded that "[s]ince a market potential study by segment has not been conducted for KS, there is no analysis of the above question." (SC-1-31).

[2] All citations to Evergy's Responses to Information Requests are attached to this testimony in Appendix C.

This lack of any analysis of the barriers preventing, or impeding, low-income energy efficiency investments is surprising given the language of the KEEIA statute. KEEIA provides that, in reviewing a proposed utility program, the Commission shall "ensure that the financial incentives for an electric public utility are aligned with helping such utility's customers use energy more efficiently and in a manner that sustains or enhances such customers' incentives to use energy more efficiently." (K.S.A. § 66-1283(e)(2)). If the low-income incentives provided through the Evergy program do not consider those barriers that prevent or impede customer investment in energy efficiency, it would not be possible to "ensure" that the low-income incentives are "aligned" with helping low-income customers use energy more efficiently.

Q. IS THERE EMPIRICAL DATA SHOWING THE LACK OF INVESTMENT IN ENERGY EFFICIENCY MEASURES BY LOW-INCOME HOUSEHOLDS USING THEIR OWN FUNDS?

A. Yes. The U.S. Department of Energy's Energy Information Administration ("DOE/EIA") publishes such data in its periodic Residential Energy Consumption Survey ("RECS"). Using the 2015 RECS data, I have examined the extent to which low-income households have engaged in specific investments that would likely reduce energy consumption. I examined electric measures that are commonly viewed as typical usage reduction investments: (1) Energy Star refrigerators; (2) Energy Star dishwashers (of households using dishwashers); (3) Energy Star freezers (of those households using freezers); and (4) programmable air conditioner thermostats (of those households with central air conditioning). I also consider one "negative" efficiency factor, whether the home was "drafty" most or all of the time.

I examined data for the West North Central Census Division, which includes the State of Kansas. I examined the population at different levels of income. The ranges reported by DOE include: (1) below $20,000; (2) $20,000 – $39,999; (3) $40,000 – $59,999; and increasing upwards. For purposes here, I define "low-income" to be below $20,000.

Q. WHAT DID YOU FIND?

A. Low-income households have implemented far fewer usage reduction measures than have non-low-income households. The data is set forth in Table 1. The data shows that while 20% of all homes have income below $20,000, 38% of the homes that are "always" drafty, and 29% of the homes that are drafty "most of the time," have income in that range. In contrast, while 19% of the households have income at $100,000 or more, only 4% of the households reporting homes that are "always" drafty, and only 11% of those reporting homes that are drafty "most of the time" have income in those ranges.

Table 1. Percentage of Households Reporting How Frequently Home is Drafty By Income (West North Central) (2015 RECS)

Income	Always	Most of the Time	Some Times	Never	Grand Total
Below $20,000	38%	29%	19%	18%	20%
$20,000 - $39,999	28%	21%	18%	24%	22%
$40,000 - $59,999	19%	25%	19%	16%	18%
$60,000 - $79,999	4%	7%	11%	14%	12%
$80,000 - $99,999	8%	7%	8%	8%	8%
$100,000 - $119,999	0%	9%	7%	6%	6%
$120,000 - $139,999	4%	0%	6%	4%	4%
$140,000 or more	0%	2%	10%	11%	9%
Grand Total	100%	100%	100%	100%	100%

Similar results are found with respect to insulation as shown in Table 2. All of the homes which the RECS found to be uninsulated are inhabited by households with income less than $20,000. While 20% of all homes are inhabited by households with income less than $20,000, 28% of the poorly insulated homes are inhabited by households with income that low. In contrast, while 13% of all homes have households with income $120,000 or more, only 6% of the homes that are poorly insulated have incomes that high.

Table 2. Percentage of Households Reporting How Well Insulated Home Is By Income (West North Central) (2015 RECS)					
Income	Well Insulated	Adequately Insulated	Poorly Insulated	Not Insulated	Total
Below $20,000	16%	20%	28%	100%	20%
$20,000 - $39,999	25%	20%	20%	0%	22%
$40,000 - $59,999	14%	19%	22%	0%	18%
$60,000 - $79,999	13%	13%	8%	0%	12%
$80,000 - $99,999	10%	8%	5%	0%	8%
$100,000 - $119,999	8%	4%	10%	0%	6%
$120,000 - $139,999	4%	5%	3%	0%	4%
$140,000 or more	10%	11%	3%	0%	9%
Grand Total	100%	100%	100%	100%	100%

Q. WERE THE RESULTS FOR ELECTRIC APPLIANCE MEASURES SUBSTANTIALLY DIFFERENT?

A. No. Data regarding the penetration of Energy Star refrigerators, freezers, and dishwashers, is presented in Table 3. More low-income households report not having Energy Star appliances than report having Energy Star appliances. In fact, while 20% of the total population has income less than $20,000, only 4% of the population with Energy Star freezers, and only 6% of the population with Energy Star dishwashers, have income that low. The percentage of households with Energy Star refrigerators having low-income is only 17%. In contrast, for each appliance, and at each annual income range exceeding $40,000, the percentage having an Energy Star appliance is greater than the percentage of households in that income range (*e.g.*, 25% of households with Energy Star refrigerators have income at or above $100,000, while 19% of all households have income in that range).

Table 3. Percentage of Households Reporting Energy Star Appliances By Income (West North Central) (2015 RECS)										
	Refrigerators[3]			Freezers			Dishwashers			
Income	No	Yes	N/A[4]	No	Yes	N/A	No	Yes	N/A	Total
Below $20,000	19%	17%	0%	9%	4%	29%	11%	6%	44%	20%
$20,000 - $39,999	27%	15%	0%	19%	10%	25%	25%	12%	25%	22%
$40,000 - $59,999	19%	19%	0%	20%	19%	17%	19%	18%	17%	18%
$60,000 - $79,999	12%	14%	100%	11%	25%	9%	14%	15%	8%	12%
$80,000 - $99,999	6%	11%	0%	10%	12%	7%	6%	14%	4%	8%
$100,000 - $119,999	7%	7%	0%	11%	8%	4%	8%	10%	1%	6%
$120,000 - $139,999	5%	5%	0%	5%	11%	3%	5%	8%	1%	4%
$140,000 or more	6%	13%	0%	15%	11%	6%	13%	16%	0%	9%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Based on the data, I conclude that low-income households will be excluded from an opportunity to invest in energy efficiency measures in the absence of external assistance. Programs such as Evergy KEEIA programs need to equitably serve low-income customers to generate bill savings and energy reductions, along with the corresponding improvement in bill collectability. Equitably serving low-income customers is also necessary to generate the climate benefits and system cost reductions flowing from the associated usage reductions. In the next section, I explain ***why*** this exclusion occurs and why external assistance, such as utility-sponsored low-income programs, are needed.

[3] Some households may have refused to respond or may have reported that they "do not know" whether their appliance is Energy Star or not.

[4] Columns marked "N/A" ("not applicable") are those columns where the household does not report having such an appliance.

Q. WHY IS IT IMPORTANT TO UNDERSTAND WHAT CAUSES EXCLUSION OF LOW-INCOME CUSTOMERS FROM ENERGY EFFICIENCY PROGRAMS?

A. In my testimony, I consider three types of impediments that prevent low-income investment in energy efficiency: (1) the physical characteristics of the housing units occupied by low-income customers; (2) the housing-related characteristics of the people who live in those units; and (3) the cost characteristics of housing in the Evergy Kansas service territory.[5] Through a review of these various housing characteristics in the Evergy service territory, it is possible to gain insight into the need for low-income energy efficiency investments, and into the capacity of low-income residents to generate those investments without outside assistance. A review of the impediments to low-income investments also provides insights into what Evergy programs will be effective, or ineffective, in overcoming those impediments.

B. Housing-Related Characteristics of Low-Income Households.

Q. WHAT HOUSING CHARACTERISTICS OF EVERGY LOW-INCOME CUSTOMERS ARE RELEVANT TO A CONSIDERATION OF THE EVERGY KEEIA PROGRAM PROPOSAL?

A. The housing-related characteristics of low-income households in the Evergy service territory tend to make energy efficiency investments unavailable to low-income

[5] Throughout my testimony below, unless explicitly noted or unless the context clearly indicates to the contrary, any reference to "Evergy" is intended to be a reference to the set of Kansas communities that Evergy has listed in its tariffs as comprising its service territory. Moreover, I intend any reference to "Evergy" to be a reference to Evergy Kansas Metro, Inc. and Evergy Kansas Central, Inc., unless other explicitly noted otherwise or the context clearly indicates to the contrary. The Evergy KEEIA Application indicates that its Application refers to Evergy Kansas South and Evergy Kansas Central collectively as Evergy Kansas Central.

households without outside assistance. Thus, a review of those characteristics is relevant to consider for Evergy's KEEIA proposal. Low-income households are systematically excluded from being able to access energy efficiency as a mechanism to control home energy bills because of market barriers that are unique to low-income households. Two illustrative "market barriers" related to the housing-related characteristics of low-income households in the Evergy service territory are (1) the tenure of households; and (2) the mobility of the households.

Q. PLEASE EXPLAIN THE IMPACT OF TENURE ON THE ACCESSIBILITY OF ENERGY EFFICIENCY FOR THE POOR.

A. Low-income households in the Evergy service territory tend to live in rental dwellings. The Evergy service territory had 346,508 households who were homeowners in 2019, of which roughly 12,263 (3.5%) had income at or below 100% of the Federal Poverty Level. Likewise, the Evergy service territory had 130,069 renters in 2019, of which 26,485 (20.4%) had income at or below 100% of the Federal Poverty Level. Looked at conversely, of the total 38,748 families with income below the Federal Poverty Level in 2019, 26,485 (68%) were renters.[6]

This finding has two significant impacts on whether energy efficiency is accessible to low-income households. First, tenants have little or no incentive to improve their landlord's property as tenants receive little, if any, of the increased value of the property. Second, tenants do not generally have the authority to make decisions over improving

[6] Table B17019, American Community Survey, 5-year data, 2019.

major housing systems; whether it be a heating/cooling system or a hot water system. Indeed, even major appliances such as refrigerators are often owned and controlled by the property owner rather than by the tenant.

The relationship between tenure status and income for households is important to understand. The “tenure” of households considers whether households own or rent their homes. Low-income renters run into the problem of “split incentives.” The term “split incentives” refers to the situation where the cost of installing measures is borne by the owner of a housing unit while the benefit of reduced consumption—and thus reduced bills—is directed toward the resident (*i.e.*, the tenant). Since the costs and benefits are borne by different stakeholders, no investment often occurs.

The problems caused by renter status, however, go well beyond this economic problem. There is a legal problem as well. When a person is a tenant, the person does not have the “dominion interest” over the major systems in a home that would generate substantial energy efficiency investment and bill reductions. The “dominion interest” refers to the authority to make decisions. Even if the tenant had the desire to make energy efficiency investments, and the financial wherewithal to fund such investments, as a non-owner of the home, the tenant would not have the authorization to make such changes to the major systems and appliances.

There is no question that, to the extent that renter status presents a market barrier to the installation of energy efficiency measures, those market barriers disproportionately impede the installation of energy efficiency measures for low-income households in the Evergy service territory. Therefore, low-income households have less access to energy efficiency measures than homeowners and are often excluded from participating in this bill reduction technique.

Q. PLEASE EXPLAIN THE IMPACT OF MOBILITY ON THE ACCESSIBILITY OF ENERGY EFFICIENCY FOR THE POOR.

A. In addition to tenure, a second housing-related attribute of low-income tenants that impedes their ability to invest in energy efficiency as a mechanism to reduce home energy consumption is their tendency to be more mobile. Census data clearly demonstrates that, compared to the proportion of the total population that changes residences each year, nearly twice as many low-income households move. As a result, even in instances where a tenant may have the authority and financial ability to invest in an energy efficiency measure, no investment is made as the payback period required to justify such an investment would not match the household's tenure. A low-income household, in other words, will not invest in a measure with a two-year payback if that household intends to move to a different dwelling in 12 months. A low-income household will not invest in a measure if that household does not anticipate remaining in the home for the duration of the payback period.

I examined the median "year household moved in" for homeowners and renters throughout the Evergy service territory. I find that there is virtually no overlap between homeowners and renters in the median year in which the household moved into their current premises. Of the 235 communities for which data is reported—some unincorporated communities Evergy lists as serving are too small for the Census to report data on this metric—only four was the median move-in year more recent for owners than for renters. Indeed, in 205 of the of the 235 communities, the median move-in year for renters was 2013 or later, while the median move-in year for homeowners was earlier in nearly all the same communities. For homeowners, the median move-in date was between 1998 and 2010.[7]

The mobility of households in Evergy's service territory can also be measured by the extent to which they lived in their same home at the same time the previous year (*i.e.*, 12 months ago). Table 4 indicates that mobility is much more prevalent in the low-income population than it is within the non-low-income population. In 2019, while 25% of all persons with household income less than $10,000 had moved within the last year, and 20% of all persons with household income between $10,000 and $35,000 had done so, only 12% of all households with income greater than $75,000 had moved from their residence within the past year.[8]

[7] Table B25039, American Community Survey, 5-year data, 2019.
[8] Table B07010, American Community Survey, 5-year data, 2019.

Table 4. Lived in Same House One-Year Ago (by income)
(Evergy Kansas service territory)

	Percent of Population
Total: With income: $1 to $9,999 or loss	75%
Total: With income: $10,000 to $14,999	79%
Total: With income: $15,000 to $24,999	80%
Total: With income: $25,000 to $34,999	81%
Total: With income: $35,000 to $49,999	83%
Total: With income: $50,000 to $64,999	86%
Total: With income: $65,000 to $74,999	86%
Total: With income: $75,000 or more	88%

As can be seen, low-income households are twice as likely to move in a given year than higher income households. This data can be used as a surrogate for households that do not have a sufficient length of residence to justify energy efficiency investments. Few energy efficiency investments provide a one-year payback. In addition to excluding many low-income households completely from the efficiency market, restricting investments exclusively to measures that would generate a one-year payback would result in substantial "cream-skimming" of usage reduction, with the bulk of cost-effective usage reduction missed. Rate-payer funded energy efficiency programs address these market barriers and allow low-income households to access deeper energy efficiency measures and realize greater bill reductions.

C. Financial Characteristics of Low-Income Housing.

Q. WHY IS AN ASSESSMENT OF THE FINANCIAL CHARACTERISTICS OF HOUSING IN THE EVERGY SERVICE TERRITORY NECESSARY TO ASSESS THE NEED FOR LOW-INCOME EFFICIENCY INVESTMENTS?

A. As home energy prices increase as a percentage of income, low-income households have fewer available discretionary resources to invest in measures that could reduce their household energy expenditures. The discussion below examines the stress on household income by focusing on total shelter costs. Rising home energy prices are a major factor in driving overall shelter costs upwards in the Evergy service territory and creates a barrier to the implementation of energy efficiency measures as a strategy to control those costs. This impact is a particular problem for the lowest income households.

One impact of the high home energy bills facing low-income households in the Evergy service territory is the stress that such bills place on household budgets. One common principle in reviewing basic household budgets is that total shelter costs should represent no more than 30% of a household's income. A household devoting more than 30% of income toward shelter costs is considered to be over-extended. The affordability of housing under federal programs such as the Low-Income Housing Tax Credit and Home Investment Partnership Program ("HOME") programs, for example, is determined by reference to the 30% shelter burden figure.[9] In addition,

[9] "Shelter costs" include rent or mortgage payments plus all utilities (except telephones). Internet service is not considered to be a "utility." See generally, Schwartz and Wilson (2008). "Who Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey," U.S. Census Bureau: Washington D.C.,

programs such as the federal Section 8 subsidized housing program administered by the Department of Housing and Urban Development (HUD), as well as local public housing (generally administered by local housing authorities), are governed by the principle that total shelter costs should not exceed 30% of income. In assessing shelter burdens under the HUD's Comprehensive Housing Affordability Strategy planning process, "excess" shelter burdens are also defined as those over 30% of income.

The U.S. Census Bureau reports shelter burdens, disaggregated by rental burdens and homeowner burdens. In the Evergy service territory, more than 78% of all ***renters*** with income less than $20,000 a year have rent burdens exceeding 30% of income. Indeed, 58% of renters with income less than $20,000 have rent burdens exceeding 40% of income. By the time annual incomes increase to $20,000 – $35,000, rent burdens drop dramatically (to 36% of renters with rent burdens exceeding 40%), even though they remain high.[10]

Low-income ***homeowners*** served by Evergy are somewhat, but not much, better off. In the Evergy service territory, 66% of homeowners with income less than $10,000 have a shelter burden of 30% or more, while 44% of homeowners with income between $10,000 and $20,000 do. Similar to rental burdens, which sharply decrease when income exceeds $20,000, homeowner burdens do as well. In the Evergy service

available at https://center4affordablehousing.org/topics/who-can-afford-to-live-in-a-home/ (last accessed June 3, 20220.

[10] Table B25074, American Community Survey, 5-year data, 2019.

territory, 45% of homeowners with income between $20,000 and $35,000 have shelter burdens exceeding 35% of income, while 26% have homeowner cost burdens exceeding 40% of income.[11] To the extent that shelter costs increase faster than income does, this situation will continue to get worse.

Q. HOW DO THESE TOTAL SHELTER BURDENS RELATE TO HOME ENERGY EFFICIENCY?

A. High shelter burdens relate to energy efficiency in two ways. First, the high shelter costs, themselves, present an impediment to low-income households being able to invest in energy efficiency measures. If the household struggles to meet its day-to-day bills, it does not have the discretionary income to invest in energy savings measures; even if those measures are "cost-effective" over a reasonable period of time. In addition, as home energy takes up an increasing proportion of total shelter costs, there is less money "left" to pay for the housing component of total shelter costs. As a result, households in the Evergy service territory are either forced into increasingly lower-priced (and presumptively lower quality) housing, or those households face ongoing bill payment problems attributable to the mismatch between household resources and household expenses. In either case, the very housing cost characteristics that cause the need to improve energy efficiency to reduce bills is also the characteristic that makes it less likely that such investments in energy efficiency can occur. This impediment to the ability of low-income households to invest in

[11] Table B25095, American Community Survey, 5-year data, 2019.

energy efficiency should be of concern to energy stakeholders because it is the energy bills, themselves, that are contributing to the budget squeeze imposed by shelter costs.

D. <u>Financial Characteristics of Evergy's Low-Income Households.</u>

Q. DOES A HOUSEHOLD'S LOW-INCOME STATUS IMPEDE THEIR ABILITY TO INVEST IN ENERGY EFFICIENCY?

A. Yes. If a household lacks the funds to invest in efficiency improvements, the cost-effectiveness of those investments—even in the medium term—becomes irrelevant. The fact that these households are <u>*low-income*</u> households is a factor which, unto itself, presents additional market barriers. One consequence of the income status of many Evergy customers involves the inability of these households to afford even cost-effective energy efficiency improvements. As might be expected, households with annual incomes at or below $10,000 or $15,000 tend to have extremely low liquidity. The payback period for any particular energy efficiency measure becomes irrelevant if the household does not have the investment capital with which to begin.

The importance of this, for example, lies with appliance replacements. It is often cost-effective for a consumer to spend more money for a more energy efficient new appliance. For example, if a less efficient refrigerator costs $600 and the more efficient refrigerator costs $800, it may well be cost-effective for the customer to pay the $200 difference to purchase the more efficient appliance. As I demonstrated earlier in my testimony, however, a reliance on such purchase decisions will, by definition, exclude households that are not in the market to purchase a new appliance. It is unlikely many low-income households have recently spent $600 for a new refrigerator.

Additionally, low-income households tend to have very high implicit discount rates (also sometimes known as hurdle rates or internal rates of return). In a report for the Electric Power Research Institute, Cambridge Systematics found that the implicit discount rate for low-income households ranged up to the 80 – 90 percent level. This translates into a payback period of roughly one year. Requiring efficiency investments to be justified by a hurdle rate of 90% or more will almost entirely exclude low-income households from the energy efficiency market.

Table 5. Percent of Households by Annual Household Income
Evergy Kansas Service Territory

Annual Household Income	Percent	Cumulative Percent
Total: Less than $10,000	5.9%	5.9%
Total: $10,000 to $14,999	4.2%	10.1%
Total: $15,000 to $19,999	4.4%	14.5%
Total: $20,000 to $24,999	4.5%	19.0%
Total: $25,000 to $29,999	4.7%	23.7%
Total: $30,000 to $34,999	5.0%	28.7%
Total: $35,000 to $39,999	4.7%	33.4%
Total: $40,000 to $44,999	4.7%	38.1%
Total: $45,000 to $49,999	4.2%	42.3%
Total: $50,000 to $59,999	7.9%	50.2%
Total: $60,000 to $74,999	10.3%	60.5%
Total: $75,000 to $99,999	12.9%	73.3%
Total: $100,000 to $124,999	9.2%	82.5%
Total: $125,000 to $149,999	5.6%	88.1%
Total: $150,000 to $199,999	6.0%	94.1%
Total: $200,000 or more	5.9%	100.0%
Total:	100.0%	

When I discuss “low-income” customers in the Evergy service territory, the incomes associated with these customers are quite low. Table 5 sets forth the percentage of households in the communities identified in Evergy’s tariffs as being served by the utility by income level within those communities. More than one-in-ten customers in the Evergy service territory (10.1%) have an annual income less than $15,000, or roughly $1,250 per month. Nearly one-in-five households (19.0%) have an annual income of less than $25,000, while approximately one-in-four (23.7%) have an annual income of less than $30,000.

To place these incomes into context, I have compared them to the Self-Sufficiency Standard for the counties served by Evergy. The Self-Sufficiency Standard was prepared for the State of Kansas by the Center for Women's Welfare ("CWW") at the University of Washington. According to CWW, the Self-Sufficiency Standard "defines the income working families need to meet a minimum yet adequate level, taking into account family composition, ages of children, and geographic differences in costs. The Standard is an affordability and living wage economic security measure that provides an alternative to the official poverty measure."[12] The Standard presents the dollars of income needed to be self-sufficient in each Kansas county for 719 different families of varying sizes and compositions. In Schedule RDC-1, I present the Self-Sufficiency Standard for 50 counties that are served in whole or part by Evergy for six different three-person households. A three-person household is a typical household size in the Evergy service territory.[13] To place some boundaries on the data presented in Schedule RDC-1, Table 6 summarizes the lowest and highest Self-Sufficiency Standard for the six households studied in the 50 Evergy counties examined. As can be seen, these dollar figures show that the Self-Sufficiency Standard is well above that level of income which I have defined as "low-income" in my discussion above. I do not over-state the problems faced by Evergy low-income households.

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[12] Available at http://www.selfsufficiencystandard.org/kansas/ (last accessed March 12, 2022).
[13] Table B25010, American Community Survey, 5-year data, 2019.

Table 6. Minimum and Maximum Self-Sufficiency Standard ("SSS"): Six 3-person Families Amongst the 50 Evergy Kansas Counties in Schedule RDC-1

	Adult/Infant/ Preschooler	Adult/Preschooler/ School-age	Adult/School-age (x2)	2 Adults/Infant	2 Adults/Preschooler	2 Adults/School-age
Minimum SSS	$37,162	$36,321	$36,097	$40,569	$39,875	$39,720
Maximum SSS	$63,174	$57,708	$54,305	$58,277	$56,226	$53,481

Q. WHAT DO YOU CONCLUDE BASED ON THE ABOVE DATA AND DISCUSSION?

A. First, let me emphasize what I am *not* asserting. I am not asserting that Evergy should be directing appropriately designed, targeted, and funded low-income efficiency programs to low-income households simply because they are poor. For purposes of this proceeding to consider the Evergy KEEIA programs proposal, based on the data and discussion above, I conclude that low-income households face substantial market barriers which impede low-income households from making investments in energy efficiency measures out of their own resources. If energy efficiency measures are to be pursued in low-income homes, they must be pursued through direct-install investments by third parties. They cannot and will not be pursued by low-income households in the absence of an appropriately designed, targeted, and funded Evergy low-income program. Given the harms to Evergy from *not* having such investments made, and the benefits to Evergy from pursuing such low-income investment, I conclude that Evergy's KEEIA plan should be modified as described in my testimony below. Before turning to my recommendations, however, I turn next to a discussion of how and why I conclude that the failure to make substantial additional investments in low-income energy efficiency redounds to the detriment of Evergy and, by extension, to Evergy's ratepayers.

PART 2. The Unique Utility-Related Benefits Arising from Low-Income Efficiency Investments.

Q. DO APPROPRIATELY DESIGNED, TARGETED, AND FUNDED ENERGY EFFICIENCY INVESTMENTS DIRECTED TOWARD LOW-INCOME CUSTOMERS HELP REDUCE UTILITY COSTS?

A. Yes. The delivery of appropriately designed, targeted, and funded investments in low-income energy efficiency measures not only yield affordability benefits to the participating customer, but also deliver a broad range of improvements in a utility's ability-to-collect. Accordingly, low-income energy efficiency investments should be pursued by Evergy as an important business tool in controlling system-wide utility costs that would otherwise be included in rates to customers. Cost reductions commonly associated with low-income energy efficiency investments include savings such as reduced bad debt, reduced working capital, and reduced credit and collection expenses.

A. National Data.

Q. PLEASE EXPLAIN THE RELATIONSHIP BETWEEN LOW-INCOME STATUS AND BILL PAYMENT DIFFICULTIES.

A. The relationship that exists between low-income status and bill payment difficulties has been established in numerous studies. The EIA convincingly established the relationship between income and "energy insecurity" in nationwide data from its 2015 RECS.[14] The data is presented in Table 7.

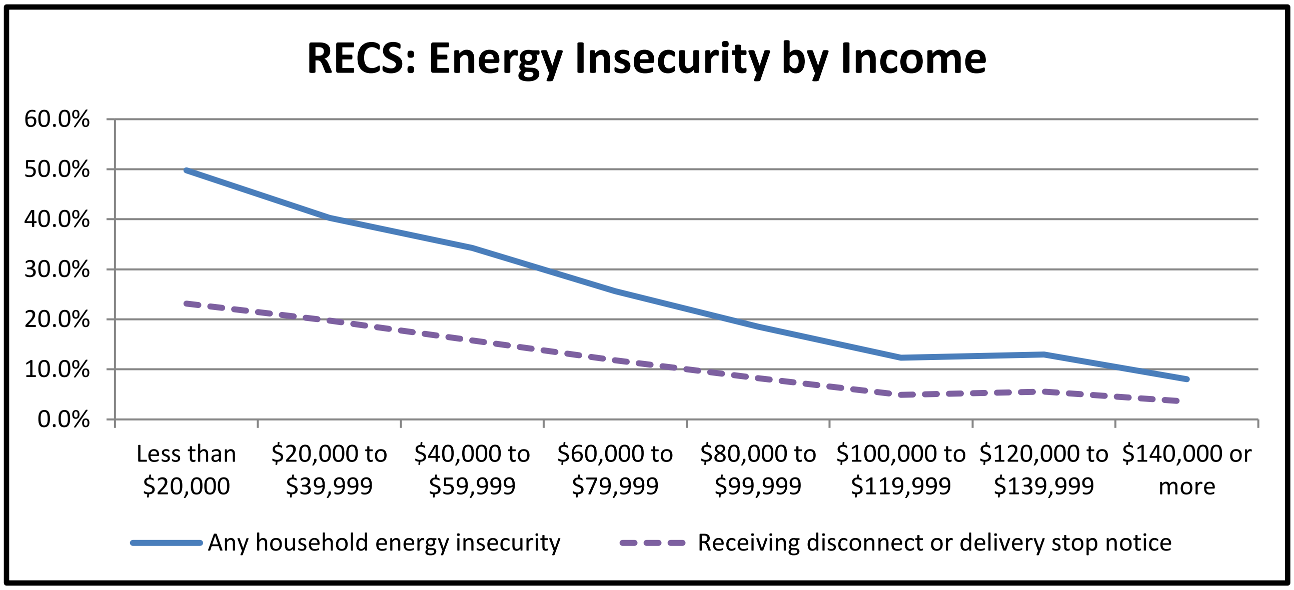
[14] Data from the 2019 RECS has not yet been publicly released. The 2015 data is the most recent data available. https://www.eia.gov/consumption/residential/data/2015/index.php (last accessed March 2, 2022).

Table 7. Household Energy Insecurity, 2015
EIA/DOE Residential Energy Consumption Survey (RECS)[15]

2015 annual household income	Any household energy insecurity	Reducing or forgoing food or medicine to pay energy costs	Leaving home at unhealthy temperature	Receiving disconnect or delivery stop notice	Unable to use heating equipment	Unable to use cooling equipment
Less than $20,000	49.8%	38.4%	20.1%	23.1%	10.5%	10.0%
$20,000 to $39,999	40.3%	29.3%	13.9%	19.8%	7.0%	8.1%
$40,000 to $59,999	34.2%	22.8%	10.3%	15.8%	5.4%	5.4%
$60,000 to $79,999	25.7%	14.5%	7.2%	11.8%	3.3%	5.3%
$80,000 to $99,999	18.6%	8.2%	4.1%	8.2%	1.0%	2.1%
$100,000 to $119,999	12.3%	7.4%	3.7%	4.9%	1.2%	1.2%
$120,000 to $139,999	13.0%	7.4%	5.6%	5.6%	N/A	N/A
$140,000 or more	8.0%	2.7%	2.7%	3.6%	0.9%	1.8%

The data shows that as household income increases, home energy insecurity decreases. The Figure below shows the relationship between "any household energy insecurity" in general, and, for purposes here, the receipt of a notice of disconnection (applicable to public utilities) or "stop delivery" notice (applicable to deliverable fuels such as fuel oil). Of households with income less than $20,000, 23.1% had received a disconnect/stop delivery notice compared to only 15.8% of households with income between $40,000 and $59,999. When income increased to between $80,000 and $99,999, the percentage decreased further to 8.2%.

[15] https://www.eia.gov/consumption/residential/data/2015/hc/php/hc11.1.php (last accessed March 2, 2022).



The 2015 results were not unique, nor surprising given similar examinations of earlier RECS data. In 2005, the federal agency administering LIHEAP funded a one-time special set of questions through the 2005 RECS. A resulting review of the 2005 data was undertaken for the federal LIHEAP office.[16] The LIHEAP study reported that households with income below the Federal Poverty Level had higher rates of energy insecurity than other households (*e.g.*, households with income at 100% to 150% of Poverty; households with income above 150% of Poverty). Poverty Level, rather than income, is associated with all types of energy insecurity, the study found (concluding that it is important to take into account household size).[17] The study

[16]APPRISE, Inc. (Feb. 2010). LIHEAP Special Study of the 2005 Residential Energy Consumption Survey, Dimensions of Energy Insecurity for Low-Income Households, Final Report, prepared for U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (last accessed March 2, 2022).

[17] Poverty Level is income taking into account household size. In 2022, for example, 100% of Poverty for a 1-person household is $13,590, while 100% of Poverty for a 2-perosn household is $18,310, and for a 3-person household is $23,030. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines (last accessed March 2, 2022).

found higher residential energy burdens, but not higher home energy burdens,[18] are associated with all types of energy insecurity—including both service interruptions and "financial energy insecurity."[19]

This DOE data is confirmed by more recent data from the National Energy Assistance Directors Association ("NEADA"). NEADA periodically conducts a Congressionally-funded survey of low-income households who receive benefits through LIHEAP. The most recent NEADA survey was published in December 2018.[20] NEADA provides three results that are important from the perspective of how inability-to-pay and targeted low-income energy efficiency fit together.

First, not only do a significant number of low-income households skip paying, or pay less than, their full home energy bill due to not having enough money for their energy bill, but the percentage reporting to take such actions increases as incomes decline.

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[18] Pursuant to the federal LIHEAP statute, "home energy" is a defined term. By statute, "home energy" is limited to home heating and cooling used in a residential dwelling. https://www.acf.hhs.gov/ocs/fact-sheet/liheap-fact-sheet (last accessed March 2, 2022). *See also*, 42 U.S.C. § 8621(6). In contrast, "residential energy" includes energy used for home heating and cooling, water heating, and appliances. *See*, Dimensions of Energy Insecurity, *supra*, at 32 (contrasting "home energy" and "residential energy").

[19] "[I]n 2005, households with high residential energy burden were much more likely to have a heat interruption than households with moderate or low burdens. However, it appears that there is very little relationship between home energy burden and heat interruptions. One reason that high residential energy burden is better associated with heat interruptions compared to home energy burden may be the fact that if the household cannot pay its whole energy bill, it will be without heat regardless of what portion of the energy bill was for space heating . . . [The data] focuses on the constraints households face on household necessities or whether they received shutoff notices or threats. The [data] shows that both types of financial Energy Insecurity appear to be related to residential energy burden, but not related to the level of home energy burden." (Dimensions of Energy Insecurity, *supra*, at 33, 34).

[20] NEADA (December 2018). 2018 National Energy Assistance Survey, Final Report, available at http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (last accessed March 6, 2022).

Table 8 presents data which shows that one-in-nine LIHEAP recipients either skipped paying their home energy bills every month, or paid less than their full bill. Nearly three times as many LIHEAP recipients with income *less than* 50% of Poverty, and 1.5 times as many recipients with income between 51 and 100% of Poverty, did so than did LIHEAP recipients with income *greater than* 150% of Poverty. Fewer than half of LIHEAP recipients said that they "never" skipped paying a bill, or paid less than their full bill. While roughly three-in-five (57%) recipients with income *greater than* 150% of Poverty reported never missing a payment, or paying less than their full payment, only two-in-five (40%) recipients with income below 50% of Poverty reported never skipping a payment.

Table 8. Skipped Paying or Paid Less than Entire Home Energy Bill
Due to Not having Enough Money for the Energy Bill During the Past Year
2018 NEA Survey Final Report (at 24 – 25)

	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Almost every month	11%	17%	9%	11%	6%
Some Months	21%	34%	17%	20%	15%
1 or 2 Months	17%	8%	24%	12%	20%
Never / No	49%	40%	47%	56%	57%
Don't Know/Refused	2%	2%	3%	1%	2%

Second, one impact of skipping payments, or making less than full payments, is that LIHEAP recipients also report having received shutoff notices. The data is set forth in Table 9 . Fewer than half reported having "never" received a shutoff notice, while nearly one-third report having received a shutoff notice either "almost every month" (11%) or "some months" (21%). Again, there is a noticeable difference between households at the lowest income levels and households at the highest income level.

While more than one-quarter (27%) of LIHEAP recipients with income less than 50% of Poverty report having received a disconnect notice either "almost every month" (10%) or "some months" (17%), only 4% of households with income greater than 150% of Poverty reported receiving disconnect notices that frequently (0% almost every month; 4% some months). More than four-fifths (84%) of LIHEAP recipients with income greater than 150% of Poverty report never having received a shutoff notice, while only one-half (50%) of LIHEAP recipients with income less than 50% of Poverty did so.

Table 9. Received Notice or Threat to Disconnect or Discontinue Electricity or Home Heating Fuel Due to Not Having Enough Money for the Energy Bill During the Past Year
2018 NEA Survey Final Report (at 26 – 27)

	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Almost every month	4%	10%	3%	4%	0%
Some Months	13%	17%	15%	9%	4%
1 or 2 Months	17%	20%	18%	15%	12%
Never / No	64%	50%	62%	70%	84%
Don't Know/Refused	2%	4%	2%	2%	0%

Third, the NEADA survey of LIHEAP recipients reports that nearly one-in-six (15%) recipients experienced either an electricity shutoff or a natural gas shutoff due to nonpayment during the past year. When utility fuels are examined individually, the NEADA data shows that 13% of all LIHEAP recipients had their electricity disconnected for nonpayment, and 7% of LIHEAP recipients had their natural gas service disconnected for nonpayment. The data is presented in Table 10. The lowest income recipients had service disconnected far more frequently than did higher income recipients—five times more frequently for electricity (24% vs. 5%), and nearly six times more frequently for natural gas (12% vs. 2%).

Table 10. Utility Service Was Shut Off Due to Nonpayment During the Past Year
2018 NEA Survey Final Report (at 27 – 28)

	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Electricity	13%	24%	12%	9%	5%
Gas	7%	12%	6%	8%	2%
Electricity or Gas	15%	26%	14%	13%	7%

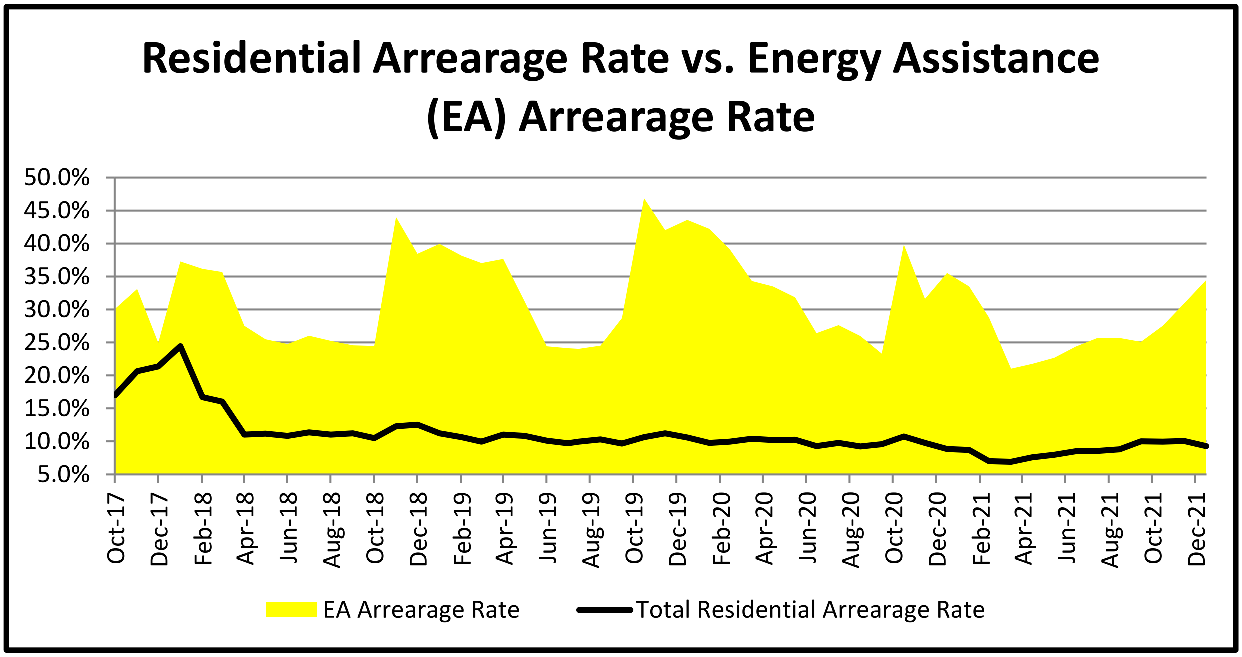
Based on the data and discussion above, two conclusions have been convincingly established. First, substantial numbers of low-income households either skip payments or make less than their full utility bill in any given month because they lack the household resources to make such payments. As a result, utilities incur working capital costs they would not have incurred had low-income bills been paid. Second, utilities respond by engaging in collection activity that frequently leads to the threatened or actual disconnection of service. The failure to pay, and the utility collection activity which results from that failure to pay, is clearly related to low-income status. While problems are more prevalent in the lowest income tier of poverty (0 – 50%), there is a bright line of distinction between those households with income at or below 150% of Poverty and those households with income exceeding 150% of Poverty.

B. State-Specific Data.

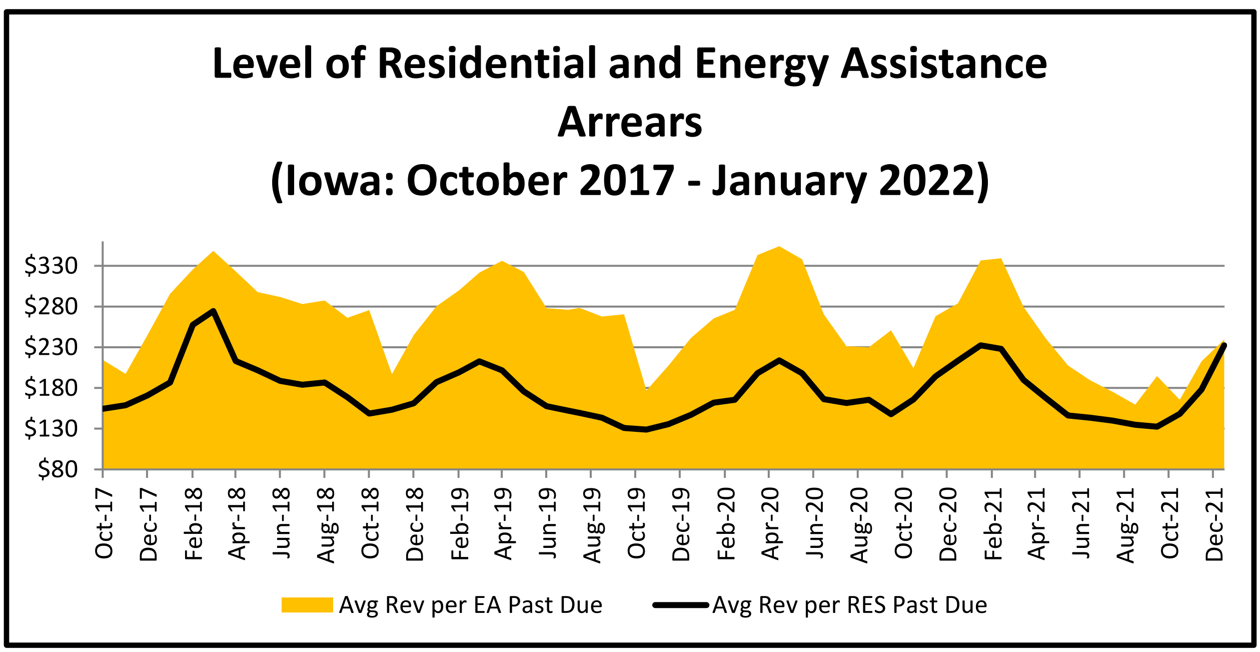
Q. DOES DATA FROM OTHER STATES SUPPORT THE CONCLUSIONS YOU HAVE DRAWN FROM THIS NATIONAL INFORMATION?

A. Yes. The national information I present above is uniformly consistent with data that has been generated for natural gas and electric utilities in other states. Not only each study unto itself, but the group of studies taken as a whole, demonstrates that low-income customers suffer from a greater inability-to-pay than residential customers generally. This data demonstrates further that it is not only possible, but probable, for Evergy to help address both the inability-to-pay problems of the individual customers and the business problems arising from those payment troubles by offering usage reduction services.

Perhaps most comparable to Kansas is data from Iowa. The Iowa Utilities Board tracks the arrearages of Energy Assistance ("EA") recipients and residential customers. The Figure below shows the percentage of revenue in arrears by month since October 2017. This data range shows two complete winter heating seasons prior to COVID-19 through the most recent month available. The data shows that the percentage of low-income accounts in arrears in Iowa was generally 2.5 times higher than the percentage of residential accounts in arrears, with seasonal variation pushing the rate up to more than four times higher.



Not only is a higher percentage of Iowa's low-income accounts in arrears, but those accounts that are in arrears are deeper in arrears. Even with the seasonal variation of the level of arrears for both residential and low-income accounts, low-income customers have average unpaid balances of well over $100 more than the unpaid balances of residential customers as a whole.



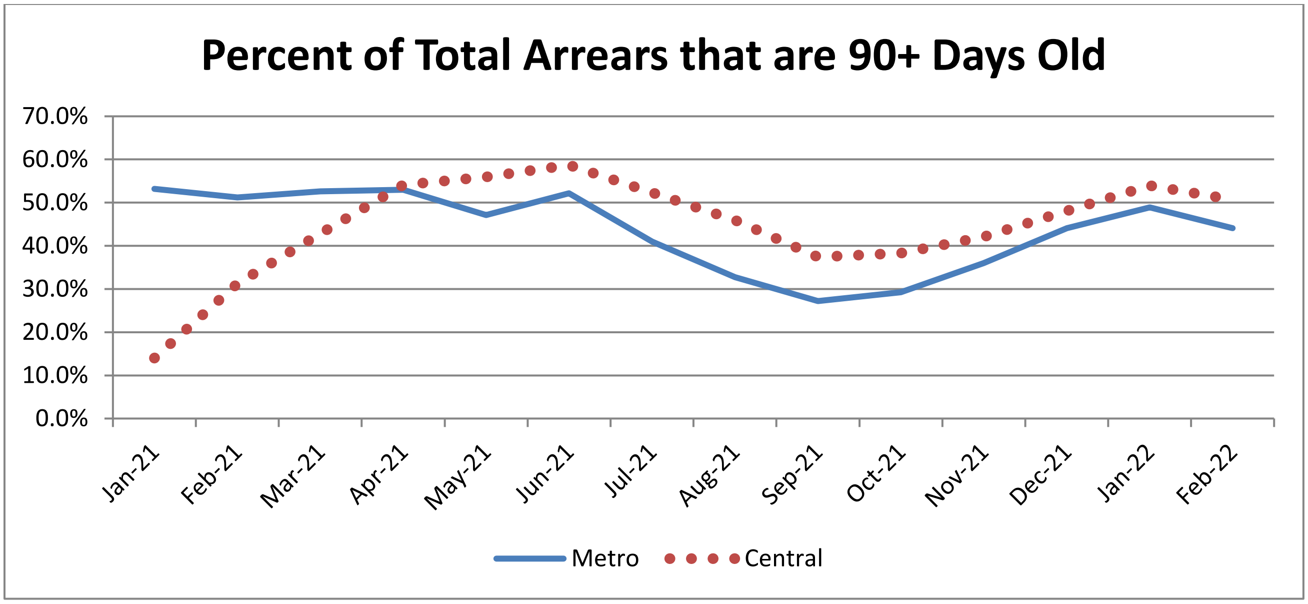
Directing energy efficiency investments toward low-income customers, particularly those low-income households in payment trouble, not only will have the effect of improving the affordability of service to these households, but will have the effect of reducing utility costs as well.

C. <u>A Review of Evergy Data on Payment Troubles.</u>

Q. HAVE YOU HAD OCCASION TO REVIEW EVERGY COLLECTIONS DATA?

A. Yes. While Evergy does not have collections data specifically for low-income customers, I have reviewed information that the Company has provided for collections related to its residential customers generally. I know, for example, that Evergy has substantial room for its customers to improve the timeliness of their payments. As the Figure below shows, for the period of January 2021 through February 2022, consistently between 30% and 50% of Evergy Kansas Metro's total arrears (in dollars) were 90 days old or older. The performance of Evergy Kansas Central was somewhat worse, with 90+ day arrears consistently representing between 40% and 60% of total arrears. (SC-2-3).[21] My observation here is not whether Evergy is doing a "good" or "bad" job of collecting its arrears. My observation is that there is substantial room for reducing working capital expenses either by reducing the dollar of arrears that are long-term arrears, or by accelerating payments so that they are no longer 90+ days late in being paid.

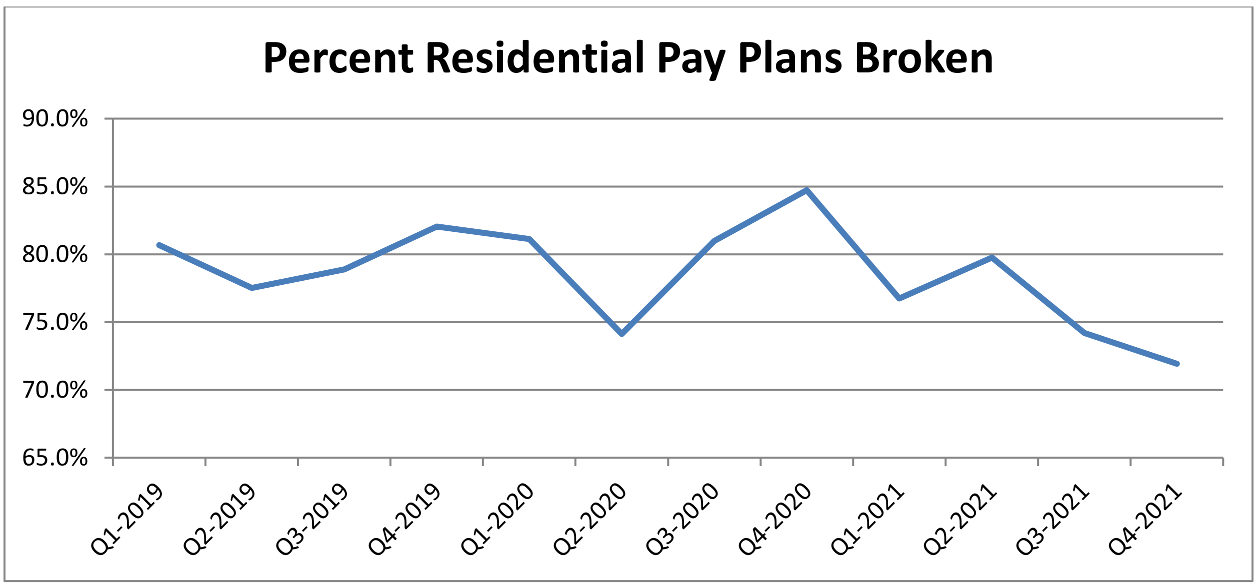
[21] This aging of arrears excludes arrearages that are subject to deferred payment arrangements.



One impact of long-term arrears is that Evergy disconnects a substantial number of residential customers, of which a high proportion are never reconnected. For example, for the 12 months ending February 2022 Evergy involuntarily disconnected service for nonpayment to roughly 30 residential customers for every 1,000 customers the Company has. (SC-2-2). According to Evergy, during that same time period, it reconnected only 79% of its disconnected customers. In other words, more than one-in-five disconnected customers do not return to Evergy service. (SC-2-2).

Finally, I know that energy efficiency can help improve the efficiency and effectiveness of Evergy's existing collection processes. One method Evergy responds to unpaid residential bills is to encourage customers to enter into deferred payment arrangements. Through a deferred payment arrangement, a customer agrees to make an installment payment toward their unpaid balance in addition to paying their monthly bill for current service as it comes due. According to Evergy, while it offers a number of different types of deferred payment arrangements, the "overwhelming majority" of such arrangements involve an agreement to make an initial payment of 1/12 of the outstanding balance and to pay the remaining balance over an 11-month period. (SC-2-5).[22]

The problem with Evergy's deferred payment arrangements is that the vast majority of them default. As the Figure below documents, during the two years of 2019 and 2020, between 75% and 85% of residential payment arrangements were defaulted before being completed. (SC-2-5). Even as Evergy customers improved their payment plan success in the four quarters of 2021, payment plan default rates were between 75% and 80%. The most recent quarter showed further improvement, but defaults remained above 70%. (*Id.*).



We know from my earlier testimony above that low-income payment performance is expected to be substantially worse than the payment performance of residential customers generally. With the above data setting a baseline showing the opportunity

[22] These 12-month plans are available only to residential customers.

for avoided costs that are above and beyond avoided energy and capacity costs, the reasonableness of Evergy using energy efficiency to help address its low-income payment troubles is unquestionable.

D. <u>The Relationship between KEEIA and Responding to Low-Income Payment Troubles.</u>

Q. PLEASE EXPLAIN HOW YOUR DISCUSSION ABOVE RELATES TO EVERGY'S PROPOSED KEEIA PROGRAMS.

A. The delivery of energy efficiency investments to low-income customers not only yields resource conservation and avoided cost benefits to Evergy, but delivers a broad range of other utility cost reductions as well. Accordingly, low-income energy efficiency programs should be implemented not only as a resource efficiency measure, but also as an important tool in controlling other system-wide utility costs. Avoided costs commonly associated with low-income energy efficiency would include savings such as reduced arrears, reduced working capital, and reduced credit and collection expenses.

The notion that energy efficiency investments directed toward payment-troubled, low-income customers can yield benefits beyond the traditional "avoided costs" is neither new nor revolutionary. The existence of direct financial benefits to utilities arising from energy efficiency programs targeted specifically to low-income households has been recognized for over 35 years. The presence of such avoided costs was first postulated in 1987. That analysis stated that targeted electric efficiency programs had advantages that went beyond the traditional energy and capacity savings associated with energy efficiency measures:

> The cost-effective reduction of system costs is relevant and important in every part of the business operations of the utility, not simply to the power supply function. Accordingly, a utility should be concerned with the problem of nonpayment, overdue payment, and partial payment of utility bills. Bad debt arises when ratepayers demand power from the system and then do not pay for it on a timely basis . . . . [A] new conservation program [can be proposed] that is justified on an avoided cost basis. The proposal rejects the historical view that avoided costs include only an energy and a capacity component. Instead, it introduces the notion of avoided bad debt. As long as the energy efficiency program costs less than the bad debt it will avoid, the program is cost-justified.[23]

In this 1987 article, "bad debt" is defined to include all aspects of costs associated with payment troubles. The term includes not only written-off accounts, but credit and collection expenses, working capital expenses, and a host of other expenses related to nonpayment. Since that time, the existence and importance of such expanded avoided costs has become generally-accepted. Analysts have repeatedly confirmed that low-income energy efficiency generates benefits beyond energy and capacity savings.

Q. HOW CAN ENERGY EFFICIENCY INVESTMENTS APPROPRIATELY TARGETED TO LOW-INCOME CUSTOMERS REDUCE COSTS TO EVERGY?

A. My discussion here is not intended to be an exhaustive list of how energy efficiency investments targeted to low-income customers might reduce costs to Evergy. Instead, this list is intended to be illustrative.

[23] Colton and Sheehan (1987). "A New Basis for Conservation Programs for the Poor: Expanding the Concept of Avoided Costs," 21 *Clearinghouse Review* 135, 139.

- If a low-income customer has an arrearage, the total "asked to pay" amount includes the unpaid arrears *plus* the bill for current service. To the extent that energy efficiency investments reduce the bill for current service, more of the total payment by the customer will be available to apply to the retirement of arrears. By reducing the level of arrears, not only does Evergy reduce its working capital requirement, it reduces its risk of bad debt (in the event that some portion of the arrears ultimately goes unpaid).

- To the extent that a customer has been unsuccessful on a payment plan, the arrearages subject to that payment plan are placed in jeopardy of ultimate nonpayment. By reducing the asked-to-pay amount for current service, particularly on a seasonal basis, given a constant payment, the ability of a low-income customer to successfully complete a payment plan increases. As a result, Evergy would reduce both its working capital requirement and its risk of loss due to bad debt.

- To the extent that Evergy disconnects service to a low-income customer for nonpayment, reducing that customer's bills would make the reconnection of service more affordable. As a result, Evergy would not only reduce its risk of loss due to bad debt, but it would also preserve its future stream of revenue from having the customer back on its system, and more likely to remain, with a more affordable bill.

Q. WHY IS WORKING CAPITAL A PARTICULARLY IMPORTANT EXPENSE REDUCTION TO CONSIDER IN ASSESSING THE IMPACT OF APPROPRIATELY-DESIGNED, TARGETED, AND FUNDED ENERGY EFFICIENCY INVESTMENTS?

A. Working capital expense is driven by two factors: (1) the *level* of arrears; and (2) the *age* of arrears. For example: (1) An arrearage of $1,500 generates a greater working capital expense than an arrearage of $500. (2) An arrearage that is 120 days old generates a greater working capital expense than an arrearage that is 60 days old.

Accordingly, working capital reductions are important to consider for several reasons.

- First, working capital reductions arise even if arrearages are not eliminated entirely. If a low-income customer carries an arrearage of $100 rather than $300, there is a working capital reduction, all else equal.

- Second, working capital reductions occur if bill payment is accelerated, even if the *total* dollars of payment over time is the same. A low-income customer with a 90-day arrears results in a lower working capital expense than a low-income customer with a 30-day arrears, all else equal.

- Third, since working capital is a capital item, working capital carries an equity return with it. The impact of reducing either the dollar level of arrears (*i.e*, increasing the completeness of payment) or the number of days before a bill is paid (*i.e.*, increasing the timeliness of payment), is more than the working capital cost reduction itself. There is a return associated with it as well.

- Fourth, there will be a tax impact associated with the equity portion of the return on working capital. As a result, every one-dollar reduction in working capital, generates more than a one-dollar reduction in rates.

To the extent that an appropriately designed, targeted, and funded low-income program has the impact of reducing the number of low-income customers in arrears, the dollars of arrears which low-income customers carry, or the length of time that arrearages remain outstanding, there is a working capital reduction that redounds to the benefit of ratepayers.

Q. WHAT ARE YOUR GENERAL CONCLUSIONS ABOUT THE POTENTIAL COST SAVINGS TO EVERGY FROM APPROPRIATELY DESIGNED, TARGETED, AND FUNDED LOW-INCOME ENERGY EFFICIENCY INVESTMENTS?

A. Cost reductions arise from reductions in arrears in at least the following ways. To the extent that Evergy reduces the dollar level of arrears, the Company will experience expense savings. To the extent that Evergy reduces the amount of time a customer carries arrears, the Company will experience expense reductions. To the extent that Evergy reduces the credit and collection activity needed to pursue bill payment, the Company will experience expense reductions. Expense reductions include, amongst other things, reduced bad debt, reduced working capital, and reduced credit and collection expenses. In addition, to the extent that Evergy retains its customers against nonpayment disconnections, it preserves future sales and future revenue streams.

Q. HAVE OTHER UTILITIES IMPLEMENTED LOW-INCOME USAGE REDUCTION PROGRAMS BASED ON THEIR BENEFICIAL ARREARAGE REDUCTION IMPACTS?

A. Yes. Pennsylvania's electric utilities have operated what that state's PUC calls the Low-Income Usage Reduction Program ("LIURP"). Electric utilities offer three types of usage reduction packages to low-income households: (1) an electric space heating package; (2) an electric water heating package; and (3) a baseload electric package.

LIURP jobs designed to reduce electricity usage, other than heating, are referred to as an "electric baseload package." Between 1989 and 2009, electric baseload jobs represented roughly two-in-five (115,098 of 292,071 total jobs: 39.4%) of all LIURP homes.[24] Over the 20-year period, electric baseload jobs outnumbered every other

[24] Customer Services Information System Project, Pennsylvania State University (January 2009). *Long-Term Study of Pennsylvania's Low-Income Usage Reduction Program: Results of Analyses and Discussion*, prepared for Pennsylvania Public Utility Commission, Penn State University: State College (PA), available at file:///C:/Users/Owner/Downloads/LowIncomeUsage2008.pdf (last accessed June 3, 2022).

type of usage reduction treatment, including the treatment of electric space heating homes (n=85,999 jobs).

In January 2009, Penn State University prepared a comprehensive long-term evaluation of the LIURP program examining data over the first 18 years of program operation. The evaluation provides important lessons that inform whether Evergy would promote least-cost service by adopting an appropriately designed, targeted, and funded low-income electric efficiency program. The LIURP evaluation reported:

- "LIURP is a cost-effective method of reducing both energy consumption ***and energy bill arrearages*** . . . Sixty nine percent of LIURP households reduce their energy consumption following weatherization treatments, with an average reduction of 16.5 percent." Electric baseload jobs generated a usage reduction of 698.2 kWh, or 19.1%." (emphasis added).

- "Of those households with energy bill arrearages, 40 percent reduce their arrearage following weatherization services. Thirty seven percent of electric industry households reduce their arrearages."[25] LIURP was targeted to households with arrears (within the population of large energy users). The LIURP evaluation found that "by the end of the year following weatherization, 68 percent of the households have an energy bill arrearage, a decrease of 29 percent . . . Although the average number of full payments made does not vary from the pre- to post-period, the percent of households with missed payments decreased and the average number of partial payments increased."

- "The [third] most significant, and most common, variable that is positively related to reductions in energy consumption is the amount of arrearage owed in the pre-period [before usage-reduction treatments are installed], suggesting that households with large arrearages are motivated to make the necessary behavioral changes to contribute toward additional reductions in energy

[25] The LIURP evaluation found that this result was consistent with prior DOE research, which found that "low-income families who receive weatherization have a lower rate of default on their utility bills and require less emergency heating assistance." Bruce Tonn, et al. (2001). "Weatherizing the Home of Low-Income Home Energy Assistance Program Clients: A Programmatic Assessment," U.S. Department of Energy: Washington D.C., available at https://weatherization.ornl.gov/wp-content/uploads/pdf/2001_2005/ORNL_CON-486.pdf (last accessed June 3, 2022).

> consumption. It therefore makes sense to target households with higher arrearages when prioritizing LIURP jobs."

The objectives established for Pennsylvania's LIURP are similar to the objectives I recommend for a low-income usage reduction component to be added to Evergy's low-income energy efficiency programs, including, but not limited to:

- To assist low-income residential customers in conserving energy by reducing their energy ***consumption***;
- To assist participating households in reducing their energy ***bills***; and
- To decrease the incidence and risk of customer payment delinquencies and the attendant utility costs associated with customer arrearage and uncollectible accounts.

Q. WHAT DO YOU CONCLUDE WITH RESPECT TO THE BENEFITS OF AN APPROPRIATELY DESIGNED, TARGETED, AND FUNDED LOW-INCOME ENERGY EFFICIENCY INVESTMENT PROGRAM?

A. Each of the impacts that I have identified represents a financial benefit arising from an appropriately designed, targeted, and funded low-income energy efficiency program to Evergy and its customers. Given the extent of these potential expense reductions to Evergy, the benefits of the low-income program create an independent justification for the recommendations I make regarding the structure, funding, and targeting of an extended and expanded program.

Q. DOES EVERGY CONSIDER, OR HAS EVERGY EVER CONSIDERED, THESE LOW-INCOME BENEFITS IN DECIDING WHAT LOW-INCOME CUSTOMERS SHOULD RECEIVE EFFICIENCY INVESTMENTS, OR WHAT INVESTMENTS SHOULD BE PROVIDED?

A. No. Historically, Evergy has not collected income information to allow the utility to assess the relationship between payment difficulties and low-income status. (SC-1-7, SC-1-8, SC-1-9). Evergy states that specific income information to qualify for its low-income programs is submitted to third parties and is not shared with the utility. (SC-1-7).

Nor has Evergy "contemplated" the possibility that customers with higher arrearages might have a greater potential for energy savings. (SC-1-12). When asked for any "analysis . . . assessing the proposition[] that . . . (b) the greater the energy bill arrearage is in the pre-treatment period, the greater the reductions in energy consumption realized by energy efficiency investments,"[26] Evergy responded that "the specific analysis described in part b has not been contemplated or analyzed by the Company." (*Id.*). The Company further concedes that it "has not conducted any analysis associated" with a request asking whether Evergy assesses

> (a) [h]ouseholds with energy bills arrearages in the pre-treatment period . . . reduce their arrearages following energy efficiency services; (b) [t]he number of complete payments changes following energy efficiency services; and (c) [t]he payment coverage ratio (i.e., payments as a percentage of billed revenue) changes following energy efficiency services. (SC-1-13).

[26] The "pre-treatment period" was "defined generally as a twelve-month period prior to the delivery of energy efficiency investments or installation of energy efficiency measures." (SC-1-12).

Similarly, Evergy reports that it has no documents within its custody or control "discussing the extent to which, if at all, energy efficiency measures delivered to low-income customers result in . . . (a) [r]educed arrearages; (b) [r]educed bad debt; (c) [r]educed credit and collection activity; (d) [i]mproved timeliness of payments; (e) [i]mproved completeness of payments." (SC-1-15).

This failure to track low-income customers means that Evergy leaves much information unutilized. For example, Evergy reports that its low-income customers received 20,427 LIHEAP grants in 2020, and received 49,327 LIHEAP grants in 2021. (SC-1-23A). Moreover, Evergy reported that its low-income customers received 9,040 LIHEAP Crisis grants in 2020 and 9,217 LIHEAP Crisis grants in 2021. Evergy cautioned that "because customers can receive multiple crisis pledges throughout the LIHEAP season, these totals do not reflect the true number of customers assisted with crisis funds." (SC-1-25A).

The receipt of a LIHEAP grant, whether it is a basic cash grant, a state supplemental grant, or a LIHEAP crisis grant, provides Evergy a basis to identify a population of its customers which it knows, by reason of the receipt of the grant, to be low-income. In addition, Evergy tracks income-qualified grants received from "other sources" (*i.e.*, agencies other than LIHEAP), such as grants through the federal Emergency Rental Assistance Program. (SC-1-27, SC-1-28). These customers would be additional low-income customers that could be identified with existing information.

Given the numbers of customers receiving LIHEAP assistance, or assistance through "other sources" as defined by Evergy, the Company can identify low-income customers in its service territory and begin to monitor the qualities discussed above. Should Evergy take such action, it will more appropriately design, target, and fund low-income energy efficiency measures and unlock greater benefits to the utility and its ratepayers.

PART 3. Identifying Areas of Particular Need to Target with Low-Income Energy Efficiency Investments.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain why it is important not only to adopt a low-income energy efficiency program, but also to appropriately target those energy efficiency investments to geographic areas in need.

In making this assessment, I identify and apply 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. My analysis is based on Census data for Evergy's communities; communities are referred to as "places" in Census data. I begin with the communities that comprise the Evergy service territory as a whole (*i.e.*, I do not distinguish between Evergy Metro and Evergy Central).[27]

[27] There are 35 unincorporated communities which Evergy lists as being in its service territory that are not sufficiently large for the Census to report detailed data on. These communities, however, have a total population of 3,002 persons and thus do not substantially affect my conclusions.

Having identified the communities which comprise the Evergy service territory, I 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 prevalence 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).

Q. TO WHAT EXTENT DO THESE FOUR INDICATORS OF VULNERABILITY EXIST IN EVERGY COMMUNITIES?

A. 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 indicators studied.[28] 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. Table 11 presents the distribution of the

[28] Different communities would meet different combinations of the indicators of vulnerability. This reference to meeting three indicators does not mean that I excluded one and tested for the remaining three.

total number of vulnerability indicators met and by which indicators appear in the total.

Table 11. Number of Communities by Number of Vulnerability Indicators Present

Total Indicators Met	<200% FPL		With SNAP		Income <$15K		Hsg Built Before 1970		Total
	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
Total	169	128[29]	184	114	192	106	105	193	298

Q. DO THE COMMUNITIES WHERE THESE VULNERABILITY INDICATORS EXIST OVERLAP WITH HIGH ENERGY BURDEN COMMUNITIES?

A.Yes. I selected seven of the communities which meet 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 energy is generally defined to be affordable if it does not exceed 6.0% of income, and that an affordable electricity burden is generally set at3.0%. It is evident that electricity is significantly unaffordable in these Evergy communities that exhibit the four vulnerability factors I defined above.

[29] One community had no population with income below 200% of Poverty.

The communities I selected include Fort Scot (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:[30]

- Fort Scott has 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 has 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 has 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);
- Ottawa has 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 has 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 has 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).

[30] Available at https://public.tableau.com/app/profile/brendan.pierpont/viz/EnergyBurdenIndicators/EnergyBurdenandRelatedIndicators (last access March 13, 2022).

Finally, Kansas City (Wyandotte County) has 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%.

Q. HAVE YOU IDENTIFIED AN ALTERNATIVE MANNER TO IDENTIFY COMMUNITIES WITH PARTICULAR NEEDS FOR LOW-INCOME EFFICIENCY IN THE EVERGY SERVICE TERRITORY?

A. Yes. 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.

Here, I have 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 compositions to the areas of Topeka with energy burdens above and below 6% of income. Table 12 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 composition between low burden and high burden Census Tracts in Topeka is evident.

Table 12. Racial Composition of Census Tracts
with Energy Burdens Above and Below 6% of Income
(Topeka, KS)

	Burden Below 6%	Burden 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 set forth in Schedule RDC-2.

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 Table 13. 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).

Table 13. Average Home Energy Burden and Average Low-Income Home Energy Burden In Census Tracts with Burdens Exceeding 6% of Income (Wichita, KS)					
Census Tract	Average Home Energy Burden	Average Low-Income Home Energy Burden	Census Tract	Average Home Energy Burden	Average 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 Table 14.

Table 14. Racial Composition of Census Tracts with Energy Burdens Above and Below 6% of Income (Wichita, KS)		
	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 are presented in Schedule RDC-3. The overlap between the two is evident, both north and south of Highway 54 and east and west of Interstate 135.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THIS DATA?

A. I draw several conclusions from the of 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 KEEIA 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 KEEIA measures. The delivery of major KEEIA 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, I identify the historically redlined neighborhoods 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 KEEIA 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 KEEIA programs as though these neighborhoods are the same as other neighborhoods, the KEEIA programs simply continue that embedded discrimination. For Evergy to adequately and appropriately serve these low-income neighborhoods through its low-income KEEIA programs, and to not perpetuate the housing discrimination that I have identified, the utility needs to structure its programs to address the market barriers that I discussed in detail. Evergy also needs to adopt improvements to its low-income KEEIA programs such as the ones I recommend below.

PART 4. Evaluating the Distribution of Evergy's Low-Income Energy Efficiency Investments.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I present an objective definition of the term "equitable" (or, similarly, "equity") within the context of the distribution of ratepayer-funded utility investments in KEEIA measures. I compare this definition of equity to Evergy' approach to the distribution of its low-income KEEIA spending. I assess the proposed distribution of KEEIA investments to low-income to assess whether Evergy's KEEIA program represents an equitable distribution of funding to low-income households. I find that the Evergy approach to equity has shortcomings that adversely affect the distribution of KEEIA funding to low-income households.

A. Assessing Evergy's Proposed Low-Income Program.

Q. PLEASE DESCRIBE THE LOW-INCOME PROGRAMS WHICH EVERGY PROPOSES IN ITS KEEIA PROGRAM.

A. In describing the low-income programs that Evergy offers, it is important, first, to understand what Evergy has *not* proposed. Evergy offers a residential program which is titled its Hard-to-Reach Homes program. The low-income program components, however, are but *parts* of the Hard-to-Reach Homes program. The four components of the Hard-to-Reach Homes program include:

- Component 1: Enhanced Home Comfort;
- Component 2: Enhanced Home Products;
- Component 3: No Cost Energy Assessment and Free Energy Savings Kit; and

- Component 4: Weatherization assistance.

Of these four program components, Evergy offers two specific income-qualified program components: Components 1 and 4 are directed to households who meet the income eligibility guidelines for either the federal Weatherization Assistance Program (administered through the Department of Energy) or of the LIHEAP (administered through the Department of Health and Human Services).

- Component 1 provides that "Customers that install efficient heating and cooling equipment by one of the programs authorized trade allies are eligible to receive enhanced rebates. Note: eligible efficient heating equipment must be like technology to existing technology. Insulation and Air Sealing – Customers that have completed a comprehensive energy audit by a Program authorized energy auditor are eligible to receive enhanced rebates with potential DIY installation incentives for insulation. Evergy may also offer an on-bill financing solution for eligible measures."

- Component 4 provides "support of federal weatherization program delivered and implemented through local agencies such as Kansas Housing Resources Center."

Q. DO EVERGY'S ACTIONS PROVIDE AN EQUITABLE DISTRIBUTION OF LOW-INCOME ENERGY EFFICIENCY INVESTMENTS?

A. Evergy's KEEIA plan leads me to conclude that the low-income program components can and should be meaningfully improved so that low-income customers receive an equitable distribution of energy efficiency funding. Moreover, the way in which Evergy proposes to structure its low-income program does not address the impediments to low-income investment in energy efficiency identified above. As a result, the program will continue to exclude low-income customers from making meaningful investments in energy efficiency.

Q. UPON WHAT DO YOU BASE THAT CONCLUSION?

A. I base my conclusion on two lines of reasoning. First, Evergy does not provide a budget break-down of its Hard-to-Reach Homes program by program component. While Evergy offers a budget for its Hard-to-Reach Homes program as a whole, it does not provide individualized budgets for the each of the four specific program components identified.

Second, and more importantly, the proposed Hard-to-Reach Homes program generates savings that are substantially lower as a percentage of the total residential savings than the proportion of the Hard-to-Reach Homes budget is of the total residential budget. The savings in megawatt-hours ("MWh") are set forth in Table 15 below. When viewing all of Evergy's service territories together,[31] the Hard-to-Reach Homes program generates 16.4% of total MWh savings from the residential programs as a whole. Evergy Kansas Central's Hard-to-Reach Homes program generates 17.9%, while Energy Kansas Metro's Hard-to-Reach Homes program generates only 12.5% of the total MWh of savings.

In reviewing these percentages, it is again important to remember that "Hard-to-Reach" is not synonymous with "low-income" in Evergy's program planning. The low-income programs are but one *__part__* of the broader Hard-to-Reach Homes program.

[31] Recall, Evergy's Application begins by stating that Evergy South and Evergy Central are collectively referred to as "Evergy Central" in this proceeding. ("COME NOW Evergy Kansas Metro, Inc. ("Evergy Kansas Metro") and Evergy Kansas Central, Inc. and Evergy Kansas South, Inc. (referred to together as "Evergy Kansas Central") (collectively referred to herein as "Evergy" or the "Company") . . . . "

Evergy does not disaggregate its estimated Hard-to-Reach energy savings by the various parts of that program.

Table 15. Expected Net Energy Savings (MWH)
Hard-to-Reach (HTR) Homes vs. Residential Portfolio as a Whole
Evergy Kansas Central / Evergy Kansas Metro)[32]

	Kansas Central					Kansas Metro				
	PY1	PY2	PU3	PY4	Total	PY1	PU2	PY3	PY4	Total
HTR	3,849	4,619	5,700	5,347	19,515	1,041	1,290	1,591	1,505	5,427
Res	15,542	27,745	32,235	36,293	108,816	6,132	10,005	12,807	14,538	43,482
Pct HTR of Res	24.8%	16.6%	17.7%	14.7%	17.9%	17.0%	12.9%	12.4%	10.4%	12.5%

Having noted that the low-income percentage would be lower than the percentages in the Table above (since low-income is only one sub-part of the broader Hard-to-Reach program), as can be seen, not even the *total* savings (MWh) generated in the Hard-to-Reach Homes programs as a whole (low-income plus others) reflect the percentage of low-income population in the Evergy service territories. In the Evergy service territories collectively (*i.e.*, not disaggregating Evergy Metro from Evergy Central), 30% of the total population lives with an annual income of less than 200% of the Federal Poverty Level.[33]

Two reasons are immediately evident as to why the Evergy low-income programs fail to generate a savings that are at least proportionate to the percentage of income-eligible population served by Evergy. Evergy describes its "Hard-to-Reach Homes" program as being "targeted to income-eligible and rural customers. In order to drive

[32] Proposed Evergy Tariffs, Kansas Evergy Metro and Kansas Evergy Central.
[33] Table C17002, American Community Survey, 5-year data, 2019.

participation in these demographics, Evergy proposes to deliver a deeper level of support, which includes no-cost direct installs, personalized home energy assessments and enhanced incentives and rebates." (KEEIA Report, at 27).

- ➢ While its low-income program "includes . . . no-cost direct installs," it also focuses on generating investments through "enhanced incentives and rebates." For all the reasons I discuss above, however, a program offering based on "incentives and rebates," which requires a low-income out-of-pocket investment, will not be an effective low-income strategy.

- ➢ The primary low-income program offered by Evergy is support for DOE's weatherization program. Not only does this exclude Evergy KEEIA investment in low-income homes not heating with electricity, but it excludes base load electric investments (such as Energy Star appliances). Evergy's primary low-income investment in electric non-heating measures comes through lighting measures, as well as through its free home energy assessment accompanied by its low-cost "kit" with non-major self-installation measures.

Q. COULD EVERGY IMPROVE ITS USE OF DEMOGRAPHIC DATA TO DEVELOP KEEIA INCOME-QUALIFIED STRATEGIES AND PROGRAMS?

A. Yes. Evergy states in its Application that it designed its low-income program "in order to drive participation in these demographics." (*Id.* at 27, 34). Evergy asserts that it provides "program offers designed specifically for this demographic." (*Id.*, at 36). Evergy does not, however, explain <u>*how*</u> it has accounted for the low-income "demographics."

Substantial data exists on low-income households in the Evergy service territory which is under-utilized by the Company. This data could be used to help design, target, and fund Evergy's income-qualified programs.

- Evergy could better use Census data on the lack of access to capital for low-income customers; the proportion of renters in the low-income population, and the mobility rate within the low-income renter population. It hasn't used such data to date. (SC-1-11).

- Evergy could include the quality of low-income housing, the cost of housing, and the discretionary income after payment of housing costs in its design, targeting, and funding of low-income programs. Such data, which is not now used (SC-1-22), could help identify market barriers that impede low-income investments in energy efficiency without external assistance.

- Evaluating the distribution of income-qualified usage reduction measures, savings and/or expenditures by income or by geography, which does not currently occur (SC-1-29), would help Evergy track whether it has holes in its delivery of energy efficiency services.

Finally, good program design would call for the definition of program objectives for how its low-income customers will be served; an identification of the metrics by which the Company would determine whether those objectives are being achieved; and an identification of the data by which those metrics will be measured. While a part, but only a part, of Evergy's Hard-to-Reach program is directed toward low-income customers, Evergy does not measure or track the equity of the distribution of its investments by geography or by income. (*see e.g.*, SC-1-32, SC-1-33, SC-1-49, SC-1-51).

One key missing element of the Evergy KEEIA plan, which would substantially help the Company improve its service to low-income customers, is the development of planning documents that would "identify and discuss ***program objectives***" with respect to the distribution of income-qualified savings, measures, and/or expenditures by geographic region, race/ethnicity, or income of its KEEIA participants. At present, Evergy has only considered program objectives for income-qualified savings, measures, or expenditures in terms of "service territory." (SC-1-30).

In sum, modest steps that Evergy could take to improve the equity of the design, implementation, and funding of its energy efficiency programs would be to study the demographics of its low-income population; to collect information on those demographics; to establish program objectives or goals for reaching those demographics; to define metrics by which to measure the extent to which those program objectives or goals have been reached by its programming; and to collect and analyze data by which to measure those metrics.

Q. WHAT DO YOU CONCLUDE?

A. This lack of data collection and analysis by Evergy means that the utility does not have the current capacity to assess the equity of its distribution of income-qualified energy efficiency investments by income status or by geography. It is not possible for Evergy to assess whether its income-qualified investments are being distributed in areas of need. It is not possible for Evergy to determine whether the desired outcomes of its income-qualified investments (*e.g.*, energy savings, capacity savings, bill reductions, emissions reductions) are being equitably distributed to the geographic areas of its service territory with particular identified needs. As a result, both the need for the pilot programs proposed below, as well as the need for the future data collection recommended below, are particularly evident.

B. <u>Recommended Modifications to Evergy's Proposed Low-Income Program.</u>

Q. WHAT LEVEL OF LOW-INCOME KEEIA SPENDING DO YOU RECOMMEND?

A. I recommend that Evergy's Hard-to-Reach Homes program be modified such that low-income spending is sufficient to generate MWH of energy savings that are proportionate to the percentage of low-income population in Evergy's population as a whole. Given that 30% of the total population in Evergy's service territory has income at or below 200% of Poverty Level, Evergy's low-income investments should be programmed such that 30% of the MWH savings are generated from low-income households.

In making this recommendation, I understand that this objective may not be achievable in the first year of the KEEIA plan implementation. Accordingly, I recommend that Evergy be provided the leeway to ramp-up to achieve this objective by Year 3 of the four-year plan implementation.

Q. PLEASE EXPLAIN YOUR FIRST RECOMMENDATION.

A. Evergy needs to ensure equal access not merely to KEEIA spending, but to KEEIA outcomes from its energy efficiency investments. Evergy has not undertaken to do this. Evergy claims to adequately serve low-income customers because, in part, it has developed a program of "enhanced incentives" for low-income customers. Evergy makes this claim despite not yet undertaking a baseline study of appliance usage specific to low-income customers. (SC-1-21, CURB-33). Moreover, when repeatedly asked to provide information on how it has considered, let alone ensured, the equitable distribution of energy efficiency investments to low-income customers, Evergy could not do so. (*see e.g.*, SC-1-11, SC-1-22, SC-1-30, SC-1-48, SC-1-49, SC-1-51).

Evergy should modify its proposed income-qualified programming to ensure that expenditures made through this program are devoted primarily to deep energy savings investments. Programs primarily based on energy "education," or on the provision of "incentives" which require the out-of-pocket expenditures by low-income households, as demonstrated elsewhere in my testimony, result in substantial expenditures, but few MWh of energy savings.

Q. DO YOU HAVE A SECOND RECOMMENDATION REGARDING THE LOW-INCOME KEEIA PROGRAM COMPONENT?

A. Evergy underserves its low-income population by the manner in which it treats health and safety repairs needed for efficiency investments to be made. According to the utility, "if a health or safety issue is identified during an Evergy home energy assessment/direct install, these leads will be passed accordingly to other organizations that can assist through KS-LILIES." (SC-1-36). LILIES stand for "Low-Income Leadership in Essential Services," a program through which external agencies provide supplemental spending on Evergy homes. While a health and safety issue can be identified through the Evergy home energy audit, it will not be treated with Evergy funds. (SC-1-38). Evergy does not track the number or type of health and safety hazards identified. (SC-1-40). More importantly, the Company does not track the number of “walkaways”—defining a walkaway as “a housing unit where health and safety issues prevent the delivery of energy efficient products and services.” (SC-1-42). Evergy does not budget for remediation of any health and safety issue that would prevent a housing unit from participating in the low-income energy efficiency program. (SC-1-41).

Evergy should provide its low-income efficiency contractors with the discretion to use a reasonable amount of money per participating home to engage in the health and safety remediation needed to allow a home to be treated with energy efficiency measures. The availability of external agencies to fund that remediation unreasonably restricts the ability to serve all low-income housing units that need energy efficiency investments. Other electric utilities that I have worked with allow their contractors an allowance of $500 to $650 for health and safety measures for heating jobs. A contractor may exceed this allowance with the utility’s approval. One utility allows a health and safety expenditure in addition to the direct installed efficiency measures of up to 50% of the total energy efficiency investment. I recommend an allowed health and safety allowance not to exceed $700, with a tracking of such expenditures and their impact on total program expenditures to be considered at Evergy’s next KEEIA filing. These health and safety expenditures should supplement and not supplant funds otherwise made available for low-income energy efficiency investments.

C. Transparency and Community Participation.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. Evergy should improve its efforts to provide transparency and community participation in the design and delivery of its income-qualified KEEIA programs. Community participation differs from participation by institutional stakeholders such as the Sierra Club, Kansas Appleseed, the National Housing Trust, and related organizations. Community participation involves working with the population directly affected by the Evergy programs.

Evergy should take specific actions to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of its income qualified programs. All decarbonization efforts should incorporate equity considerations from the onset, through planning, design, and implementation. Without careful design, planning, and community input, programs designed to decarbonize the energy sector may have unintended consequences that worsen inequity. Low-income households face higher energy burdens and greater energy insecurity than higher-income households. Low-income households also face disproportionately high health impacts from indoor and outdoor air pollution. Consequently, low-income customers can most directly benefit from energy efficiency programs and renewable energy projects, but the planning, design, and implementation of the programs and projects must be undertaken with input from these communities to maximize the benefit on these communities.

I recommend that Evergy should commit to the following principles with respect to transparency and meaningful public involvement:

A. Proactive steps to incorporate: (1) facilitating ongoing opportunities for direct interaction between agencies and communities; (2) allocating funding for staff positions trained and dedicated to community outreach and facilitating collaborations; (3) choosing arrangements for community interactions to maximize effective participation, accounting for factors such as meeting times, locations, and translation needs; (4) ensuring that affected individuals and communities have access to sufficient information to enable meaningful participation in activities; (5) ensuring sufficient time for meaningful interaction before decisions are made or unalterable commitments are agreed to; and (6) ensuring transparency in decision-making.

B. Meaningful public participation means that: (1) potentially affected community residents have an appropriate opportunity through a process, not merely an event, to participate in decision-making about a proposed program or policy that may affect their access to safe, clean, affordable, adequate, sufficient and accessible services; (2) the contribution of the public can influence the provider's decision-making; (3) the concerns of the public will be considered in the decision-making process; (4) the decision-makers seek out and facilitate the involvement of those potentially affected; and (5) the decisionmakers undertake actual documented consideration of the public input received.

C. Meaningful public participation requires that stakeholders have adequate access to necessary information as soon as it is known, to allow them to prepare to participate effectively, in accordance with the principle of maximum disclosure.

1. Relevant information shall be proactively disseminated by making it available in a manner appropriate to local conditions and accounting for the special needs of individuals and groups that are marginalized or discriminated against.

2. Relevant information shall be provided free of charge, or at a reasonable cost, and without undue restrictions on its reproduction and use both offline and on-line.

D. Meaningful public participation requires that stakeholders be able to participate in the decision-making process from an early stage when all options are still open. Decision-makers shall refrain from taking any formal, irreversible decisions prior to the commencement of the process. No steps shall be taken that undermine public participation in practice, such as large investments in the direction of one option, including those agreed to with another agency, a non-government actor, or state or local government entity, or some combination thereof.

E. Meaningful public participation shall be provided into multi-year or repeating decision-making that will generate present and reasonably foreseeable cumulative future impacts on the provision of safe, clean, affordable, adequate, sufficient and accessible services.

PART 5. Three Recommended Low-Income KEEIA Pilot Programs.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I recommend that Evergy commit to the pursuit of three different pilot programs. Based on my previous discussion and data presented regarding the relationship of payment-troubled status and low-income status, the first pilot involves targeting low-income energy efficiency investments specifically and explicitly toward low-income customers who are facing payment-troubles. "Payment trouble" is a term that I define in my discussion below.

Second, based on my discussion and data presented above regarding the relationship of the ability to identify specific geographic areas of need, which are areas with high concentrations of low-income customers who cannot pursue energy efficiency investments on their own without external assistance, I recommend adopting a community targeting initiative. This initiative involves special efforts to invest not only in low-income households, but also in low-income neighborhoods which have demonstrated vulnerability. I identified and discussed two ways to determine these neighborhoods with demonstrated vulnerabilities.

Third, based on my discussion and data presented above regarding the market barriers that impede the ability of low-income customers to invest in energy efficiency measures on their own, even if cost-effective in the short- or medium-term, as well as the relationship between residency in multi-family buildings and the presence of those impediments, I recommend a pilot through which Every can improve its targeting of low-income efficiency to multi-family buildings.

Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF EVERGY'S USE OF "PILOT" PROGRAMS IN ITS KEEIA PORTFOLIO.

A. What Evergy refers to as its Pilot Incubator Program spans both residential and business customers. Evergy explains that "[t]he objective of the Pilot Incubator Program is threefold. It creates a pathway for generating ideas, creates an opportunity for identifying additional programs and/or program component improvements, and tests new concepts for both business and residential customers." (KEEIA Report, at 43). According to the Company, "[v]alidation is the largest stage of the program. It includes researching the concept for historical success, evaluating alternative options, reviews viability in the market and then uses this information to scope the test, design the pilot and determine what success will look like. The pilot is presented to stakeholders for feedback, launched, monitored, and enters a cycle of redesign and redeployment if necessary." (*Id.*). Eventually, "in the integration phase, business models for the new program or concept are built, new programs are filed for approval and then transferred to an implementation team for the successful integration of improved or new program designs." (*Id.*).

A. <u>Payment-Troubled Customer Targeting Pilot.</u>

Q. PLEASE EXPLAIN THE PAYMENT-TROUBLED CUSTOMER TARGETING PILOT PROGRAM YOU RECOMMEND FOR EVERGY.

A. My recommended Payment Troubled Customer Targeting Pilot builds on the data and discussion presented above documenting the relationship between low-income status and payment-troubled status. It builds on the documented findings elsewhere regarding how targeted energy efficiency to payment-troubled low-income customers can generate not only the traditional energy and capacity avoided costs, but the whole range of avoided costs associated with improved payment pattern.

Income <u>*eligibility*</u> for the proposed pilot low-income usage reduction program should remain at Evergy's current level. This proposed pilot project should not change the income <u>*eligibility*</u> levels for its low-income programs. However, Evergy should also establish certain <u>*targeting*</u> objectives. The difference between setting "eligibility standards" and setting "targeting objectives" is not new to low-income home energy programming. For example, the federal LIHEAP statute establishes income eligibility as not to be less than 110% of Poverty Level or more than 60% of State Median Income. Under the federal LIHEAP statute, three populations within that income-eligible population are to be *targeted* for assistance: (1) the elderly; (2) households with young children; and (3) the disabled.

Q. HAS ANY OTHER UTILITY ADOPTED A PILOT PROGRAM TARGETED AT PAYMENT-TROUBLED CUSTOMERS SUCH AS YOU RECOMMEND BELOW?

A. Yes. In 2018, Michigan's largest electric utility, DTE, agreed to test a proposal to target a portion of its low-income "Energy Waste Reduction" (energy efficiency) toward "payment-troubled" income-eligible customers. The Settlement explained the project as follows:[34]

> The following information describes the increased ramping efforts of DTE Electric Company ("DTE Electric") and DTE Gas Company ("DTE Gas") (collectively the "Companies") in the Energy Efficiency Assistance (EEA) program to target low income customers in arrears. Low income customers are defined as those customers with income at or below 200% of the federal poverty limit. Customers may be eligible for this program regardless of home ownership or renting status.
>
> The Companies will increase Electric and Gas EEA program spend by a total of $5,000,000 for the EWR 2018-2019 plan to target low income customers in arrears
>
> - 2018: $1,000,000 at a minimum to be spent on energy efficiency measures for low income customers in arrears
>   - 2019: Spend the balance of the of the $5,000,000 increase made to the EWR 2018-2019 plan to be focused at low income customers in arrears.

[34] Before the Michigan Public Service Commission, In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for DTE Electric Company to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016, Case No. U-18262, Settlement (March 20, 2018), https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000000sS7rAAE.

Q. WHAT WAS THE TARGETING MECHANISM THAT DTE AGREED TO IMPLEMENT?

A. DTE agreed as follows:

> The methodology that will be used by the Companies to target low income customers in arrears will be as follows:[35]
>
> - Leverage the billing systems of the Companies to identify customers in arrears. Low income status will also be identified if data is available in the billing system.
> - The customer list will be sorted and prioritized by customers with the highest amount in arrears; meaning that customers with the highest arrears will be targeted first
> - Customers with the highest energy intensity will be the next step in prioritization
> - Energy intensity is defined by the ratio of annual energy consumption used per square foot in the home
>   - Energy usage data will be provided via the Company billing system
>   - Household square footage data will be obtained through Company owned or procured records
> - This customer list will then be segmented geographically based on regions that are served by community action agencies ("CAAs"), non-profit organizations or appropriate government agencies that facilitate energy efficiency assistance.
> - The segmented lists will be provided to the appropriately agencies.
> - The Company will work with the agencies to extend the EEA program to this targeted audience.
> - Customer participation will be identified through records provided to Company by the agencies.

[35] *Id.*, Attachment A.

DTE also agreed to have a multi-family component to the payment-troubled customer pilot project.

Q. HOW DID DTE AGREE TO EVALUATE THE PAYMENT-TROUBLED TARGETING PILOT?

A. DTE agreed as follows:

Items that the Companies may track in the study include:

- Reduction of write-offs
- Reduction of money that is in arrears
- Timeliness of payments
- Number of payments
- Regularity of payment
- Unsolicited nature of payment (reduction of shut-off/past due)
- Complete Bill Payment:
- Regular Bill Payment

Finally, DTE agreed to use "billing and other data, and looking at the entire population of multifamily buildings in its territories, the Companies will document and report out on whether there appear to be clusters of customers in arrears within specific multifamily buildings. This may identify areas for future increases in targeting and spending."[36]

[36] *Id.*

Q. CAN YOU EXPLAIN HOW, IF AT ALL, YOU MIGHT MODIFY THE TARGETING ADOPTED IN THE DTE PROCEEDING?

A. Yes. I recommend that an Evergy pilot low-income program target its low-income usage reduction program not merely on the highest arrears, but based also on the following non-exclusive factors:[37]

- **<u>High energy usage</u>:** Research has shown that the single greatest predictor of energy usage reduction potential is high consumption prior to efficiency measures being implemented.

- **<u>High arrearages</u>:** High arrearages and high usage frequently, but do not universally, correspond. Customers with high arrearages disproportionately tend to have high usage as well. Targeting low-income customers with high arrearages generates the following benefits: (1) high arrearages have been associated with a greater usage reduction potential; and (2) directing usage reduction to low-income customers with high arrearages can reduce the utility's non-energy costs whether or not the arrearages are reduced to $0. For example, if usage reduction investments can help a low-income customer reduce his or her arrearage from $500 to $300, the utility pockets the working capital savings associated with carrying those $200 in reduced arrearages (along with a potential reduction in bad debt if those arrears are ultimately written off).

- **<u>Broken/defaulted deferred payment arrangements</u>:** A low-income customer on a deferred payment arrangement ("DPA"), by definition, is in arrears. To the extent that a customer has a history of negotiating a DPA, that customer has evidenced a willingness to work with the Company to address its nonpayment, even though the DPA default indicates that effort was unsuccessful. To the extent that usage reduction can reduce the bill for current service, the low-income customer is more likely to pay the total asked-to-pay amount. As discussed, not only will the ultimate risk of lost revenue due to nonpayment be reduced, but the immediate working capital associated with any delayed collection of revenue will be reduced as well. Defaulting on a DPA should be an indicator of payment-troubled status for purposes of targeted low-income usage reduction.

[37] By "non-exclusive," I mean that customers may fall into one or more of these categories.

- **Disconnection for nonpayment:** A disconnection (or multiple threats of disconnection) of service for nonpayment within the immediately preceding two-year period should establish payment-troubled status for purposes of targeting usage reduction. A disconnection for nonpayment is the ultimate indicator of payment-troubled status. Even if the disconnection was avoided subsequent to the issuance of a notice of disconnection, that level of payment-trouble should prioritize a household for low-income usage reduction services.

As discussed, the non-exclusive factors I identify above are not ***eligibility*** criteria for low-income usage reduction. They are instead targeting objectives, through which Evergy should engage in to identify low-income customers to enroll in its low-income usage reduction program.

In describing how the integration of usage reduction with credit and collection activities should occur, lets first identify how this integration should ***not*** occur. The integration of usage reduction into Evergy's credit and collection processes cannot simply involve providing notice of the availability of the low-income usage reduction program as part of a shutoff notice. Research I undertook for the federal LIHEAP office in 1999 examined reasons why low-income customers do not engage in "constructive responses" to inability to pay. For example:

- I found that some "constructive responses" standing on their own do not address the underlying affordability problem facing the customer. I reported that "Low-income customers, however, frequently have little incentive, and even fewer choices, to pursue one of these constructive responses to bill unaffordability. Enrolling in a usage reduction program to reduce high bills on a going-forward basis, for example, does not help pay the existing arrears unless coupled with a reasonable long-term deferred payment plan. Conversely, agreeing to a deferred payment arrangement does not address affordability on a going-forward basis unless some adjustment can be made in either the level of the bill or the level of household resources available to pay for the bill."

- I found further that by the time a shutoff notice has been issued, the time for a low-income customer to engage in a "constructive response" has lapsed. I reported that: "All too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. Given the immediate consequences of failing to address the short-term nonpayment crisis, the customer is pushed into the negative actions identified in this research."

Accordingly, I recommend Evergy engage its credit and collection records as a means to identify low-income households that might benefit from participation in the proposed low-income usage reduction program.[38] Evergy should routinely inquire of its customer information system ("CIS") which customers meet the targeting criteria that I have outlined. The resulting lists of tagged customers generated through this use of the CIS should be provided to Community-Based Organizations ("CBOs") working with, and under contract to, the Company to engage in the outreach and intake process. The rationale for using the CBOs as the outreach mechanism is described below.

This is not to say that Evergy should completely eliminate its own outreach efforts. For example, we know from research performed by the National Regulatory Research Institute ("NRRI"),[39] the research arm of the National Association of Regulatory Utility Commissioners, that differing customer groups rely on differing primary sources of information for where to obtain assistance on their bills. According to

[38] *See generally*, Colton (1999). *The Use of Utility Data Processing Records as a Data Mining Source on Low-Income Consumers: Converting Information to Knowledge*, prepared for Affordable Comfort, Inc. (1999). *See also*, Colton (February 2003). *Zip Code Scoring: Targeting EITC Outreach to Delinquent Utility Customers*.
[39] National Regulatory Research Institute (April 2003). *Where Consumers Go for Help Paying Utility Bills,* National Regulatory Research Institute: Ohio State University.

NRRI, understanding the cultural differences (not simply ethnic but age-wise) is important to the delivery of bill payment assistance. For example, NRRI finds consumers over age 55 are more likely to look for help directly from the utility company. The group of households over age 55 “relies much less on people close to them, compared to younger people, and much more on the utility company.”[40] On the other hand, NRRI continues, “[n]ontraditional consumer education such as grass-roots campaigns might be more appropriate for hard-to-reach groups such as Hispanics.”[41] Providing outreach only through the utility likely misses households.

In sum, the Pilot project I recommend involves the following steps:

- While income eligibility for the low-income usage reduction component added to the low-income bill assistance programs should remain as it is, Evergy should establish certain targeting objectives based on indicators of payment-troubled status and high usage.
- Evergy should routinely inquire of its CIS which customers meet the payment-troubled targeting criteria.
- The resulting list of tagged customers should be provided to CBOs working with, and under contract to, the Company to engage in outreach and intake specifically targeted to these customers in message and outreach platform.

[40] Id., at 1 - 2.
[41] Id., at 1.

B. Community-Based Targeting Pilot.

Q. WHAT DO YOU RECOMMEND FOR INTENTIONAL GEOGRAPHIC TARGETING?

A. One way to engage in intentional targeting is to engage in a neighborhood-based outreach for delivering Evergy KEEIA measures to low-income customers. As I describe in detail above, it is possible to identify a limited number of specific Census Tracts that have a high concentration of households with characteristics demonstrating a particular need within the Evergy service territory. Neighborhood targeting would seek to treat the entire neighborhood, recognizing that doing so would generate a high penetration of investment in households that have demonstrated characteristics of need. The implementation of a successful neighborhood targeting scheme, such as I recommend here, has been implemented by other electric utilities.

An Evergy geo-targeting pilot can be modelled on the Consumers Energy Company pilot program adopted as part of a settlement of a proceeding reviewing the Consumers "Energy Waste Reduction" ("EWR") plan. That settlement was approved by the Michigan PSC on March 17, 2022.[42] In that Consumers Settlement, the parties (Consumers Energy, and environmental intervenors which included Sierra

[42] Michigan Public Service Commission, In the Matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for Consumers Energy Company to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016, Case No. U-20875, Order Approving Settlement Agreement (March 17, 2022), https://mi-psc.force.com/sfc/servlet.shepherd/version/download/0688y000002M86GAAS .

Club, Natural Resources Defense Council, Ecology Center, and National Housing Trust), agreed in relevant part as follows:

> *Geographic Targeting. The parties agree that in 2022 Consumers Energy will* initiate the research studies identified below to support development of an income-qualified geo-targeting protocol.
>
> a. A low income needs assessment ("LINA") study to identify historic participation and coverage of the Company's income qualified programs, characterize low-income areas using available datasets, and develop scenarios for ranking geographies based on high need criteria or for optimizing specific benefits to inform future prioritization of services. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.
>
> b. The parties agree that Consumers Energy will initiate a follow-up research effort utilizing the LINA research to develop a protocol and implementation strategy for future geographic targeting initiatives designed to increase vulnerable and/or underserved low income customers' participation in income qualified single and multi-family programs through geographically and programmatically targeted approaches, ensure availability and promotion of air sealing and insulation measures by partner agencies and contractors, and increase trade ally awareness regarding the identification of health and safety deferrals. The Company agrees to incorporate the targeting protocol in the development of its next EWR Plan filing.[43]

In addition to this "LINA" effort, the March 2022 Consumers Energy settlement provided that:

> Income Qualified Flint Initiative. The Company agrees to invest $1 million between 2023 and 2024 to support an Income Qualified program targeted initiative in and around Flint to identify and assess the impact of a geographically targeted approach to the delivery of EWR services. The initiative aims to find and provide EWR intervention to economically vulnerable customers including those in arrears (which can include CARE, HHC, and SER recipients), struggling to pay utility bills, and at risk of

[43] *Id.* at 8–9.

> deferral due to health and safety concerns. The initiative will focus on expanding existing efforts with community agencies, energy assistance coordination, outreach to income-qualified participants who recently installed emergency equipment, education and awareness efforts, trade ally education and engagement, and other targeted approaches.
>
> a. Consumers Energy can use this $1 million in any of the following zip codes in Flint: 48502, 48503, 48504, 48505, 48506, and 48507; however, Consumers Energy will prioritize outreach to zip code 48505, followed by 48503 and then 48502, and finally by 48507, 40504, and 48506.[44]

An Evergy geo-targeting pilot program has precedent in Michigan. Evergy would be well-served to model such a pilot on the Consumers Energy effort.

Q. HAS EVERGY EVER CONSIDERED THIS GEOGRAPHIC APPROACH TO TARGETING THE DELIVERY OF LOW-INCOME KEEIA INVESTMENTS?

A. No. Unfortunately, Evergy has not considered this approach for targeting investments. When asked for any study it has prepared which included a discussion of the distribution of income-qualified usage reductions measures, savings, and/or expenditures by census tracts, Evergy responded that it had not performed any such assessment. (SC-1-29(b)). While Evergy has tracked its spending on its income-qualified program as a whole in its legacy efficiency investments (recognizing that only Evergy Metro, not Evergy KS Central or Evergy KS South had income-qualified spending in 2017–2021) (SC-1-32(a)), it could provide no data on the geographic distribution of those investments. (SC-1-32(c)). Evergy has not tracked its achieved savings compared to its projected savings on a geographic basis. (SC-1-33).

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[44] *Id.* at 10.

Lacking this data, it is not possible for Evergy to determine, or assert, that its income-qualified spending is being equitably distributed in its service territory, or whether the outcomes of its efficiency investments are being equitably distributed, let alone whether its investments are being distributed on the basis of need or vulnerability.

C. <u>Multi-Family Carve-Out Pilot.</u>

Q. PLEASE EXPLAIN THE PILOT PROGRAM INVOLVING AN EXPLICIT CARVE-OUT FOR MULTI-FAMILY HOUSING THAT YOU RECOMMEND FOR EVERGY?

A. Treating multi-family housing with energy efficiency is particularly important when seeking to reach low-income populations. Multi-family housing (defined as buildings with five or more units), one researcher notes, comprises 17% of all housing units in the United States.[45] Moreover, multi-family housing overwhelmingly is rental housing. Nationwide, 83% of multi-family housing units are rental buildings, while only 17% are owner-occupied. Multi-family housing comprises more than 40% of the entire rental stock in the United States.[46] In the Kansas counties served by Evergy, 37% of all rental housing is comprised of housing units with five or more units in the structure.[47] In those counties, 97% of all housing with five or more units is rental housing.

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[45] Pivo (2012). Energy Efficiency and its Relationship to Household Income in Multifamily Rental Housing. at 1, Fannie Mae: Washington D.C., available at https://multifamily.fanniemae.com/media/6266/display (last accessed June 3, 2022).

[46] Nedwick, et al. (2013). Partnering for Success: An Action Guide for Advancing Utility Energy Efficiency Funding for Multifamily Rental Housing, National Housing Trust: Washington D.C., available at https://www.nclc.org/images/pdf/energy_utility_telecom/weatherization/partnering-for-success-utiltiy-guide2013.pdf (last accessed June 3, 2022).

[47] Table B25032, American Community Survey, 5-year, 2019.

In the United States, lower incomes are closely related with residence in multi-family housing. Reports find that multi-family housing shelters one quarter (27%) of the nation's *very* low-income renters. Nearly all (93%) of *very* low-income households living in multi-family housing are renters.[48]

It is well-established that there is significant potential for energy efficiency savings in the multi-family housing sector. "The potential for energy savings in this sector," one study found, "is huge and largely untapped."[49] Energy efficiency in multi-family housing could be improved by about 30%.[50] One reason for this can be attributed to the relatively older age of multi-family housing relative to single-family housing. Most multi-family housing throughout the nation was constructed before 1978, the year the nation's first building energy code was enacted in California. Similarly, in the Kansas counties served by Evergy, 51% of multi-family housing units were built before 1980. This housing, in other words, was not constructed to the same energy quality standards that subsequently constructed housing was constructed.

Multi-family housing is substantially less efficient than other housing types. One study, for example, examined the prevalence of Energy Efficiency Features ("EEFs"), defined as "physical attributes that reduce the amount or cost of energy required for a

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[48] Pivo, *supra* note 38, at 1, citing the U.S. Census Bureau's 2010 American Housing Survey.

[49] Benningfield Group (2009). U.S. Multifamily Energy Efficiency Potential by 2020, at 6, Benningfield Group: Folsom (CA).

[50] As Benningfield notes, "this is the 'achievable' energy efficiency potential, which means it is both economically reasonable and within normal budget constraints. The economic energy efficiency potential is estimated to be 59% of multifamily energy use. The technical potential is even larger: over 80%." Benningfield Group, 4.

given level of energy service."[51] The study concluded that "multifamily rentals were less energy efficient than other housing in 2005 and . . . the gap persisted into 2009." Some improvement occurred from 2005 to 2009 "but it was modest."[52] The study reported that "[o]verall, 87.5 percent of the EEFs (21 of 24) were significantly less common in multifamily rentals than in other housing in 2005 (at the .10 significance level or better). By 2009, this difference had been reduced to 75 percent, though clearly the deficiency in multifamily housing remained."

In the 2005 sample, every HVAC EEF, all but 1 building envelope EEF, and 9 of the 11 appliance EEFs were significantly less common in multifamily rentals. Only 1 feature was more common in multifamily rentals (2000+ vintage clothes dryers), and only 1 was equally common (natural gas cooktops). In the 2009 sample, all but one HVAC EEF (2000+ vintage ac), every building envelope EEF, and 6 of 11 appliance EEFs were significantly less common in multifamily rentals, compared to other housing.[53]

Evergy's energy efficiency programs should ensure that multi-family units are not unreasonably excluded. I recommend a low-income multi-family carve-out of 10% of the total low-income budget (the rounded percentage of electricity direct-billed to multi-family, low-income housing units of the total electricity direct billed to multi-family housing units in the Evergy service territory). This recommendation addresses

[51] Pivo, supra note 45, at 4.
[52] Id., at 5.
[53] Id., at 4-5.

the unique barriers presented by multi-family units, the unique potential for generating usage and emission reductions, and the disproportion harms to low-income households if multi-family housing is not specifically included.

Q. IS THERE ANY ADDITIONAL CHANGE TO EVERGY'S PROGRAM DESIGN THAT YOU RECOMMEND TO ENSURE THAT CUSTOMERS WHO ARE RESIDENTS OF MULTI-FAMILY BUILDINGS ARE NOT UNFAIRLY EXCLUDED?

A. Yes. In multi-family buildings where the tenant pays the utility bill, the residence is often less efficient on a per square footage basis than a single-family home. The RECS data immediately below demonstrates that the usage for multi-family buildings is often less efficient by comparing the usage per household versus the usage per square foot, disaggregated by type of building.

Housing Unit Type	Usage per Household (million Btu)	Usage per Square Foot (thousand Btu)
1-family dwelling	126.9	44.6
Attached 1-family	130.9	44.0
Detached 1-family	102.5	50.3
Multi-family dwelling	77.4	78.1
2 – 4 units	95.4	80.1
5 or more units	64.7	76.2
Mobile home	79.2	76.9

Even if not directly excluded from Evergy's KEEIA programs, Evergy's primary focus on the level of usage rather than on the inefficiency of usage would have the effect of excluding low-income customers in multi-family buildings. As I identified, this exclusion occurs despite a sizable portion of all low-income households live in such multi-family buildings. Accordingly, in addition to the multi-family carve-out I recommend above, I recommend further that targeting of low-income customers in multi-family buildings be based on the intensity of usage on a square footage basis rather than on total consumption.

Q. DOES EVERGY OFFER MULTI-FAMILY FUNDING THROUGH ITS KEEIA PROGRAM PROPOSAL?

A. Yes. My testimony in this section should not be construed as a criticism of Evergy's proposal with respect to multi-family buildings. Instead, my testimony should be construed as endorsing what Evergy proposes and suggesting that Evergy could, and should, do more.

For my purposes here, I note that Evergy's Hard-to-Reach Homes program has a component that targets "income eligible multi-family properties." (KEEIA Report, at 34). For these multi-family properties, there will be targeted ("concierge-style") outreach to educate property owners and managers on the benefits of energy efficiency to them. These benefits include: (1) lower tenant turnover, (2) tenant rental satisfaction increases and (3) lower rent default since less money is being spent on energy use, which frees up money to apply toward rent. (*Id.* at 36).

The multi-family component of the Hard-to-Reach Homes program will seek to achieve energy savings "through increasing the awareness and educational outreach to customers, property managers and owners about their energy usage, installing energy savings measures and providing financial incentives." (*Id.*, at Appendix A, page 9). In particular, Evergy states that Component 3 of its Hard-to-Reach Homes program is directed toward income-qualified multi-family buildings. Component 3 is described as "Energy efficient measures provided and/or installed in tenant units of multi-family building by the Company to include energy assessments. Energy efficient measures provided and/or installed in tenant units of multi-family building by the Company to include energy assessments." (*Id.*).

Q. HOW DOES EVERGY DEFINE AN INCOME-QUALIFIED MULTI-FAMILY BUILDING?

A. Evergy provides five alternatives by which the Company will designate a building as an income-qualified building:

1. Participation in an affordable housing program. Documented participation in a federal, state, or local affordable housing program, including LIHTC, HUD, USDA, State HFA, and local tax abatement for low-income properties.

2. Location in a low-income census tract. Location in a census tract we identify as low-income, using HUD's annually published "Qualified Census Tracts" as a starting point.

3. Rent roll documentation. Where at least 50 percent of units have rents affordable to households at or below 80% of area median income, as published annually by HUD.

4. Tenant income information. Documented tenant income information demonstrating at least 50 percent of units are rented to households meeting one of these criteria: at or below 200 percent of the Federal poverty level or at or below 80% of area median income.

5. Participation in the Weatherization Assistance Program. Documented information demonstrating the property is on the waiting list for, currently participating in, or has in the last five years participated in the Weatherization Assistance Program.

(KEEIA Report, Appendix A, page 10).

Q.PLEASE RESPOND TO THESE FIVE ELIGIBILITY CRITERIA.

A. Evergy should be commended in its efforts to define an income-qualified multi-family building. I have no objection to the five criteria for as far as they go. Indeed, Criterion #5 is appropriate as written. I do, however, make the following modest recommendations for Criteria #1, #2, and #3, and propose a more substantive recommendation for Criterion #2.

- In defining an "affordable housing" development for Criterion #1, such a development should not be excluded because it may be part of a mixed-use development. In a multi-family development that may be part of a mixed-use development, the Hard-to-Reach Homes dollars should be limited to the residential portion of the development. Moreover, Evergy should make clear that just because a development is participating in an affordable housing program does not mean that 100% of the units in that development are directed toward low-income households. In providing funds to such developments, the allocation of funding between Evergy residential programs generally—and income-qualified programs in particular—should be proportionate to the number of income-qualified units to the total units. If only 30% of a Low-Income Housing Tax Credit ("LIHTC") development involves affordable units, only 30% of the Evergy spending on that development should be allocated to the income-qualified energy efficiency program.

- In defining an affordable multi-family development pursuant to Criterion #3, Evergy should be consistent with the affordable housing programs that it references in Criterion #1. Nearly all affordable housing programs have dual income qualifications. The LIHTC program, for example, provides federal tax credits when all units receiving tax credit assistance must have 20% or more households earning no more than 50% of area median income or 40% or more households earning no more than 60% of the area median income. Affordable housing programs, in other words, recognize that it is often beneficial to provide fewer units of affordable housing if those units are affordable at lower incomes. Evergy should modify its Criterion #3 so that it accepts rent roll documentation of either 50% of units having rents affordable to households at or below 80% of area median income, or 30% of units having rents affordable to households at or below 50% of area median income.

Q. WHAT IS THE MORE SUBSTANTIVE MODIFICATION YOU PROPOSE FOR CRITERION #2?

A. Evergy should not use "Qualified Census Tracts" ("QCT") as defined by the Internal Revenue Service for purposes of allocating LIHTC tax benefit and for defining a "low-income" Census Tract. The purpose of QCTs is to identify Census Tracts for the purpose of Low-Income Housing Credits under IRC Section 42 with the purpose of increasing the availability of low-income rental housing. This is achieved by providing an income tax credit to certain owners of newly constructed or substantially rehabilitated low-income rental housing projects.

The problem with using QCTs is that they are not well-targeted to identify low-income areas for other purposes. To document this, I have included in Appendix B a list of all QCTs in the State of Kansas as identified for 2021. In addition, in Appendix B, I have set forth the list of Census Tracts in Evergy counties, as identified by the Federal Financial Institutions Examination Council ("FFIEC"). The FFIEC categorizes each Census Tract by whether that tract is low-income, moderate-income, middle-income, or upper-income.

As can be seen in Appendix B, many of the QCTs in Kansas are either “middle” or “moderate” income Census Tracts. The data from Appendix B is summarized in Table 16. Of the 119 QCTs for which data is available (there is one QCT in Riley County the income status for which is “unknown”), fewer than half are classified as “low-income” Census Tracts. Of the 119 QCTs, 46 are classified as “low-income,” while 56 are classified as “moderate” income, and another 16 are classified as “middle” income. Only one of the QCTs in the Evergy counties is classified as “upper” income (in Crawford County).

Table 16. Evergy Counties by Number of QCTs and Census Tracts By Income Status (2021)
(Source: Appendix B)
(Evergy Counties not listed have no 2021 QCTs)

		Number of Census Tracts						Number of Census Tracts			
County	QCTs	Low	Middle	Moderate	Upper	County	QCTs	Low	Middle	Moderate	Upper
Allen	1			1		Lyon	2		1	1	
Atchison	1		1			Mntgomry	5		1	4	
Butler	2			2		Reno	2		1	1	
Crawford	4		2	1	1	Riley	4		3	(1 unknown)	
Douglas	4	1		3		Saline	3			3	
Geary	2			2		Sedgwick	35	13	3	19	
Johnson	3	2		1		Shawnee	11	4	2	5	
Labette	2			2		Woodson	1		1		
Leavenworth	2	1		1		Wyandotte	36	25	1	10	

Q. DO YOU OBJECT TO USING QUALIFIED CENSUS TRACTS (QCTS) AS THE BASIS FOR A MULTI-FAMILY PROGRAM NOT TARGETED TO LOW-INCOME CUSTOMERS OR FUNDED THROUGH THE BUDGET FOR INCOME-QUALIFIED CUSTOMERS?

A. No. Indeed, using QCTs as an indicator of need for targeted multi-family energy efficiency assistance generally seems to be well-founded. My objection use the use of QCTs as the basis for targeting energy efficiency assistance defined to be "income-qualified assistance" based on an identification of QCTs. Multi-family investments in QCTs should not be funded out of the low-income program. Energy savings, or emissions reductions, attributable to investments in QCTs should not be attributed to the low-income program.

Q. WHAT DO YOU RECOMMEND INSTEAD BE USED FOR THE INCOME-QUALIFIED MULTI-FAMILY PROGRAM?

A. Instead, I recommend that Evergy use Census Tracts that have been qualified as a "low-income community" for purposes of the federal New Market Tax Credit ("NMTC") program. Rather than being exclusively directed toward housing, with designations that take into consideration the cost of housing development, the NMTC is a federal program that directs investment into a wide range of housing, commercial development and other economic development initiatives (*e.g.*, supermarkets) serving "low-income communities." Under the NMTC, "low-income communities" include Census Tracts: (1) where the poverty rate is at least 20%; or (2) where the median family income does not exceed 80% of the area median family income; or (3) where the median family income does not exceed 85% of the area median family income provided the Census Tract is located in a high migration rural county; or (4) where the Census Tract has a population of less than 2,000 and is contained within a Federally-designated Empowerment Zone and is contiguous to at least one other low-income community. Other programs also use the NMTC in their income-eligibility guidelines (*e.g.*, the USDA Low-Income, Low-Access [LILA]) program).

In Kansas, the NMTC program has been used by LILA to identify 211 low-income Census Tracts.

Q. GIVEN THAT EVERGY HAS ALREADY PROPOSED AN INCOME-QUALIFIED MULTI-FAMILY PROGRAM, WHY DO YOU PROPOSE THIS AS A "PILOT" PROJECT?

A. While I do not propose fundamental changes in Evergy's proposed multi-family KEEIA program, I do propose changes that are sufficiently substantive—involving an allocation of spending and savings between low-income and non-low-income residents; allocating spending between residential and non-residential customers in multi-family developments; and modifying the criteria for defining a "low-income" geographic area. I decided it is reasonable to allow Evergy time to ramp-up these modifications rather than to require that they be implemented "immediately." The most reasonable way to allow such a ramp-up seemed to be to treat the modifications as a "pilot" project until sufficient experience was gained by the Company to remove any uncertainty in funding and to remove any process changes in implementation.

PART 6. Cost Recovery.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I address the metrics that should be utilized to determine whether Evergy should be allowed to recover its "Earnings Opportunity" for its low-income programs. In my testimony, I do not take a position on the form or implementation of EOs as a whole. My exclusive purpose is to address what Evergy should be required to demonstrate in order to trigger the EOs for its low-income program.

Q. WHAT DOES THE EVERGY KEEIA PROGRAM CURRENTLY PROPOSE?

A. Evergy proposes, with respect to a performance indicator for its Hard-to-Reach Homes program: that its metric be "customer participation: criteria will be $ invested and customers participating." Evergy goes on to propose that "the performance metric will be based on key indicators of participation of hard-to-reach customers during the period. 1) Actual spend for Hard-to-Reach Home program exceeds 85% of approved annual budget." (KEEIA Report, Appendix E Tables, at 2 of 4).

Evergy's recommendation that there be no separate metric for its low-income program should not be approved. The low-income programming of Evergy should be subject to separate performance reporting. Moreover, the specific "performance metric" that Evergy has proposed should be replaced with the set of proposed outcome measurements below.

Q. PLEASE PROVIDE THE CONCEPTUAL BACKGROUND FOR THE RECOMMENDATION OF USING OUTCOME MEASUREMENTS."

A. Measuring "outcomes" is to be distinguished from measuring "activities." An "activity" is defined as the work performed that directly produces products or services. The "outcome" of a program is the accomplishment of a program objectives attributable to the program. Measuring outcomes, therefore, is the most credible performance measurement when evaluating the effectiveness of a specific program.

Performance measurement has been growing for nearly 30 years in both public and private programs. The best-known application is the federal Government Performance and Results Act of 1993 (the "GPRA"). GPRA was designed to address the same conceptual issues that Evergy must address for its low-income energy efficiency programs (or its energy efficiency programs generally): "to grapple with how to best improve effectiveness and service quality while limiting costs." It shifts the focus from program activities to program results.

According to GPRA, "The key concepts of this performance-based management are the need to define clear agency missions, set results-oriented goals, measure progress toward achievement of those goals, and use performance information to help make decisions and strengthen accountability." Utilities face the same sort of problems in measuring efficiency as do federal agencies. As the U.S. General Accounting Office ("GAO") has observed, "Many agencies have a difficult time moving from measuring program activities to establishing results-oriented goals and performance measures."[54]

The GAO explains further: "[A]gencies must move beyond what they control—that is, their activities—to focus on what they merely influence—their results." In this observation, one easily could replace the word "agencies" with the word "utilities."

Evergy introducing the use of the EO metrics is an important advance in the design and evaluation of energy efficiency and emission reduction programs in Kansas. While the Company's KEEIA proposal does not discuss its EO metrics in terms of "outcomes," the discussion it presents appears to be based on an assessment of outcomes.

Q. HAS HELPFUL GUIDANCE BEEN DEVELOPED WITH RESPECT TO THE USE OF OUTCOME MEASUREMENTS?

A. Yes. Federal agencies have been given substantial guidance on the aspects of GPRA that relate to adequate and appropriate performance measures. One report, entitled Executive Guide: Effectively Implementing the Government Performance and Results Act, reviewed both private and governmental (including foreign) agencies and concluded that the most successful performance measures embraced four characteristics: (1) tied to program goals and showed the degree to which results were achieved; (2) included only data necessary for decision-making; (3) responded to

[54] James Hinchman (Acting Comptroller General). (June 24, 1997). Managing for Results: The Statutory Framework for Improving Federal Management and Effectiveness, at 1, Testimony before U.S. Senate Committee on Appropriations and Committee on Governmental Affairs (GAO/T-GGD/AIMD-97-144).

multiple priorities and forced managers and policymakers to consider competing interests and demands; and (4) established accountability for results.

In proposing the below low-income metrics as a mechanism to measure the performance of the proposed low-income Evergy program, one caution is necessary. The collection of data on performance indicators is only important to the extent that such data is used in managing the process being evaluated. One crucial element of performance management is establishing and reporting the desired goals so that gaps in performance are identified and rectified. GPRA provides guidance on how to approach the planning and utilization of performance data.[55] As implementation of GPRA has made clear:

> Even the best performance information is of limited value if it is not used to identify performance gaps, set improvement goals, and improve results . . . [S]uccessful organizations recognize that it is not enough just to measure outcomes . . . By analyzing the gap between where they are and where they need to be to achieve desired outcomes, management can target those processes that are in most need of improvement, set realistic improvement goals, and select an appropriate process improvement technique.[56]

Given this background, I present a series of performance metrics to measure the outcomes of Evergy's low-income programs.

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[55] *See generally*, Colton (1998). "Universal Service: A Performance Based Measure for a Competitive Industry, Public Utilities Fortnightly 136(12): 40; *see also*, Colton (2000). Integration of LIHEAP with Energy Assistance Programs Created through Electric and/or Natural Gas Restructuring, report for the LIHEAP Advisory Committee on Managing for Results, U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance (federal LIHEAP office).

[56] Johnny C. Finch (Assistant Comptroller General) and Christopher Hoenig (Director, Information Resource Management/Policies and Issues). (June 20, 1995). Managing for Results: Critical Actions for Measuring Performance, at 9, testimony before the U.S. House Subcommittee on Government Management, Information and Technology, Committee on Government Reform and Oversight.

Q. WHAT DO YOU RECOMMEND?

A. I recommend the following metrics for use in ongoing evaluations and assessments of the outcomes performance of Evergy's low-income programs.

1. **<u>Outcome measured</u>:** Is Evergy's low-income program achieving the same savings in low-income homes as in non-low-income homes? Metric: Ratio of the percent of low-income energy savings per home to the percent of residential savings per home. A ratio of 1.0 is an indicator of equity.

2. **<u>Outcome measured</u>:** Is Evergy's low-income program reaching a proportionate share of low-income homes with deep savings? Metric: Ratio of the sum of the average kWh shared per home times the number of low-income homes treated to the average kWh shared per home times the number of residential homes treated. A ratio equal to the percentage of income-eligible households amongst all households is an indicator of equity.

3. **<u>Outcome measured</u>:** Is Evergy's low-income program achieving the same carbon reduction in low-income homes as in non-low-income homes? Metric: Ratio of the average carbon reduction in low-income home to average carbon reduction in residential homes. A ratio of 1.0 is an indicator of equity.

4. **<u>Outcome measured</u>:** Is Evergy's low-income program allowing low-income customers to make payments and to avoid arrears at the same rate as residential customers do? Metric: Ratio of the percentage of revenue in arrears in treated low-income homes to percentage of revenue in arrears in residential homes. A ratio equal to 1.0 is an indicator of equity.

5. **<u>Outcome measured</u>:** Is Evergy's low-income program allowing low-income customers to pay the same percentage of their bills as residential customers pay? Metric: Ratio of the payment coverage ratio (*i.e.*, dollars of payments divided by dollars of bills) for treated low-income households to the payment coverage ratio in residential households. A ratio equal to 1.0 is an indicator of equity.

6. **<u>Outcome measured</u>:** Is Evergy's low-income program generating a substantive improvement in low-income home energy burdens through a reduction in energy usage? In measuring the impacts on energy burdens, it would be unreasonable to establish an objective of using Evergy's low-income investments to *<u>achieve</u>* an affordable burden for all treated households. Some households have high energy burdens not because of high energy use, but rather because of very low incomes. In these instances, achieving an affordable burden

> is not a function of energy efficiency standing alone, but rather a function of combining energy efficiency with bill assistance. The outcome desired from Evergy's low-income efficiency investments is an ***improvement*** in energy burdens. An energy burden reduced from 20% of income to 12% of income (an improvement even though the burden is still "unaffordable") may be as important as an energy burden reduced from 9% of income to 5% of income.

Q. ARE THERE SPECIFIC ADVANTAGES TO USING THESE METRICS RATHER THAN EVERGY'S PROPOSAL TO TIE ITS PERFORMANCE METRIC TO THE PERCENTAGE OF BUDGET SPENT?

A. Yes. Multiple advantages arise from the use of these outcome measurements. First, these measurements do not allow the low-income population to be treated with low-cost, but low-savings measures. The "inequity" in such treatments would routinely appear in Equity Ratios consistently less than 1.0. Second, these measurements can easily be modified to reflect particular interests or areas of inquiry. For example, one area of inquiry might involve a comparison not of low-income households to residential households, but rather of low-income households in "vulnerable" areas (*e.g.*, NMTC Census Tracts as discussed in this Statement) to low-income households generally. One area of inquiry that could be the subject of easy adaptation would involve a focus on the efficiency investments directed toward multi-family housing.

Q. ASIDE FROM THE DATA COLLECTED FOR DETERMINING EARNINGS OPPORTUNITIES, IS THERE LOW-INCOME DATA THAT EVERGY SHOULD REPORT TO THE COMMISSION?

A. Yes. The Commission should direct Evergy to begin to report a limited amount of data in order to track the impacts of its KEEIA programming on low-income customers. Before I begin, however, let me note several observations about my recommendations.

- First, there are data elements that I recommend being collected. On the other hand, there are other data elements that I argue are *not* particularly helpful. I will note both below.

- Second, within that data that I recommend being collected, my references to "accounts" (and related terms, *e.g.*, "customers") is intended to be limited to recipients of low-income energy efficiency investments.

- Third, while I state that data should be collected "by month," I mean that the data should be monthly data. However, that "monthly data" could be submitted to the Commission on a bi-annual or an annual basis. There is no need to *receive* the data each month. When the Commission does receive data though, that data should be "by month."

Given the above observations, I recommend reporting of the following data elements:

1. The dollars of bills for current service by month.
2. The dollars of actual receipts by month.[57]
3. The number of accounts receiving a bill by month.
4. The number of accounts making a payment by month.[58]

[57] The combination of Metric #1 and Metric #2 allows us to look at the percentage of bills that are paid each month. If you place the dollars of bills (Metric #1) in the denominator and the dollars of receipts (Metric #2) in the numerator, you can calculate what percentage of bills is being paid on a monthly basis. You can also aggregate these monthly bills (and payments) to examine the results (the term for this calculation is "payment coverage ratio") on an annual basis, a seasonal basis, or any other time period desired. For example, in an evaluation I performed for a Colorado energy affordability program, one question was the extent to which customers made payments after receiving a disconnect notice. I calculated a bill payment coverage ratio for the four months after the receipt of a disconnect notice. One additional question was the extent to which customers made payments after having service disconnected and reconnected (or whether customers simply fell back into arrears again). Again, that was tested by examining the payment coverage ratio for the four months subsequent to the reconnection.

[58]This allows us to see what percentage of people make *some* payment (while Metric #1 and Metric #2 allow us to see what percentage of the bill is paid).

5. The number of disconnect notices issued by month.[59][60]
6. The number of accounts in arrears;
7. The dollars of arrears by month;
8. The average arrears of accounts with arrears by month;
9. Conversely, the number of accounts with a $0 balance[61] by month;[62]
10. The number of Final Bills by month;
11. Pre- and post-treatment energy burdens.[63]

What is conspicuously absent from the above list is the number of shutoffs. I don't *object* to counting the number of shutoffs. My experience, however, is that the number of shutoffs is not a meaningful piece of information as it does not relate to whether a customer has an arrearage, or the value of the unpaid balance. "Final bills" are better than "shutoffs" because a metric based on Final Bills shows the number of

[59] This is more important than the number of disconnections.

[60] Data elements 1 through 5 also allow us to calculate a number of other metrics. For example, the number of disconnect notices per $1,000 in bills (or, similarly, the number of disconnect notices per $1,000 in payments) lets us see how hard the Company has to work to collect its revenue. Similarly, the number of disconnect notices per 1,000 bills provides insights into the extent of payment troubled status of customers. You can also "flip" these metrics. Looking at the amount of dollars received per disconnect notice allows us to assess the efficiency of collection. An increasing amount of revenue per disconnect notice may mean that the Company is issuing fewer disconnect notices, or that the Company is collecting more dollars, either of which is a positive development.

[61] Experience counsels that testing for whether an account has a $0 balance is easier than tracking whether a customer has made a payment "in-full" and "on-time" each month. In fact, it is the $0 balance which a utility should have the most interest in.

[62] In contrast, the extent to which customers make partial payments is determined through the "payment coverage ratio" discussed above. A "payment coverage ratio" of more than 0% and less than 100% indicates a partial payment.

[63] Tracking burdens has two impacts. First, it allows the utility to track the number of customers who moved from having an *unaffordable* burden to having an *affordable* burden given the usage / billing reduction. Second, it allows the utility to track the reduction in burdens for those customers who continue to have an unaffordable burden despite having received energy efficiency investments.

customers actually leaving the system, whether due to a shutoff, or because they are "running" from a debt, or for some other reason.

Q. WHY IS SUCH DIRECTION REGARDING DATA COLLECTION NEEDED FROM THE COMMISSION?

A. Evergy's proposed KEEIA plan devotes substantial attention to describing its Evaluation, Measurement and Verification ("EM&V") framework. (KEEIA Report, Appendix D). The EM&V discussion, however, is devoted almost exclusively to the traditional avoided costs of energy efficiency investments. Evergy concedes in discovery that the relationship between arrearages and energy savings "has not been contemplated or analyzed by the Company" (SC-1-12), and that it has "not conducted any analysis" of the impact of energy efficiency investments on low-income arrearages or payments." (SC-1-13). The Company further concedes that it "has not conducted any such analysis" when asked about the extent to which, if at all, "energy efficiency measures delivered to low-income customers result in the following associated with the customers: (a) reduced arrearages; (b) reduced bad debt; (c) reduced credit and collection activity; (d) improved timeliness of payments; and (e) improved completeness of payments." (SC-1-15).

Even though the KEEIA statute does not require low-income efficiency investments to meet a cost-benefit test, it is important for Evergy to determine the full range of benefits that accrue to the Company, its ratepayers, and to the State, of its low-income investments. The proposed KEEIA plan does not provide for the definition of metrics, or the collection of data, that would allow for this to occur. The Commission should act to guarantee that it does occur to fulfill its statutory mandate to ensure that the low-income expenditures are "in the public interest and . . . supported by a reasonable budget in the context of the overall budget." That task cannot be accomplished unless the full range of benefits generated by the low-income program are determined and assessed.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Colton Schedules

Schedule RDC-1: Self-Sufficiency Standard: Six 3-person Families
50 Evergy Kansas Counties

	Adult/Infant/ Preschooler	Adult/Preschooler/ School-age	Adult/School-age (x2)	2 Adults/Infant	2 Adults/Preschooler	2 Adults/School-age
Allen County	$38,602	$37,140	$36,688	$41,930	$40,786	$40,351
Anderson County	$51,053	$47,308	$43,870	$49,401	$47,945	$45,039
Atchison County	$50,148	$46,048	$42,346	$48,668	$47,241	$44,217
Bourbon County	$37,162	$36,321	$36,097	$40,569	$39,950	$39,720
Brown County	$47,783	$44,411	$42,194	$46,950	$45,306	$43,583
Butler County	$50,612	$48,449	$46,758	$49,979	$49,130	$47,521
Chase County	$46,911	$43,426	$41,440	$46,393	$44,618	$42,917
Chautauqua County	$50,070	$45,457	$41,794	$48,163	$46,123	$43,133
Clay County	$50,611	$46,149	$42,418	$48,849	$47,002	$43,955
Coffey County	$49,947	$44,631	$40,920	$48,406	$46,054	$42,959
Cowley County	$48,993	$43,099	$39,766	$47,416	$44,888	$41,755
Crawford County	$47,039	$42,653	$39,352	$45,730	$44,531	$41,343
Dickinson County	$50,154	$44,882	$40,878	$48,566	$46,459	$43,050
Doniphan County	$50,268	$46,475	$42,632	$48,771	$47,694	$44,553
Douglas County	$63,174	$57,708	$54,305	$58,277	$56,226	$52,844
Elk County	$49,777	$44,286	$40,711	$48,315	$45,792	$42,768
Franklin County	$51,954	$49,139	$46,637	$50,249	$49,505	$47,052
Geary County	$53,592	$49,295	$48,407	$52,968	$49,580	$48,697
Greenwood County	$49,220	$43,862	$40,332	$47,691	$45,391	$42,328
Harvey County	$50,194	$46,798	$44,491	$48,550	$46,527	$44,622
Jackson County	$51,563	$46,271	$41,397	$49,547	$47,802	$43,748
Jefferson County	$53,386	$49,486	$46,906	$51,563	$49,919	$47,344
Johnson County	$57,758	$54,629	$52,346	$56,591	$55,750	$53,481
Kingman County	$50,705	$45,616	$41,958	$48,630	$46,047	$43,061
Labette County	$45,527	$39,919	$40,298	$47,605	$41,917	$42,307
Leavenworth County	$54,293	$50,164	$47,590	$52,955	$51,302	$48,850
Linn County	$53,726	$49,424	$46,633	$51,909	$49,973	$47,279

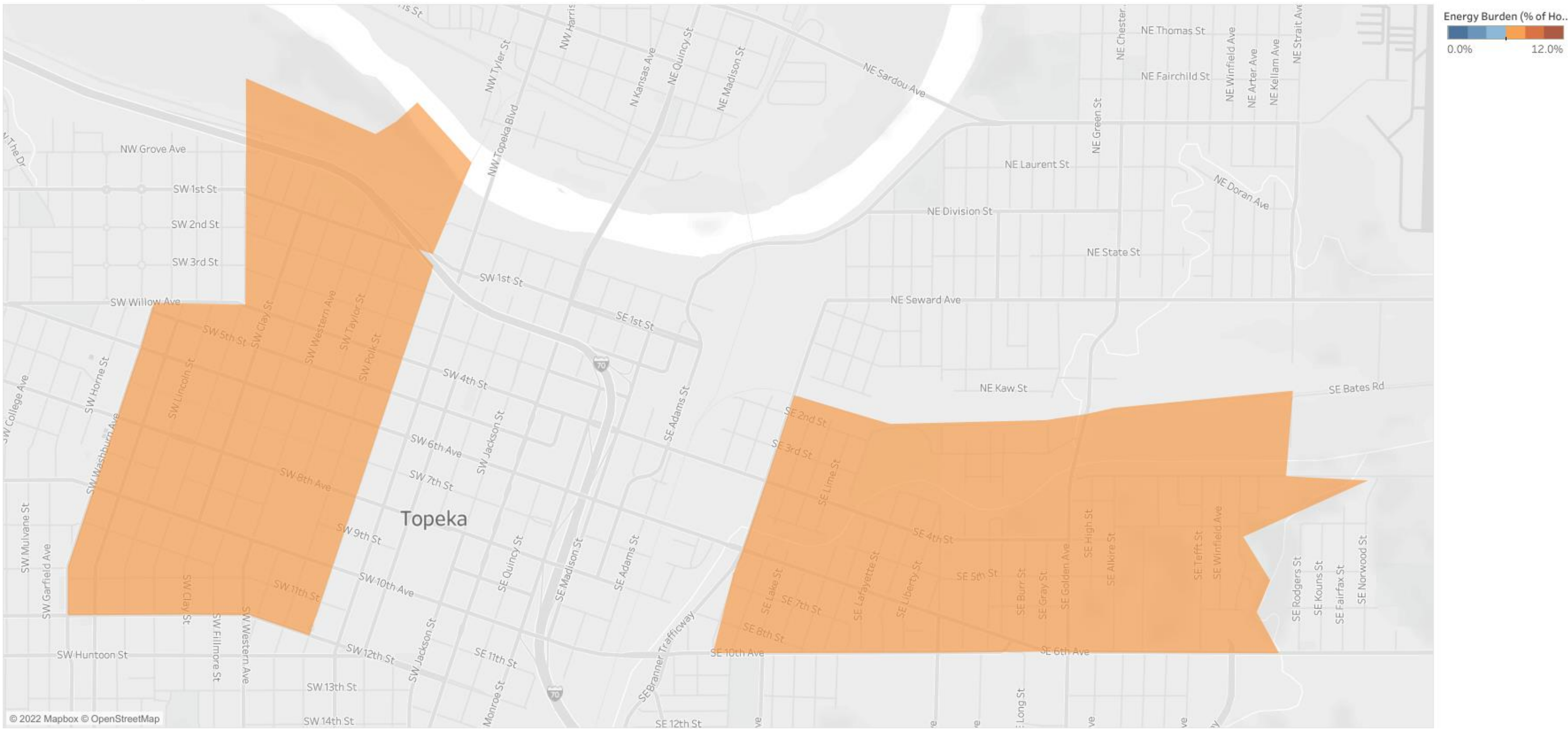
Schedule RDC-1: Self-Sufficiency Standard: Six 3-person Families
50 Evergy Kansas Counties

	Adult/Infant/ Preschooler	Adult/Preschooler/ School-age	Adult/School-age (x2)	2 Adults/Infant	2 Adults/Preschooler	2 Adults/School-age
Lyon County	$48,737	$44,380	$42,085	$47,569	$44,992	$43,142
McPherson County	$50,857	$47,179	$43,759	$48,898	$47,443	$44,551
Marion County	$47,816	$43,284	$41,757	$47,146	$44,257	$42,985
Marshall County	$50,133	$44,124	$39,213	$48,707	$47,184	$42,680
Miami County	$50,660	$48,868	$48,298	$51,119	$49,904	$49,337
Montgomery County	$49,376	$44,190	$40,627	$47,883	$45,675	$42,646
Morris County	$50,306	$46,300	$42,673	$48,444	$46,915	$43,954
Nemaha County	$50,031	$45,968	$41,508	$48,006	$47,160	$43,473
Neosho County	$37,232	$37,543	$38,764	$40,870	$39,875	$41,198
Osage County	$50,859	$46,557	$42,849	$49,131	$47,367	$44,339
Ottawa County	$49,795	$44,584	$40,863	$48,065	$45,799	$42,684
Pottawatomie County	$52,012	$48,660	$45,309	$50,379	$49,519	$46,490
Reno County	$49,118	$46,183	$42,903	$47,392	$46,626	$44,016
Riley County	$55,559	$51,925	$48,696	$54,086	$53,682	$50,473
Saline County	$48,495	$43,241	$41,713	$48,310	$44,869	$43,595
Sedgwick County	$52,256	$48,294	$44,810	$50,746	$49,250	$46,193
Shawnee County	$54,372	$49,763	$45,995	$51,549	$50,074	$46,391
Sumner County	$44,179	$43,115	$42,218	$44,556	$44,483	$43,736
Wabaunsee County	$49,273	$46,581	$44,342	$48,530	$47,495	$45,568
Washington County	$51,121	$47,635	$44,294	$49,447	$48,106	$45,283
Wilson County	$41,047	$37,936	$37,434	$44,078	$41,421	$40,834
Woodson County	$49,308	$44,236	$40,694	$47,300	$45,045	$42,046
Wyandotte County	$57,722	$52,379	$49,493	$55,007	$52,564	$49,696

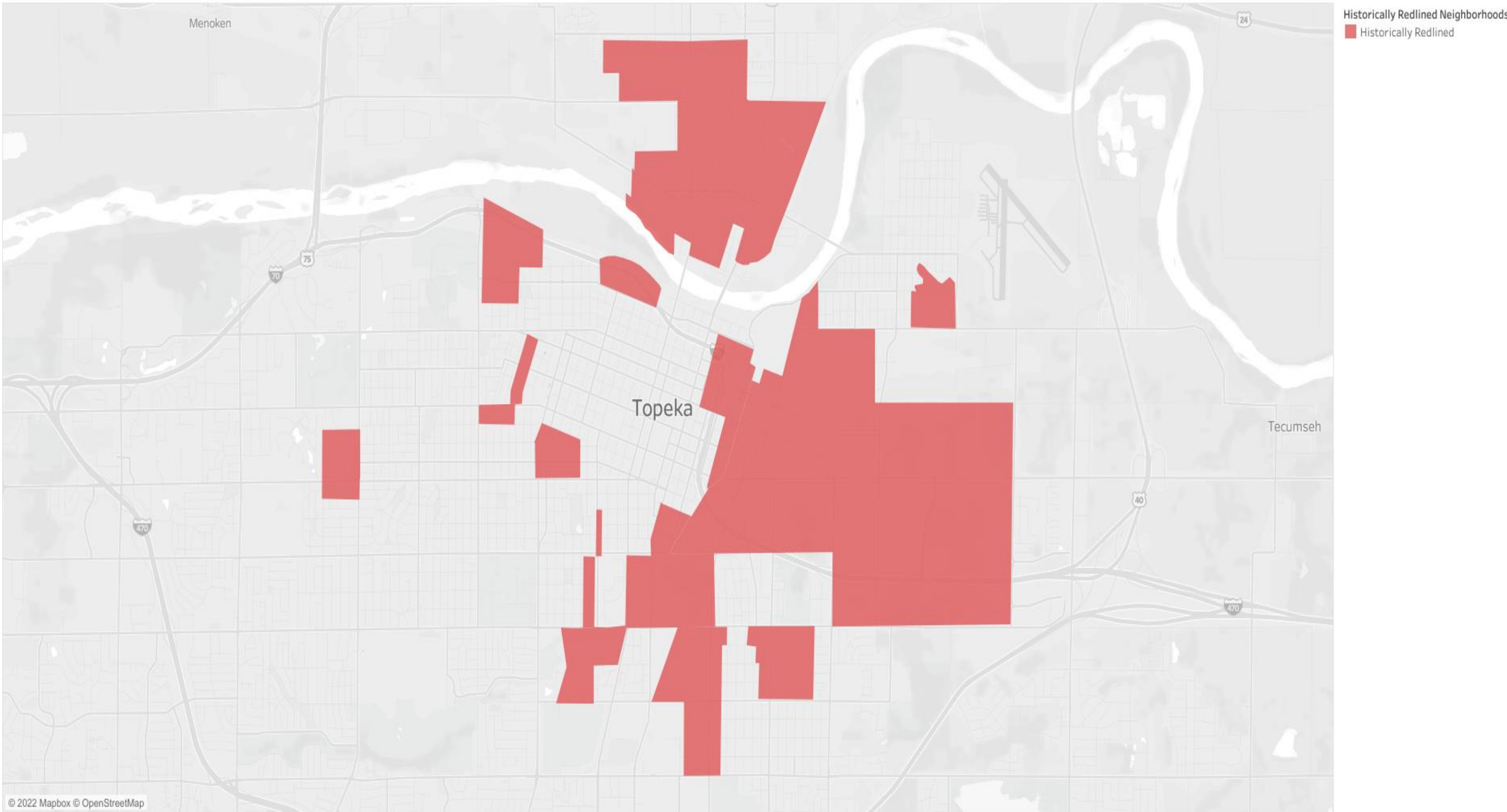
Schedule RDC-2

Topeka High Energy Burdens and Historically Redlined Neighborhoods

Energy Burden (% of Household Income)

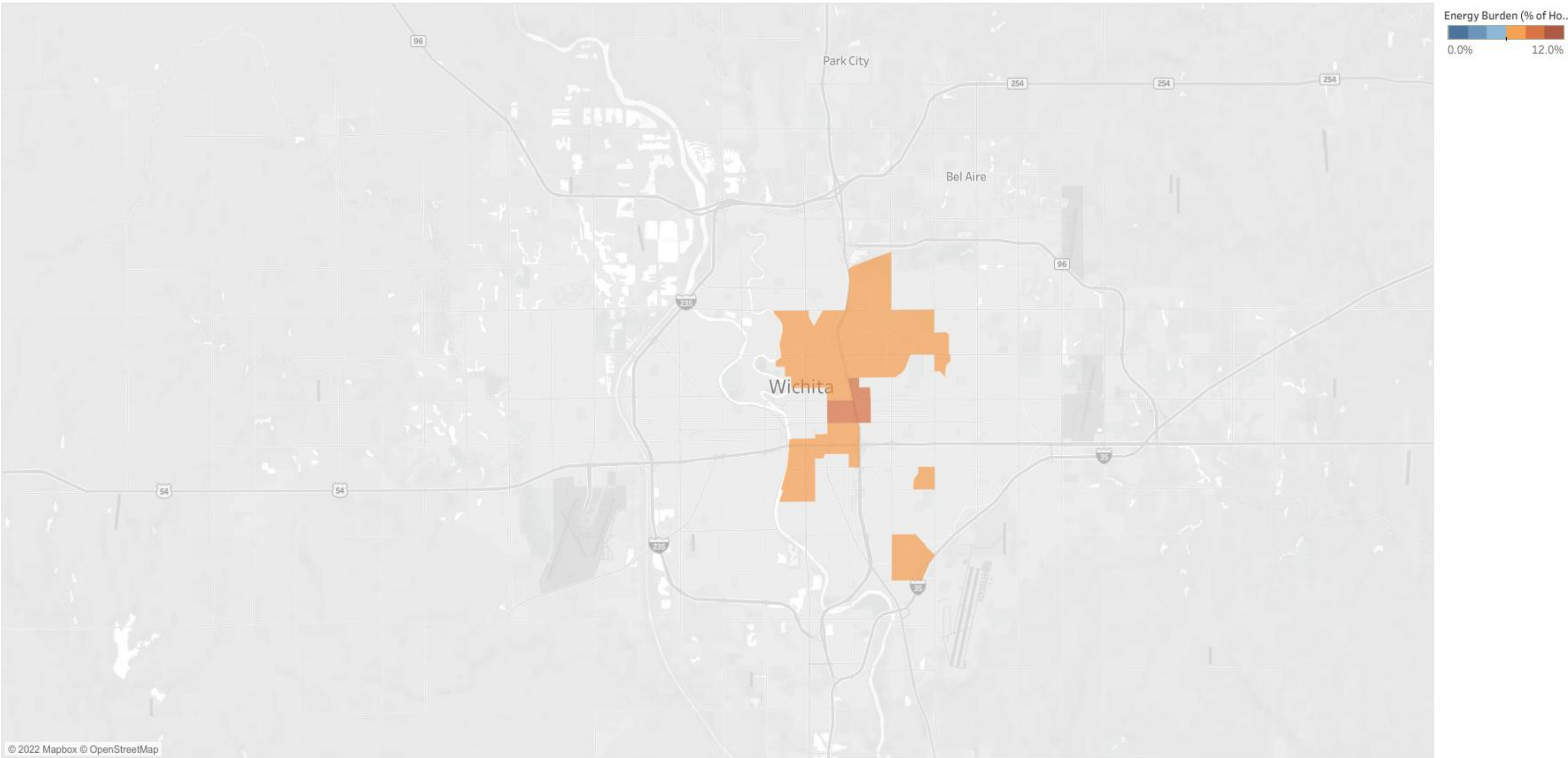


Historically Redlined Neighborhoods

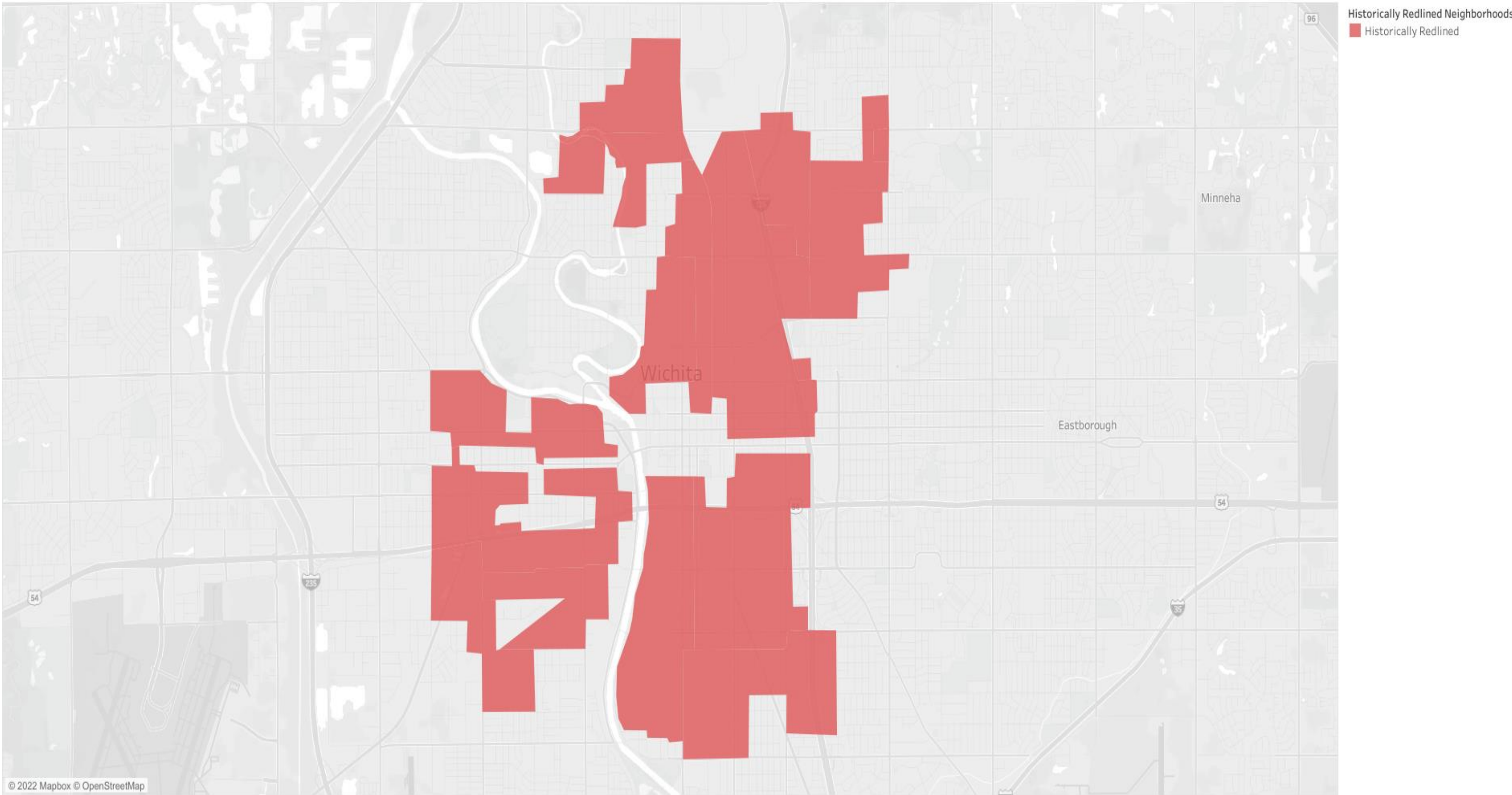


Wichita High Energy Burdens and Historically Redlined Neighborhoods

Energy Burden (% of Household Income)



Historically Redlined Neighborhoods



Appendices

Appendix A:
Summary of Professional Experience, Publications, and Testimony

Roger Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
Belmont, MA
*** ***

EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Regulatory Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

PROFESSIONAL AFFILIATIONS:

Past Chair:	Belmont Zoning By-law Review Working Committee (climate change)
Member:	Board of Directors, Massachusetts Rivers Alliance
Columnist:	Belmont Citizen-Herald
Producer:	Belmont Media Center: BMC Podcast Network
Host:	Belmont Media Center: Belmont Journal
Member:	Belmont Town Meeting
Vice-chair:	Belmont Light General Manager Screening Committee
Past Chair:	Belmont Goes Solar
Coordinator:	BelmontBudget.org (Belmont's Community Budget Forum)
Coordinator:	Belmont Affordable Shelter Fund (BASF)
Past Chair:	Belmont Solar Initiative Oversight Committee

Past Member:	City of Detroit Blue Ribbon Panel on Water Affordability
Past Chair:	Belmont Energy Committee
Member:	Massachusetts Municipal Energy Group (Mass Municipal Association)
Past Chair:	Housing Work Group, Belmont (MA) Comprehensive Planning Process
Past Chair:	Board of Directors, Belmont Housing Trust, Inc.
Past Chair:	Waverley Square Fire Station Re-use Study Committee (Belmont MA)
Past Member:	Belmont (MA) Energy and Facilities Work Group
Past Member:	Belmont (MA) Uplands Advisory Committee
Past Member:	Advisory Board: Fair Housing Center of Greater Boston.
Past Chair:	Fair Housing Committee, Town of Belmont (MA)
Past Member:	Aggregation Advisory Committee, New York State Energy Research and Development Authority.
Past Member:	Board of Directors, Vermont Energy Investment Corporation.
Past Member:	Board of Directors, National Fuel Funds Network
Past Member:	Board of Directors, Affordable Comfort, Inc.
Past Member:	National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
Past Member:	Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
Past Member:	ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
Past Member:	National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
Past Member:	National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
National Society of Newspaper Columnists (NSNC)
Association for Enterprise Opportunity (AEO)
Iowa State Bar Association
Energy Bar Association
Association for Institutional Thought (AFIT)
Association for Evolutionary Economics (AEE)
Society for the Study of Social Problems (SSSO)
Association for Social Economics

<u>BOOKS:</u>

Colton, *et al.*, ***Access to Utility Service***, National Consumer Law Center: Boston (4th edition 2008).
Colton, *et al.*, ***Tenants' Rights to Utility Service***, National Consumer Law Center: Boston (1994).

Colton, ***The Regulation of Rural Electric Cooperatives***, National Consumer Law Center: Boston (1992).

<u>BOOK CHAPTERS:</u>

Colton (2018). The equities of efficiency: distributing energy usage reduction dollars, Chapter in Energy Justice: US and International Perspectives (Edited by Raya Salter, Carmen Gonzalez and Elizabeth Ann Kronk Warner), Edward Elgar Publishing (London, England).

<u>JOURNAL PUBLICATIONS:</u>
65 publications in industry and academic journals, primarily involving utility regulation and affordable housing. (list available upon request)

<u>TECHNICAL REPORTS:</u>
200 technical reports for public-sector and private-sector clients (list available upon request)

JURISDICTIONS IN WHICH EXPERT WITNESS TESTIMONY PROVIDED:

1. Maine
2. New Hampshire
3. Vermont
4. Massachusetts
5. Massachusetts
6. Rhode Island
7. Connecticut
8. New Jersey
9. Maryland
10. Pennsylvania
11. Washington D.C.
12. Virginia
13. North Carolina
14. South Carolina
15. Florida (Federal Court)
16. Alabama
17. Mississippi
18. Tennessee
19. Kentucky
20. Ohio
21. Indiana
22. Michigan
23. Wisconsin
24. Illinois
25. Minnesota
26. Iowa
27. Missouri
28. Kansas
29. Arkansas
30. Texas (federal court)
31. South Dakota
32. North Dakota
33. Montana
34. Colorado
35. New Mexico
36. Arizona
37. Utah
38. Idaho
39. Nevada
40. Washington
41. Oregon
42. California
43. Hawaii

Canadian Provinces

1. Nova Scotia
2. Ontario
3. Manitoba
4. British Columbia

Appendix B:
Kansas Qualified Census Tracts

Kansas Qualified Census Tracts (2021)

State: Kansas

COUNTY OR COUNTY EQUIVALENT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT	TRACT
Allen County	9528.00											
Atchison County	819.00											
Butler County	204.00	208.00										
Crawford County	9571.00	9573.00	9575.00	9576.00								
Douglas County	3.00	7.02	9.01	9.02								
Ellis County	729.00											
Geary County	1.00	2.00										
Johnson County	524.18	535.02	535.55									
Labette County	9502.00	9508.00										
Leavenworth County	701.00	702.00										
Lyon County	1.00	4.00										
Montgomery County	9504.00	9509.00	9510.00	9511.00	9512.00							
Reno County	6.00	7.00										
Riley County	3.03	3.04	5.00	8.01								
Saline County	1.00	2.00	3.00									
Sedgwick County	3.00	4.00	6.00	7.00	8.00	9.00	18.00	24.00	26.00	27.00	28.00	29.00
	30.00	31.00	34.00	35.00	37.00	38.00	39.00	40.00	43.00	51.00	52.00	58.00
	60.00	62.00	65.00	67.00	68.00	69.00	70.00	71.02	75.00	77.00	78.00	
Shawnee County	4.00	5.00	6.00	8.00	9.00	10.00	11.00	16.03	29.00	31.00	40.00	
Woodson County	966.00											
Wyandotte County	403.00	404.00	405.00	406.00	407.00	408.00	409.00	410.00	411.00	412.00	413.00	415.00
	416.00	417.00	418.00	420.01	420.02	421.00	422.00	423.00	424.00	426.00	427.00	428.00
	430.00	433.01	439.04	439.05	440.03	440.04	441.01	441.04	443.01	443.03	445.00	450.00

Appendix B (continued):
Income Status of Kansas Census Tracts (FFIEC)

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 001 - ALLEN COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	001	9526.00	Middle	$57,229	$64,800	10.55	100.11	$57,292	$64,871	$49,034
20	001	9527.00	Moderate	$57,229	$64,800	18.07	77.29	$44,236	$50,084	$37,446
20	001	9528.00	Moderate	$57,229	$64,800	20.79	78.20	$44,754	$50,674	$35,404
20	001	9529.00	Middle	$57,229	$64,800	28.26	82.99	$47,500	$53,778	$36,667
20	001	9530.00	Middle	$57,229	$64,800	9.72	100.37	$57,443	$65,040	$41,078
20	001	9999.99	Middle	$57,229	$64,800	17.95	88.01	$50,368	$57,030	$38,698

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 005 - ATCHISON COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	005	0816.00	Middle	$57,229	$64,800	12.62	98.80	$56,544	$64,022	$50,445
20	005	0817.00	Middle	$57,229	$64,800	16.44	100.01	$57,237	$64,806	$42,662
20	005	0818.00	Middle	$57,229	$64,800	25.75	91.45	$52,339	$59,260	$42,256
20	005	0819.00	Middle	$57,229	$64,800	25.21	97.73	$55,932	$63,329	$38,024
20	005	9999.99	Middle	$57,229	$64,800	19.25	97.99	$56,082	$63,498	$43,581

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 015 - BUTLER COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	015	0201.00	Middle	$64,331	$73,200	8.92	107.19	$68,958	$78,463	$60,183
20	015	0202.01	Middle	$64,331	$73,200	11.56	115.46	$74,282	$84,517	$61,654
20	015	0202.02	Upper	$64,331	$73,200	3.27	135.76	$87,339	$99,376	$81,629
20	015	0202.03	Upper	$64,331	$73,200	2.93	141.49	$91,028	$103,571	$78,135
20	015	0203.00	Middle	$64,331	$73,200	7.32	107.17	$68,947	$78,448	$58,238
20	015	0204.00	Moderate	$64,331	$73,200	22.26	64.00	$41,172	$46,848	$31,842
20	015	0205.00	Middle	$64,331	$73,200	29.43	80.37	$51,707	$58,831	$41,977
20	015	0206.00	Middle	$64,331	$73,200	8.38	114.40	$73,600	$83,741	$55,323
20	015	0207.00	Middle	$64,331	$73,200	14.86	102.28	$65,804	$74,869	$44,598
20	015	0208.00	Moderate	$64,331	$73,200	23.08	67.35	$43,333	$49,300	$35,844
20	015	0209.01	Upper	$64,331	$73,200	7.87	121.69	$78,288	$89,077	$71,118
20	015	0209.02	Upper	$64,331	$73,200	1.62	120.04	$77,227	$87,869	$67,384
20	015	0209.03	Middle	$64,331	$73,200	7.59	113.88	$73,265	$83,360	$64,426

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 037 - CRAWFORD COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	037	9566.00	Middle	$57,229	$64,800	18.34	83.42	$47,742	$54,056	$34,267
20	037	9567.00	Middle	$57,229	$64,800	13.96	95.45	$54,630	$61,852	$42,723
20	037	9568.00	Middle	$57,229	$64,800	11.06	85.11	$48,710	$55,151	$38,707
20	037	9569.00	Middle	$57,229	$64,800	11.53	101.48	$58,077	$65,759	$46,094
20	037	9570.00	Middle	$57,229	$64,800	15.85	99.08	$56,708	$64,204	$49,444
20	037	9571.00	Middle	$57,229	$64,800	23.89	90.98	$52,067	$58,955	$37,762
20	037	9572.00	Moderate	$57,229	$64,800	14.40	74.11	$42,414	$48,023	$36,106
20	037	9573.00	Middle	$57,229	$64,800	30.47	118.67	$67,917	$76,898	$28,654
20	037	9574.00	Middle	$57,229	$64,800	16.74	99.06	$56,696	$64,191	$38,750
20	037	9575.00	Moderate	$57,229	$64,800	41.69	60.49	$34,618	$39,198	$20,369
20	037	9576.00	Upper	$57,229	$64,800	37.30	125.14	$71,618	$81,091	$33,656

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 045 - DOUGLAS COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	045	0001.00	Moderate	$72,755	$84,500	7.67	75.97	$55,275	$64,195	$50,294
20	045	0002.00	Moderate	$72,755	$84,500	29.00	73.43	$53,429	$62,048	$37,306
20	045	0003.00	Low	$72,755	$84,500	60.71	47.33	$34,438	$39,994	$19,163
20	045	0004.00	Low	$72,755	$84,500	40.50	30.92	$22,500	$26,127	$18,207
20	045	0005.01	Moderate	$72,755	$84,500	17.22	73.26	$53,304	$61,905	$35,000
20	045	0005.02	Middle	$72,755	$84,500	33.19	105.36	$76,655	$89,029	$34,972
20	045	0006.03	Upper	$72,755	$84,500	5.81	132.83	$96,642	$112,241	$80,819
20	045	0006.04	Upper	$72,755	$84,500	9.07	134.23	$97,661	$113,424	$71,331
20	045	0007.02	Moderate	$72,755	$84,500	26.65	74.30	$54,063	$62,784	$35,841
20	045	0007.97	Upper	$72,755	$84,500	11.95	133.50	$97,130	$112,808	$71,000
20	045	0008.01	Moderate	$72,755	$84,500	20.38	68.88	$50,114	$58,204	$48,200
20	045	0008.02	Middle	$72,755	$84,500	33.78	107.49	$78,206	$90,829	$42,975
20	045	0009.01	Moderate	$72,755	$84,500	31.55	76.15	$55,404	$64,347	$29,907
20	045	0009.02	Moderate	$72,755	$84,500	23.39	72.50	$52,750	$61,263	$39,792
20	045	0010.01	Middle	$72,755	$84,500	9.57	91.60	$66,645	$77,402	$49,250
20	045	0010.02	Middle	$72,755	$84,500	12.92	86.61	$63,017	$73,185	$48,660
20	045	0012.01	Middle	$72,755	$84,500	5.12	104.67	$76,154	$88,446	$71,707
20	045	0012.02	Middle	$72,755	$84,500	9.59	114.91	$83,603	$97,099	$65,086
20	045	0012.03	Upper	$72,755	$84,500	7.40	126.96	$92,375	$107,281	$61,603
20	045	0014.00	Middle	$72,755	$84,500	9.13	113.82	$82,813	$96,178	$77,250
20	045	0015.00	Middle	$72,755	$84,500	8.65	82.41	$59,963	$69,636	$56,719
20	045	0016.00	Upper	$72,755	$84,500	6.28	149.01	$108,417	$125,913	$81,223

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 061 - GEARY COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	061	0001.00	Moderate	$61,327	$69,500	26.97	68.74	$42,159	$47,774	$38,594
20	061	0002.00	Moderate	$61,327	$69,500	28.05	58.74	$36,029	$40,824	$35,466
20	061	0003.00	Middle	$61,327	$69,500	11.98	99.43	$60,980	$69,104	$49,156
20	061	0004.00	Moderate	$61,327	$69,500	7.99	77.11	$47,292	$53,591	$44,862
20	061	0005.00	Moderate	$61,327	$69,500	19.70	72.42	$44,418	$50,332	$38,873
20	061	0006.00	Moderate	$61,327	$69,500	10.92	66.20	$40,600	$46,009	$39,381
20	061	0007.00	Moderate	$61,327	$69,500	9.21	76.34	$46,822	$53,056	$45,473
20	061	0008.00	Upper	$61,327	$69,500	4.91	132.61	$81,328	$92,164	$72,479

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	091	0500.00	Upper	$72,623	$86,300	2.53	158.92	$115,417	$137,148	$91,653
20	091	0501.00	Middle	$72,623	$86,300	9.90	97.71	$70,962	$84,324	$56,602
20	091	0502.00	Middle	$72,623	$86,300	3.38	108.65	$78,906	$93,765	$65,637
20	091	0503.01	Middle	$72,623	$86,300	10.60	95.97	$69,697	$82,822	$46,792
20	091	0503.02	Middle	$72,623	$86,300	9.58	110.78	$80,455	$95,603	$49,052
20	091	0504.00	Middle	$72,623	$86,300	17.83	80.78	$58,669	$69,713	$47,713
20	091	0505.00	Middle	$72,623	$86,300	3.36	97.24	$70,625	$83,918	$57,354
20	091	0506.00	Middle	$72,623	$86,300	4.15	108.88	$79,074	$93,963	$70,157
20	091	0507.00	Upper	$72,623	$86,300	3.82	159.21	$115,625	$137,398	$80,582
20	091	0508.00	Upper	$72,623	$86,300	1.78	314.63	$228,500	$271,526	$208,500
20	091	0509.00	Upper	$72,623	$86,300	3.61	171.35	$124,444	$147,875	$96,902
20	091	0510.00	Upper	$72,623	$86,300	4.51	155.20	$112,716	$133,938	$87,173
20	091	0511.00	Middle	$72,623	$86,300	9.38	87.44	$63,505	$75,461	$55,927
20	091	0512.00	Middle	$72,623	$86,300	11.63	91.68	$66,585	$79,120	$45,781
20	091	0513.00	Middle	$72,623	$86,300	9.91	87.03	$63,205	$75,107	$52,232
20	091	0514.00	Upper	$72,623	$86,300	0.84	129.15	$93,798	$111,456	$80,508
20	091	0515.00	Upper	$72,623	$86,300	6.04	121.66	$88,355	$104,993	$67,900
20	091	0516.00	Upper	$72,623	$86,300	4.42	201.47	$146,319	$173,869	$117,463
20	091	0517.00	Upper	$72,623	$86,300	1.64	176.63	$128,281	$152,432	$103,934
20	091	0518.01	Upper	$72,623	$86,300	2.78	226.16	$164,250	$195,176	$122,212
20	091	0518.02	Middle	$72,623	$86,300	5.23	95.74	$69,531	$82,624	$54,100
20	091	0518.03	Middle	$72,623	$86,300	6.02	100.22	$72,786	$86,490	$56,250
20	091	0518.04	Middle	$72,623	$86,300	16.89	101.69	$73,851	$87,758	$53,625
20	091	0518.05	Upper	$72,623	$86,300	2.35	147.96	$107,456	$127,689	$77,750
20	091	0518.06	Upper	$72,623	$86,300	3.26	152.75	$110,938	$131,823	$87,564
20	091	0519.02	Middle	$72,623	$86,300	3.30	93.08	$67,600	$80,328	$58,661
20	091	0519.03	Moderate	$72,623	$86,300	6.36	71.51	$51,938	$61,713	$53,899
20	091	0519.04	Upper	$72,623	$86,300	6.96	142.46	$103,459	$122,943	$67,261
20	091	0519.06	Moderate	$72,623	$86,300	13.04	63.37	$46,028	$54,688	$48,669
20	091	0519.07	Moderate	$72,623	$86,300	18.19	73.62	$53,466	$63,534	$51,274
20	091	0519.08	Upper	$72,623	$86,300	8.59	134.54	$97,708	$116,108	$75,106
20	091	0519.09	Middle	$72,623	$86,300	3.59	111.20	$80,763	$95,966	$68,402
20	091	0520.01	Middle	$72,623	$86,300	12.20	102.17	$74,200	$88,173	$53,628
20	091	0520.03	Middle	$72,623	$86,300	15.56	83.00	$60,283	$71,629	$50,140
20	091	0520.04	Middle	$72,623	$86,300	3.60	95.04	$69,022	$82,020	$57,930
20	091	0521.01	Middle	$72,623	$86,300	10.97	100.88	$73,264	$87,059	$54,375
20	091	0521.02	Moderate	$72,623	$86,300	13.07	67.64	$49,125	$58,373	$46,285
20	091	0522.01	Middle	$72,623	$86,300	11.92	92.76	$67,371	$80,052	$55,463
20	091	0522.02	Middle	$72,623	$86,300	2.19	115.32	$83,750	$99,521	$75,265
20	091	0523.03	Middle	$72,623	$86,300	12.37	118.41	$86,000	$102,188	$63,681
20	091	0523.04	Middle	$72,623	$86,300	5.76	102.58	$74,500	$88,527	$68,167

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	091	0523.05	Upper	$72,623	$86,300	4.98	121.86	$88,500	$105,165	$81,233
20	091	0523.06	Upper	$72,623	$86,300	3.93	185.97	$135,057	$160,492	$125,104
20	091	0524.05	Middle	$72,623	$86,300	10.87	103.04	$74,831	$88,924	$66,893
20	091	0524.10	Upper	$72,623	$86,300	5.48	154.14	$111,944	$133,023	$83,370
20	091	0524.11	Upper	$72,623	$86,300	1.87	159.67	$115,962	$137,795	$106,734
20	091	0524.14	Upper	$72,623	$86,300	1.27	155.17	$112,692	$133,912	$110,123
20	091	0524.15	Upper	$72,623	$86,300	2.42	136.19	$98,906	$117,532	$78,545
20	091	0524.16	Middle	$72,623	$86,300	9.32	108.71	$78,953	$93,817	$64,828
20	091	0524.17	Moderate	$72,623	$86,300	8.29	66.14	$48,036	$57,079	$44,278
20	091	0524.18	Low	$72,623	$86,300	31.51	39.36	$28,590	$33,968	$30,729
20	091	0524.19	Upper	$72,623	$86,300	12.98	129.63	$94,143	$111,871	$81,852
20	091	0524.21	Middle	$72,623	$86,300	3.78	119.39	$86,711	$103,034	$69,900
20	091	0525.02	Upper	$72,623	$86,300	1.08	179.69	$130,500	$155,072	$116,607
20	091	0525.04	Middle	$72,623	$86,300	5.85	119.85	$87,045	$103,431	$78,041
20	091	0526.01	Upper	$72,623	$86,300	2.47	173.80	$126,220	$149,989	$123,981
20	091	0526.03	Upper	$72,623	$86,300	1.69	168.73	$122,538	$145,614	$114,643
20	091	0526.04	Upper	$72,623	$86,300	3.73	151.20	$109,808	$130,486	$101,389
20	091	0526.06	Upper	$72,623	$86,300	6.01	126.32	$91,742	$109,014	$80,417
20	091	0526.07	Upper	$72,623	$86,300	2.31	163.73	$118,906	$141,299	$111,000
20	091	0527.00	Middle	$72,623	$86,300	16.03	103.37	$75,076	$89,208	$59,271
20	091	0528.01	Upper	$72,623	$86,300	1.01	158.61	$115,192	$136,880	$112,205
20	091	0528.02	Upper	$72,623	$86,300	0.75	156.92	$113,962	$135,422	$107,250
20	091	0528.03	Middle	$72,623	$86,300	7.75	80.27	$58,295	$69,273	$48,792
20	091	0529.04	Upper	$72,623	$86,300	3.71	121.18	$88,011	$104,578	$75,347
20	091	0529.05	Moderate	$72,623	$86,300	16.17	61.71	$44,817	$53,256	$40,896
20	091	0529.06	Middle	$72,623	$86,300	14.78	101.76	$73,906	$87,819	$64,063
20	091	0529.07	Middle	$72,623	$86,300	11.61	93.92	$68,214	$81,053	$52,209
20	091	0529.08	Moderate	$72,623	$86,300	10.14	73.58	$53,438	$63,500	$42,385
20	091	0529.10	Upper	$72,623	$86,300	4.51	165.23	$120,000	$142,593	$101,923
20	091	0530.02	Upper	$72,623	$86,300	5.98	126.87	$92,143	$109,489	$64,158
20	091	0530.04	Middle	$72,623	$86,300	5.46	112.95	$82,031	$97,476	$66,653
20	091	0530.05	Middle	$72,623	$86,300	5.01	105.02	$76,270	$90,632	$74,236
20	091	0530.06	Middle	$72,623	$86,300	6.78	117.45	$85,300	$101,359	$59,671
20	091	0530.07	Upper	$72,623	$86,300	4.22	133.62	$97,042	$115,314	$85,321
20	091	0530.08	Upper	$72,623	$86,300	5.84	125.64	$91,250	$108,427	$57,117
20	091	0530.09	Upper	$72,623	$86,300	4.20	175.51	$127,461	$151,465	$103,875
20	091	0530.10	Upper	$72,623	$86,300	1.38	204.21	$148,309	$176,233	$145,977
20	091	0530.11	Upper	$72,623	$86,300	2.73	180.99	$131,442	$156,194	$130,288
20	091	0531.01	Upper	$72,623	$86,300	3.84	127.26	$92,426	$109,825	$68,708
20	091	0531.02	Upper	$72,623	$86,300	5.96	141.09	$102,464	$121,761	$81,298
20	091	0531.05	Moderate	$72,623	$86,300	12.12	71.82	$52,159	$61,981	$50,216
20	091	0531.08	Upper	$72,623	$86,300	6.33	147.06	$106,806	$126,913	$81,569
20	091	0531.09	Upper	$72,623	$86,300	1.74	126.60	$91,944	$109,256	$75,321
20	091	0531.10	Upper	$72,623	$86,300	0.92	172.84	$125,525	$149,161	$114,102
20	091	0532.01	Upper	$72,623	$86,300	1.94	143.26	$104,044	$123,633	$93,542

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	091	0532.02	Upper	$72,623	$86,300	6.11	149.99	$108,929	$129,441	$64,435
20	091	0532.03	Upper	$72,623	$86,300	2.75	182.25	$132,361	$157,282	$87,715
20	091	0533.01	Upper	$72,623	$86,300	1.12	223.40	$162,241	$192,794	$136,683
20	091	0533.02	Upper	$72,623	$86,300	2.32	229.65	$166,779	$198,188	$152,076
20	091	0534.03	Upper	$72,623	$86,300	3.71	159.04	$115,506	$137,252	$87,009
20	091	0534.06	Upper	$72,623	$86,300	1.88	178.50	$129,636	$154,046	$124,301
20	091	0534.09	Upper	$72,623	$86,300	5.60	186.98	$135,795	$161,364	$88,625
20	091	0534.10	Upper	$72,623	$86,300	2.23	234.73	$170,471	$202,572	$165,184
20	091	0534.11	Upper	$72,623	$86,300	4.10	141.19	$102,543	$121,847	$92,155
20	091	0534.13	Upper	$72,623	$86,300	1.84	199.40	$144,816	$172,082	$134,350
20	091	0534.14	Upper	$72,623	$86,300	6.68	161.12	$117,014	$139,047	$81,283
20	091	0534.15	Upper	$72,623	$86,300	10.43	124.11	$90,136	$107,107	$89,435
20	091	0534.17	Upper	$72,623	$86,300	1.61	172.22	$125,078	$148,626	$117,009
20	091	0534.18	Upper	$72,623	$86,300	2.49	143.05	$103,889	$123,452	$95,500
20	091	0534.19	Upper	$72,623	$86,300	3.60	256.65	$186,389	$221,489	$152,589
20	091	0534.21	Upper	$72,623	$86,300	1.73	172.32	$125,144	$148,712	$110,488
20	091	0534.22	Upper	$72,623	$86,300	0.78	241.69	$175,524	$208,578	$136,389
20	091	0534.23	Upper	$72,623	$86,300	2.22	235.72	$171,190	$203,426	$169,219
20	091	0534.24	Upper	$72,623	$86,300	2.09	239.88	$174,211	$207,016	$175,439
20	091	0535.02	Moderate	$72,623	$86,300	11.79	55.31	$40,172	$47,733	$36,586
20	091	0535.05	Upper	$72,623	$86,300	1.98	148.30	$107,703	$127,983	$105,309
20	091	0535.06	Upper	$72,623	$86,300	2.67	144.09	$104,648	$124,350	$94,375
20	091	0535.07	Upper	$72,623	$86,300	1.41	134.07	$97,367	$115,702	$95,526
20	091	0535.08	Middle	$72,623	$86,300	8.18	106.05	$77,019	$91,521	$77,700
20	091	0535.09	Upper	$72,623	$86,300	7.78	128.99	$93,681	$111,318	$79,973
20	091	0535.10	Upper	$72,623	$86,300	1.25	138.57	$100,635	$119,586	$90,714
20	091	0535.55	Low	$72,623	$86,300	21.31	44.30	$32,172	$38,231	$28,702
20	091	0535.56	Moderate	$72,623	$86,300	20.83	61.36	$44,564	$52,954	$45,321
20	091	0535.57	Moderate	$72,623	$86,300	31.03	56.49	$41,028	$48,751	$32,649
20	091	0536.01	Moderate	$72,623	$86,300	24.38	63.57	$46,172	$54,861	$44,643
20	091	0536.02	Middle	$72,623	$86,300	11.53	96.85	$70,341	$83,582	$63,596
20	091	0537.01	Middle	$72,623	$86,300	7.75	100.69	$73,125	$86,895	$58,583
20	091	0537.03	Middle	$72,623	$86,300	3.44	83.53	$60,663	$72,086	$49,952
20	091	0537.05	Middle	$72,623	$86,300	8.04	90.32	$65,598	$77,946	$64,833
20	091	0537.07	Middle	$72,623	$86,300	3.78	96.17	$69,844	$82,995	$67,734
20	091	0537.09	Middle	$72,623	$86,300	3.41	109.41	$79,464	$94,421	$75,145
20	091	0537.11	Upper	$72,623	$86,300	3.54	149.90	$108,869	$129,364	$85,938
20	091	0537.12	Upper	$72,623	$86,300	0.54	136.49	$99,130	$117,791	$85,341
20	091	0538.01	Middle	$72,623	$86,300	5.43	95.60	$69,432	$82,503	$64,811
20	091	0538.03	Upper	$72,623	$86,300	4.76	154.01	$111,853	$132,911	$102,365
20	091	0538.04	Upper	$72,623	$86,300	1.62	137.22	$99,659	$118,421	$94,500
20	091	9800.01	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	091	9800.02	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	091	9800.03	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 099 - LABETTE COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	099	9501.00	Middle	$57,229	$64,800	19.42	93.10	$53,284	$60,329	$44,479
20	099	9502.00	Moderate	$57,229	$64,800	26.19	70.74	$40,485	$45,840	$30,043
20	099	9503.00	Middle	$57,229	$64,800	16.24	82.30	$47,102	$53,330	$39,732
20	099	9504.00	Middle	$57,229	$64,800	20.30	92.50	$52,938	$59,940	$39,208
20	099	9505.00	Middle	$57,229	$64,800	12.45	110.11	$63,015	$71,351	$52,961
20	099	9506.00	Middle	$57,229	$64,800	15.14	96.87	$55,438	$62,772	$52,096
20	099	9507.00	Moderate	$57,229	$64,800	12.56	79.77	$45,655	$51,691	$41,938
20	099	9508.00	Moderate	$57,229	$64,800	24.83	73.53	$42,083	$47,647	$32,917
20	099	9999.99	Middle	$57,229	$64,800	17.76	90.15	$51,597	$58,417	$41,439

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 103 - LEAVENWORTH COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	103	0701.00	Low	$72,623	$86,300	37.72	30.86	$22,414	$26,632	$17,171
20	103	0702.00	Moderate	$72,623	$86,300	30.45	52.72	$38,287	$45,497	$32,526
20	103	0703.00	Middle	$72,623	$86,300	10.83	88.12	$63,996	$76,048	$55,435
20	103	0704.00	Middle	$72,623	$86,300	12.97	87.14	$63,287	$75,202	$48,610
20	103	0705.00	Moderate	$72,623	$86,300	30.28	66.66	$48,417	$57,528	$39,455
20	103	0707.00	Middle	$72,623	$86,300	12.76	95.40	$69,286	$82,330	$53,906
20	103	0709.00	Middle	$72,623	$86,300	7.89	99.36	$72,163	$85,748	$67,917
20	103	0710.00	Middle	$72,623	$86,300	4.37	116.95	$84,934	$100,928	$82,059
20	103	0711.01	Upper	$72,623	$86,300	8.59	144.17	$104,706	$124,419	$96,875
20	103	0711.02	Middle	$72,623	$86,300	14.12	114.30	$83,011	$98,641	$53,884
20	103	0712.02	Upper	$72,623	$86,300	1.86	133.40	$96,885	$115,124	$96,434
20	103	0712.03	Middle	$72,623	$86,300	7.57	117.08	$85,028	$101,040	$72,146
20	103	0714.00	Middle	$72,623	$86,300	4.84	107.03	$77,734	$92,367	$66,141
20	103	0716.00	Middle	$72,623	$86,300	4.53	106.64	$77,446	$92,030	$74,538
20	103	0718.00	Middle	$72,623	$86,300	8.72	103.46	$75,139	$89,286	$49,362
20	103	9819.00	Upper	$72,623	$86,300	7.10	125.05	$90,819	$107,918	$91,028

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 111 - LYON COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	111	0001.00	Middle	$57,229	$64,800	29.20	80.81	$46,250	$52,365	$28,247
20	111	0002.00	Middle	$57,229	$64,800	17.96	86.02	$49,229	$55,741	$45,139
20	111	0003.00	Middle	$57,229	$64,800	26.56	82.22	$47,056	$53,279	$35,698
20	111	0004.00	Moderate	$57,229	$64,800	39.82	69.28	$39,653	$44,893	$31,929
20	111	0005.00	Moderate	$57,229	$64,800	24.49	67.15	$38,432	$43,513	$36,604
20	111	0006.00	Middle	$57,229	$64,800	9.64	108.29	$61,979	$70,172	$57,433
20	111	0007.00	Upper	$57,229	$64,800	11.51	125.26	$71,688	$81,168	$54,821
20	111	0008.00	Middle	$57,229	$64,800	8.42	101.22	$57,930	$65,591	$48,779

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 125 - MONTGOMERY COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	125	9501.00	Middle	$57,229	$64,800	9.08	109.38	$62,600	$70,878	$50,493
20	125	9502.00	Moderate	$57,229	$64,800	23.55	77.05	$44,097	$49,928	$35,774
20	125	9503.00	Middle	$57,229	$64,800	12.56	101.52	$58,100	$65,785	$48,791
20	125	9504.00	Moderate	$57,229	$64,800	25.01	60.06	$34,375	$38,919	$35,625
20	125	9505.00	Moderate	$57,229	$64,800	30.92	58.73	$33,611	$38,057	$31,970
20	125	9506.00	Middle	$57,229	$64,800	18.96	82.20	$47,045	$53,266	$37,006
20	125	9507.00	Middle	$57,229	$64,800	6.02	109.06	$62,417	$70,671	$54,583
20	125	9508.00	Middle	$57,229	$64,800	12.38	105.40	$60,325	$68,299	$44,300
20	125	9509.00	Moderate	$57,229	$64,800	32.12	67.29	$38,510	$43,604	$28,333
20	125	9510.00	Middle	$57,229	$64,800	31.74	93.48	$53,500	$60,575	$25,081
20	125	9511.00	Moderate	$57,229	$64,800	29.03	65.11	$37,262	$42,191	$35,473
20	125	9512.00	Moderate	$57,229	$64,800	28.80	60.95	$34,886	$39,496	$27,857
20	125	9513.00	Moderate	$57,229	$64,800	25.00	78.94	$45,179	$51,153	$30,774

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 155 - RENO COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	155	0001.00	Middle	$57,229	$64,800	14.82	101.92	$58,333	$66,044	$44,041
20	155	0002.00	Middle	$57,229	$64,800	3.52	112.62	$64,453	$72,978	$44,071
20	155	0003.00	Upper	$57,229	$64,800	9.13	134.32	$76,875	$87,039	$64,195
20	155	0004.00	Middle	$57,229	$64,800	13.06	90.36	$51,713	$58,553	$44,012
20	155	0005.00	Moderate	$57,229	$64,800	10.62	78.67	$45,024	$50,978	$39,627
20	155	0006.00	Middle	$57,229	$64,800	30.41	86.03	$49,239	$55,747	$24,722
20	155	0007.00	Moderate	$57,229	$64,800	20.80	72.10	$41,266	$46,721	$37,224
20	155	0008.00	Moderate	$57,229	$64,800	23.35	74.26	$42,500	$48,120	$27,460
20	155	0010.00	Moderate	$57,229	$64,800	22.64	52.78	$30,208	$34,201	$34,886
20	155	0011.00	Upper	$57,229	$64,800	1.18	153.08	$87,611	$99,196	$68,169
20	155	0012.00	Upper	$57,229	$64,800	10.82	126.39	$72,333	$81,901	$58,286
20	155	0013.00	Middle	$57,229	$64,800	13.41	80.52	$46,083	$52,177	$36,513
20	155	0014.00	Middle	$57,229	$64,800	5.55	111.13	$63,603	$72,012	$53,088
20	155	0015.00	Middle	$57,229	$64,800	5.91	104.66	$59,900	$67,820	$54,330
20	155	0016.00	Middle	$57,229	$64,800	13.57	96.10	$55,000	$62,273	$44,464
20	155	0017.00	Middle	$57,229	$64,800	16.61	82.86	$47,422	$53,693	$41,639
20	155	0018.00	Middle	$57,229	$64,800	11.25	99.80	$57,120	$64,670	$50,156

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 161 - RILEY COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	161	0002.00	Middle	$61,327	$69,500	12.66	88.86	$54,500	$61,758	$49,397
20	161	0003.03	Unknown	$61,327	$69,500	56.15	0.00	$0	$0	$22,794
20	161	0003.04	Middle	$61,327	$69,500	26.88	110.62	$67,843	$76,881	$35,338
20	161	0005.00	Middle	$61,327	$69,500	62.32	81.42	$49,938	$56,587	$22,889
20	161	0006.00	Upper	$61,327	$69,500	5.82	148.70	$91,198	$103,347	$77,180
20	161	0007.00	Middle	$61,327	$69,500	19.48	115.73	$70,978	$80,432	$53,553
20	161	0008.01	Middle	$61,327	$69,500	45.74	95.98	$58,866	$66,706	$23,952
20	161	0008.02	Moderate	$61,327	$69,500	25.35	70.37	$43,159	$48,907	$32,904
20	161	0009.00	Middle	$61,327	$69,500	12.47	111.56	$68,417	$77,534	$50,901
20	161	0010.02	Moderate	$61,327	$69,500	10.37	66.14	$40,566	$45,967	$38,911
20	161	0011.00	Upper	$61,327	$69,500	40.58	131.28	$80,515	$91,240	$35,138
20	161	0013.01	Upper	$61,327	$69,500	13.85	147.80	$90,645	$102,721	$65,185
20	161	0013.02	Upper	$61,327	$69,500	7.79	131.12	$80,417	$91,128	$68,112
20	161	9800.00	Unknown	$61,327	$69,500	0.00	0.00	$0	$0	$0

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 169 - SALINE COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	169	0001.00	Moderate	$57,229	$64,800	26.18	75.71	$43,333	$49,060	$31,005
20	169	0002.00	Moderate	$57,229	$64,800	19.51	78.99	$45,208	$51,186	$31,386
20	169	0003.00	Moderate	$57,229	$64,800	33.62	61.52	$35,213	$39,865	$30,200
20	169	0004.00	Middle	$57,229	$64,800	8.26	100.38	$57,448	$65,046	$50,578
20	169	0005.00	Moderate	$57,229	$64,800	29.72	75.49	$43,206	$48,918	$41,019
20	169	0006.00	Middle	$57,229	$64,800	21.69	98.60	$56,429	$63,893	$40,854
20	169	0007.00	Upper	$57,229	$64,800	7.73	136.74	$78,255	$88,608	$59,063
20	169	0008.00	Upper	$57,229	$64,800	3.37	121.55	$69,563	$78,764	$64,451
20	169	0009.00	Middle	$57,229	$64,800	14.59	102.87	$58,872	$66,660	$41,513
20	169	0010.00	Upper	$57,229	$64,800	8.70	138.69	$79,375	$89,871	$71,421
20	169	0011.00	Upper	$57,229	$64,800	4.33	143.63	$82,200	$93,072	$74,007
20	169	0012.00	Upper	$57,229	$64,800	7.91	123.39	$70,615	$79,957	$57,069

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	173	0001.00	Low	$64,331	$73,200	44.67	48.57	$31,250	$35,553	$33,135
20	173	0002.00	Middle	$64,331	$73,200	18.81	97.64	$62,813	$71,472	$52,365
20	173	0003.00	Moderate	$64,331	$73,200	23.32	60.81	$39,122	$44,513	$30,343
20	173	0004.00	Moderate	$64,331	$73,200	28.61	58.13	$37,400	$42,551	$28,043
20	173	0006.00	Low	$64,331	$73,200	45.25	44.95	$28,920	$32,903	$16,627
20	173	0007.00	Low	$64,331	$73,200	48.90	41.22	$26,522	$30,173	$22,226
20	173	0008.00	Low	$64,331	$73,200	44.33	39.99	$25,726	$29,273	$21,014
20	173	0009.00	Moderate	$64,331	$73,200	34.91	53.49	$34,412	$39,155	$19,294
20	173	0010.00	Moderate	$64,331	$73,200	15.82	64.57	$41,542	$47,265	$42,422
20	173	0011.00	Moderate	$64,331	$73,200	33.13	64.32	$41,382	$47,082	$32,321
20	173	0014.00	Middle	$64,331	$73,200	5.76	96.52	$62,097	$70,653	$51,211
20	173	0015.00	Moderate	$64,331	$73,200	27.82	55.03	$35,404	$40,282	$31,598
20	173	0018.00	Moderate	$64,331	$73,200	37.99	50.26	$32,336	$36,790	$22,153
20	173	0019.00	Moderate	$64,331	$73,200	21.59	76.48	$49,205	$55,983	$38,475
20	173	0020.00	Upper	$64,331	$73,200	12.20	169.25	$108,882	$123,891	$85,809
20	173	0021.00	Upper	$64,331	$73,200	5.48	120.92	$77,794	$88,513	$57,813
20	173	0022.00	Upper	$64,331	$73,200	9.82	159.21	$102,422	$116,542	$61,875
20	173	0023.00	Middle	$64,331	$73,200	16.43	81.94	$52,716	$59,980	$40,407
20	173	0024.00	Low	$64,331	$73,200	35.27	40.74	$26,211	$29,822	$23,021
20	173	0026.00	Low	$64,331	$73,200	43.16	46.10	$29,659	$33,745	$23,967
20	173	0027.00	Moderate	$64,331	$73,200	23.71	56.41	$36,295	$41,292	$29,592
20	173	0028.00	Middle	$64,331	$73,200	23.16	87.37	$56,208	$63,955	$35,286
20	173	0029.00	Middle	$64,331	$73,200	20.02	81.73	$52,580	$59,826	$33,670
20	173	0030.00	Low	$64,331	$73,200	24.86	49.69	$31,969	$36,373	$26,619
20	173	0031.00	Moderate	$64,331	$73,200	31.55	57.16	$36,776	$41,841	$27,212
20	173	0032.00	Low	$64,331	$73,200	56.18	26.88	$17,296	$19,676	$16,766
20	173	0034.00	Low	$64,331	$73,200	33.91	47.14	$30,332	$34,506	$27,275
20	173	0035.00	Moderate	$64,331	$73,200	28.63	64.02	$41,186	$46,863	$35,976
20	173	0036.00	Middle	$64,331	$73,200	20.82	82.04	$52,782	$60,053	$35,104
20	173	0037.00	Moderate	$64,331	$73,200	35.97	55.83	$35,917	$40,868	$24,926
20	173	0038.00	Moderate	$64,331	$73,200	23.73	69.02	$44,407	$50,523	$40,948
20	173	0039.00	Moderate	$64,331	$73,200	20.90	63.45	$40,821	$46,445	$36,775
20	173	0040.00	Low	$64,331	$73,200	36.49	48.89	$31,452	$35,787	$21,696
20	173	0043.00	Moderate	$64,331	$73,200	28.57	54.48	$35,050	$39,879	$31,288
20	173	0051.00	Moderate	$64,331	$73,200	25.97	59.26	$38,125	$43,378	$31,189
20	173	0052.00	Moderate	$64,331	$73,200	26.70	79.80	$51,341	$58,414	$32,842
20	173	0053.00	Moderate	$64,331	$73,200	8.63	72.24	$46,479	$52,880	$39,420
20	173	0054.00	Moderate	$64,331	$73,200	22.95	62.87	$40,451	$46,021	$38,310
20	173	0055.01	Middle	$64,331	$73,200	12.05	87.20	$56,099	$63,830	$48,717
20	173	0055.02	Middle	$64,331	$73,200	9.13	93.74	$60,306	$68,618	$55,142
20	173	0056.00	Middle	$64,331	$73,200	7.78	81.28	$52,292	$59,497	$47,551

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	173	0057.00	Middle	$64,331	$73,200	17.83	84.56	$54,403	$61,898	$49,456
20	173	0058.00	Low	$64,331	$73,200	33.30	49.24	$31,678	$36,044	$26,373
20	173	0059.00	Moderate	$64,331	$73,200	23.43	58.82	$37,844	$43,056	$38,826
20	173	0060.00	Moderate	$64,331	$73,200	31.20	62.82	$40,417	$45,984	$33,345
20	173	0061.00	Moderate	$64,331	$73,200	32.79	61.85	$39,792	$45,274	$39,648
20	173	0062.00	Moderate	$64,331	$73,200	27.83	54.22	$34,886	$39,689	$32,103
20	173	0063.00	Moderate	$64,331	$73,200	21.97	77.14	$49,625	$56,466	$40,556
20	173	0064.00	Middle	$64,331	$73,200	11.05	86.46	$55,625	$63,289	$46,750
20	173	0065.00	Low	$64,331	$73,200	39.81	37.84	$24,346	$27,699	$22,784
20	173	0066.00	Moderate	$64,331	$73,200	21.15	53.01	$34,102	$38,803	$35,091
20	173	0067.00	Moderate	$64,331	$73,200	23.47	70.40	$45,294	$51,533	$35,802
20	173	0068.00	Low	$64,331	$73,200	46.28	39.51	$25,423	$28,921	$25,400
20	173	0069.00	Moderate	$64,331	$73,200	18.33	58.26	$37,481	$42,646	$36,356
20	173	0070.00	Low	$64,331	$73,200	24.33	46.24	$29,750	$33,848	$28,411
20	173	0071.01	Moderate	$64,331	$73,200	29.79	69.37	$44,632	$50,779	$37,614
20	173	0071.02	Moderate	$64,331	$73,200	15.61	58.17	$37,424	$42,580	$36,255
20	173	0072.01	Middle	$64,331	$73,200	15.35	102.07	$65,667	$74,715	$56,327
20	173	0072.03	Middle	$64,331	$73,200	9.91	87.12	$56,050	$63,772	$43,545
20	173	0072.04	Middle	$64,331	$73,200	7.38	110.45	$71,059	$80,849	$67,321
20	173	0073.01	Upper	$64,331	$73,200	8.71	184.59	$118,750	$135,120	$81,429
20	173	0073.02	Upper	$64,331	$73,200	6.80	120.20	$77,331	$87,986	$66,843
20	173	0074.00	Upper	$64,331	$73,200	6.25	257.45	$165,625	$188,453	$114,250
20	173	0075.00	Moderate	$64,331	$73,200	33.48	55.32	$35,592	$40,494	$32,236
20	173	0076.00	Middle	$64,331	$73,200	12.13	105.57	$67,917	$77,277	$50,625
20	173	0077.00	Middle	$64,331	$73,200	18.99	103.53	$66,607	$75,784	$39,479
20	173	0078.00	Low	$64,331	$73,200	41.42	46.89	$30,169	$34,323	$23,068
20	173	0080.00	Middle	$64,331	$73,200	9.12	98.66	$63,475	$72,219	$57,931
20	173	0081.00	Middle	$64,331	$73,200	14.11	105.29	$67,738	$77,072	$56,364
20	173	0082.00	Moderate	$64,331	$73,200	30.24	70.11	$45,103	$51,321	$28,056
20	173	0083.00	Middle	$64,331	$73,200	11.70	104.46	$67,205	$76,465	$55,513
20	173	0084.00	Middle	$64,331	$73,200	14.17	87.66	$56,397	$64,167	$47,734
20	173	0085.00	Middle	$64,331	$73,200	9.19	114.57	$73,708	$83,865	$54,817
20	173	0086.00	Middle	$64,331	$73,200	8.76	95.56	$61,480	$69,950	$51,557
20	173	0087.00	Moderate	$64,331	$73,200	19.54	78.15	$50,278	$57,206	$28,839
20	173	0088.00	Middle	$64,331	$73,200	11.79	89.64	$57,667	$65,616	$52,500
20	173	0089.00	Moderate	$64,331	$73,200	31.86	59.08	$38,008	$43,247	$32,111
20	173	0090.00	Moderate	$64,331	$73,200	19.68	52.54	$33,803	$38,459	$31,215
20	173	0091.00	Moderate	$64,331	$73,200	25.35	64.72	$41,638	$47,375	$40,603
20	173	0092.00	Middle	$64,331	$73,200	14.32	96.35	$61,984	$70,528	$52,396
20	173	0093.01	Middle	$64,331	$73,200	3.39	86.53	$55,671	$63,340	$51,429
20	173	0093.02	Middle	$64,331	$73,200	14.68	99.46	$63,989	$72,805	$43,869
20	173	0094.01	Middle	$64,331	$73,200	5.53	99.09	$63,750	$72,534	$55,658
20	173	0094.02	Middle	$64,331	$73,200	10.56	98.09	$63,103	$71,802	$51,029
20	173	0095.03	Upper	$64,331	$73,200	4.33	167.82	$107,962	$122,844	$97,768
20	173	0095.04	Upper	$64,331	$73,200	12.15	123.87	$79,688	$90,673	$72,074

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	173	0095.05	Upper	$64,331	$73,200	1.33	161.88	$104,141	$118,496	$85,583
20	173	0095.06	Upper	$64,331	$73,200	2.67	129.32	$83,198	$94,662	$75,980
20	173	0095.07	Upper	$64,331	$73,200	1.08	161.76	$104,063	$118,408	$98,542
20	173	0095.08	Middle	$64,331	$73,200	9.52	105.20	$67,679	$77,006	$58,000
20	173	0095.09	Upper	$64,331	$73,200	3.22	152.74	$98,260	$111,806	$95,372
20	173	0095.10	Upper	$64,331	$73,200	1.27	142.33	$91,563	$104,186	$85,987
20	173	0095.11	Upper	$64,331	$73,200	3.03	120.41	$77,461	$88,140	$76,508
20	173	0095.12	Upper	$64,331	$73,200	4.62	142.55	$91,705	$104,347	$80,167
20	173	0095.13	Upper	$64,331	$73,200	8.37	121.29	$78,032	$88,784	$65,139
20	173	0096.03	Upper	$64,331	$73,200	7.16	122.41	$78,750	$89,604	$67,008
20	173	0096.04	Upper	$64,331	$73,200	9.24	120.37	$77,438	$88,111	$63,950
20	173	0096.05	Upper	$64,331	$73,200	6.72	125.78	$80,918	$92,071	$79,583
20	173	0097.00	Upper	$64,331	$73,200	3.15	129.98	$83,618	$95,145	$70,402
20	173	0098.01	Middle	$64,331	$73,200	8.97	87.88	$56,538	$64,328	$48,705
20	173	0098.02	Upper	$64,331	$73,200	8.45	133.29	$85,750	$97,568	$73,811
20	173	0099.00	Upper	$64,331	$73,200	3.17	134.45	$86,498	$98,417	$80,622
20	173	0100.01	Upper	$64,331	$73,200	0.33	178.23	$114,662	$130,464	$110,610
20	173	0100.02	Upper	$64,331	$73,200	7.11	194.92	$125,395	$142,681	$113,542
20	173	0100.03	Upper	$64,331	$73,200	2.17	130.64	$84,048	$95,628	$83,301
20	173	0100.04	Upper	$64,331	$73,200	3.77	139.06	$89,464	$101,792	$63,750
20	173	0100.05	Upper	$64,331	$73,200	3.54	121.99	$78,482	$89,297	$70,423
20	173	0101.06	Upper	$64,331	$73,200	3.64	166.03	$106,811	$121,534	$90,938
20	173	0101.07	Middle	$64,331	$73,200	10.79	118.73	$76,384	$86,910	$53,099
20	173	0101.08	Upper	$64,331	$73,200	3.24	205.39	$132,132	$150,345	$78,250
20	173	0101.09	Moderate	$64,331	$73,200	24.63	79.11	$50,893	$57,909	$41,553
20	173	0101.10	Upper	$64,331	$73,200	2.57	124.55	$80,125	$91,171	$67,857
20	173	0101.11	Upper	$64,331	$73,200	4.50	142.25	$91,515	$104,127	$71,574
20	173	0101.13	Upper	$64,331	$73,200	9.35	130.30	$83,825	$95,380	$81,389
20	173	0101.15	Upper	$64,331	$73,200	1.48	225.51	$145,078	$165,073	$120,529
20	173	0101.16	Upper	$64,331	$73,200	7.90	161.87	$104,135	$118,489	$94,423
20	173	0102.00	Upper	$64,331	$73,200	4.62	130.67	$84,063	$95,650	$69,608
20	173	0103.00	Upper	$64,331	$73,200	6.24	154.84	$99,611	$113,343	$89,936
20	173	0104.00	Middle	$64,331	$73,200	15.32	109.95	$70,735	$80,483	$64,000
20	173	0105.00	Upper	$64,331	$73,200	5.37	141.84	$91,250	$103,827	$82,833
20	173	0106.00	Upper	$64,331	$73,200	2.96	154.39	$99,327	$113,013	$91,818
20	173	0107.00	Upper	$64,331	$73,200	4.48	134.23	$86,357	$98,256	$73,173
20	173	0108.01	Middle	$64,331	$73,200	8.64	84.33	$54,253	$61,730	$53,401
20	173	0108.02	Middle	$64,331	$73,200	17.64	101.71	$65,433	$74,452	$50,487

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	177	0004.00	Low	$64,984	$77,000	47.13	43.38	$28,193	$33,403	$22,883
20	177	0005.00	Moderate	$64,984	$77,000	39.20	56.88	$36,964	$43,798	$21,865
20	177	0006.00	Low	$64,984	$77,000	39.54	41.06	$26,686	$31,616	$25,932
20	177	0007.00	Moderate	$64,984	$77,000	27.69	54.57	$35,465	$42,019	$35,808
20	177	0008.00	Moderate	$64,984	$77,000	31.92	62.98	$40,932	$48,495	$32,813
20	177	0009.00	Moderate	$64,984	$77,000	24.13	71.81	$46,667	$55,294	$41,136
20	177	0010.00	Middle	$64,984	$77,000	15.43	84.70	$55,047	$65,219	$35,598
20	177	0011.00	Low	$64,984	$77,000	48.86	42.19	$27,422	$32,486	$19,894
20	177	0012.00	Low	$64,984	$77,000	27.63	46.94	$30,505	$36,144	$30,333
20	177	0013.00	Moderate	$64,984	$77,000	23.70	69.64	$45,260	$53,623	$31,551
20	177	0015.00	Middle	$64,984	$77,000	23.82	84.70	$55,045	$65,219	$40,792
20	177	0016.01	Middle	$64,984	$77,000	18.13	113.24	$73,594	$87,195	$45,711
20	177	0016.03	Moderate	$64,984	$77,000	23.90	75.98	$49,375	$58,505	$37,823
20	177	0016.04	Middle	$64,984	$77,000	8.45	95.98	$62,373	$73,905	$52,195
20	177	0018.00	Middle	$64,984	$77,000	18.22	87.41	$56,806	$67,306	$48,625
20	177	0019.00	Upper	$64,984	$77,000	3.50	134.81	$87,609	$103,804	$65,750
20	177	0021.00	Moderate	$64,984	$77,000	24.10	58.61	$38,092	$45,130	$36,506
20	177	0022.00	Middle	$64,984	$77,000	13.67	100.30	$65,179	$77,231	$46,930
20	177	0024.00	Middle	$64,984	$77,000	13.07	92.81	$60,313	$71,464	$38,849
20	177	0025.00	Middle	$64,984	$77,000	9.53	101.45	$65,930	$78,117	$45,346
20	177	0026.01	Middle	$64,984	$77,000	10.04	91.93	$59,743	$70,786	$47,011
20	177	0026.02	Middle	$64,984	$77,000	10.05	103.06	$66,974	$79,356	$49,676
20	177	0027.01	Middle	$64,984	$77,000	11.72	91.17	$59,250	$70,201	$48,945
20	177	0027.02	Middle	$64,984	$77,000	7.62	108.73	$70,663	$83,722	$54,125
20	177	0028.00	Moderate	$64,984	$77,000	22.55	63.69	$41,389	$49,041	$32,698
20	177	0029.00	Moderate	$64,984	$77,000	35.21	51.30	$33,342	$39,501	$31,063
20	177	0030.01	Moderate	$64,984	$77,000	23.59	78.26	$50,859	$60,260	$37,328
20	177	0030.02	Upper	$64,984	$77,000	5.03	123.05	$79,966	$94,749	$69,932
20	177	0031.00	Middle	$64,984	$77,000	29.12	104.35	$67,813	$80,350	$36,783
20	177	0033.01	Middle	$64,984	$77,000	5.76	104.91	$68,177	$80,781	$57,257
20	177	0033.02	Upper	$64,984	$77,000	5.27	137.25	$89,196	$105,683	$81,111
20	177	0034.00	Upper	$64,984	$77,000	2.38	126.07	$81,929	$97,074	$76,285
20	177	0035.00	Upper	$64,984	$77,000	3.57	122.60	$79,671	$94,402	$64,389
20	177	0036.01	Upper	$64,984	$77,000	3.92	124.13	$80,670	$95,580	$70,625
20	177	0036.04	Upper	$64,984	$77,000	2.57	168.52	$109,515	$129,760	$100,172
20	177	0036.05	Upper	$64,984	$77,000	2.19	174.08	$113,125	$134,042	$95,333
20	177	0036.06	Middle	$64,984	$77,000	5.55	118.10	$76,750	$90,937	$58,779
20	177	0036.07	Upper	$64,984	$77,000	3.59	149.41	$97,095	$115,046	$85,815
20	177	0037.00	Middle	$64,984	$77,000	15.14	99.00	$64,335	$76,230	$63,323
20	177	0039.01	Upper	$64,984	$77,000	3.82	120.27	$78,159	$92,608	$70,625
20	177	0039.02	Upper	$64,984	$77,000	4.36	137.18	$89,149	$105,629	$75,789

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20	177	0040.00	Low	$64,984	$77,000	52.30	42.66	$27,725	$32,848	$17,019
20	177	0041.00	Middle	$64,984	$77,000	17.35	93.33	$60,653	$71,864	$44,638

2021 FFIEC Census Report - Summary Census Income Information
State: 20 - KANSAS (KS)
County: 207 - WOODSON COUNTY

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	207	0966.00	Middle	$57,229	$64,800	30.40	85.42	$48,889	$55,352	$37,550
20	207	0967.00	Middle	$57,229	$64,800	13.67	88.16	$50,457	$57,128	$32,308
20	207	9999.99	Middle	$57,229	$64,800	22.84	87.65	$50,162	$56,797	$35,787

FFIEC Federal Financial Institutions Examination Council

State Code	County Code	Tract Code	Tract Income Level	2015 MSA/MD Statewide non-MSA/MD Median Family Income	2021 FFIEC Est. MSA/MD non-MSA/MD Median Family Income	% Below Poverty Line	Tract Median Family Income %	2015 Tract Median Family Income	2021 Est. Tract Median Family Income	2015 Tract Median Household Income
20	209	0400.01	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0400.02	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0402.00	Unknown	$72,623	$86,300	42.45	0.00	$0	$0	$23,258
20	209	0403.00	Low	$72,623	$86,300	46.65	33.18	$24,097	$28,634	$27,313
20	209	0404.00	Low	$72,623	$86,300	30.03	45.73	$33,214	$39,465	$31,234
20	209	0405.00	Moderate	$72,623	$86,300	19.07	56.54	$41,066	$48,794	$39,281
20	209	0406.00	Low	$72,623	$86,300	35.71	37.40	$27,165	$32,276	$26,642
20	209	0407.00	Low	$72,623	$86,300	43.62	36.79	$26,719	$31,750	$25,402
20	209	0408.00	Low	$72,623	$86,300	26.02	45.61	$33,125	$39,361	$22,656
20	209	0409.00	Low	$72,623	$86,300	42.48	26.78	$19,453	$23,111	$18,229
20	209	0410.00	Low	$72,623	$86,300	61.72	31.26	$22,702	$26,977	$11,707
20	209	0411.00	Low	$72,623	$86,300	54.78	28.88	$20,978	$24,923	$16,424
20	209	0412.00	Low	$72,623	$86,300	39.70	41.40	$30,066	$35,728	$15,313
20	209	0413.00	Low	$72,623	$86,300	42.58	46.56	$33,814	$40,181	$29,833
20	209	0415.00	Moderate	$72,623	$86,300	31.04	51.84	$37,653	$44,738	$29,325
20	209	0416.00	Moderate	$72,623	$86,300	29.24	59.11	$42,933	$51,012	$34,089
20	209	0417.00	Moderate	$72,623	$86,300	18.85	60.07	$43,625	$51,840	$35,407
20	209	0418.00	Low	$72,623	$86,300	55.37	38.37	$27,868	$33,113	$10,489
20	209	0419.00	Moderate	$72,623	$86,300	26.34	56.63	$41,131	$48,872	$40,179
20	209	0420.01	Low	$72,623	$86,300	47.13	49.63	$36,050	$42,831	$35,476
20	209	0420.02	Low	$72,623	$86,300	48.01	29.57	$21,480	$25,519	$18,155
20	209	0421.00	Low	$72,623	$86,300	39.11	36.68	$26,641	$31,655	$26,823
20	209	0422.00	Moderate	$72,623	$86,300	26.65	50.85	$36,932	$43,884	$36,554
20	209	0423.00	Low	$72,623	$86,300	37.74	45.41	$32,983	$39,189	$27,788
20	209	0424.00	Low	$72,623	$86,300	36.19	45.89	$33,333	$39,603	$29,618
20	209	0425.01	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0425.02	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0426.00	Low	$72,623	$86,300	32.25	45.87	$33,317	$39,586	$31,451
20	209	0427.00	Moderate	$72,623	$86,300	39.59	52.10	$37,841	$44,962	$34,557
20	209	0428.00	Low	$72,623	$86,300	32.57	47.76	$34,688	$41,217	$28,795
20	209	0430.00	Low	$72,623	$86,300	27.93	43.27	$31,429	$37,342	$31,875
20	209	0433.01	Low	$72,623	$86,300	26.94	48.45	$35,192	$41,812	$31,318
20	209	0434.00	Moderate	$72,623	$86,300	14.42	66.63	$48,393	$57,502	$42,344
20	209	0435.00	Moderate	$72,623	$86,300	8.61	79.22	$57,535	$68,367	$50,368
20	209	0436.00	Moderate	$72,623	$86,300	20.60	74.84	$54,355	$64,587	$48,921
20	209	0437.00	Middle	$72,623	$86,300	7.59	89.27	$64,833	$77,040	$55,875
20	209	0438.02	Middle	$72,623	$86,300	16.13	81.91	$59,489	$70,688	$47,386
20	209	0438.03	Moderate	$72,623	$86,300	9.94	76.02	$55,211	$65,605	$48,015
20	209	0438.04	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0439.03	Low	$72,623	$86,300	23.29	44.64	$32,420	$38,524	$41,898
20	209	0439.04	Moderate	$72,623	$86,300	35.77	58.75	$42,667	$50,701	$34,766

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20	209	0439.05	Low	$72,623	$86,300	47.67	35.57	$25,833	$30,697	$24,479
20	209	0440.01	Moderate	$72,623	$86,300	14.44	68.89	$50,035	$59,452	$46,454
20	209	0440.03	Moderate	$72,623	$86,300	26.75	52.13	$37,865	$44,988	$38,542
20	209	0440.04	Low	$72,623	$86,300	51.74	36.36	$26,406	$31,379	$32,321
20	209	0441.01	Low	$72,623	$86,300	32.28	47.02	$34,148	$40,578	$32,778
20	209	0441.02	Moderate	$72,623	$86,300	7.96	66.01	$47,944	$56,967	$44,146
20	209	0441.03	Middle	$72,623	$86,300	10.97	85.64	$62,197	$73,907	$53,403
20	209	0441.04	Low	$72,623	$86,300	23.08	46.34	$33,654	$39,991	$27,545
20	209	0442.01	Middle	$72,623	$86,300	2.49	106.08	$77,045	$91,547	$60,153
20	209	0442.02	Middle	$72,623	$86,300	12.73	81.47	$59,167	$70,309	$49,886
20	209	0443.01	Middle	$72,623	$86,300	17.12	84.92	$61,677	$73,286	$45,000
20	209	0443.02	Moderate	$72,623	$86,300	12.73	69.52	$50,490	$59,996	$41,650
20	209	0443.03	Moderate	$72,623	$86,300	12.14	62.24	$45,203	$53,713	$45,094
20	209	0444.00	Moderate	$72,623	$86,300	22.20	69.80	$50,694	$60,237	$41,074
20	209	0445.00	Moderate	$72,623	$86,300	16.60	69.44	$50,433	$59,927	$34,286
20	209	0446.01	Moderate	$72,623	$86,300	10.98	70.63	$51,300	$60,954	$46,875
20	209	0446.02	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0446.03	Unknown	$72,623	$86,300	0.00	0.00	$0	$0	$0
20	209	0447.02	Middle	$72,623	$86,300	10.72	87.71	$63,704	$75,694	$56,063
20	209	0447.03	Middle	$72,623	$86,300	2.28	105.08	$76,318	$90,684	$72,917
20	209	0447.04	Middle	$72,623	$86,300	4.53	103.75	$75,352	$89,536	$66,346
20	209	0448.03	Upper	$72,623	$86,300	2.96	147.13	$106,856	$126,973	$84,329
20	209	0448.04	Upper	$72,623	$86,300	3.70	141.82	$102,995	$122,391	$104,009
20	209	0448.05	Middle	$72,623	$86,300	13.55	100.97	$73,333	$87,137	$65,660
20	209	0448.06	Upper	$72,623	$86,300	2.48	136.44	$99,091	$117,748	$84,861
20	209	0449.00	Middle	$72,623	$86,300	9.82	80.94	$58,788	$69,851	$50,745
20	209	0450.00	Low	$72,623	$86,300	34.40	43.05	$31,269	$37,152	$31,081
20	209	0451.00	Low	$72,623	$86,300	45.46	35.60	$25,857	$30,723	$27,439
20	209	0452.00	Moderate	$72,623	$86,300	27.90	68.89	$50,034	$59,452	$37,006

Appendix C:
Responses to Information Requests Cited in Testimony

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-7

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide a detailed description of all circumstances under which Evergy would obtain the income information of a residential customer.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

There is no circumstance where Evergy would obtain income information of a residential customer. Customers who apply for Evergy's income eligible programs, submit an application and are verified by external parties. Evergy does not obtain or retain customer income amounts.

Information provided by: Maria Lopez, Theresa English

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-8

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide a detailed description of all procedures used by Evergy for:

a. a. Recording the income of residential customers;
b. b. Accessing the income of residential customers.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
Please see previously provided response to data request number SC-1-7 within rate case number ER-EKME-254-TAR.

Information provided by: Maria Lopez, Theresa English

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 18, 2022

Question:SC-1-9

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please identify:

a. a. All criteria used to categorize customers as low-income customers;
b. b. Each specific Evergy procedure or process in which these criteria are used to identify and categorize low-income customers and provide a copy of all sections of any operations manual or other written document that details the procedure or process.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

a. The federal poverty guideline chart and/or state median level income are the main criterion used to identify low-income customers.
b. Third party agencies have their own processes and procedures to determine eligibility for Evergy's income eligible programs.

Information provided by: Maria Lopez, Theresa English

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 24, 2022

Question:SC-1-11

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide all studies, reports, evaluations or other written documents of any nature within the custody or control of Evergy, prepared since January 1, 2016 regarding the extent of the following energy efficiency market conditions experienced by low-income households:

a. a. High initial capital costs of energy efficiency investments;
b. b. Lack of access to capital for energy efficiency investments;
c. c. High implicit discount rates/payback periods for energy efficiency investments;
d. d. High proportion of low-income renters;
e. e. Split incentives between landlord and tenants relative to energy efficiency investments;
f. f. High mobility rate of low-income renters.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response: Please find the attached KCP&L PAYS Feasibility study conducted by Cadmus in 2018.

Information provided by: Theresa English, Product Manager and Brian File, Director-Products

Attachment(s): QSC1-11_KCPL PAYS Feasibility Study.pdf

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 18, 2022

Question:SC-1-12

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Provide any analysis that Evergy has undertaken of its residential customer population since January 1, 2016 assessing the propositions that:

a. a. The greater the energy consumption is in the pre-treatment period (defined generally as a twelve-month period prior to the delivery of energy efficiency investments or installation of energy efficiency measures), the greater the potential savings;
b. b. The greater the energy bill arrearage is in the pre-treatment period, the greater the reductions in energy consumption realized by energy efficiency investments.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

The company has not conducted specific analysis as described in a. or b. of this question. Generally, the Company would expect the result of part a. to be true since with a larger energy consumption, the larger potential for energy savings by shear mathematics. The specific analysis described in part b has not been contemplated or analyzed by the Company.

Information provided by: Brian File – Director, Products

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-13

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Provide all analysis that Evergy has undertaken since January 1, 2016 of its residential population assessing the extent to which, if at all:

a. a. Households with energy bill arrearages in the pre-treatment period, as defined in Request No. 1-12, reduce their arrearages following energy efficiency services;
b. b. The number of complete payments changes following energy efficiency services; and
c. c. The payment coverage ratio (i.e., payments as a percentage of billed revenue) changes following energy efficiency services.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

The Company has not conducted any analysis associated with part a-c. as described in this request.

Information provided by: Brian File – Director, Products

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-15

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide all documents within the custody or control of Evergy discussing the extent to which, if at all, energy efficiency measures delivered to low-income customers result in the following associated with the customers:

a. a. Reduced arrearages;
b. b. Reduced bad debt;
c. c. Reduced credit and collection activity;
d. d. Improved timeliness of payments;
e. e. Improved completeness of payments.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

The Company has not conducted any such analysis.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-21

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide a copy of Evergy's most recent appliance saturation survey report, including all sections relating explicitly to low-income households. If a low-income report was separately prepared apart from the appliance saturation study, provide that low-income report.

RESPONSE: (do not edit or delete this line or anything above this)

Response:
The most recent appliance saturation survey report is attached in data request CURB-33. The name is "Q_CURB-33_SurveyResults_v2_Evergy.pptx".

Information provided by:
Mark Leonard

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently

discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Astrab Joseph -
Response Provided March 03, 2022

Question:CURB-33

Please refer to Appendix E, regarding the Rate Case Energy Efficiency Annualization.

a. Please describe the reconciliation and reset processes for TD in detail.

i. Would an EM&V finding that the programs produced less savings than projected trigger a reconciliation process for previous TD collections? If not, when would that reconciliation occur?

ii. Would an EM&V finding that the programs produced less savings than projected trigger a reset on the amount to be collected for TD going forward? If not, when would that reset occur?

b. Historically, what is the average interval between rate cases?

c. Does Evergy plan to file a rate case application within the term of the DSM plan? If so, when?

d. Can the KCC require Evergy to submit a rate case application?

e. Please provide the most recent baseline study for Evergy's Kansas territories.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
a. Please describe the reconciliation and reset processes for TD in detail.

The TD processes are described in Appendix E and in the recovery tariffs filed in Appendix F with this filing. In summary, on the effective date of rates implemented in connection with a general rate case, cumulative savings through the end of the test year annualized in that case will be deducted from cumulative savings upon which TD is calculated. The result of this reset is that TD is calculated on savings achieved in periods following the test year until a subsequent general rate case is completed and the process is repeated. TD will continue to be calculated and recovered until such time as a rate case is filed subsequent to the end of the KEEIA 2023 – 2026 DSM Portfolio with a test period ending at or after the end of the KEEIA 2023 – 2026 DSM Portfolio.

i. Would an EM&V finding that the programs produced less savings than projected trigger a reconciliation process for previous TD collections? If not, when would that reconciliation occur?

No, the Company's plan is to use the results of EM&V to update the Technical Resource Manual (TRM) with updated kWh/kW savings per measure and Net-to-Gross (NTG) factors and TD on a prospective basis as described below.

ii. Would an EM&V finding that the programs produced less savings than projected trigger a reset on the amount to be collected for TD going forward? If not, when would that reset occur?

Yes, the Company's EM&V plan would result in the filing of an updated Technical Resource Manual (TRM) with updated kWh/kW savings per measure and Net-to-Gross (NTG) factors to be effective at the beginning of the program year following the completion of the EM&V report. For example, the EM&V results for the 2023 program year completed during 2024 would be filed in an updated TRM effective at the beginning of 2025 and used in the TD prospectively.

b. Historically, what is the average interval between rate cases?

The average interval between rate cases in the five rate cases prior to the five-year rate filing moratorium agreed to in the 2018 merger case was approximately 1.5 years.

c. Does Evergy plan to file a rate case application within the term of the DSM plan? If so, when?

The Company plans to file rate cases in each jurisdiction early in 2023 to be effective at the end of the five-year rate filing moratorium agreed to in the 2018 merger case.

d. Can the KCC require Evergy to submit a rate case application?

It is my understanding that the Commission cannot require Evergy to submit a rate case application. However, the Commission can initiate a complaint or investigation and require the Company to file the same information as required in a rate case.

e. Please provide the most recent baseline study for Evergy's Kansas territories.

The Company has not prepared a baseline study for Evergy's Kansas territories. Attached is the most recent residential appliance saturation survey, Q_CURB-33_SurveyResults_v2_Evergy.pptx.

Information provided by: Mark Foltz, Director of Special Projects

Attachment(s):
Q_CURB-33_SurveyResults_v2_Evergy.pptx

<u>Verification:</u>
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-22

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide a copy of the most recent report, if any, prepared by or on behalf of Evergy since January 1, 2016:
a. Studying the market barriers that prevent or impede residential investments in energy efficiency measures;
b. Studying the market barriers that prevent or impede low-income residential investments in energy efficiency measures.

RESPONSE: (do not edit or delete this line or anything above this)

Response:
There have been no studies that would specifically address customer "market barriers" in KS. The previous MO appliance saturation study did include KS territories, but the survey wasn't designed to address the "market barriers".

Information provided by:
Mark Leonard

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 30, 2022

Question:SC-1-23A

AMENDED

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

In excel format, please provide the total number of Evergy customers receiving bill assistance grants from the federal Low-Income Home Energy Assistance Program (LIHEAP) in the:
a. 2017 – 2018 LIHEAP program year;
b. 2018 – 2019 LIHEAP program year;
c. 2019 – 2020 LIHEAP program year;
d. 2020 – 2021 LIHEAP program year;
e. 2021 – 2022 LIHEAP program year (to date).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

Attached are the number of LIHEAP and LIEAP grants received from 2017-2022 YTD. These numbers include supplemental grants made at the state level.

Information provided by: Maria Lopez

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 30, 2022

Question:SC-1-25A

AMENDED

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

In excel format, please provide the total number of Evergy customers receiving a Crisis assistance grant from the federal Low-Income Home Energy Assistance Program (LIHEAP) in the:

a. a. 2017 – 2018 LIHEAP program year;
b. b. 2018 – 2019 LIHEAP program year;
c. c. 2019 – 2020 LIHEAP program year;
d. d. 2020 – 2021 LIHEAP program year;
e. e. 2021 – 2022 LIHEAP program year (to date).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

Attached are the number of LIHEAP crisis pledges that were received from 2017-2022 YTD. Because customers can receive multiple crisis pledges throughout the LIHEAP season, these totals do not reflect the true number of customers assisted with crisis funds.

Information provided by: Maria Lopez

Attachment(s):

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-27

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

In excel format, please provide by month since January 2020 the total number of customers receiving bill assistance grants from the federal Emergency Rental Assistance program.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
Please see previously provided response to data request number SC-1-28 within rate case number 22-EKME-254-TAR.

Information provided by:

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-28

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

In excel format, please provide by month since January 2020 the total dollars of bill assistance grants from the federal Emergency Rental Assistance program.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
The Emergency Rental Assistance Funds are not tracked separately, they are part of Evergy's "other sources" category. Other sources include grants secured from agencies, including the Emergency Rental Assistance Funds, outside of LIEAP and LIHEAP.

Information provided by: Maria Lopez

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-29

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

For the past five years, please provide copies of all written assessments or evaluations prepared by or for Evergy, which include a discussion of:

a. a. The distribution of income-qualified usage reduction measures, savings, and/or expenditures, by census tract; and
b. b. The distribution of income-qualified usage reduction measures, savings, and/or expenditures, by household income.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

Evergy has not performed any such evaluations or assessments.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-30

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide all written documents which identify and discuss program objectives regarding the distribution of income-qualified savings, measures and/or expenditures by:

a. a. Geographic region (e.g., Census Tract, Zip Code, community, etc.);
b. b. Race/ethnicity of the participant;
c. c. Income of the participant.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response: Evergy doesn't currently have written documents which identify and discuss program objective for distribution of income-qualified savings, measures, or expenditures beyond service territory

a. There isn't a set breakout by geographic area beyond service territory
b. There isn't a breakout by race/ethnicity
c. There isn't a further breakout of participant income beyond eligibility requirements

Information provided by: Theresa English, Product Manager

Attachment(s):

<u>Verification:</u>
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-31

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide all written documents identifying, assessing or discussing the proposed spending on all income-qualified measures as a percentage of the spending needed to exhaust the efficiency potential for all income-qualified customers.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Response:
Since a market potential study by segment has not been conducted for KS, there is no analysis of the above question.

Information provided by:
Mark Leonard

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 18, 2022

Question:SC-1-32

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide in Excel format, by year for the past five years, the actual spending vs. budgeted spending, for income-qualified programs.

a. a. For the total program;
b. b. By program measure;
c. c. By geographic area (e.g., Census Tract, Zip Code, community, etc.).

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

a. See attached Excel file, Q_SC-1-32_KS Metro Low Income Weatherization Program Costs 2017-2021.xlsx. KS Central and KS South did not have any income-qualified during 2017-2021.

b. This information was handled by the weatherization agency and was not provided to the Company.

c. See response to letter b. above

Information provided by: Mark Foltz, Director of Special Projects and Theresa English, Product Manager

Attachment(s):
Q_SC-1-32_KS Metro Low Income Weatherization Program Costs 2017-2021.xlsx

<u>Verification:</u>
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-33

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide in Excel format, by year for the past five years, all written documents setting forth actual versus projected numbers of measures installed, and savings achieved, by geographic area (e.g., Census Tract, Zip Code, community, etc.).

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

The weatherization agency manages this funding. To Evergy's knowledge, there is no evaluation of actuals versus projected measures installed or savings.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 18, 2022

Question:SC-1-36

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide a detailed description of how, if at all, Evergy determines what health and safety hazards can and should be addressed through its energy efficiency program.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
For the IEWX component, our weatherization agency KHRC will conduct audits on homes that qualify for weatherization and determine if hazardous conditions exist and address accordingly. If a health or safety issue is identified during an Evergy home energy assessment/direct install these leads will be passed accordingly to other organizations that can assist through KS-LILIES. Both staffing support teams are trained in how to identify such cases.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 18, 2022

Question:SC-1-38

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please describe whether Evergy utilizes the same contractors to perform energy efficiency upgrades and also to perform health and safety upgrades. If the same contractors are not used, please describe who does each component.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
The same contractor can be used for energy efficient upgrades and/or health and safety upgrades depending on the program offer. For example, the weatherization program agency KHRC may elect to utilize their own contractor base to perform both upgrades for income-qualified homes. If a health or safety issue is identified during an Evergy home energy assessment/direct install these leads will be passed accordingly to other organizations that can assist through KS-LILIES.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-40

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide copies of all written assessments or evaluations prepared by or for Evergy since January 1, 2016, which list and/or describe the health and safety hazards found during audits or assessments of income-qualified households and the costs associated with addressing these hazards.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response: Evergy does not have assessments or evaluations reports of this nature. Household audits are handled by our weatherization partner Kansas Housing Resource Corp.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-41

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide in Excel format, by year for the past three years, the actual spending vs. budgeted spending, for health and safety measures in income-qualified housing units:

a. a. For the total program;
b. b. By program measure;
c. c. By Census Tract.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

a. This information is not available/tracked by Evergy or weatherization partner
b. See response to a.
c. See response to a.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 17, 2022

Question:SC-1-42

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

For the past five years, please provide, in Excel format, the number of walkaways (defining a "walkaway" as a housing unit where health and safety issues prevent the delivery of energy efficient products and services) Evergy and/or its contractors recorded per year and by census tract for income-qualified single- and multi-family buildings.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

This information is not tracked/handled by Evergy. Evergy would rely on our Weatherization Partner Kansas Housing Resource Corp. to handle this type of information.

Information provided by: Theresa English, Pr**oduct Manager**

Attachment(s):

<u>**Verification:**</u>
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 24, 2022

Question:SC-1-48

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide a detailed description of the process Evergy uses to determine the geographic distribution of:

a. a. Residential energy efficiency investments;
b. b. Low-income residential energy efficiency investments.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

a. The geographic distribution of the proposed KEEIA residential energy efficiency investment was determined by service territory, Kansas Metro and Kansas Central.
b. Distribution of investments were then broken-out further for low-income (income-eligible) households, utilizing data from U.S. Census Bureau's American Community Survey 2018.

Information provided by: Theresa English, Product Manager

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 24, 2022

Question:SC-1-49

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please provide a detailed description of how Evergy ensures an equitable distribution of energy efficiency investments:

a. a. By geography;
b. b. By income;

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response: The nature of the design with specific programs budgeting and targeting Hard-To-Reach customers supports the equitable distribution of energy efficiency investments by ensuring budget is available for traditionally underserved geographic (rural) and income groups (low-income). Earnings Opportunity Metric #2 (found in Appendix E of the filing) also highlights metrics for the Company to achieve performance relative to budget. Further equitable distribution of efficiency investments can be achieved through implementation partners with key performance indicators that manage the distribution by geography and income.

Information provided by: Theresa English, Product Manager
Attachment(s):

<u>Verification:</u>
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 24, 2022

Question:SC-1-51

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please Provide the Following:

Please identify all metrics, if any, employed by Evergy, and all data, if any, collected by Evergy, in measuring or assessing the extent to which, if at all, its energy efficiency investments have been equitably distributed:

a. a. By geography;
b. b. By income.

Please provide the requested information to Teresa Woody (twoody@kansasappleseed.org), Justin Somelofske (justin.somelofske@sierraclub.org), and Roger Colton (roger@fsconline.com).

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:

Evergy customer data details based on customer type and counts was used to put shape around and identify the high level opportunity for KS customers; while also utilizing other data sources such as the U.S. Census Bureau's American Community Survey 2018 for the distribution of energy efficiency investments that were proposed.

Information provided by: Natalie Gray, Manager, Products & Services

Attachment(s):

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided April 01, 2022

Question:SC-2-2

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide, in an excel format, the following information for Evergy's Service Territory, for every quarter since January 1, 2018:

a. a. The total number of disconnection notices sent;
b. b. The total number of disconnection notices sent for nonpayment;
c. c. The total number of service restorations after disconnections for nonpayment;
d. d. The average duration of disconnection for nonpayment.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
Evergy is not currently tracking the average duration of disconnection for nonpayment. Please see attached documents for data.

Information provided by:
David Austin – Mgr, Credit Management
Tyson Yager – Mgr, Customer Analytics

Attachment(s):
Updated – February 2022 Customer Stats for AAO.xlsx
Disconnect Notice Summary.xlsx

Missouri Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided March 24, 2022

Question:SC-2-3

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide, in an excel format, the following information for Evergy's Service Territory, for every quarter since January 1, 2018:

a. a. The number of customers with an arrearage balance by vintage for 60-90 days;
b. b. The number of customers with an arrearage balance by vintage for 90+ days;
c. c. The dollar value of arrearages by vintage for 60-90 days;
d. d. The dollar value of arrearages by vintage for 90+ days.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
Evergy performed major upgrade to Customer Information System and therefore, data back to 2018 is not readily available.

Please see the attached spreadsheet for data term we do have readily available.

Information provided by:
David Austin – Mgr, Credit Management
Tyson Yager – Mgr, Customer Analytics

Attachment(s):

SC-2-3_Info for KS AAO KS Metro-Central.xlsx

Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2022 EKME_EKCE KEEIA
Case Number: 22-EKME-254-TAR

Requestor Woody Teresa -
Response Provided April 01, 2022

Question:SC-2-5

RE: In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.

Please provide, in an excel format, the following information for Evergy's Service Territory, for each quarter since January 1, 2018:

a. a. The number of new deferred payment agreements entered into;
b. b. The average repayment term of new deferred payment agreements;
c. c. The number of successfully completed deferred payment agreements.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC
Statement: This response is Public. No Confidential Statement is needed.

Response:
Evergy offers several payment arrangement options to assist customers in managing their debt. The most used option is a 12-month arrangement where the initial payment is 1/12th of their total current balance and the rest is divided equally over the next 11 months. This program is for residential customers only and those customers have the option of leveraging the average payment plan or paying their actual usage in addition to the installment payments for the duration of the arrangement. An overwhelming majority of payment arrangements initiated are for this 12-month term.

Short Term payment arrangements are available for customers who are just one month behind and simply need a little more time. This option requires no immediate payment and moves the entire balance to a payment arrangement that will be due on the due date of the customer's next bill.

A final short-term option exists for residential and commercial customers who are further behind and need more time but no longer qualify for the 12-month arrangement. These customers pay their current bill + ¼ of their past due balance. The remaining arrears are billed in equal installments over the next three months.

Please see the attached spreadsheet for a summary of the payment arrangement data.

Information provided by:
David Austin – Mgr, Credit Management
Tyson Yager – Mgr, Customer Data Analytics

Attachment(s):

Pay Arrangement Summary.xlsx

Missouri Verification:
I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc., and Evergy Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act ("KEEIA"), K.S.A. 66-1283.	))))))	Docket No. 22-EKME-254-TAR

AFFIDAVIT OF ROGER COLTON

County of Middlesex)
)
State of Massachusetts)

I, Roger Colton, of lawful age and being duly sworn, state and affirm the following: that the foregoing prepared testimony in question and answer format constitutes my Direct Testimony in the above-captioned proceeding; that the answers set forth therein were given by me and that I have knowledge of the matters set forth in such answers; and that the answers contained therein are true and correct to the best of my information, knowledge, and belief.

Roger Colton

SUBSCRIBED AND SWORN before me this 17th day of June, 2022.

Notary Public

My commission expires: Aug 22, 2025

ANNE L. LOUGEE
COMMISSION EXPIRES AUG. 22, 2025
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

CERTIFICATE OF SERVICE

I, the undersigned, do hereby certify that on this 17 day of June, 2022, a true and correct copy of the above and foregoing **Direct Testimony of Roger Colton on behalf of Sierra Club and Kansas Appleseed Center for Law and Justice, Inc.** was electronically delivered to the following individuals, who constitute the service list for Docket No. 22-EKME-254-TAR:

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