



# Independent EM&V Audit of the Evergy Metro PY2019 Program Evaluations

Final Report

September 21, 2020



**Michaels**Energy



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## I Executive Summary

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In April 2016, the Missouri Public Service Commission (the PSC) approved Missouri Energy Efficiency Investment Act (MEEIA) Cycle 2 DSM programs for the Great Plains Energy Services Incorporated (GPES) affiliate, Evergy Metro (formerly Kansas City Power and Light, KCPL). Of the sixteen Cycle 2 programs approved in the MEEIA, Evergy Metro implemented fifteen no later than the second quarter of 2016.

The MEEIA Cycle 2 Programs (Cases No. EO-2015-240, EO-2015-241) covered in the program year 2019 (PY2019) evaluations (and this audit) include the following:

- **Business EER - Standard** - Designed to help commercial and industrial (C&I) customers save energy through a broad range of energy efficiency options that address all major end uses and processes. The program offers standard rebates as well as mid-stream incentives. The measures incentivized included lighting, HVAC equipment, and motors.
- **Business EER - Custom** - Offered to all Evergy Metro C&I customers, the program provides incentives for a broad range of projects that do not fit within the Business EER - Standard program.
- **Business EER - Block Bidding** - Offers incentives to large C&I customers and trade allies to complete large projects that would be capped at \$100,000 for Business EER - Custom and \$400,000 for Business EER - Standard. The Block Bidding program did not have any project activity in 2019.
- **Strategic Energy Management** - Provides incentives for C&I customers to implement a continuous energy management improvement process that results in energy savings and reductions in energy intensity for industrial and large commercial clients. The SEM program was a 3-year effort ending in July of Program Year (PY) 2018. The Strategic Energy Management program did not have any project activity in 2019.
- **Small Business Lighting** - Available to small business customers, with an average monthly demand below 100 kW, the program provides energy assessments that includes information on potential energy savings and anticipated payback and offers higher incentives on specific lighting measures than the Standard program to help small business customers overcome financial barriers to adoption. It stopped accepting applications at the end of PY2017 due to successfully exhausting available funding and did not have any project activity in 2019.
- **Whole House Efficiency** - Promotes home energy audits and comprehensive retrofits to encourage whole house improvements to existing homes. Customers are eligible for this program if they own or rent a residence and can receive assistance based on three tiers: Tier 1: Home Energy Assessment and direct install measures, Tier 2 - Weatherization Measures, and Tier 3 - HVAC Equipment.

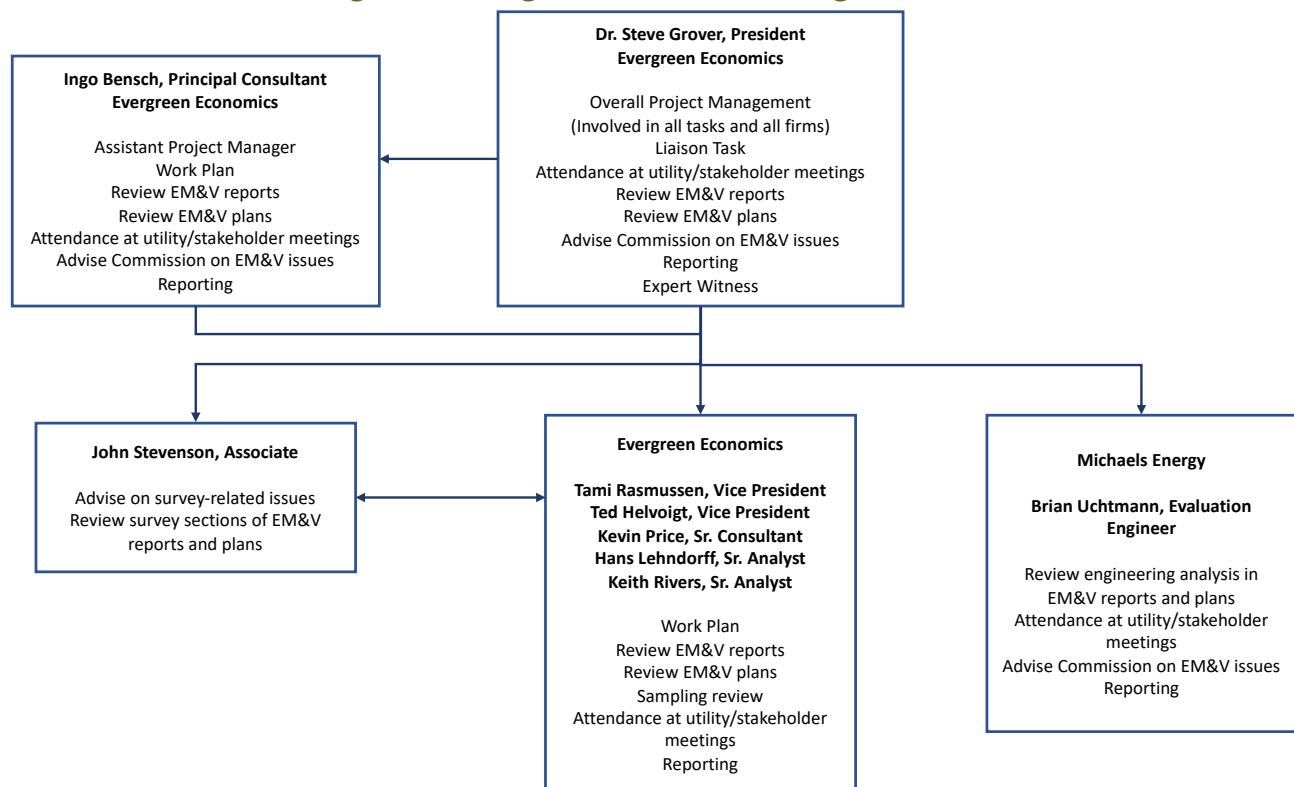
- **Income-Eligible Multifamily** - Delivers long-term energy savings and bill reduction to residents in income-eligible multifamily housing. The program was separated into two tracks in PY2019: one consisting of direct install efficiency kit measures and the other consisting of custom measures.
- **Home Lighting Rebate** - Offers upstream incentives to partnering manufacturers and retailers in the Evergy Metro and Evergy Missouri West service territories to discount the shelf-price of ENERGY STAR qualified LED bulbs. The program started in April 2016 and continued to operate until December 2019.
- **Home Energy Report (HER) Program** - Distributes single-page print reports by mail to educate residential customers about their home energy usage and provides them with information designed to encourage behavior change in energy use.
- **Income-Eligible Home Energy Report (IE-HER) Program** - Identical to the HER program except report messaging focuses on low- or no-cost ways to save energy.
- **Home Online and Business Online Energy Audit** - Opt-in online tools that provide energy-saving tips and help customers track their energy usage. The tools encourage customers to take energy-saving actions in their homes and businesses through individual actions and through participation in other Evergy energy efficiency programs. This program claims no savings.
- **Residential and Business Programmable Thermostat** - Incentivizes residential customers to use a Nest thermostat and allows Evergy Metro to remotely operate their HVAC system during peak demand periods by sending a signal to participating thermostats.
- **Demand Response Incentive** - Provides rebates to C&I customers for curtailing their energy usage during system peak demand periods. When Evergy Metro calls an event, participants reduce their load toward a pre-defined firm power level to create demand savings.

To ensure that programs comply with Missouri's rules regarding electric utility resource planning, the PSC has rules requiring annual impact evaluations and process evaluations. Minimum requirements that evaluations must meet are stipulated in 4 CSR 240-22.070(8).

Evergy Metro contracted with an evaluation team led by Guidehouse, Inc. (Guidehouse). The evaluation team conducted comprehensive impact and process evaluations of Evergy Metro's energy efficiency portfolio in PY2019. For the purposes of this report the evaluation team will be referred to as "the Guidehouse team".

In 2019, the Missouri PSC contracted with Evergreen Economics to serve in the capacity of EM&V Auditor. Figure 1 shows the audit team members and organization, the individual team members by firm, and the associated audit responsibilities.

**Figure 1: Evergreen Audit Team Organization**



The audit team is required to review program evaluation activities and provide comments on compliance with 4 CSR 240-22.070(8) and the overall quality, scope and accuracy of the program evaluation reports, as well as recommendations to improve the evaluation and reporting process. Key findings of the Evergreen team’s review are summarized below.

## **1.1 Summary of Audit Conclusions and Recommendations**

Over the past several years, the audit team has raised a variety of issues regarding the Navigant/Guidehouse evaluations, and we have held several working meetings with the evaluation team to work through these differences. As a result of these discussions, some of the major issues the audit team has raised with the prior year evaluations have largely been resolved. We appreciate the willingness of the Guidehouse team to work through these issues and make adjustments where needed. The audit team has no recommendations for savings adjustments for the PY2019 programs.

There are still some ongoing issues from the audit team perspective, however, and these are summarized below.

### *General Comments on Report Structure & Content*

The evaluation report structure was changed for PY2019, and now includes three components:

1. A summary report that presents the final savings numbers for each program;
2. Appendices in a separate document that provide technical details on the savings calculation methodologies and program-level impact results, and;
3. An Excel workbook that contains additional detail on the program savings numbers (e.g., measure-level savings).

While we are generally in favor of the approach where summary results are presented in the main report and more technical details are relegated to appendices, we still find the current report structure to be somewhat cumbersome to review. In particular, it is not readily apparent in the main report when new data collection and analyses were performed for PY2019 and when evaluation results from prior years were applied. Currently most of this identifying information is included in the appendices rather than the main report.

To help make the report easier to navigate, we suggest adding a table and some text at the beginning of the main report that identifies which programs have new evaluation research conducted for the current year, and which are relying on information from prior years (with the appropriate program year clearly referenced). In addition, we suggest a short (2-4 page) section for each program be included in the main report that summarizes how the current year impact estimates were derived and that includes references to the appropriate program year if results from prior evaluations are being used. If there are data collection or sampling that were done for the current year, this information should be presented in a table for that program section. We believe that these simple additions to the main evaluation report would really improve the readability and help with navigating the other documents.

### *HVAC Early Replacement versus Replace on Burnout*

In the audit team's comments on the draft report (and in our comments from prior years), we have noted the high number of residential HVAC projects that are identified as Early Replacement compared to Replace on Burnout. For PY2019, the vast majority of projects (90%) are identified as Early Replacement. For comparison, the Illinois TRM v.7, which was used as the reference for the per-unit CAC savings, assumes that 14 percent of the measures are early replacement by default.

In response to our earlier comments on this issue, Guidehouse indicated that the implementer has a two-step process for categorizing these projects. The first step is to ask the customer to describe the operational state of the heat pump or CAC that is being replaced. The contractor also records the pre-existing condition of the equipment prior to replacement. Guidehouse then uses the data from the implementer to calculate the

savings. Based on this, it appears that calculations relied on the program implementation data and that there was no separate verification to determine if a project was actually an early replacement. There is also no separate verification to determine if the customer and contractor definitions of ‘early replacement’ are consistent with those assumed in the savings calculation.

Table 1 shows the PY2019 savings for these measures in the Whole House Efficiency program and illustrates the magnitude of this issue for PY2019. Note that an AC project that is categorized as Early Replacement has average savings that is almost three times the amount for Replace on Burnout (labeled as ‘Time of Sale’ in the Guidehouse spreadsheet). For Air Source Heat Pump replacements, the Early Replacement savings are 5 to 10 times as great as the Replace on Burnout projects, on average.

**Table 1: Residential HVAC ER vs ROB Savings (Every Metro)**

Measure	Status	Number of Projects	Total Savings	Average Savings
AC	Time-of-Sale	108	43,752.25	405.11
AC	Early Replacement	1,074	1,236,048.14	1,150.88
Heat Pump	Air Source Time-of-Sale	15	14,180.76	945.38
Heat Pump	Air Source Early Replacement	42	234,438.82	5,581.88
Heat Pump	Air Source Replace Failed ER Heat	5	5,354.35	1,070.87
Heat Pump	Air Source Replace Operating ER Heat	47	558,449.97	11,881.91
Heat Pump	Ductless Mini-Split	50	106,798.52	2,135.97
Heat Pump	Ground Source Time-of-Sale	1	4,959.47	4,959.47
Heat Pump	Ground Source Early Replacement	8	51,552.22	6,444.03
Heat Pump	Ground Source Replace ER Heat	5	38,940.21	7,788.04
Heat Pump	Ground Source New Construction	5	31,059.03	6,211.81

Source: *Every Metro EMV PY 2019 Databook Final (Whole House Efficiency Tab)*

The audit team has consistently raised this issue in prior years for both Evergy and Ameren MO, and we reiterate our earlier recommendations that this issue needs additional study by the evaluation teams. This should involve having a consistent set of criteria for classifying a project as Early Replacement, and then having a savings calculation algorithm that is consistent with this definition.

### *Free Ridership & Spillover*

A separate ongoing issue is with the free ridership and spillover scoring of survey responses. The audit team has commented for PY2019 (and in prior years) that survey responses of ‘don’t know’ should be excluded completely from the free ridership scoring calculations. We maintain that a response of ‘don’t know’ does not provide any information at all about free ridership, and including these in the scoring algorithm will bias the results. The evaluation team rebuttal to this is that they are using a respected



approach from Energy Trust of Oregon that has been approved and vetted. They also note that very few customers actually provided a 'don't know' response in the Custom Program survey (the only program in PY2019 where this method is used) and so as a practical matter the coding of these few responses is having very little effect on the final free ridership number.

We disagree with this component of the Energy Trust approach and reiterate here that these responses are not providing any information one way or the other about free ridership. We also note that the Illinois TRM (the primary reference used for all other areas of the evaluation) does not assign any score to the 'don't know' responses. While this is not going to have a significant impact on the net impact calculations for PY2019, we believe that it is important to document our concerns in the audit report as it may have a significant effect in the future if this approach continues to be used.

On a related topic, we have also commented on the issue of using the trade ally free ridership estimates as a cap on the participant survey free ridership estimates. The current approach uses the lower of the participant and trade ally estimates for free ridership. For PY2019, the evaluation team reports that this is a moot issue as only the participant free ridership estimates are used (i.e., they are lower than the free ridership rates calculated from the trade ally surveys). As we have noted in the past, the rationale provided for using the trade ally results to cap the participant free ridership results is not convincing; one could just as plausibly argue that the evaluation should use the *greater* of the two free ridership estimates as this would be a more conservative approach. As we have stated in the past, we do not recommend that the participant free ridership scores be capped based on trade ally responses.

The trade ally surveys are also used to estimate spillover, and the audit team has noted in the past that there is not enough information provided on how these results are calculated or how the spillover measures are being confirmed as actually being energy efficient and installed outside the program. Guidehouse acknowledges that there may be some overlap between the trade ally and customer spillover estimates. They note that the overall magnitude for the participant spillover is small, and therefore any overlap with the spillover reported by trade allies is likely to be very small. They also note that trade allies often mentioned that spillover occurred because customers did not want to take the time to complete the program-related paperwork. From the audit perspective, it does not seem that these customers are being influenced by the program. Given the small amount of spillover savings and the continuing ambiguity of whether or not the trade ally estimates are double counting savings, we recommend that the trade ally surveys not be used to estimate either participant spillover or non-participant spillover.

Finally, in the past we have also indicated that spillover should only be counted for measures that are eligible for the programs, and we repeat that point here. Other efficiency measures done outside of the program can just as easily be categorized as free riders,

absent any additional information or a rigorous confirmation that they are not already being counted in the other net impact analyses.

### *HER and Upstream Lighting*

In the audit team comments on the draft report for the HER program, we recommended that an analysis be done to determine if there are differences in purchase rates of LEDs between the control and treatment groups in the post period. If the treatment group is purchasing more LEDs, these savings are likely already captured in the upstream Home Lighting Rebate Program and therefore need to be subtracted out of the HER impacts to avoid double counting. Determining any differences in LED purchase rates can be accomplished with a short survey of customers from both the treatment and control groups.

In response to this comment, the evaluation team cited a presentation from Michigan<sup>1</sup> that suggests that this issue has already been studied elsewhere and that there is no compelling evidence indicating that there are differences between HER treatment and control groups with respect to LED purchases. In our review of this presentation, it seems that the results are inconclusive. Of the 10 studies references in the report, only six did any primary data collection (either phone survey or on-sites) while the remainder relied on secondary sources. Of the six studies that did primary data collection, the results were mixed with some finding a small amount of double counting of lighting purchases while others found no statistically significant differences across groups. Of these six studies, five covered large lighting programs in California and the Pacific Northwest that have been operating for decades, and so it is unclear that these results should be applied to Missouri.

To resolve this issue for Missouri, we are still recommending that a short survey be conducted to determine if there are statistically significant differences in LED purchases between HER report recipients and the control group. We recommend that statistically significant samples be surveyed for each group (treatment and control) in each HER wave. If there are significant differences in LED purchase rates, then the survey results should be used to adjust the HER program impacts to avoid double counting the LED savings.

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<sup>1</sup> [https://www.michigan.gov/documents/mpsc/Avoiding\\_Double\\_Counting\\_-\\_20190416\\_652854\\_7.pdf](https://www.michigan.gov/documents/mpsc/Avoiding_Double_Counting_-_20190416_652854_7.pdf)

## 2 Introduction

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The Missouri Energy Efficiency Investment Act (MEEIA) was passed in 2009, launching a new era for energy efficiency programs in Missouri. The Missouri Public Service Commission (the PSC) adopted four administrative rules (4 CSR 240-3.163, 4 CSR 240-3.164, 4 CSR 240-20.093 and 4 CSR 240-20.094) referred to as “MEEIA rules”) to implement MEEIA.<sup>2</sup> MEEIA directs the PSC to permit electric corporations to implement Commission-approved demand side management (DSM) programs, with a goal of achieving cost-effective demand-side savings.

In 2009, the State of Missouri and Evergy Metro reached an agreement to create Evergy Metro’s suite of residential and commercial energy efficiency programs, which began in 2013 as MEEIA Cycle 1. The MEEIA Cycle 1 programs ended on December 31, 2015, for KCP&L-MO (Case No. EO-2012-0142). In early 2016, the PSC approved MEEIA Cycle 2 DSM programs for KCP&L-MO (Case No. EO-2015-0055). For PY2019, program evaluation reports were filed for Evergy as part of Case No. EO-2015-0240 and Case No. EO-2015-0241.

The PY2019 Evergy programs covered in this audit include:

- **Business EER - Standard** - Designed to help commercial and industrial (C&I) customers save energy through a broad range of energy efficiency options that address all major end uses and processes. The program offers standard rebates as well as mid-stream incentives. The measures incentivized included lighting, HVAC equipment, and motors.
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- **Strategic Energy Management** - Provides incentives for C&I customers to implement a continuous energy management improvement process that results in energy savings and reductions in energy intensity for industrial and large commercial clients. The SEM program was a 3-year effort ending in July of Program Year (PY) 2018. The Strategic Energy Management program did not have any project activity in 2019.
- **Small Business Lighting** - Available to small business customers, with an average monthly demand below 100 kW, the program provides energy assessments that

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<sup>2</sup> The PSC is currently in the process of revising the MEEIA rules.

includes information on potential energy savings and anticipated payback and offers higher incentives on specific lighting measures than the Standard program to help small business customers overcome financial barriers to adoption. It stopped accepting applications at the end of PY2017 due to successfully exhausting available funding and did not have any project activity in 2019.

- **Whole House Efficiency** - Promotes home energy audits and comprehensive retrofits to encourage whole house improvements to existing homes. Customers are eligible for this program if they own or rent a residence and can receive assistance based on three tiers: Tier 1: Home Energy Assessment and direct install measures, Tier 2 - Weatherization Measures, and Tier 3 - HVAC Equipment.
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- **Home Lighting Rebate** - Offers upstream incentives to partnering manufacturers and retailers in the Evergy Metro and Evergy Missouri West service territories to discount the shelf-price of ENERGY STAR qualified LED bulbs. The program started in April 2016 and continued to operate until December 2019.
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- **Residential and Business Programmable Thermostat** - Incentivizes residential customers to use a Nest thermostat and allows Evergy Metro to remotely operate their HVAC system during peak demand periods by sending a signal to participating thermostats.
- **Demand Response Incentive** - Provides rebates to C&I customers for curtailing their energy usage during system peak demand periods. When Evergy Metro calls an event, participants reduce their load toward a pre-defined firm power level to create demand savings.

To ensure that programs comply with Missouri's rules regarding electric utility resource planning, the PSC has long-term resource planning rules that contain requirements for impact evaluations and process evaluations. The goal of the impact and process evaluations is "to develop the information necessary to evaluate the cost-effectiveness and improve the design of existing and future demand-side programs and demand-side rates,

to improve the forecasts of customer energy consumption and responsiveness to demand-side programs and demand-side rates and to gather data on the implementation costs and load impacts of demand-side programs and demand-side rates for use in future cost-effectiveness screening and integrated resource analysis.”<sup>3</sup>

Key requirements of the evaluations as outlined in 4 CSR 240-22.070(8) include the following:

- Utilities are expected to complete annual full process and impact evaluations for each DSM program.
- **At a minimum, impact evaluations should:**
  1. “develop methods of estimating the actual load impacts of each demand-side program” using one or both of the following methods:
    - a. “Comparisons of pre-adoption and post-adoption loads of program participants, corrected for the effects of weather and other intertemporal differences”; and
    - b. “Comparisons between program participants’ loads and those of an appropriate control group over the same time period”.
  2. “develop load-impact measurement protocols that are designed to make the most cost-effective use of the following types of measurements, either individually or in combination: monthly billing data, load research data, end-use load metered data, building and equipment simulation models, and survey responses or audit data on appliance and equipment type, size and efficiency levels, household or business characteristics, or energy-related building characteristics”.
  3. Develop protocols to collect data regarding demand-side program market potential, participation rates, utility costs, participant costs and total costs.
- **At a minimum, process evaluations should** address the following five questions:
  1. What are the primary market imperfections that are common to the target market segment?
  2. Is the target market segment appropriately defined or should it be further subdivided or merged with other segments?
  3. Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target segment?

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<sup>3</sup> 4 CSR 240-22.070(8) Evaluation of Demand-Side Programs and Demand-Side Rates

4. Are the communication channels and delivery mechanisms appropriate for the target segment?
5. What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?

Evergy Metro contracted with Guidehouse, Inc. as the Evaluation, Measurement & Verification (EM&V) contractor, to conduct comprehensive impact and process evaluations of Evergy Metro's energy efficiency portfolio. Guidehouse conducted evaluations of both the commercial and residential energy efficiency programs.

In 2020, the PSC contracted with Evergreen Economics and Michaels Energy (the Evergreen team) to serve in the capacity of EM&V Auditor to review program evaluation activities and provide comments on compliance with 4 CSR 240-22.070(8) and the overall quality, scope and accuracy of the program evaluation reports. The following report presents Evergreen Economics' review of the Evergy Metro program evaluations for PY2019.

To conduct this review, the Evergreen team conducted the following activities:

- Reviewed each program's evaluation report in its entirety, including impact, process, and cost effectiveness methodologies and results;
- Reviewed the evaluation survey instruments and responses (where available) to confirm that the methodologies used were reasonable and consistent with best practices and that reported findings aligned with the data collected;
- Verified that the cost effectiveness calculation inputs used the final net impact numbers from the final evaluation reports; and
- Reviewed specific evaluation tools and methodologies used for calculating program savings, including selected measure-level savings calculations, and survey methods for developing net program impacts.

The remainder of this audit report is organized as follows. First, a summary of the impact and process evaluation results are provided in the following sections. After these summaries, we present our review of the cost effectiveness calculations where we confirm that the calculation inputs used match the results from the PY2019 evaluation. The final section presents the audit conclusions and recommendations.



### 3 Impact Evaluation Summary

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This section summarizes the results and key findings and recommendations from the impact evaluations of Evergy Metro’s residential and business energy efficiency program portfolio.

#### 3.1 Summary of Impact Evaluation Methods

Guidehouse followed the Missouri Code of State Regulations 4 CSR-240-22-070 (8), completing impact evaluations for each Evergy Metro program that reported energy savings in 2019. Missouri regulations state that programs should be evaluated using one or both of the methods and one or both of the protocols detailed below.

##### *1) Impact Evaluation Methods*

“At a minimum, comparisons of one or both of the following types shall be used to measure program and rate impacts in a manner that is based on sound statistical principles:

- a) Comparisons of pre-adoption and post-adoption loads of program or demand-side rate participants, corrected for the effects of weather and other intertemporal differences.
- b) Comparisons between program and demand-side rate participants’ loads and those of an appropriate control group over the same time period. “

##### *2) Load Impact Measurement Protocols*

“The evaluator shall develop load impact measurement protocols designed to make the most cost-effective use of the following types of measurements, either individually or in combination:

- a) Monthly billing data, hourly load data, load research data, end-use load metered data, building and equipment simulation models, and survey responses.
- b) Audit and survey data on appliance and equipment type, size and efficiency levels, household or business characteristics, or energy-related building characteristics.”

Table 2 below summarizes Guidehouse’s methods and protocols for each program. The labels in columns two and three align with the Missouri requirements discussed above.

**Table 2: Impact Evaluation Methods and Protocols**

<b>Program</b>	<b>Impact Method</b>	<b>Impact Protocol</b>	<b>Description</b>
<b>Commercial and Industrial Programs</b>			
Business EER - Standard	1a	2a and 2b	Tracking database review, deemed measure savings review, engineering analysis
Business EER - Custom	1a	2b	Tracking database review, desk/phone reviews, on-site EM&V
Block Bidding	1a	2b	Tracking database review, desk/phone reviews
Strategic Energy Management	1a	2b	Tracking database review
Small Business Lighting	1a	2a and 2b	Tracking database review
<b>Residential Programs</b>			
Income-Eligible Weatherization*	N/A	N/A	N/A
Whole House Efficiency	1a	2b	Tracking database review, deemed measure savings review, engineering analysis
Income-Eligible Multifamily	1a	2b	Tracking database review, engineering analysis, desk/phone reviews
Home Lighting Rebate	1a**	2b	Tracking database review, engineering desk reviews, engineering analysis
<b>Educational and Behavioral Programs</b>			
Home Energy Report / Income-Eligible Home Energy Report	1b	2a	Tracking database review, engineering analysis
Online Home & Business Online Energy Audit	N/A	N/A	Tracking database review, engineering analysis
<b>Demand Response (DR) Programs</b>			
Business Programmable Thermostat	1b	2b	Tracking database review, engineering analysis
Residential Programmable Thermostat	1b	2b	Tracking database review, engineering analysis
Demand Response Incentive	1a	2a	Tracking database review, engineering analysis, billing analysis

\*No savings were claimed for the Income-Eligible Weatherization program in PY2019.

\*\*The upstream nature of the HLR program does not allow for identification of participants and nonparticipants for assessments for comparisons of load shapes; for budgetary reasons the evaluation did not include an hours of use study, which could have provided lighting load shapes for all households.



### 3.1.1 Net-to-Gross Calculation Methods

Guidehouse developed net-to-gross (NTG) ratios for selected Evergy Metro programs to estimate net program savings. Net savings are the portion of total estimated savings that are directly attributable to a specific energy efficiency program. Net savings estimates typically account for one or more of the following:

- **Free Ridership (FR)** - program savings attributable to program participants who would have implemented a program measure or practice in the absence of the program.
- **Participant Spillover (PSO)** - additional energy savings achieved when a program participant installs energy efficiency measures or practices as a result of the program's influence outside the efficiency program.
- **Nonparticipant Spillover (NPSO)** - additional energy savings achieved when a nonparticipant implements energy efficiency measures or practices because of the program's influence (e.g., through exposure to the program).

The net-to-gross ratio for each program adjusts gross program savings to account for the presence of free ridership, participant spillover, and non-participant spillover. The general formula for calculating the net-to-gross ratio is:

$$\text{NTG Ratio} = 1 - \text{FR rate} + \text{PSO rate} + \text{NPSO rate}$$

Guidehouse applied net-to-gross (NTG) ratios developed over the course of the MEEIA Cycle 2 for all programs in PY2019, with the exception of the Custom program which was the only program in PY2019 to receive primary research. This program received additional evaluation focus because a new implementation contractor had assumed the C&I Business Custom program for PY2019.

Additionally, the evaluation team applied a deemed NTG ratio of 1.0 for the following programs in PY2019:

- **Home Online Energy Audit** and the **Business Online Energy Audit** programs, which did not claim any savings.
- **Income-Eligible Multifamily**, as the cost of assessing net savings for this program was judged to exceed the value given the program's small contribution to total energy savings targeted for PY2019.

## 3.2 Summary of Impact Evaluation Findings

In this section, we provide a summary of the energy savings goals and accomplishments across Evergy Metro's energy efficiency program portfolio. Table 3 and Table 4 show Evergy Metro's energy efficiency targets, *ex ante* gross values, *ex post* gross values, the evaluated *ex post* net savings (evaluated) and net achievement compared to the targets for

energy savings (kWh) and demand reductions (kW), respectively. To ensure clarity, these terms are defined as follows:

- **Ex Ante Gross Savings:** Annualized savings reported by Evergy Metro or calculated using tracked program activity to TRM savings values.
- **Ex Post Gross Savings:** Annualized savings calculated and provided by the evaluation team.
- **Net Savings Ex Post:** *Ex post* savings multiplied by the net-to-gross ratio, accounting for free ridership, spillover effect and market effects.
- **PSC-Approved Targets:** Annualized savings targets for the residential and commercial and industrial (C&I) sectors.

Table 3: Evergy Metro Portfolio Energy Savings in PY2019, kWh

Program	Ex Ante Gross Savings	Ex Post Gross Savings	Gross Realization Rate	MEEIA 4-Year Cycle 2 Targets	Net Savings Ex Post	% of Target Reached
Business EER - Standard	17,339,531	18,827,606	109%	72,963,363	18,074,502	25%
Business EER - Custom	15,529,467	13,553,350	87%	55,451,825	9,351,811	17%
Block Bidding	0	0	NA	12,574,248	0	NA
Strategic Energy Management	0	0	NA	11,284,066	0	NA
Small Business Lighting	0	0	NA	4,387,042	0	NA
<b>Total Commercial Portfolio</b>	<b>32,868,998</b>	<b>32,380,956</b>	<b>99%</b>	<b>156,660,544</b>	<b>27,426,313</b>	<b>18%</b>
Whole House Efficiency	4,308,852	4,513,848	105%	21,835,320	3,701,355	17%
Income-Eligible Multifamily	1,949,095	1,902,468	98%	13,221,415	1,902,468	14%
Home Lighting Rebate	20,344,503	24,549,972	121%	30,866,088	19,594,937	63%
<b>Total Residential Portfolio</b>	<b>26,602,450</b>	<b>30,966,287</b>	<b>116%</b>	<b>65,922,822</b>	<b>25,198,760</b>	<b>38%</b>
Income-Eligible Home Energy Report	589,881	426,596	72%	1,682,756	426,596	25%
Home Energy Report	10,038,010	9,418,559	94%	13,861,941	9,418,559	68%
<b>Total Educational Portfolio*</b>	<b>10,627,891</b>	<b>9,845,155</b>	<b>93%</b>	<b>15,544,697</b>	<b>9,845,155</b>	<b>63%</b>
Business Programmable Thermostat	13,593	16,331	120%	123,008	16,331	13%
Residential Programmable Thermostat	591,591	626,834	N/A	5,485,095	626,834	11%
<b>Total Demand Response Portfolio**</b>	<b>605,184</b>	<b>643,165</b>	<b>N/A</b>	<b>5,608,103</b>	<b>643,165</b>	<b>11%</b>
<b>Total***</b>	<b>70,704,523</b>	<b>73,835,563</b>	<b>104%</b>	<b>243,736,165</b>	<b>63,113,393</b>	<b>26%</b>

\*Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.

\*\*The Demand Response Incentive Program did not claim any energy savings.

\*\*\*Totals may not sum due to rounding

Overall, the gross evaluated savings for PY2019 were 73,835,563 kWh, with a gross realization rate of 104 percent. Additionally, the total portfolio net savings were estimated at 63,113,393 kWh. The portfolio achieved approximately 26 percent of the four-year MEEIA Cycle 2 energy target, indicating that the programs are progressing toward meeting these targets.

The commercial portfolio achieved 18 percent of the four-year target net savings goal in 2019 at 27,426,313 kWh. While the Block Bidding program, the Strategic Energy Management program, and the Small Business Lighting programs did not report any activity in PY2019, the Business EER – Standard and Custom programs reached 25 percent and 17 percent of their targets respectively.

Similarly, the residential portfolio achieved 38 percent of the four-year target net savings goal in 2019 at 25,198,760 kWh. Of the three residential programs, the Home Lighting Rebate program most successfully made progress toward its four-year target at 63 percent of the target. The other two residential programs, the Whole House Efficiency program and the Income-Eligible Multifamily programs, achieved 17 percent and 14 percent of their targets respectively.

The two educational programs, the Home Energy Reports and the Income-Eligible Home Energy Reports, met 63 percent of their target net savings in 2019 at 9,845,155 kWh. More specifically, the Home Energy Reports program met 68 percent of its target, while the Income-Eligible program met 25 percent of its savings goal.

Finally, the demand response portfolio achieved 11 percent of the four-year target net savings goal in 2019 at 643,165 kWh. Although the Demand Response Incentive program did not claim any savings in 2019, the Business and Residential Programmable Thermostats programs met 13 percent and 11 percent of their savings goals respectively.

Table 4 displays the Evergy Metro results for demand savings. In PY2019, the portfolio saw gross evaluated demand savings of an estimated 41,403 kW, a gross realization rate of 120 percent. Total portfolio net demand savings were estimated at 39,243 kW. The portfolio achieved approximately 50 percent of its four-year MEEIA Cycle 2 demand savings target in PY2019.

**Table 4: Evergy Metro Portfolio Demand Savings in PY2019, KW**

<b>Program</b>	<b>Ex Ante Gross Savings</b>	<b>Ex Post Gross Savings</b>	<b>Gross Realization Rate</b>	<b>MEEIA 4- Year Cycle 2 Targets</b>	<b>Net Savings Ex Post</b>	<b>% of Target Reached</b>
Business EER - Standard	3,277	3,889	119%	13,667	3,734	27%
Business EER - Custom	3,257	2,738	84%	15,160	1,889	12%
Block Bidding	0	0	NA	2,180	0	NA
Strategic Energy Management	0	0	NA	2,527	0	NA
Small Business Lighting	0	0	NA	702	0	NA
<b>Total Commercial Portfolio</b>	<b>6,534</b>	<b>6,627</b>	<b>101%</b>	<b>34,236</b>	<b>5,623</b>	<b>16%</b>
Whole House Efficiency	1,477	2,533	171%	5,403	2,077	38%
Income-Eligible Multifamily	240	231	96%	1,929	231	12%
Home Lighting Rebate	1,935	3,391	175%	3,122	2,690	86%
<b>Total Residential Portfolio</b>	<b>3,652</b>	<b>6,154</b>	<b>169%</b>	<b>10,453</b>	<b>4,998</b>	<b>48%</b>
Income-Eligible Home Energy Report	232	171	74%	474	171	36%
Home Energy Report	3,035	3,005	99%	2,866	3,005	105%
<b>Total Educational Portfolio*</b>	<b>3,267</b>	<b>3,176</b>	<b>97%</b>	<b>3,341</b>	<b>3,176</b>	<b>95%</b>
Business Programmable Thermostat	97	97	100%	335	97	29%
Residential Programmable Thermostat	4,584	4,315	NA	14,959	4,315	29%
Demand Response Incentive	16,400	21,035	128%	15,000	21,035	140%
<b>Total Demand Response Portfolio**</b>	<b>21,081</b>	<b>25,446</b>	<b>121%</b>	<b>30,295</b>	<b>25,446</b>	<b>84%</b>
<b>Total***</b>	<b>34,534</b>	<b>41,403</b>	<b>120%</b>	<b>78,325</b>	<b>39,243</b>	<b>50%</b>

\*Totals may not sum due to rounding

Table 5 shows estimated free ridership, spillover, and non-participant spillover rates along with the final net-to-gross ratios across the Evergy Metro 2019 program portfolio.

**Table 5: Evergy Metro Portfolio Estimated Free Ridership, Spillover and NTG Ratio**

<b>Program</b>	<b>Free Ridership</b>	<b>Participant Spillover</b>	<b>Non-participant Spillover</b>	<b>NTG Ratio</b>
Business EER - Standard	0.05	0.002	0.004	96%
Business EER - Custom	0.32	0.01	0	69%
Block Bidding - Standard	Projects Originating from the Standard Program			96%
Block Bidding - Custom	Projects Originating from the Custom Program			69%
Strategic Energy Management	Guidehouse assumed a NTG value of 1.0 for the SEM program.			100%
Small Business Lighting	0.14	0.002	0.01	87%
Income-Eligible Weatherization	Deemed 1.0			100%
Whole House Efficiency	0.33	0.02	0.14	82%
Income-Eligible Multifamily	Deemed 1.0 pending future research			100%
Home Lighting Rebate	0.37	0.18	0.00	80%
Home Energy Report	Guidehouse assumed a NTG value of 1.0 for the HER program.			100%
Business Programmable Thermostat	Guidehouse assumed a NTG value of 1.0 for the Programmable Thermostats programs and Demand Response Incentive program.			100%
Residential Programmable Thermostat				100%
Demand Response Incentive				100%
<b>Portfolio Level NTG (Demand)</b>				<b>93%</b>
<b>Portfolio Level NTG (Energy)</b>				<b>89%</b>

### 3.3 Summary of Key Impact Evaluation Recommendations

#### 3.3.1 PY2019 Recommendations

Guidehouse provided recommendations from the PY2019 program evaluations that seek to guide and improve future impact evaluations. The table below summarizes the evaluator recommendations by program.

Program	PY2019 Recommendation
Business Energy Efficiency – Standard Program	IC should perform additional quality checks of the customer or TA reported efficient lamp/fixture wattage to ensure that they match the value in the product specification sheets.
	IC should align with Evergy on the methodology for tracking the tonnage for non-lighting measures.
	Provide further guidelines, such as a lumen equivalency range, around what qualifies for the LED High/Low Bay measures.
	Update deemed savings for non-lighting measures to align with the IL TRM v7 algorithms.
Business Energy Efficiency - Custom Program	Implement an additional field for the efficiency of the unit installed for non-lighting measures.
	All calculations, independent of measure type, should be initially performed in worksheets where the equations are transparent and easily reviewed to facilitate verification and evaluation. Currently, a subset of measure types uses locked worksheets which makes verification of the engineering analysis more time intensive.
	Use the 8,760 hourly data analysis approach instead of 2-degree or other interval bin data analysis approach for weather-dependent measures like HVAC controls and motors & drive. Guidehouse has provided the IC an analysis template with the 8,760 hourly data analysis approach for estimating savings of HVAC unit replacement projects and would recommend applying this approach to other weather-dependent measures when appropriate.
Collect calculation inputs by verifying with the customer and contractor and gathering data from customer’s building management system (BMS), including, but not limited to, temperature setpoints, setbacks during unoccupied times, operating schedules, balance point, baseline conditions, and efficient conditions.	
For measures that could have both a peak demand or non-peak demand impact, such as HVAC controls, verify that the kW factor accurately reflects the control strategy applied for each project. Guidehouse found that in a few instances when a kW factor with a peak demand impact was used, the measure only had an influence on the unoccupied operating schedules which happened to be after Evergy’s peak period.	
Whole House Efficiency Program	The tracking database should contain all data needed to track installed program measures and calculate program savings.
	The program implementer should continue working toward updating the methodology used to calculate the program’s reported savings to align with the IL TRM v7.

Income-Eligible Multifamily Program	<p>The tracking database did not include all data needed to evaluate the custom measures. The evaluation team made a separate request for detailed information for custom measures including the following:</p> <ul style="list-style-type: none"> <li>• Lighting: Baseline wattage, bulb location, and hours of use</li> <li>• Air Sealing: Blower door test results</li> <li>• Refrigerators: Equipment models and configurations for both the existing and the efficient equipment</li> <li>• Multiple Measure Types: Equipment specifications and descriptions</li> </ul>
Home Lighting Rebate Program	<p>The implementation contractor should account for leakage when estimating reported savings.</p> <p>Align the standard and specialty LED savings assumptions listed below with the IL TRM v7 as outlined in the residential savings assumptions in Appendix LI.</p> <p>Account for the C&amp;I cross-sector sales.</p> <p>Adjust NTG to align with evaluated findings.</p>
Home Energy Report and Income Eligible Home Energy Report Programs	<p>Continue to use IC-reported savings for tracking purposes.</p> <p>Evaluate the reported savings with a billing analysis every 2 years to monitor continued consistency between evaluated savings and implementer-reported savings.</p> <p>Evaluate the performance of the IE-HER wave after a full year of implementation of the new report design with additional features and consider modifying savings goals for this wave.</p> <p>Consider modifying savings goals in light of declining treatment group sizes.</p> <p>After the program integrates AMI data, consider evaluating demand impacts using AMI data from a sample of treatment and control customers. Guidehouse suggests using a post-only difference approach as most customers will not have AMI data available for the pre-period.</p>
Home Online Energy Audit and Business Online Energy Audit	<p>The programs track overall page views and customer-level activity on key program pages. This detailed information is valuable for tracking use of the tools and should be continued.</p>
Residential and Business Programmable Thermostat Programs	<p>Refresh deemed savings value with regression analysis.</p> <p>Achieve more savings. Evergy should consider using AMI data to identify non-thermostat related impacts during event hours.</p>
Demand Response Incentive Program	<p>Guidehouse recommends that Evergy identify customer-specific baselines in advance of the next DR season to best align performance payment calculations and end-of- season EM&amp;V impacts.</p>



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Guidehouse, Evergy, and the implementation contractor successfully collaborated on data transfer protocols, including establishing a daily data transfer process, and recommends continuing the process in Cycle 3. With AMI data available within a few days, Guidehouse recommends making use of that data to calculate impacts immediately following each event.

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## **4 Process Evaluation Summary**

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This section summarizes key methods and findings from the PY2019 process evaluations of Evergy Metro’s residential and business energy efficiency program portfolio. The first subsection summarizes the process evaluation methods used by the Guidehouse evaluation team and includes an assessment of how the process evaluation aligns with the minimum requirements for demand-side process evaluations set forth by the Missouri Code of State Regulations (CSR).

### **4.1 PY2019 Process Evaluation Findings**

This subsection presents overall program process evaluation findings and evaluator recommendations.

#### **4.1.1 Process Evaluation Findings**

Guidehouse presented the process evaluation findings for each program in terms of responses to key evaluation research questions, and responses to the five required process evaluation questions set forth in 4 CSR 240-22.070(9). Overall, the process evaluation findings are complete, thorough and respond to the mandated questions.

In the following sections we summarize key process evaluation findings and recommendations.

#### **4.1.2 Customer and Trade Ally Satisfaction**

Evergy Metro programs appear to be performing to customer and trade ally satisfaction. Guidehouse evaluated customer or trade ally satisfaction for five programs. Across these programs, customer and trade ally satisfaction is high. The satisfaction results reported (on a five-point scale) indicate that the programs are well-run and meeting needs of customers and trade allies. Table 6 below presents a summary of satisfaction results across the programs where satisfaction research was conducted.

**Table 6: Customer and Trade Ally Satisfaction Findings Summary**

<b>Program</b>	<b>Participant Satisfaction</b>	<b>Trade Ally Satisfaction</b>
Business EER - Standard	The average participant satisfaction score was a 4.5, with over 60 percent of respondents rating their satisfaction as a 5.	The average trade ally satisfaction score was a 4.2, with over 50% of respondents rating their satisfaction as a 5.
Business EER - Custom	The average participant satisfaction score was a 4.4, with over 50 percent of respondents rating their satisfaction as a 5.	The average trade ally satisfaction score was a 4.4, with over 50% of respondents rating their satisfaction as a 5.
Small Business Lighting	The average participant satisfaction score was a 4.8, with over 70 percent of respondents rating their satisfaction as a 5.	The average trade ally satisfaction score was a 4.0, with over 50% of respondents rating their satisfaction as a 4.
Whole House Efficiency	The average participant satisfaction score was a 4.4, with over 60 percent of respondents rating their satisfaction as a 5.	The average trade ally satisfaction score was a 4.0, with over 30% of respondents rating their satisfaction as a 5.
Programmable Thermostat Program	<p><b>Rush Hour Rewards:</b> The average participant satisfaction score was a 4.0, with over 40% of participants rating their satisfaction as a 5.</p> <p><b>Seasonal Savings:</b> The average participant satisfaction score was a 3.7, with over 30% of participants rating their satisfaction as a 5.</p>	Guidehouse did not conduct trade ally interviews for the Programmable Thermostat Program in PY2019.

## 4.2 Summary of Key Process Evaluation Recommendations

Based on the evaluation findings, Guidehouse provided overall evaluation conclusions and recommendations for each PY2019 program. The table below summarizes the evaluator recommendations by program.

Program	PY2019 Recommendation
Business Energy Efficiency – Standard Program	<p>The Standard program has surpassed its 4-year MEEIA target, primarily through significant participation in efficient lighting measures. Overall, Guidehouse found that Evergy Metro has addressed the process recommendations noted in the PY2018 Evaluation report and no further changes are recommended based on the process research conducted during PY2019.</p>
Business Energy Efficiency - Custom Program	<p>Some customers do not have the in-house engineering expertise to pursue complex custom projects. The program should continue efforts to offer additional technical support to: a) help identify energy efficiency projects, b) help customers with the application process including the preapproval and post phase, and c) develop industry- specific outreach campaigns, which help customers understand how custom projects benefit customers like them.</p> <p>Ensure Evergy’s Customer Solution Managers (CSMs) have the training and expertise to help customers identify energy savings in their facilities through an in-depth audit and face-to-face interactions. The CSMs could also work more closely with the implementer to help identify potential projects and utilize the implementation staff to support the customer through the application process.</p> <p>Trade Allies and customers should be encouraged to install non- lighting measures. These efforts could include case studies, marketing campaigns, trade shows, and additional training on the various non- lighting measures.</p> <p>In addition to customer and trade ally email communications, the utility and implementer should engage trade allies and customers through other channels. The website could be utilized as a central repository.</p> <p>There are opportunities to streamline the Custom application. For example, the fields that are common on the various steps of the electronic application such as contact name and number on the application could be auto-filled for subsequent pages after the cover page.</p> <p>Evergy and TRC could offer additional technical support such as outside subject matter experts to help customers with complex processes (such as food or electronic manufacturing), or energy- dense end uses (such as data centers) to help customers find opportunities to reduce their consumption.</p> <p>Guidehouse recommends incentive levels are reviewed annually to ensure they are significant enough to not only increase participation in the program without increasing free ridership but to also consider the time and effort needed to complete the Custom application.</p>
Whole House Efficiency Program	<p>Customer education and access to financing are two important factors in the market. Encouraging customers to be proactive about replacing old equipment will</p>

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In addition, Evergy should continue to explore the effectiveness and feasibility of—and offer support for—alternative financing programs such as PAYS to help offset the burden of up-front cost, particularly for expensive insulation and HVAC measures.

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The three program tiers offered by the WHE program adequately spans customer needs within the target market. Because program tiers are distinct from one another, and because savings tends to increase by tier, Evergy should continue emphasizing customer participation in multiple program tiers to encourage greater synergy and more energy savings.

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Tier 2 and Tier 3 measures offer the most potential energy savings for homeowners. Even though these measures are cost effective, participation may be difficult due to the high up-front costs. This is particularly true for lower-income customers. Alternative financing mechanisms (such as PAYS) may encourage the adoption of Tier 2 and Tier 3 measures, allowing customers to save more energy while remaining within their individual home improvement budgets.

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Guidehouse does not have any recommendations related to this research question since the communication channels and delivery mechanisms are appropriate, including the customer support and education provided by the EEPs and trade allies, the leave-behind materials for customers, and the targeted marketing campaigns.

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Evergy is doing a commendable job in exploring new opportunities for program offerings and delivery mechanisms. In addition to the implementation of new financing mechanisms, it may be worthwhile to explore additional direct install measure offerings and combinations.

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The program is attempting to address the market imperfections by prioritizing direct outreach and relationship-building with property managers and owners and a concierge-type serve for HVAC measures. Future evaluation research could investigate the effectiveness of the concierge service from the property manager and owner perspective, in addition to the overall property manager and owner program experience.

Income-Eligible  
Multifamily  
Program

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The program plans to increase participation of smaller multi-family properties in MEEIA Cycle 3. The program should identify best practices for engaging these types of properties, determine the effectiveness of the programs' outreach in increasing participation of this market segment, and conduct research to identify motivations, barriers to participation, and participant satisfaction within this market segment.

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The measures for the direct install track of the program are appropriate. Similar to PY2018, there was a high volume of custom measures, particularly for lighting measures. Guidehouse continues to recommend that Evergy identify commonly implemented measures that may be suited for a prescriptive track.

	<p>Working with property managers and owners via direct outreach and relationship-building has proven to be an effective means of communication. Future research could evaluate the effectiveness of the neighborhood-level outreach deployed during PY2019 in increasing program awareness and participation for these groups.</p> <p>The program plans to continue offering custom measures, the new concierge-type service for HVAC measures, and conducting outreach to increase participation and measure installation at smaller MF properties. Future evaluation research should determine the effectiveness of these program and outreach solutions, including identifying ways to optimize outreach at smaller MF properties, and the customer experience with new program offerings.</p>
Home Lighting Rebate Program	<p>Evergy Metro implemented the recommendations from PY2018, and Guidehouse has no further recommendations for PY2019.</p>
Home Energy Report and Income Eligible Home Energy Report Programs	<p>Evergy Metro should continue providing reports in multiple formats and encouraging customers to log into the Online Energy Audit to help customers understand how to manage their energy use.</p> <p>The target market segment is appropriately defined as residential single-family homes. As the program modifies the reports and add features, Evergy Metro should consider assessing the effectiveness of the program with customers in multifamily homes in order to expand the target market.</p> <p>The program greatly expanded and revised its library of tips for PY2019. The expanded tips included tips on working from home, new technologies like EV charging and solar subscriptions, as well more tips on HVAC and appliance use. Guidehouse has no new recommendations.</p> <p>With the launch of the new process that will enable more customers to receive email reports, high bill alerts, and other communications, Evergy Metro may want to consider additional future research on the effectiveness and customer experience with these touchpoints.</p> <p>With increased distribution of email reports and revisions to the look and feel of reports, Evergy Metro may want to consider additional research on effectiveness after the new program elements have been in place for a full year.</p> <p>After the revised tools have been active for several months, Evergy Metro may want to consider gathering additional feedback from customers to understand, from the customer perspective, how effectively the tools engage and educate customers on their energy use and how to reduce their energy use.</p>
Home Online Energy Audit and Business Online Energy Audit	<p>Evergy Metro should continue to monitor the effectiveness of outreach to ensure residential and small business customers learn about the tools. Evergy Metro may want to consider segmentation or propensity modeling to understand who is using the tools and who is not to better target both groups.</p> <p>Evergy Metro could consider a quick analysis to assess savings associated with the program, by assigning rough savings estimates to tips and applying those estimates to customers who indicated they have taken the tip action.</p>

	<p>Evergy has used a variety of communication channels in the past. With the launch of the updated tools, using and assessing the efficacy of a variety of channels will continue to be important.</p> <p>After the new tools have been active for several months Evergy may want to assess the most effective approaches to drive different types of customers to the tools through A/B testing, propensity modeling, or other approaches.</p>
	<p>Continuing to monitor the market for how the Nest solution compares to competition, especially as Evergy rolls out the Ecobee option, can help ensure the program is matching the market.</p> <p>Evergy met enrollment targets in PY2019. Guidehouse recommends a continued focus on BYOD customers, whose acquisition costs are lower.</p>
Residential and Business Programmable Thermostat Programs	<p>Evergy should continue to explore opportunities to include other brands of WiFi thermostats. This will widen the pool of potential participants, especially BYOD customers who have low cost of acquisition.</p> <p>Evergy should consider further educating customers on event notification options and the purpose of DR events to reduce customer confusion and increase program satisfaction. The program should continue to focus communication channels around activating DIY thermostats that have yet to be activated.</p> <p>In PY2018, Guidehouse recommended expanding the program to reach more multifamily participants. If the barriers to participation for this segment can be overcome, the program could access a new pool of participants to increase energy and DR impacts.</p>
Demand Response Incentive Program	<p>Evergy should continue to refine propensity modeling to select customers for the program. Additionally, Evergy should begin to identify and target customers with automated curtailment capabilities.</p> <p>Customers with highly volatile loads have underperformed because their load is not a “firm” resource that can be relied upon (e.g. a highly volatile customer may already be below their FPL on the event day with no load to shed). Guidehouse recommends avoiding recruiting these customers into the program.</p> <p>Access to real-time data will allow the program manager to have preliminary results much sooner than the end of the season.</p> <p>Guidehouse recommends moving to a “pay-for-performance” incentive structure to increase event participation in Cycle 3. As noted earlier, the DRI Product Manager is planning to adopt this recommendation in MEEIA Cycle 3.</p>

## 5 Review of Cost-Effectiveness

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Guidehouse calculated the cost-effectiveness for the individual Evergy Metro energy efficiency and demand response programs, as well as the cost-effectiveness of the portfolios of energy efficiency and demand response programs. Guidehouse calculated cost-effectiveness using the five-standard benefit-cost ratios that calculate cost-effectiveness from the vantage points of different stakeholder groups:

- **Total Resource Cost (TRC) Test** - compares the benefits and costs from the perspective of all utility customers, including energy program participants and nonparticipants.
- **Societal Cost Test (SCT)** - compares the benefits and costs to all stakeholders in the utility service territory, state, or nation as a whole
- **Utility Cost Test (UCT)**- compares the benefits and costs to the utility implementing the program
- **Participant Cost Test (PCT)**- compares the benefits and costs from the perspective of the customer installing the measure
- **Ratepayer Impact Measure (RIM) Test** - compares the benefits and costs from the perspective on non-participating ratepayers, and the impact of energy programs on customer rates.

Guidehouse conducted these tests in a manner consistent with the 2001 California Standard Practice Manual (SPM).<sup>4</sup> For this evaluation audit, Guidehouse provided output files that included measure specific cost and benefit inputs, detailed load shapes, electricity avoided costs, program administration costs, electricity rates, and other assumptions including discount rates.

The Evergreen team reviewed residential and commercial summary findings from the portfolio reports and the output files for each program and at the portfolio level to confirm that calculations were performed correctly. The specific audit tasks undertaken were to:

- Confirmed summary values included in the final evaluation report matched the values in the results file; and
- Confirmed that the reported costs matched the costs input into the cost-effectiveness input files, including administrative costs, incentive costs, and participant incremental equipment costs;

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<sup>4</sup> California Public Utilities Commission. October 2001. "California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects."

[https://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy - Electricity and Natural Gas/CPUC STANDARD PRACTICE MANUAL.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf)

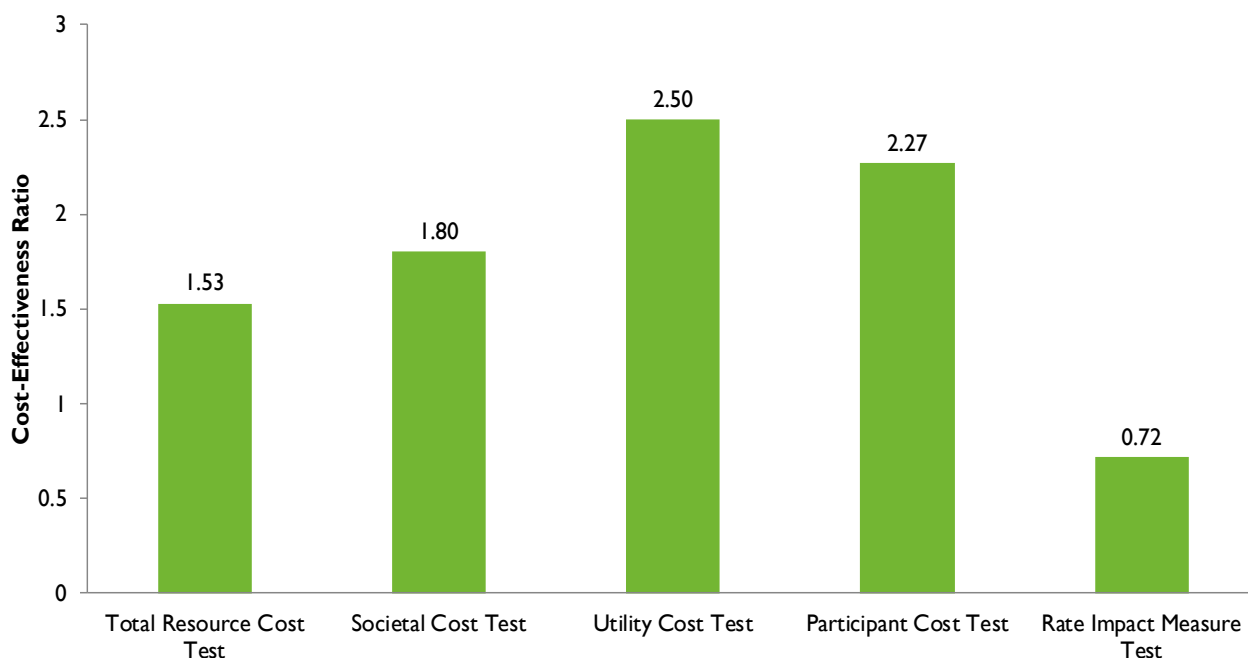


- Reviewed avoided cost of energy and demand values and confirmed Guidehouse used appropriate values to calculate program level benefits;
- Confirm that measures received appropriate cost-effectiveness input values, from appropriate sources, consistent with the sources used in the Guidehouse evaluation reports (i.e., kWh savings, expected usable life (EUL), incremental cost);
- Confirmed that discount rates were appropriate.

## 5.1 Cost-Effectiveness Results

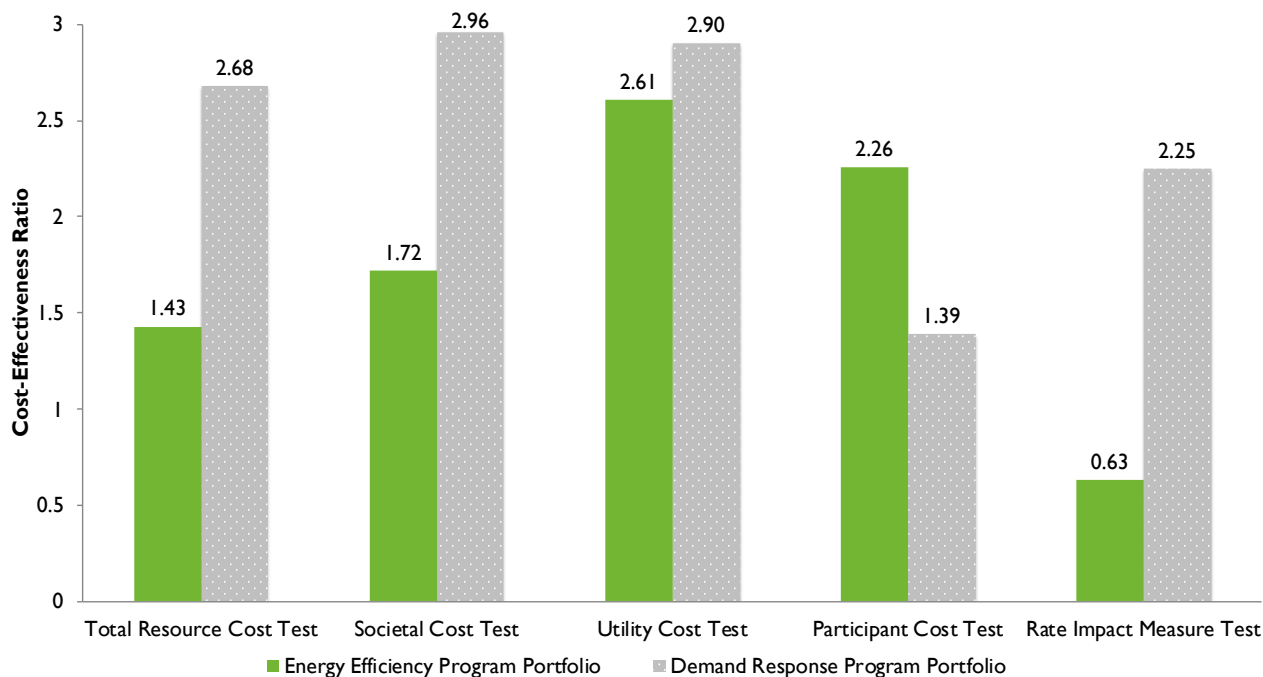
The overall Evergy Metro program portfolio is cost-effective for the fourth year of MEEIA Cycle 2, PY2019. As Figure 2 shows, Evergy Metro’s overall energy efficiency and DR portfolio is cost-effective for all tests except the Rate Impact Test; the Rate Impact Test is the most conservative cost-effectiveness test.

**Figure 2: Evergy Metro Portfolio Level Cost-Effectiveness Test Results**



Looking at the energy efficiency and demand response portfolios separately, Guidehouse reported similar results to the overall program. Figure 3 presents the results of the cost-effectiveness tests for Evergy Metro’s energy efficiency and demand response portfolios. The energy efficiency portfolio is cost-effective across all tests except the Rate Impact Measure Test, while the demand response portfolio is cost-effective across all tests.

**Figure 3: Evergy Metro Cost-Effectiveness Test Results – Energy Efficiency and Demand Response Portfolios**



While the portfolio was cost-effective in PY2019, individual program cost-effectiveness varied. Table 7 on the following page presents the program specific cost-effectiveness test results. We also present the cost-effectiveness results for PY2018 for comparison.

Using the PCT test, all programs are cost-effective from the participant perspective, except the Business and Residential Programmable Thermostat programs. Seven programs are not cost-effective under the RIM test.

**Table 7: Cost-Effectiveness Test Results**

Program	TRC		SCT		UCT		PCT		RIM	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Business EER - Standard	1.34	1.27	1.59	1.49	4.83	3.07	1.34	1.44	0.91	0.84
Business EER - Custom	1.25	1.02	1.55	1.28	2.91	1.91	1.32	1.19	0.83	0.73
Block Bidding	0.44	0.00	0.55	0.00	0.83	0.00	0.61	N/A	0.51	0.00
Whole House Efficiency	1.08	1.45	1.31	1.83	2.01	2.38	1.79	2.28	0.60	0.65
Income-Eligible Multifamily	1.40	0.90	1.70	1.11	1.40	0.90	7.00	5.24	0.37	0.33
Home Lighting Rebate	2.05	2.99	2.28	3.48	1.83	4.60	14.87	6.26	0.42	0.50
Income-Eligible Home Energy Report	1.18	0.23	1.18	0.23	1.18	0.23	--*	--*	0.41	0.18
Home Energy Report	3.35	1.47	3.35	1.47	3.35	1.47	--*	--*	0.48	0.47
Business Programmable Thermostat	0.35	1.43	0.40	1.65	0.35	2.02	1.08	0.43	0.35	1.74
Residential Programmable Thermostat	0.34	1.89	0.39	2.20	0.30	2.71	2.20	0.90	0.31	1.91
Demand Response Incentive	6.89	12.51	6.89	12.51	2.02	3.39	537.73	338.27	2.02	3.39

\* Ratios are infinite because there are positive benefits and no participant costs.

\*\* Benefit-cost calculations for Home Online Energy Audit and Business Online Energy Audit not included because no savings are claimed for these programs. The Block Bidding, Strategic Energy Management, and Small Business Lighting programs did not claim savings in PY2019.

## 6 Audit Conclusions

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Over the past several years, the audit team has raised a variety of issues regarding the Navigant/Guidehouse evaluations, and we have held several working meetings with the evaluation team to work through these differences. As a result of these discussions, some of the major issues the audit team has raised with the prior year evaluations have largely been resolved. We appreciate the willingness of the Guidehouse team to work through these issues and make adjustments where needed. The audit team has no recommendations for savings adjustments for the PY2019 programs.

There are still some ongoing issues from the audit team perspective, however, and these are summarized below.

### *General Comments on Report Structure & Content*

The evaluation report structure was changed for PY2019, and now includes three components:

1. A summary report that presents the final savings numbers for each program;
2. Appendices in a separate document that provide technical details on the savings calculation methodologies and program-level impact results, and;
3. An Excel workbook that contains additional detail on the program savings numbers (e.g., measure-level savings).

While we are generally in favor of the approach where summary results are presented in the main report and more technical details are relegated to appendices, we still find the current report structure to be somewhat cumbersome to review. In particular, it is not readily apparent in the main report when new data collection and analyses were performed for PY2019 and when evaluation results from prior years were applied. Currently most of this identifying information is included in the appendices rather than the main report.

To help make the report easier to navigate, we suggest adding a table and some text at the beginning of the main report that identifies which programs have new evaluation research conducted for the current year, and which are relying on information from prior years (with the appropriate program year clearly referenced). In addition, we suggest a short (2-4 page) section for each program be included in the main report that summarizes how the current year impact estimates were derived and that includes references to the appropriate program year if results from prior evaluations are being used. If there are data collection or sampling that were done for the current year, this information should be presented in a table for that program section. We believe that these simple additions to the main evaluation report would really improve the readability and help with navigating the other documents.

### *HVAC Early Replacement versus Replace on Burnout*

In the audit team’s comments on the draft report (and in our comments from prior years), we have noted the high number of residential HVAC projects that are identified as Early Replacement compared to Replace on Burnout. For PY2019, the vast majority of projects (90%) are identified as Early Replacement. For comparison, the Illinois TRM v.7, which was used as the reference for the per-unit CAC savings, assumes that 14 percent of the measures are early replacement by default.

In response to our earlier comments on this issue, Guidehouse indicated that the implementer has a two-step process for categorizing these projects. The first step is to ask the customer to describe the operational state of the heat pump or CAC that is being replaced. The contractor also records the pre-existing condition of the equipment prior to replacement. Guidehouse then uses the data from the implementer to calculate the savings. Based on this, it appears that calculations relied on the program implementation data and that there was no separate verification to determine if a project was actually an early replacement. There is also no separate verification to determine if the customer and contractor definitions of ‘early replacement’ are consistent with those assumed in the savings calculation.

Table 8 shows the PY2019 savings for these measures in the Whole House Efficiency program and illustrates the magnitude of this issue for PY2019. Note that an AC project that is categorized as Early Replacement has average savings that is almost three times the amount for Replace on Burnout (labeled as ‘Time of Sale’ in the Guidehouse spreadsheet). For Air Source Heat Pump replacements, the Early Replacement savings are 5 to 10 times as great as the Replace on Burnout projects, on average.

**Table 8: Residential HVAC ER vs ROB Savings (Evergy Metro)**

<b>Measure</b>	<b>Status</b>	<b>Number of Projects</b>	<b>Total Savings</b>	<b>Average Savings</b>
AC	Time-of-Sale	108	43,752.25	405.11
AC	Early Replacement	1,074	1,236,048.14	1,150.88
Heat Pump	Air Source Time-of-Sale	15	14,180.76	945.38
Heat Pump	Air Source Early Replacement	42	234,438.82	5,581.88
Heat Pump	Air Source Replace Failed ER Heat	5	5,354.35	1,070.87
Heat Pump	Air Source Replace Operating ER Heat	47	558,449.97	11,881.91
Heat Pump	Ductless Mini-Split	50	106,798.52	2,135.97
Heat Pump	Ground Source Time-of-Sale	1	4,959.47	4,959.47
Heat Pump	Ground Source Early Replacement	8	51,552.22	6,444.03
Heat Pump	Ground Source Replace ER Heat	5	38,940.21	7,788.04
Heat Pump	Ground Source New Construction	5	31,059.03	6,211.81

Source: *Evergy Metro EMV PY 2019 Databook Final (Whole House Efficiency Tab)*

The audit team has consistently raised this issue in prior years for both Evergy and Ameren MO, and we reiterate our earlier recommendations that this issue needs additional study by the evaluation teams. This should involve having a consistent set of criteria for classifying a project as Early Replacement, and then having a savings calculation algorithm that is consistent with this definition.

### *Free Ridership & Spillover*

A separate ongoing issue is with the free ridership and spillover scoring of survey responses. The audit team has commented for PY2019 (and in prior years) that survey responses of ‘don’t know’ should be excluded completely from the free ridership scoring calculations. We maintain that a response of ‘don’t know’ does not provide any information at all about free ridership, and including these in the scoring algorithm will bias the results. The evaluation team rebuttal to this is that they are using a respected approach from Energy Trust of Oregon that has been approved and vetted. They also note that very few customers actually provided a ‘don’t know’ response in the Custom Program survey (the only program in PY2019 where this method is used) and so as a practical matter the coding of these few responses is having very little effect on the final free ridership number.

We disagree with this component of the Energy Trust approach and reiterate here that these responses are not providing any information one way or the other about free ridership. We also note that the Illinois TRM (the primary reference used for all other areas of the evaluation) does not assign any score to the ‘don’t know’ responses. While this is not going to have a significant impact on the net impact calculations for PY2019, we believe that it is important to document our concerns in the audit report as it may have a significant effect in the future if this approach continues to be used.

On a related topic, we have also commented on the issue of using the trade ally free ridership estimates as a cap on the participant survey free ridership estimates. The current approach uses the lower of the participant and trade ally estimates for free ridership. For PY2019, the evaluation team reports that this is a moot issue as only the participant free ridership estimates are used (i.e., they are lower than the free ridership rates calculated from the trade ally surveys). As we have noted in the past, the rationale provided for using the trade ally results to cap the participant free ridership results is not convincing; one could just as plausibly argue that the evaluation should use the *greater* of the two free ridership estimates as this would be a more conservative approach. As we have stated in the past, we do not recommend that the participant free ridership scores be capped based on trade ally responses.

The trade ally surveys are also used to estimate spillover, and the audit team has noted in the past that there is not enough information provided on how these results are calculated or how the spillover measures are being confirmed as actually being energy efficient and installed outside the program. Guidehouse acknowledges that there may be some overlap

between the trade ally and customer spillover estimates. They note that the overall magnitude for the participant spillover is small, and therefore any overlap with the spillover reported by trade allies is likely to be very small. They also note that trade allies often mentioned that spillover occurred because customers did not want to take the time to complete the program-related paperwork. From the audit perspective, it does not seem that these customers are being influenced by the program. Given the small amount of spillover savings and the continuing ambiguity of whether or not the trade ally estimates are double counting savings, we recommend that the trade ally surveys not be used to estimate either participant spillover or non-participant spillover.

Finally, in the past we have also indicated that spillover should only be counted for measures that are eligible for the programs, and we repeat that point here. Other efficiency measures done outside of the program can just as easily be categorized as free riders, absent any additional information or a rigorous confirmation that they are not already being counted in the other net impact analyses.

### *HER and Upstream Lighting*

In the audit team comments on the draft report for the HER program, we recommended that an analysis be done to determine if there are differences in purchase rates of LEDs between the control and treatment groups in the post period. If the treatment group is purchasing more LEDs, these savings are likely already captured in the upstream Home Lighting Rebate Program and therefore need to be subtracted out of the HER impacts to avoid double counting. Determining any differences in LED purchase rates can be accomplished with a short survey of customers from both the treatment and control groups.

In response to this comment, the evaluation team cited a presentation from Michigan<sup>5</sup> that suggests that this issue has already been studied elsewhere and that there is no compelling evidence indicating that there are differences between HER treatment and control groups with respect to LED purchases. In our review of this presentation, it seems that the results are inconclusive. Of the 10 studies references in the report, only six did any primary data collection (either phone survey or on-sites) while the remainder relied on secondary sources. Of the six studies that did primary data collection, the results were mixed with some finding a small amount of double counting of lighting purchases while others found no statistically significant differences across groups. Of these six studies, five covered large lighting programs in California and the Pacific Northwest that have been operating for decades, and so it is unclear that these results should be applied to Missouri.

To resolve this issue for Missouri, we are still recommending that a short survey be conducted to determine if there are statistically significant differences in LED purchases

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<sup>5</sup> [https://www.michigan.gov/documents/mpsc/Avoiding\\_Double\\_Counting\\_-\\_20190416\\_652854\\_7.pdf](https://www.michigan.gov/documents/mpsc/Avoiding_Double_Counting_-_20190416_652854_7.pdf)

between HER report recipients and the control group. We recommend that statistically significant samples be surveyed for each group (treatment and control) in each HER wave. If there are significant differences in LED purchase rates, then the survey results should be used to adjust the HER program impacts to avoid double counting the LED savings.



## Appendix A: Full Process Evaluation Responses to Minimum Question Requirements

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This appendix provides a summary of the detailed responses to minimum process evaluation requirement questions.

**Table 9: Minimum Process Evaluation Questions**

<b>Issue Number</b>	<b>Question</b>
Issue 1	What are the primary market imperfections common to the target market segment?
Issue 2	Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?
Issue 3	Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?
Issue 4	Are the communication channels and delivery mechanisms appropriate for the target market segment?
Issue 5	What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?

**Table 10: Issue 1 - What are the primary market imperfections common to the target market segment?**

Program	2018 Summary Response	2019 Summary Response
Business EER - Standard	<p>The target market faces a high barrier to make an energy efficiency upgrade due to the first cost and a lack of understanding of lifetime value for energy efficient products. KCP&amp;L-MO addresses the barrier by providing incentives which reduce the incremental cost. In addition, there are many smaller C&amp;I customers that have limited resources for researching energy conservation, leading to imperfect or incomplete information about the market. KCP&amp;L- MO has developed targeted marketing materials to increase participation of smaller.</p> <p>KCP&amp;L focused on developing targeted marketing materials for certain segments to help explain the benefits of implementing energy conservation. In PY2016 the majority of energy savings came from industrial and warehouse building types. In contrast, more than 80% of energy savings came from measures installed in “Retail”, “School”, “Office”, and “Other” building types in PY2018. This indicates that marketing materials and campaigns may have increased the participation of various types and sizes of facilities.</p>	<p>The target market faces a high barrier to make an energy efficiency upgrade due to the first cost and a lack of understanding of lifetime value for energy efficient products. Evergy Metro addresses the barrier by providing incentives which reduce the incremental cost. In addition, there are many smaller C&amp;I customers that have limited resources for researching energy conservation, leading to imperfect or incomplete information about the market. Evergy Metro has developed targeted marketing materials and hosted interactive events to increase participation of smaller C&amp;I customers in implementing energy conservation measures.</p>

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Business EER -  
Custom

KCP&L has continued its strategy of targeted marketing campaigns towards specific market segments and successfully expanded its network of participating trade allies.

KCP&L conducted targeted marketing campaigns for specific market segments: healthcare, data centers, new construction, and industrials. However, other than the industrial sector, few of the participating trade allies reported that they market high efficiency to these sectors.

KCP&L increased the amount of outreach and education offered to trade allies, particularly with regard to non-lighting measures. These outreach efforts included webinars focused on chillers and data centers, a trade ally newsletter, and sales training.

KCP&L program staff has some concerns about Tier One customers opting out of the EE rider. They are eager to use the Custom program as a mechanism for demonstrating the additional value that KCP&L can bring to the table beyond simply recouping the cost of the rider.

KCP&L is considering the development of a separate program component focused on new construction projects, which may help them implement more targeted strategies to overcome market barriers specific to those projects.

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Custom measures are complex and can have uncertainty in energy savings requiring utility education and incentives.

Program	2018 Summary Response	2019 Summary Response
Whole House Efficiency	<p>The program Operations Manual identifies lack of education for both end-use consumers and trade allies as a primary barrier to residential EE upgrades, along with high upfront costs—particularly for HVAC purchases. Surveyed participants and trade allies alike support that view.</p> <p>Cost continues to be a barrier to residential EE upgrades, especially for HVAC purchases. KCP&amp;L and the implementer have made strides in this area by streamlining messaging to encourage customer participation in Tiers 2 and 3. The majority of WHE savings is attributed to HVAC measures, but it is still important to continue educating the consumer that the lowest cost option is not always the lowest cost in the long-run, nor is the first cost the only consideration. KCP&amp;L should also continue to emphasize the non-energy benefits of EE, including home comfort factors.</p> <p>Participants in the Whole House Efficiency program tend to be largely middle-class, with fewer programmatic options available to low-income residents.</p>	<p>Participants in each tier often experience different barriers to participation. Tier 1 participants may face difficulties in finding time to engage with the program and sometimes are hesitant to engage with the program, questioning the credibility of free upgrades with no-strings-attached. For Tier 2 and Tier 3 participants, up-front costs can be a significant barrier to entry, given the expenses associated with building envelope or HVAC upgrades. It remains crucial to help these customers understand the value of replacing and upgrading equipment before the failure of an air conditioner or heat pump, for example.</p>

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<p>Income Eligible Multifamily</p>	<p>The target market for this program was low-income multifamily properties, targeting both property owners and managers for building efficiency improvements, and tenants for direct install measures. This market generally has limited capital availability and property management staff experience high turnover.</p> <p>The primary difficulty in this market is the inability of income-eligible tenants to afford custom energy efficiency (EE) measures, and the limited incentive for property owners and managers to increase EE when the tenants pay the utility bills.</p> <p>Another obstacle to this market is high turnover among property managers. According to the implementation manager, there was approximately a 50% turnover among this group from PY2017 to PY2018.</p> <p>The program continues to prioritize direct outreach to property owners and managers through phone calls and in-person visits to increase awareness of the IEMF program. Implementation staff reported that they have more robust relationships with property owners and managers because of these interactions. Implementation staff also tried other outreach strategies in PY2018 including lunch and learns events and appreciation dinners. However, these types of events were ineffective as many customers signed up to participate but then did not attend the events.</p>	<p>The target market for this program are income-eligible multifamily residents and property owners and managers, targeting tenant units for direct install measures and property owners and managers for building improvements. This market generally has limited capital availability and property management staff experience high turnover. However, the program is overcoming these challenges with direct outreach strategies, developing relationships with property managers, and a new concierge approach that was rolled out for HVAC projects in PY2019. This concierge approach involved providing a consultation for the customer, identifying possible contractors, developing an RFP for the work that contractors can respond to, and completing savings calculations for the projects. Program staff report that the HVAC offerings were very successful in PY2019.</p>
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**Program**

**2018 Summary Response**

**2019 Summary Response**

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Home Lighting  
Rebate

The program seeks to address imperfections of price, availability, and consumer knowledge of efficient lighting choices. The program has made strong progress on each, offering incentives that reduce the shelf price of LEDs, diversifying the retail channels and venues through which consumers can buy supported LEDs, and engaging in marketing and educational campaigns that explain the benefits of energy efficient lighting. The great success of the program in PY2016 and PY2017 led to focus primarily on reducing the shelf price of specialty LEDs.

The HLR program reduced the shelf price of standard LEDs by \$1.18 from \$3.80 to \$2.61. For specialty LEDs, the program reduced the price by \$1.53 from \$4.50 to \$2.96. Manufacturers and retailers sometimes added their own discounts to reduce the shelf price further.

The program seeks to address imperfections of price, availability, and consumer knowledge of efficient lighting choices. The program has made strong progress on each, offering incentives that reduce the shelf price of LEDs, diversifying the retail channels and venues through which consumers can buy supported LEDs, and engaging in marketing and educational campaigns that explain the benefits of energy efficient lighting. In PY2019, the program expanded offerings to an online popup store through which consumers could purchase multipacks of both standard and specialty bulbs during the holiday season.

Program	2018 Summary Response	2019 Summary Response
Home Energy Report & Income-Eligible Home Energy Report	<p data-bbox="451 324 1102 503">Some residential customers do not understand how their behaviors, appliances, and electronic devices can affect their energy use and contribute to their monthly bills. Customers are also unaware of cost-effective strategies to reduce energy in their home.</p> <p data-bbox="451 568 1102 779">The PY2018 program targeted over 76,000 customers to receive four HERs. An additional 18,000 customers served as a control group. The PY2018 IE-HER program targeted over 10,000 customers to receive four HERs, with over 6,000 customers in the control group.</p> <p data-bbox="451 812 1102 1055">Based on responses to the CET, 79% of treatment customers agree that KCP&amp;L provides tools to help customers learn about energy use. Furthermore, 71% of treatment customers report that the EE tips on the report are useful, while 64% report that the HERs help the customer make better decisions to use and save energy.</p>	<p data-bbox="1102 324 1885 487">Some residential customers do not understand how their behaviors, appliances, and electronic devices can affect their energy use and contribute to their monthly bills. Customers are also unaware of cost-effective strategies to reduce energy in their home.</p>
Home Online Energy Audit and Business Online Energy Audit		<p data-bbox="1102 1071 1885 1279">Some customers do not understand how their actions and appliances or equipment in their home or business can affect their energy use. The HOEA and BOEA tools educate customers on their energy use and provide tips to help them lower their use.</p>

Program	2018 Summary Response	2019 Summary Response
Residential and Business Programmable Thermostat	<p>Utilities use residential and small commercial thermostat DR programs to obtain needed demand reductions. The programs address the fact that traditional rate structures do not provide customers appropriate incentives to reduce electricity usage during peak periods.</p> <p>KCP&amp;L calls curtailment events during which Nest increases the set point of a customer’s thermostat by three degrees in order for the HVAC system to achieve aggregate demand reductions. If DR resources are large enough, they can offset enough demand to delay or avoid the need to purchase power at spot market prices or invest in new sources of generation to meet peak summer demand. DR is a lower cost means of reducing demand and thus the need for generation and can be called on during periods of high demand in the same manner as a peaking power plant—which might be built and brought online to serve the same end.</p> <p>The Nest learning thermostat adjusts to customer behavior year-round; this enables energy savings throughout the year, not only during event hours. Unlike the previous Honeywell thermostats, customers can remotely control their Nest devices, which also enable year-round energy savings.</p>	<p>As noted in the PY2018 evaluation, the program addresses market imperfections by providing customers with an ability to reduce electricity usage during hours of peak demand.</p>



Program	2018 Summary Response	2019 Summary Response
Demand Response Incentive	<p>The PY2017 report cited two main barriers for participating in the DRI program: (1) businesses do not have automatic load curtailment; and (2) for some customers, the point of contact (as indicated on the contract) neglected to pass the event notification onto the individual who can manually curtail load at the customer site. PY2018 revealed the importance of one additional barrier: (3) lack of real-time feedback following DR events.</p>	<p>CLEAResult continued using propensity modeling in PY2019 to select customers to recruit. Evergy should continue to refine propensity modeling to select customers for the program. Additionally, Evergy should begin to identify and target customers with automated curtailment capabilities.</p>

**Table 11: Issue 2 - Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?**

<b>Program</b>	<b>2018 Summary Response</b>	<b>2019 Summary Response</b>
Business EER - Standard	<p data-bbox="569 407 1213 509">KCP&amp;L has a well-defined target market (C&amp;I) for the Standard program. No further subdivisions appear necessary given current program participation.</p> <p data-bbox="569 558 1213 724">KCP&amp;L and their implementer track which trade allies are most active and routinely consider how they could improve their program by increasing their breadth of trade allies that have different niches or cater towards different types of customers.</p> <p data-bbox="569 776 1213 943">KCP&amp;L actively tracks the sales cycle to understand sales conversion from prospective to completed projects in the targeted market. They are working to identify areas to improve sales conversions of all customer types.</p>	<p data-bbox="1236 402 1881 500">Evergy Metro has a well-defined target market (C&amp;I) for the Standard program. No further subdivisions appear necessary given current program participation.</p>

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Business EER - Custom

The measures targeted by the custom program are more complex and have more uncertainty in energy savings than those in the standard program, which makes customers less likely to install them without the education and financial incentives offered by the program. KCP&L identified K-12 schools, data centers, and new construction projects as its target market segments for the Custom program in PY2017.

The types of measures targeted by the custom program are more complex than the types of measures offered by standard programs. Specifying and selling these types of efficiency measures requires more technical knowledge on the part of the trade ally, meaning that a lack of trade ally awareness and knowledge can inhibit widespread market adoption. Navigant confirmed with CLEAResult that new construction projects are tracked within the program tracking system. Navigant will request this information in PY2018 to better understand whether new construction participation is increasing in response to program efforts.

New construction projects face some of the more challenging barriers. Program staff noted the importance of reaching customers before/during the design stage of a new construction project and observed that designers are paid by the hour and therefore unlikely to spend time on developing specifications for EE unless the customer is paying them for it. Therefore, the customer has to value EE and be aware of the opportunity to receive KCP&L incentives at the design stage for the program to have

Yes, the target market is appropriately defined. All business customers are eligible to participate in the Custom program. Tier one customers provide the most energy savings to the program. The program could target small and medium sized customers.

Program	2018 Summary Response	2019 Summary Response
	<p>the opportunity to influence new construction projects.</p> <p>One trade ally emphasized the importance of streamlining program preapproval requirements to be able to capture new construction programs, noting that new business owners were missing opportunities to incorporate EE into their buildings “because they want to open the doors, they do not have the additional time to wait for preapproval for higher efficiency designs. Time is money, every day waiting for the doors to open is a dollar lost.”</p>	
Whole House Efficiency	<p>KCP&amp;L’s primary target audience for this program is broadly defined as owners of single-family homes, although 2-unit to 4-unit residences and renters are also eligible. There may be an opportunity to address a gap in the multifamily ‘market-rate’ segment, however. There are currently programmatic offerings for income-eligible multifamily, but nothing targeted toward general multifamily residences that are on Residential meters.</p> <p>KCP&amp;L is planning to address this market gap via a market-rate multifamily incubator program for Cycle 3. The program is likely to utilize a modified version of the Income-Eligible Multifamily program TRM for evaluation purposes.</p>	<p>The Whole House Efficiency program combines three programs into one, with participants in each tier experiencing their own motivations and barriers. In that regard, the program is sufficiently subdivided. The implementer continues to conduct research to better segment the market and understand the needs of each customer segment.</p> <p>In addition, Evergy is implementing a recommendation from PY2018 to provide measures to multifamily market-rate customers through a MEEIA 3 incubator program.</p>

Program	2018 Summary Response	2019 Summary Response
Income-Eligible Multifamily	<p>The market for the IEMF program in PY2018 was defined using the Federal Poverty Income guidelines. However, program staff noted alternative methodologies for identifying income-eligible multifamily units and described some difficulty in identifying all eligible properties.</p> <p>KMO defines the target market of income-eligible customers as multifamily properties that are subsidized federally or at the state level, or if 50% or more of tenants have household incomes that are at or below 200% of the Federal Poverty Limit. Per the implementation manager, they can validate federal or state subsidy receipts for properties. However, validating that 50% or more of tenants are at or below 200% of the Federal Poverty Limit has been challenging. Regarding the latter, the implementation team is relying on estimates based on rent rolls or validation from property owners and managers.</p> <p>The definition of income-eligible will be broadened in MEEIA Cycle 3 to include Census tract information and average income at the Census tract level. Program staff reported that this revised definition will aid in targeting eligible properties.</p>	<p>The target market includes income-eligible multifamily properties. Implementation staff noted that there was limited participation of smaller MF properties during PY2019 (for example, a six-unit building as opposed to a larger 40-unit building). A goal for MEEIA Cycle 3 is to increase participation of this market segment in order to bring more diversity to the program and continue achieving program goals. Program staff reported that barriers to reaching this market segment include that there may not be a property manager on site, contact information for offsite property managers may be difficult to obtain, property budgets tend to be very limited, and more support is typically required to engage this market segment in the program because these smaller buildings tend to need more updates.</p>

Program	2018 Summary Response	2019 Summary Response
Home Lighting Rebate	<p>The program appropriately defines the target market as all residential customers. Even though KCP&amp;L-MO focused most incentive efforts in PY2018 on specialty LEDs, they retained incentives for standard LEDs in the Discount channel for the first few months of PY2018 in an effort to make these bulbs available to hard to reach customers.</p> <p>Discount stores accounted for 24% standard LED sales attributed to PY2018, but the discount portion of sales varies by quarter. In Q1 of PY2018, the quarter with the largest amount of holdover PY2017 sales, Discount stores accounted for only 18% (4,098) of standard LED sales (22,399). In Q2, Discount stores accounted for 33% (5,282) of the standard LED sales (16,085). The program sold only 269 standard LEDs across all channels in Q3 and Q4, 24% (78) of those in the Discount channel.</p>	<p>The program appropriately defines the target market as all residential customers, which is an appropriate definition for the HLR.</p>

Program	2018 Summary Response	2019 Summary Response
Income-Eligible Home Energy Report and Home Energy Report & Income-Eligible Home Energy Report	<p>The target market segment is appropriately defined as residential customers in single- family homes.</p> <p>The initial waves included the highest energy users.</p> <p>As the program adds waves, the new waves should continue to include customers beyond the highest energy users. For example, the 2016 wave includes customers that have lower baseline energy use (about 29 kWh/day compared to 34 kWh/day for the 2014 wave).</p> <p>IE-HER targets low income customers with messaging that focuses on low cost and no cost energy-saving tips.</p>	<p>The target market segment is appropriately defined as residential customers in single-family homes.</p>
Home Online Energy Audit and Business Online Energy Audit		<p>In PY2019, the program targeted residential and small business customers interested in making their homes/businesses more energy efficient and/or reducing their electricity bill. The applicability of energy-saving tips is different for residential and small business customers, so it is appropriate to have separate tools for these groups.</p>
Residential and Business Programmable Thermostats	<p>The target market appropriately addresses residential and small commercial customers. The Demand Response Incentive (DRI) program provides DR opportunities for large C&amp;I customers.</p>	<p>Evergny resumed recruitment efforts of customers in PY2019 to meet their enrollment targets. In MEEIA Cycle 3, Guidehouse recommends focusing on BYOT and waitlist customers. In MEEIA Cycle 3, Evergny may consider targeting a more staggered program enrollment over the cycle's duration.</p>

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Program	2018 Summary Response	2019 Summary Response
Demand Response Incentive	The target market segment is defined as all commercial customers that can reduce their demand to at least 25 kW below estimated peak usage when a curtailment event is called between June 1 and September 30 of a given year.	The target market is appropriately defined.

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**Table 12: Issue 3 - Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?**

Program	2018 Summary Response	2019 Summary Response
Business EER - Standard	<p>While the Standard program includes many measures that address a participant's water heating, refrigeration, and HVAC energy end-uses, 97% of the projects in PY2018 were for lighting measures. Primarily other KCP&amp;L Business EER programs address these other end-uses.</p> <p>The Standard program complements the other Business EER programs, specifically the Custom program, by providing rebates for common energy efficiency upgrades, which are primarily lighting measures. KCP&amp;L is working towards further aligning the Standard and Custom programs, so that multiple end-use energy saving projects can be easily served across the entire portfolio.</p> <p>From the customer perspective, the Standard program and the Custom program are one program not two programs. Most of the measures not covered by Standard are covered by another program. The intention of the Standard program is not to be a stand-alone program, rather considered as an integrated part of the C&amp;I portfolio.</p>	<p>While the Standard program includes many measures that address a participant's water heating, refrigeration, and HVAC energy end-uses, 96% of the projects in PY2019 were for lighting measures. The other Evergy Metro Business EER programs primarily address the other end-uses.</p>
Business EER - Custom	<p>Between the Custom program and KCP&amp;L's other C&amp;I offerings, trade allies and customers are able to receive rebates for all of the measures they are interested in, with the exception of exterior lighting, which has been added back into the program for PY4.</p>	<p>Due to the shortened program year, the program focused on lighting measures to meet the PY2019 goals. Lighting measures made up 54% of the energy savings in PY2019. The Product Manager for the Custom program continued to increase focus on non-lighting measures in PY2019. This is apparent in the year-over-year increase in</p>

	<p>When asked if there were any measures that they wanted the program to start offering, the surveyed trade allies most often answered “exterior lighting.”</p> <p>KCP&amp;L added exterior lighting back into their program for PY4 of Cycle 2.</p> <p>Overall, the Custom program’s measure mix is comparable to other custom programs evaluated by Navigant.</p>	<p>participation in non-lighting measures, including HVAC and motor end-uses.</p>
<p>Whole House Efficiency</p>	<p>The program offers measures that cover most of the common energy end uses in residential homes. However, most energy savings and participation come from air conditioning units and heat pumps, with little participation in the heat pump water heater, air sealing, or insulation measures.</p> <p>The program-maintained participation across all measure tiers similar to PY2017, including sustained participation in the HVAC-focused Tier 3. The WHE program continues to evaluate the cost-effectiveness of existing measures and that of potential new measures.</p>	<p>The program offers measures that cover most of the common energy end uses for residential customers. However, most energy savings and participation come from air conditioning units and heat pumps. Evergy engaged new trade allies in PY2019 to encourage greater participation in building envelope measures. Ceiling insulation in particular saw close to a 30% increase in participation for PY2019.</p>
<p>Income-Eligible Multifamily</p>	<p>Navigant found that the program included appropriate measures for its targets.</p> <p>The program installed the following end-use measures in PY2018: faucet aerators, low-flow showerheads, lighting, and smart power strips. Common area measures included lighting and optional custom measures. Implementation staff reported that customers were satisfied with the custom options, especially the custom lighting measures. They reported that the custom lighting measures were</p>	<p>Guidehouse found that the program includes appropriate measures for its current targets. Custom projects continued to perform well, as they did in PY2018. During PY2019, the program had to waitlist some properties that wanted to do custom lighting projects because the program had achieved 100% of its program budget. The budget was increased to 115% in October 2019. As a</p>

frequently implemented because property owners and managers were able to update mismatched lighting in different common areas throughout their properties to consistent, higher quality lighting. Improving common area lighting also helped alleviate the burden on maintenance staff, which implementation staff noted was a challenging role for multifamily properties to fill.

The custom program track will offer an HVAC tune-up measure in the next program year. Per implementation staff, this measure is needed primarily due to a lack of maintenance personnel available to service existing units, including those located at ground-level and on roofs.

result, the program is entering MEEIA Cycle 3 with a pipeline of waitlisted projects.

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Home Lighting Rebate

The program focused incentives on specialty LEDs in PY2018 to allow KCP&L-MO to move resources from the high-performing HLR to other programs in the KCP&L-MO portfolio. Although the specialty focus makes sense for the program portfolio, specialty applications only meet a small portion of end-use energy service needs of the target market.

KCP&L-MO will reintroduce standard LED incentives to the program in PY2019, which will increase the degree to which the program meets end-use energy service needs.

Suppliers interviewed in PY2016 suggested that the program add LED downlight and retrofit kits and integrated LED fixtures. In-depth interviews with program and IC staff in PY2017 suggest that they are considering these additions for MEEIA Cycle 3.

The program offered incentives on a wide variety of standard and specialty bulbs, expanding to include bulbs with features such as WiFi (smart) or solar sensors (i.e., dusk to dawn). The IC indicated that they have considered offering downlight retrofit kits and LED fixtures, but the program budget is not sufficient to support incentives for those products at this time.

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Home Energy Report  
and Income-Eligible  
Home Energy Report

HERs provide a diverse set of suggestions that target all residential end uses. The focus of the report is to modify behaviors; therefore, the program does not offer rebates for specific measures but does promote rebates provided through other KCP&L programs.

These tips include many low costs and no cost actions and suggestions to buy efficient equipment and appliances.

The tips cover the main residential electricity end uses: lighting, HVAC, electronics, water heating, appliances, and pools. New tips include EV charging, smart device usage, and load shifting.

The print reports also cross-promoted rebates on new cooling equipment, heating and cooling system tune-ups, the email reports included messaging on Energy Audit, heating and cooling tune-ups, rebates on new air conditioners or heat pumps, EVs, and solar subscription.

HERs provide a diverse set of suggestions that target all residential end uses. The focus of the report is to modify behaviors; therefore, the program does not offer rebates for specific measures, but does promote rebates provided through other EE programs.

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Home Online Energy  
Audit and Business  
Online Energy Audit

The tools appropriately reflect the diversity of end-use energy service needs of the target market.

The residential tool has five components:

- Trends: Customers can view their energy usage over time. They can also view trends of “efficient” and “all neighbors” over time. The page also includes energy saving tips.
  - Compare: Customers can view their current usage compared to similar homes. The page also includes energy saving tips.
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- Analyze: This is an online survey that helps customers understand the sources of their energy use. The page also includes energy saving tips.
- Save: This tip library provides practical suggestions for customers to reduce their energy use. The guides use customer attributes to generate personalized guides and include common residential end uses such as lighting, HVAC, pools, and plug loads.
- Reports: Home Energy Report recipients can opt-out and designate their preferred communication channel.

The small business tool has three components:

- My Energy Usage: Customers can view their own usage on a monthly or annual basis.
- Ways to Save: This tip library provides business-specific suggestions in the areas of lighting, HVAC, and refrigeration for customers to reduce their energy use. The library contains over 30 tips.

Residential and Business Programmable Thermostat

The program aligns with the overall diversity of end-use energy service needs and existing technologies by using the cooling end-use for DR purposes. This is appropriate because it is the highest contributor to peak demand in

The mix of end-use measures included in the program (i.e., PTs) meets the needs of the existing market. Evergy is expanding the program to include customers that have already purchased other

the residential and small C&I sector. This was noted in the PY2016 and PY2017 evaluation reports and found to be consistent in PY2018.

In the future, competition among PT vendors and evolving technological developments could lead to the market shifting from one vendor toward another. Navigant suggests KCP&L monitor the market to avoid missing market trends. The BYOD segment of the RHR population is small. KCP&L could consider expanding the BYOD customer segment through targeted marketing in MEEIA Cycle 3. BYOD programs are comparatively inexpensive to operate and a way that many utilities run thermostat programs successfully.

KCP&L has tested the performance of Tendril's Orchestrated Energy platform, a comparable DR and energy optimization technology that is similar to Nest's RHR and Seasonal Savings. Tendril's offering could expand the pool of eligible participants to customers with other brands of Wi-Fi- connected thermostats.

brands of smart or connected thermostats. In addition, Evergy could continue expanding the BYOT customer segment through targeted marketing in MEEIA Cycle 3. BYOT programs are comparatively inexpensive to operate and a way that many utilities run thermostat programs successfully.

Demand Response  
Incentive

The mix of end-use measures included in the program appropriately reflects the diversity of end-use energy service needs and existing end-use technologies within the target segment.

There was no change in mix of end-use measures in PY2018. Participants control how they meet their demand reduction obligations through curtailing or rescheduling end uses, using backup generators, or both.

The mix of end-use measures appropriately reflects the diversity of end-use energy needs. Evergy should consider the impacts of weather when determining a participant's curtailable load in cool summers.

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End-use options that can be chosen include but are not limited to: rescheduling use to off-peak time; temporarily shutting down factory production lines; reducing motor, process, lighting, and cooling loads; and turning off or lowering water heater set points.

In PY2018, the energy consultants (ECs) and CLEARResult representatives worked with many existing customers to confirm that their end-use technologies contracted to curtail were in fact curtailable before the event season to help ensure surprises did not occur during event season.

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**Table 13: Issue 4 - Are the communication channels and delivery mechanisms appropriate for the target market segment?**

Program	2018 Summary Response	2019 Summary Response
Business EER - Standard	<p>The IC for the Standard program works one on one with the larger customers. The trade-ally network addresses medium and smaller customers. In addition, there is also targeted marketing for sectors with historically lower participation such as datacenters and property managers. KCP&amp;L’s marketing activities meet the programs needs as evidenced by them exceeding their savings and participation goals.</p> <p>KCP&amp;L developed additional channels for communication by creating high quality targeted videos for property managers and special energy conservation coffee for schools and universities in PY2017. In addition, the implementer hosted sector specific webinars in PY2018 that mostly focused on lighting, since the other C&amp;I programs address other the non-lighting end-uses.</p> <p>Based on responses from the implementer administered survey, the available rebate influenced the consideration of energy efficiency upgrades most greatly, from PY2016 to PY2018. This is in line with the low FR found in the PY2016 survey. High-energy bills represented the next most influential factor. This reinforces the fact that saving money is the driving force behind implementing energy efficient equipment, either</p>	<p>The IC for the Standard program works one on one with the larger customers. The trade-ally network addresses medium and smaller customers. In addition, there is also targeted marketing for sectors with historically lower participation such as datacenters and property managers on the website. Evergy Metro’s marketing activities meet the programs needs as evidenced by them exceeding their savings and participation goals.</p>

Program	2018 Summary Response	2019 Summary Response
Business EER - Custom	<p>through a reduction in energy bills or a reduction in equipment costs via a rebate.</p> <p>The program's efforts to educate and engage trade allies have been effective, but program staff would like more support from Customer Service Managers to better reach Tier I customers. Trade allies and customers value consistency in incentive levels and calculation methods.</p> <p>The program relies heavily on trade allies to market to customers. The program's efforts to increase engagement with existing trade allies and recruit new trade allies appear to be working.</p> <p>Over three-quarters (82%) of surveyed trade allies indicated that they had participated in program webinars and trainings or received educational materials from the program.</p> <p>27% of surveyed trade allies have brought a program staff member on a sales call with them, and they describe these joint sales calls as very effective.</p>	<p>Due to the shortened program year in PY2019, the marketing and promotion of the program was primarily through emails to customers and trade allies.</p>
Whole House Efficiency	<p>The current means of communication are appropriate, with high levels of customer satisfaction for the program. The implementer suggests that additional direct marketing may be useful.</p>	<p>The current means of communication include customer support and education provided by energy efficiency professionals and trade allies, leave-behind materials for customers, and targeted marketing campaigns. These channels and mechanisms are appropriate for the program,</p>

Program	2018 Summary Response	2019 Summary Response
Income-Eligible Multifamily	<p>The WHE program has continued to emphasize the synergies that occur when customers participate in multiple program tiers. Customers that have already participated in the program have demonstrated a high level of receptivity and a willingness to engage with KCP&amp;L and with the program implementer.</p> <p>Communication channels focused largely on direct outreach and in-person contacts with property owners and managers. The program continued to identify opportunities to leverage partnerships with the Missouri Housing Development Corporation (MHDC), United States Department of Agriculture (USDA), and other organizations involved in income-eligible housing.</p> <p>Communication channels and delivery are appropriate given the direct interaction with program participants. The implementer reported that these have been the most effective way to engage property owners and managers.</p> <p>Program implementation staff reported that getting property owners and managers to attend program events, such as lunch and learn events and appreciation dinners, continued to be a challenge.</p> <p>The program continued to work with MHDC, USDA, and other organizations to identify</p>	<p>which achieves high levels of customer satisfaction according to internal surveys.</p> <p>As in prior program years, communication channels focused largely on direct outreach, in-person contacts, and forming relationships with MF property managers. During PY2019, the program placed advertisements in apartment association magazines to generate broad awareness of the program, did video advertising on a local television channel (channel 41), and conducted approximately 10 community outreach events, often by partnering with neighborhood association meetings. This neighborhood outreach approach was a new strategy in PY2019. Program staff reported that their aim was to increase awareness of the program among neighborhoods and tenants, developing a vehicle through which they could reach property owners and managers. Program staff reported that they intend to select specific geographic areas in which to conduct neighborhood-level outreach for MEEIA Cycle 3.</p>

Program	2018 Summary Response	2019 Summary Response
Home Lighting Rebate	<p>opportunities for outreach. For example, the program worked to identify new opportunities where property owners and managers can get together for events such as MHDC low-income housing tax credit application workshops and other workshops.</p>	<p>Evergy Metro and the IC updated program marketing to reflect the new branding. Otherwise, program marketing and outreach mirrored efforts, as these were sufficient given the strong program performance.</p>
	<p>The program has met and exceeded the PY2018 sales and savings targets with the reduced level of HLR marketing efforts.</p>	
	<p>Redesigning marketing materials for PY2018 would have wasted valuable ratepayer funds, given the limited scope of the HLR in PY2018 and the in-progress rebranding effort.</p>	
Home Energy Report and Income-Eligible Home Energy Report	<p>The HER program uses two primary communication channels: paper mailed reports and emails.</p>	<p>The HER program uses two primary communication channels: paper mailed reports and emails.</p>
	<p>All treatment customers received four paper reports in PY2018.</p>	

Program	2018 Summary Response	2019 Summary Response
Home Online Energy Audit and Business Online Energy Audit	<p>Customers with email addresses on file (about 8% of the HER program and 8% of the IE-HER program) also received monthly email reports.</p> <p>Customers could also access an online portal to monitor energy use through the Home Online Energy Audit.</p> <p>The timing and frequency of messaging through these channels is appropriate given the need to provide information through multiple mediums over time so participants can monitor the effect of any efficiency and consumption changes they make.</p>	<p>Both communication channels and delivery mechanisms are appropriate for the target market segments. In PY2019 Evergy Metro cross-promoted HOEA through multiple channels including a series of emails related to the utility re-branding and the HERs.</p> <p>Across all Evergy MO territory, 3,342 customers completed the Analyzer survey and in total completed or plan to complete 8,536 energy-saving tips.</p> <p>BOEA did not do any targeted communications in PY2019 pending changes to the program expected in 2020/2021.</p> <p>In PY2019, Evergy successfully released an online customer portal to better communicate with and educate customers.</p>
Residential and Business Programmable Thermostat	KCP&L has successfully reached enrollment targets and decreased marketing in PY2018.	

Program	2018 Summary Response	2019 Summary Response
Demand Response Incentive	<p>Communication channels including email, cross-program promotion, social media, and participant promotion through peer-to-peer word-of-mouth have proved successful in meeting enrollment targets.</p> <p>KCP&amp;L’s product manager has taken great efforts to improve communication channels and ensure delivery mechanisms are appropriate for the DRI program. Customers in PY2018 have recognized improvements in program communication.</p> <p>The product manager continued to provide phone and email notifications 24 hours and 4 hours before events started in which customers needed to confirm notification receipt. A2A sent these notifications. If A2A did not receive receipt confirmation, the KCP&amp;L product manager asked the energy consultant or CLEAResult to reach out to customers directly. The highest usage customers were often notified of potential events more than 24 hours in advance by their energy consultants.</p> <p>During the PY2017 event season, the product manager found that their email notifications were going to certain customers’ spam email folder. The DRI team has ensured their email notifications are going to the appropriate contact</p>	<p>Per PY2017 recommendation, as AMI becomes more prevalent, Eversource has worked hard to provide more consistent updates to participants regarding their program performance. Guidehouse recommends continuing this effort in preparation for a “pay-for-performance” incentive structure in which immediate event feedback is required from DERMS. Such capabilities would also allow for more periodic updates of participants’ event target values (FPLs), as recommended in PY2017.</p>

Program	2018 Summary Response	2019 Summary Response
	<p>at the customer site by asking customers to mark the DRI email account as not spam.</p> <p>Every interaction with a customer becomes an opportunity to cross-promote programs. KCP&amp;L does not partake in blind prospecting when recruiting participants. Instead, KCP&amp;L recruits customers for the DRI program using customer contacts from other energy efficiency (EE) programs such as KCP&amp;L's suite of C&amp;I programs. The use of customer propensity modeling by the program implementer expanded the pool of potential participants outside of existing EE programs.</p> <p>Targeted email marketing was executed in PY2018. High usage customers were identified through CLEAResult's propensity modeling and received marketing materials including email, flyers, personalized marketing packets, individual field visits, and in- person DR forums. The product manager has a full marketing plan for PY2018 that includes targeted email and direct mail marketing. In PY2018, there was also a Tier 1 campaign in which energy consultants' targeted large customers with high curtailment potential. The marketing plan for the Cycle 2 extension will be similar to what was conducted in PY2018, with a heavy focus on individual field visits to recruit new customers quickly.</p>	





**Table 14: Issue 5 - What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?**

<b>Program</b>	<b>2018 Summary Response</b>	<b>2019 Summary Response</b>
Business EER - Standard	<p>In PY2018, KCP&amp;L continued to have strong success with the efficient lighting measures in the Standard program. The effect from other end uses was less than 1%, but other programs such as the Custom program covers many of those non-lighting measures.</p> <p>KCP&amp;L has had great success with the lighting rebates. Even after lowering rebate amounts in PY2017, the participation remained strong in the Standard program throughout PY2018.</p>	<p>In PY2019, Evergy Metro continued to have strong success with the efficient lighting measures in the Standard program. The effect from other end uses was less than 1%, but other programs such as the Custom program covers many of those non-lighting measures.</p>

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Business EER - Custom

Simplifying the program application process when possible would encourage more customers to complete high efficiency projects, particularly when equipment needs to be specified and installed urgently.

The program has attempted to simplify the application process, but room for improvement remains. Some trade allies indicate that the incentive levels are too low to justify the administrative burden of participating in the program.

Trade allies indicate that the level of technical expertise required to complete the preapproval process may be causing the program to miss out on significant opportunities. One trade ally stated, “Some customers may not have the resources for the custom program. If you are not an expert in the field/have an engineering team behind you, custom rebate programs are practically impossible.”

KCP&L indicated interest in developing better tools for on-site data collection that trade allies or program outreach staff could use on a tablet to pre-populate the preapproval application. Ensuring that complete and accurate data is provided in the preapproval application should help eliminate situations in which the customer feels that they were told one incentive amount and then received another.

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Customers need support in the identification and implementation of energy efficient projects. Support would encourage more customers to complete high efficiency projects, particularly when equipment needs to be specified and installed quickly.

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Whole House  
Efficiency

The main driver for customer participation is their understanding of the cost-to-value ratio. There are not too many barriers beyond first cost, and one of the most important skills is to be able to communicate non-energy benefits.

Up-front costs continue to be an important barrier to many participants – especially prospective low-income participants. Evergy is looking at alternative financing mechanisms, including a Pay As You Save (PAYS) program, to help offset the cost of large building envelope or HVAC measures. Continuing to explore the feasibility and effectiveness of this approach is highly encouraged.

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Income-Eligible  
Multifamily

The custom track saw substantial growth during PY2018, up from fewer than 10 custom measures during PY2017.

A program change occurred between PY 2017 and PY2018 wherein common area lighting became included within the custom program track. According to the program implementer, the program incentives (28 cents/kwh) for these projects are used as a marketing tool by contractors in instances where there is a strong possibility of the project being little to no cost to the property. The incentives are also promoted to property managers and owners with targeted outreach, including via case studies, postcards, and newsletters. Implementation staff estimates that approximately 85% of all custom lighting projects were fully covered by program incentives. The remaining 15% were typically project scenarios with a high ratio of exterior lights but little common area 24-hour lighting (for example, a garden-style apartment complex with few interior hallways) where the incentive covered the majority of the project cost. Implementation staff also noted that there were projects where the 28-cents/kwh incentive paid for more than the total cost of the project. In those instances, the implementer adjusted the incentive downward so that it matched the payment for the project.

The program is leveraging several strategies to overcome market imperfections and increase measure implementation such as a concierge-type service for selecting measures to support property managers and owners, and neighborhood-level outreach.

Home Lighting Rebate	<p>Navigant verified that the KCP&amp;L-MO HLR program has achieved 102% of reported savings and 95% of its MEEIA Cycle 2 net savings targets cumulatively between PY2016 and PY2018.</p> <p>Given strong realization rates and progress toward net savings goals, the HLR program has shown great success in increasing consumer acceptance and implementation of ENERGY STAR- qualified LED bulbs.</p>	<p>Guidehouse verified that the Evergy Metro HLR program has achieved 110% of reported savings and 139% of its MEEIA Cycle 2 net savings targets cumulatively between PY2016 and PY2019. Given strong realization rates and progress toward net savings goals, the HLR program has shown great success in increasing consumer acceptance and implementation of ENERGY STAR qualified LED bulbs.</p>
Home Energy Report and Income-Eligible Home Energy Report	<p>Most treatment customers read or look at the report, and many talk about the report with others. Readership rates are consistent with Oracle-reported utility averages. However, there may be an opportunity to engage the 6% of customers who either did not read the report or the 22% who did not recall receiving the report at all.</p> <p>Of CET respondents, 6% who recalled receiving the reports did not read or did not remember reading the report; 22% of all CET respondents did not recall receiving the report at all. Of CET respondents who recalled the reports, 77% like the reports and 57% talk to other people about the reports.</p>	<p>Paper report readership rates are consistent with IC-reported utility averages and email open rates are about 46%. However, there may be opportunities to encourage additional readership.</p>

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Home Online Energy  
Audit and Business  
Online Energy Audit

The main barrier to entry for residential customers is awareness of and understanding how to use the tools. Evergy has continually addressed these through extensive cross promotion through web, social media, email campaigns, and cross-promoting through other programs. Evergy has also made the tools easier to use through embedded widgets. With a single sign on and no load time, customers have a more seamless experience. Every widget or page of the tool includes energy-saving tips, ensuring that even if customers use only a portion of the available tools, they still receive tips.

The main barrier to entry for small business customers is likely time and perceived value of the tools. Evergy is planning to address these barriers with change to the program expected in 2020/2021.

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Residential and  
Business Programmable  
Thermostat

KCP&L has reached enrollment goals for Cycle 2 but will resume customer acquisition efforts to meet the new enrollment targets set for the Cycle 2 extension.

As noted in PY2019, Evergy should monitor program savings targets in addition to enrollment goals to ensure that program cost-effectiveness remains high. Guidehouse acknowledges Evergy addressed this issue in PY2019, identifying the need to expand the low-cost BYOT channel.

KCP&L is developing a customer-facing portal to increase program understanding and participation.

KCP&L is required to call five RHR events in the summer of 2019. This requirement provides the opportunity to test DR impacts under a variety of conditions.

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Demand Response  
Incentive

KCP&L has implemented targeted marketing to recruit new customers. In addition, KCP&L has refined curtailment plans and expectations (i.e., the EPD values and FPLs) with current customers. Looking to Cycle 3, KCP&L is aiming to implement a pay-for-performance incentive model and enroll more automated curtailment customers to increase program impacts.

As noted in the PY2017 evaluation, measurement, and verification (EM&V) report, KCP&L began recruiting smaller customers in PY2017. KCP&L is updating the EPD and FPL calculation for existing customers for the Cycle 2 extension. CLEAResult will use interval data during potential peak hours during weekdays to identify a more accurate EPD value. During PY2017 and PY2018, KCP&L also redefined contracted CL for many existing customers through thorough onsite visits.

Changes to the fundamental program design cannot be made until Cycle 3. In preparation for a “pay-for-performance” incentive structure, KCP&L continues to focus on real-time data analysis following each DR event and report back to customers with their findings. This ability to measure customers’ event performance will be crucial in calculating performance incentive payments in the program design under consideration for Cycle 3.

In PY2019, the DRI product manager made progress to better manage participants’ event behavior. The results of the PY2019 impact evaluation reveal limitations in what performance improvements are achievable through behavior management due to the fundamental program design. Guidehouse recommends moving to a “pay-for-performance” incentive structure to increase event participation in Cycle 3. As noted earlier, the DRI Product Manager is planning to adopt this recommendation in MEEIA Cycle 3.