



Independent EM&V Audit of the Evergy PY2024 Program Evaluations



Final Report

Submitted by Evergreen Economics

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1 Executive Summary

In 2024, Evergy implemented its Missouri Energy Efficiency Investment Act (MEEIA) Cycle 3 Programs. The MEEIA Cycle 3 Programs covered in this audit are described next.

Residential Programs:

- **Heating, Cooling and Home Comfort** – Designed to help residential customers increase awareness and incorporation of energy efficiency into their homes by providing education and financial incentives. The program encourages home improvements that increase operational energy efficiency and home comfort and consists of three components: 1) Energy Savings Kit (including faucet aerators, showerheads, power strips, and weatherization products), 2) Insulation and Home Sealing (including air sealing, attic insulation, and duct sealing), and 3) HVAC (including heat pumps, central AC, and heat pump water heaters).
- **Energy Saving Products** – The program is designed to promote, cultivate, and facilitate the adoption of energy efficient products in residential homes. It is designed to expand both residential customer and sales associate knowledge of and familiarity with the advantages of various energy efficient products and promote efficient product adoption. Customers receive instant discounts (either upstream rebates or via the Online Marketplace) for a variety of efficient measures including dehumidifiers, air purifiers, LED nightlights, room ACs, and weatherization products.
- **Income-Eligible Multi-Family** – Provides qualifying income-eligible multi-family properties with assistance through energy assessments, program applications, technical support, and equipment upgrade incentives. The program consists of three channels: direct install (LED lighting and water conservation measures), prescriptive (HVAC equipment, appliances, and thermostats), and custom measures (primarily lighting retrofits and smart thermostats).
- **Income-Eligible Single Family** – Targets low-income single-family households through multiple channels. The primary channel is an online Offer Center providing free energy efficient products to customers at or below 200% of federal poverty level, including advanced power strips, foam sealant, weatherization kits, and water conservation kits. Additional channels partner with local agencies to provide home repairs and weatherization upgrades.
- **Pay As You Save (PAYS)** – Supports the adoption of energy efficient equipment in residential homes by offsetting the upfront cost associated with major home improvements and upgrades. Each project approved through the program is designed to be a cost-effective bundle of upgrades, meaning that the estimated savings on customer's monthly bills from the installation of the upgrades must be more than the cost to install

the measures. Customers finance the upgrades through a fixed monthly PAYS charge added to their monthly bills.

- **Urban Heat Island** – A new program launched in 2024 aimed at reducing the AC/heat load associated with buildings in the Independence Avenue Corridor. The program provides shade trees to multi-family properties and partners with the City of Kansas City to plant right-of-way trees in public spaces to reduce urban heat island effects.

Business Programs:

- **Business Standard Program** – 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 include lighting, lighting controls, HVAC equipment, motors, compressed air, water heating, food service equipment, and refrigeration.
- **Business Custom Program** – Offered to all Evergy C&I customers, the program provides incentives for a broad range of projects that do not fit within the Business Standard program. Custom incentives are paid on a per-kilowatt-hour-reduced basis and require pre-approval before equipment purchase and installation.

Demand Response Programs:

- **Business Demand Response** – Provides rebates to C&I customers for curtailing their energy usage during system peak demand periods. When Evergy calls an event, participants reduce their load toward a pre-defined firm power level to create demand savings. Events can be called between June 1 and September 30, Monday through Friday from 12:00 p.m. to 8:00 p.m.
- **Residential Demand Response** – Uses smart thermostat technology to automatically adjust customers' home temperatures during peak demand events. Participants receive incentives for allowing their thermostats to increase setpoints between two- and five-degrees Fahrenheit during called events. Customers receive advance notification and their homes are pre-cooled before events begin.

Products & Services Incubator (Pilot) Programs:

- **Appliance Recycling** – Provides incentives (\$75 for refrigerators/freezers, \$25 for room ACs, dehumidifiers, and air purifiers) to customers for recycling old, working appliances through collection events held throughout the year.
- **Energy-Saving Trees** – Partners with The Arbor Day Foundation and Bridging the Gap to provide free shade trees to residential customers, using iTree software to optimize planting locations for maximum energy savings.

- **Zero Energy Ready New Homes** – Incentivizes builders and raters to construct super-efficient single-family homes meeting ENERGY STAR 3.1 standards, with bonus incentives for achieving Department of Energy Zero Energy Ready Homes standards.

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 contracted with ADM Associates (ADM) to complete the evaluations. ADM conducted comprehensive impact and process evaluations of Evergy Metro’s and Evergy Missouri West’s energy efficiency portfolios in PY2024.

In 2024, the Missouri Public Service Commission (PSC) contracted with Evergreen Economics and Michaels Energy (the Evergreen team) to serve in the capacity of EM&V Auditor.

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.

1.1 Summary of Audit Conclusions and Recommendations

Our audit conclusions and recommendations for PY2024 are provided below.

Net Impacts and Cost Effectiveness Testing. In our review of PY2024, we note that the evaluation continues to use gross impacts for cost effectiveness testing, as specified in the Non-Unanimous Stipulation and Agreement for the Extension Year of 2024. While we understand this approach was formalized through the Stipulation Agreement, we continue to recommend that future program cycles consider incorporating net impacts into cost effectiveness calculations.

The use of net impacts in cost effectiveness testing is considered an evaluation best practice and is specified in the California Standard Practice Manual, which serves as the foundation for Missouri’s cost effectiveness methodology. Including net impacts provides a more accurate picture of the true cost effectiveness of energy efficiency programs by accounting for free ridership and spillover effects. Moreover, using net impacts ensures better accountability to ratepayers by accurately matching program spending to the savings actually caused by the program, rather than crediting programs for savings that would have occurred regardless of the intervention.

We recognize that the current approach may simplify the evaluation process and reduce costs. However, as programs mature and the market transforms, understanding the net impacts becomes increasingly important for making informed decisions about program design and resource allocation.

Verification activities show improvement but remain limited. We acknowledge that PY2024 saw an increase in customer verification activities compared to PY2023. The evaluation team conducted participant surveys for multiple residential programs (HCHC, IEMF, PAYS, and UHI) and interviewed 51 customers across the C&I programs. This represents progress from the very limited verification work noted in our PY2023 review.

However, opportunities remain to strengthen the verification process. The current approach still relies heavily on program tracking data provided by implementers, with limited independent verification of key impact parameters. While customer surveys can verify basic information like fuel types and installation status, they cannot replace more rigorous verification methods for confirming equipment specifications, operating hours, and installation quality.

Statewide TRM needed. For future years, a statewide Technical Reference Manual (TRM) should be developed so that the same reference document is used to calculate savings for both Ameren Missouri and Evergy. Currently there are two separate (but similar) TRM's being used by each utility, even though essentially the same programs are being offered in both territories. Having a single TRM would help ensure that the savings calculations are being done consistently in cases where programs and measures are the same across territories.

2 Introduction

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.¹ 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 reached an agreement to create Evergy Metro’s and Evergy Missouri West’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). MEEIA Cycle 3 began in 2020 and was extended through 2024 via a Non-Unanimous Stipulation and Agreement filed on December 16, 2023.

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.”²

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

¹ The PSC is currently in the process of revising the MEEIA rules.

² 4 CSR 240-22.070(8) Evaluation of Demand-Side Programs and Demand-Side Rates

- 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?
 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 contracted with ADM Associates as the Evaluation, Measurement & Verification (EM&V) contractors to conduct comprehensive impact and process evaluations of Evergy Metro’s and Evergy Missouri West’s energy efficiency portfolio. For Program Year 5 (PY5/2024), ADM evaluated the residential energy efficiency programs, demand response programs, and Products & Services Incubator programs, while also taking over evaluation responsibilities for the business programs from Guidehouse.

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 and Evergy Missouri West program evaluations for PY2024.

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; 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.

3 Impact Evaluation Summary

3.1 Summary of Impact Evaluation Methods

ADM followed the Missouri Code of State Regulations 4 CSR-240-22-070 (8), completing impact evaluations for each Every Metro and Every Missouri West program that reported energy savings in 2024. Missouri regulations state that programs should be evaluated using one or both methods and one or both 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.”

ADM conducted the impact evaluation for both the commercial sector programs (Business Standard, Business Custom) and all residential programs. For the commercial programs, gross savings estimates were developed by conducting a census review of participant tracking data, reviewing project-specific documentation including specification sheets, invoices and custom calculators, and conducting customer interviews with 51 participants to verify key parameters such as operating hours, building types, and measure quantities. The final gross savings values were calculated using the savings algorithms prescribed in the Every TRM for standard measures and custom algorithms for project-specific applications.

For the residential and low-income sector programs, ADM reviewed the participant tracking data and calculated the final realized *ex post* savings using the algorithms from the Every TRM. Participant surveys were conducted for HCHC, IEMF, PAYS, and UHI programs to verify measure installation and fuel types, while other programs relied on tracking data review.

For the demand response programs, ADM calculated impacts using 15-minute interval meter (AMI) data, comparing participants' actual usage during called events with modeled baseline consumption. For the Business Demand Response program, multiple customer baseline (CBL) models were tested, while the Residential Demand Response program used both regression models and CBL approaches, selecting the baseline with the lowest bias and error.

3.1.1 Net-to-Gross Calculation Methods

Under the current Stipulation Agreement, there was no net impact evaluation research conducted in PY2024. According to the Non-Unanimous Stipulation and Agreement for the Extension Year of 2024, there was no net-to-gross (NTG) analysis for the MEEIA programs in PY5.

The evaluation report states that "verified gross impact values were used for cost effectiveness calculations." The Stipulation Agreement did specify deemed NTG ratios for throughput disincentive forecasting purposes only: a 50 percent NTG factor for all residential (including income-eligible) and business heating, ventilating and air conditioning (HVAC) measures, and an 80 percent NTG factor for all other measures.³

Since no NTG analysis was conducted in PY2024, net impacts were not calculated or reported in the evaluation results. All savings reported in the evaluation are gross savings, and all cost effectiveness calculations used gross rather than net savings values.

Additionally, for low income (i.e., income-eligible) and demand response programs, a NTG of 1.0 is typically used.

3.2 Summary of Impact Evaluation Results

The PY2024 gross and net impacts for the Evergy Metro and Evergy Missouri West's program portfolios are summarized below based on the ADM evaluation reports. These impact components shown in these tables are defined as follows:

- **Ex Ante Gross Savings:** Annualized savings reported by Evergy Metro and Evergy Missouri West or calculated using tracked program activity to TRM savings values.
- **Ex Post Gross Savings:** Annualized savings calculated and provided by the evaluation team.

The audit cannot estimate *ex post* net savings, as was done in the past, because the Stipulation Agreement establishes NTG ratios by measure and not by program.

³ While NTG is typically calculated, for low income (i.e., income-eligible) and demand response programs, a NTG of 1.0 is typically used.

Table 1 and Table 2 show the energy and demand impacts for Evergy Metro's programs. The gross impact results and realization rates are taken from the evaluation report. For the PY2024 Evergy Metro programs, total *ex post* gross savings were 32,193,641 kWh (93 percent of total *ex ante* gross savings) and 26,774 kW (91 percent of *ex ante* gross savings).

Table 1: Evergy Metro Portfolio Energy Savings in PY2024, kWh

Program	<i>Ex Ante</i> Gross Savings	<i>Ex Post</i> Gross Savings	Gross Realization Rate
Business Standard Program	12,160,937	10,553,461	87%
Business Custom Program	12,852,454	13,394,910	104%
Total Commercial Portfolio	25,013,391	23,948,371	96%
Heating, Cooling and Home Comfort	3,942,053	3,538,102	90%
Energy Saving Products	2,721,267	1,999,243	73%
Income-Eligible Multi-Family	2,181,812	2,127,653	98%
Income-Eligible Single Family	390,307	318,233	82%
Pay As You Save	123,824	110,442	89%
Urban Heat Island	36,879	24,323	66%
Total Residential Portfolio	9,396,142	8,117,996	86%
Appliance Recycling	21,177	11,640	55%
Energy-Saving Trees	23,760	10,201	43%
Zero Energy Ready New Homes	28,120	9,603	34%
Total Pilot Portfolio	73,057	31,444	43%
Residential Demand Response	95,830	95,830	100%
Business Demand Response	0	0	N/A
Total Demand Response Portfolio	95,830	95,830	100%
Total Portfolio	34,578,420	32,193,641	93%

Table 2: Evergy Metro Portfolio Demand Savings in PY2024, kW

Program	Ex Ante Gross Savings	Ex Post Gross Savings	Gross Realization Rate
Business Standard Program	2,769.63	2,411.71	87%
Business Custom Program	2,467.43	2,697.53	109%
Total Commercial Portfolio	5,237.06	5,109.24	98%
Heating, Cooling and Home Comfort	2,374.69	2,515.10	106%
Energy Saving Products	182.98	186.43	102%
Income-Eligible Multi-Family	291.06	388.71	134%
Income-Eligible Single Family	52.14	33.54	64%
Pay As You Save	46.46	40.83	88%
Urban Heat Island	42.18	25.76	61%
Total Residential Portfolio	2,989.51	3,190.37	107%
Appliance Recycling	3.99	2.22	56%
Energy-Saving Trees	0	15*	N/A
Zero Energy Ready New Homes	2.78	2.49	90%
Total Pilot Portfolio	6.77	19.71*	291%*
Residential Demand Response	3,281.31	3,447.77	105%
Business Demand Response	17,840.87	15,006.88	84%
Total Demand Response Portfolio	21,122.18	18,454.65	87%
Total Portfolio	29,355.52	26,773.97*	91%

* Due to rounding of the 15kW reported for *ex post* gross savings from Energy-Saving Trees, these values do not match the EM&V report.

Table 3 and Table 4 show the impact results for the PY2024 Evergy West programs. As before, the gross impact results and realization rates are taken from the evaluation report. The audit team was unable to calculate the realized *ex post* net impacts using the NTG ratios from the Stipulation Agreement because they are applied at the measure level and not program level. For the PY2024 Evergy West programs, total *ex post* gross savings were 38,469,203 kWh (97 percent of total *ex ante* gross savings) and 29,880 kW (89 percent of *ex ante* gross savings).

Table 3: Evergy MO West Portfolio Energy Savings in PY2024, kWh

Program	<i>Ex Ante</i> Gross Savings	<i>Ex Post</i> Gross Savings	Gross Realization Rate
Business Standard Program	15,778,377	14,318,393	91%
Business Custom Program	13,915,459	16,013,964	115%
Total Commercial Portfolio	29,693,836	30,332,357	102%
Heating, Cooling and Home Comfort	6,389,175	5,289,745	83%
Energy Saving Products	2,623,690	1,947,441	74%
Income-Eligible Multi-Family	118,623	225,745	190%
Income-Eligible Single Family	406,469	331,820	82%
Pay As You Save	172,033	163,258	95%
Urban Heat Island	0	0	N/A
Total Residential Portfolio	9,709,990	7,958,009	82%
Appliance Recycling	32,123	11,914	37%
Energy-Saving Trees	0	0	N/A
Zero Energy Ready New Homes	63,365	28,543	45%
Total Pilot Portfolio	95,488	40,457	42%
Residential Demand Response	138,750	138,380	100%
Business Demand Response	0	0	N/A
Total Demand Response Portfolio	138,750	138,380	100%
Total Portfolio	39,638,064	38,469,203	97%

Table 4: Evergy MO West Portfolio Demand Savings in PY2024, kW

Program	Ex Ante Gross Savings	Ex Post Gross Savings	Gross Realization Rate
Business Standard Program	3,170.03	3,190.44	101%
Business Custom Program	2,498.09	3,129.62	125%
Total Commercial Portfolio	5,668.12	6,320.06	112%
Heating, Cooling and Home Comfort	3,299.36	3,414.17	103%
Energy Saving Products	161.79	169.94	105%
Income-Eligible Multi-Family	21.07	42.81	203%
Income-Eligible Single Family	54.58	35.11	64%
Pay As You Save	53.58	47.49	89%
Urban Heat Island	0	0	N/A
Total Residential Portfolio	3,590.38	3,709.52	103%
Appliance Recycling	5.81	2.25	39%
Energy-Saving Trees	0	0	N/A
Zero Energy Ready New Homes	0	6.21	N/A
Total Pilot Portfolio	5.81	8.46	146%
Residential Demand Response	4,148.61	4,104.75	99%
Business Demand Response	20,209.65	15,737.53	78%
Total Demand Response Portfolio	24,358.26	19,842.28	81%
Total Portfolio	33,622.57	29,880.32	89%

4 Process Evaluation Summary

In accordance with the current Stipulation Agreement and associated EM&V budget constraints, limited process evaluation activities were conducted for PY2024 programs. ADM completed a full process evaluation only for the new Urban Heat Island program that involved interviews with program staff, implementation contractors, and partners from the City of Kansas City and the Housing Authority of Kansas City.

Additionally, ADM conducted participant surveys for several programs to support impact evaluation activities. These surveys focused on verifying measure installation, fuel types, and collecting customer satisfaction data for the Heating, Cooling and Home Comfort, Income-Eligible Multi-Family, Pay As You Save, and Appliance Recycling programs. Customer interviews were also conducted for the Business Standard and Business Custom programs to verify key operational parameters.

Lastly, ADM provided responses to the five regulatory process evaluation questions for the residential and demand response programs based on ongoing program awareness and evaluation research from prior years.

The limited process evaluation work for PY2024 (and PY2023) represents a significant reduction from prior program years when full process evaluations were conducted across the portfolio. This reduction in evaluation scope was consistent with the Stipulation Agreement but limits insights into program operations, market barriers, and opportunities for improvement.

In prior years, the requirements for process evaluations were set by the Public Service Commission in 4 CSR 240-22.070(8)⁴ that involved providing responses to five process evaluation questions for each program:

- **Question 1:** What are the primary market imperfections common to the target market segment?
- **Question 2:** Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?
- **Question 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?

⁴ Rules of Department of Economic Development, Division 240 - Public Service Commission, Chapter 22 - Electric Utility Resource Planning. 2011. <https://www.sos.mo.gov/cmsimages/adrules/csr/current/4csr/4c240-22.pdf>

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

5 Review of Cost Effectiveness

ADM analyzed program cost effectiveness using the five-standard benefit-cost tests that cover a range of different stakeholder perspectives:

- **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.

These tests historically have been conducted so they are consistent with the 2001 California Standard Practice Manual (SPM).⁵ As noted earlier, however, this is no longer the case (since PY2023) due to the use of gross impacts rather than net impacts for the benefit calculations. This results in cost effectiveness for these programs to be overstated, as the kWh and kW savings benefits are inflated through not using *ex post* net savings, but rather using *ex post* gross savings.

Table 5 and Table 6 show the cost effectiveness test results from the evaluation reports for Every Metro and Every West, respectively, comparing PY2023 with PY2024. The Evergreen team also reviewed summary findings from the portfolio report and compared them to the values in Appendix Q to confirm that the cost effectiveness test details that were provided in the main report matched those included in the model output files.

⁵ California Public Utilities Commission. October 2001. "California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects." https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/utilities_and_industries/energy_electricity_and_natural_gas/cpuc-standard-practice-manual.pdf

Table 5: Evergy Metro Cost Effectiveness Test Results by Year

Program	TRC		SCT		UCT		PCT		RIM	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
Business EER - Standard	1.19	1.55	1.5	1.90	2.28	2.49	1.88	2.70	0.59	0.62
Business EER - Custom	0.97	13.37	1.24	16.43	3.49	3.86	1.25	299.80	0.69	0.66
Energy Saving Products	0.32	3.52	0.38	485	0.32	3.50	2.78	13.75	0.19	0.37
Heating, Cooling and Home Comfort	1.06	1.10	1.32	1.36	1.33	1.27	3.66	3.37	0.37	0.39
Income-Eligible Multi-Family	2.28	1.41	2.51	1.72	0.86	0.74	7.76	12.36	0.39	0.37
Income-Eligible Single Family	3.83	0.69	4.31	0.85	1.92	0.69	20.44	6.26	0.36	0.24
Pay As You Save	0.28	0.15	0.35	0.18	0.31	0.09	5.63	9.80	0.19	0.08
Business Demand Response	1.27	1.04	1.27	1.04	0.75	0.54	-	-	0.75	0.54
Residential Demand Response	1.23	1.97	1.43	2.29	0.68	0.97	7.52	26.89	0.49	0.91

Table 6: Evergy West Cost Effectiveness Test Results, by Year

Program	TRC		SCT		UCT		PCT		RIM	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
Business EER - Standard	1.39	1.61	1.72	1.99	2.22	2.39	2.44	3.06	0.57	0.57
Business EER - Custom	0.92	11.57	1.14	14.20	2.14	4.01	1.45	260.67	0.6	0.61
Energy Saving Products	0.42	3.16	0.51	4.34	0.39	3.15	3.14	11.57	0.21	0.37
Heating, Cooling and Home Comfort	1.08	1.08	1.36	1.32	1.41	1.32	3.06	2.81	0.42	0.43
Income-Eligible Multi-Family	0.74	0.26	0.83	0.30	0.3	0.18	14.56	8.96	0.2	0.14
Income-Eligible Single Family	4.97	0.79	5.52	0.97	2.59	0.79	19.92	5.65	0.37	0.26
Pay As You Save	0.27	0.19	0.33	0.24	0.29	0.12	6.83	11.09	0.18	0.10
Business Demand Response	2.39	0.98	2.39	0.98	0.93	0.51	-	-	0.93	0.51
Residential Demand Response	1.34	2.36	1.56	2.75	0.73	1.08	7.24	21.30	0.56	1.01

6 Audit Conclusions

The audit conclusions and recommendations for PY2024 are provided below.

Net Impacts and Cost Effectiveness Testing. In our review of PY2024, we note that the evaluation continues to use gross impacts for cost effectiveness testing, as specified in the Non-Unanimous Stipulation and Agreement for the Extension Year of 2024. While we understand this approach was formalized through the Stipulation Agreement, we continue to recommend that future program cycles consider incorporating net impacts into cost effectiveness calculations.

The use of net impacts in cost effectiveness testing is considered an evaluation best practice and is specified in the California Standard Practice Manual, which serves as the foundation for Missouri's cost effectiveness methodology. Including net impacts provides a more accurate picture of the true cost effectiveness of energy efficiency programs by accounting for free ridership and spillover effects. Moreover, using net impacts ensures better accountability by accurately matching program spending to the savings actually caused by the program, rather than crediting programs for savings that would have occurred regardless of the intervention.

The current approach creates several concerns:

- Overstated cost effectiveness: Programs appear more cost-effective than they actually are when gross savings are used.
- Inconsistent application: While gross impacts (100%) are used for cost effectiveness testing, lower NTG ratios (50% for HVAC, 80% for other measures) are applied for throughput disincentive calculations, creating an internal inconsistency.
- Reduced transparency: Stakeholders cannot see the true program-attributable benefits relative to ratepayer investments.

We recognize that the current approach may simplify the evaluation process and reduce costs. However, as programs mature and the market transforms, understanding the net impacts becomes increasingly important for making informed decisions about program design and resource allocation. For future program cycles beyond the current Stipulation Agreement period, we encourage stakeholders to revisit this issue and consider:

- Conducting periodic net impact studies to inform program planning, even if deemed values are used for official reporting.
- Using differentiated NTG ratios by program type that reflect market conditions (e.g., maintaining a NTG of 1.0 for low income and demand response while adjusting others based on evaluation findings).

- Applying net impacts in cost effectiveness calculations to ensure results accurately reflect the programs' true resource value and provide transparent accounting of ratepayer investments. At minimum, reporting both gross and net cost effectiveness results to provide full transparency.

This approach would align Missouri's evaluation practices with industry standards while providing more meaningful information for program improvement and regulatory decision-making.

Verification activities show improvement but remain limited. We acknowledge that PY2024 saw an increase in customer verification activities compared to PY2023. The evaluation team conducted participant surveys for multiple residential programs (HCHC, IEMF, PAYS, and UHI) and interviewed 51 customers across the C&I programs. This represents meaningful progress from the very limited verification work noted in our PY2023 review.

However, significant opportunities remain to strengthen the verification process:

- Heavy reliance on implementer data: The current approach still depends primarily on program tracking data provided by implementers, with limited independent verification
- Limited scope of verification: While customer surveys can verify basic information like fuel types and installation status, they cannot confirm equipment specifications, operating conditions, or installation quality
- Missed data collection opportunities: Key parameters affecting savings calculations (existing equipment efficiency, early replacement vs. replace-on-failure, operating hours) are not being systematically collected
- No on-site verification: The evaluation includes no mention of physical inspections, even for large C&I projects where savings impacts are substantial

Enhanced verification activities would strengthen confidence in evaluated savings, provide valuable feedback to program implementers, and ensure ratepayer funds are achieving intended results.

Statewide TRM needed. For future years, a statewide Technical Reference Manual (TRM) should be developed so that the same reference document is used to calculate savings for both Ameren Missouri and Evergy. Currently there are two separate (but similar) TRM's being used by each utility, even though essentially the same programs are being offered in both territories. Having a single TRM would help ensure that the savings calculations are being done consistently in cases where programs and measures are the same across territories.