Evergy Services, Inc. Commercial & Industrial Evaluation, Measurement, and Verification Report – FINAL

MEEIA Cycle 3 – Program Year 3 (2022)

Prepared for:

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How to Use This Report

This report consists of several key pieces:

- **Main Report:** This document, which provides the summary of Guidehouse's evaluation, measurement, and verification (EM&V) analyses and findings by program.
- **Appendices:** The appendices, which consist of a Word document and two Excel files:
  - **Word document:**
    - Detailed findings and recommendations by program
    - Methodology sections for each program that explain (in greater detail than in the main report) the evaluation team's approach to analyzing each program
    - Survey instruments fielded by the evaluation team
  - **Databook:** An Excel file that provides detail on the calculations and inputs used in the engineering analyses and summarizes the EM&V outputs.
  - **Cost-effectiveness results:** An Excel file that provides detail on the inputs and outputs of the cost-effectiveness analysis.

Report Definitions

Note: Definitions provided in this section are limited to terms critical to understanding the values presented in this report.

Reporting Periods

Cycle 2

Refers to programs implemented in program years 2016-2019, which corresponds to April 2016-December 2019.

Cycle 3

Refers to programs implemented in program years 2020-2023, which corresponds to January 2020-December 2023.

Savings Types

Gross Reported Savings

Savings reported in the Evergy Missouri West (Evergy MO West) and Evergy Metro annual reports prior to any evaluation, measurement, and verification (EM&V) ex post gross adjustments and net-to-gross (NTG) adjustments. In previous Guidehouse EM&V reports, gross reported savings were referred to as ex ante gross savings.

Gross Verified Savings

Savings verified through Guidehouse's impact evaluation methods prior to NTG adjustments. In previous EM&V reports, gross verified savings were referred to as ex post gross savings.

Gross Realization Rates

The ratio of gross verified savings to gross reported savings.

Missouri Energy Efficiency Investment Act (MEEIA) Target

Three-year savings target approved by the Missouri Public Service Commission for a given program.

Net Verified Savings

Savings verified through Guidehouse's impact evaluation methods and inclusive of NTG adjustments.

Percentage of MEEIA Target Achieved

The ratio of net verified savings to the MEEIA target; reflects Evergy MO West's and Evergy Metro's overall achievement toward the MEEIA targets.

Net-to-Gross Components

Free Ridership (FR)

The program savings attributable to free riders—i.e., program participants who would have implemented a program measure or practice in the absence of the program.

Participant Spillover (PSO)

The additional energy savings achieved when a program participant—as a result of the program's influence—installs energy efficiency measures or practices outside the efficiency program after having participated.

Nonparticipant Spillover (NPSO)

The additional energy savings achieved when a nonparticipant implements energy efficiency measures or practices as a result of the program's influence (e.g., through exposure to the program) but that are not accounted for in program's gross verified savings.

Billing Analysis Approach to NTG

Approaches to estimating NTG that rely on the use of control groups, either through randomized control trials or quasi-experimental designs (e.g., the use of matching techniques to develop relevant nonparticipant comparison groups), and billing analysis to model participant net savings.

Key Report Sources

The following is a list of the most commonly referenced documents the evaluation team used for this year's analysis.

Illinois Technical Reference Manual Version 10.0. (Illinois TRM v10). https://www.ilsag.info/technical-reference-manual/il-statewide-technical-reference-manual-version-10-0

Illinois Technical Reference Manual Version 9.0. (Illinois TRM v9). https://www.ilsag.info/technical-reference-manual/il-trm-version-9

Illinois Technical Reference Manual Version 8.0. (Illinois TRM v8). https://www.ilsag.info/technical-reference-manual/il_trm_version_8/

Illinois Technical Reference Manual Version 7.0. (Illinois TRM v7). http://www.ilsag.info/il_trm_version_7.html

Evergy MEEIA 3 Technical Resource Manual - 2021-01-01 Update https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=EO-2019-0132&attach_id=2021006918

Missouri Public Service Commission. Missouri Energy Efficiency Investment Act (MEEIA) Rules and the Stipulation and Agreement Issued December 16, 2019.

Missouri Code of State Regulations 20 CSR 4240-22.070 (8).

California Public Utilities Commission. *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects.* October 2001. 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.

Daniel M. Violette and Pamela Rathbun. "Estimating Net Savings: Common Practices," Chapter 23 in *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures*. 2014. http://energy.gov/sites/prod/files/2015/02/f19/UMPChapter23-estimating-net-savings_0.pdf.

Jane Peters and Ryan Bliss. *Common Approach for Measuring Free Riders for Downstream Programs.* Research Into Action. October 4, 2013.

California Public Utilities Commission. "2007 SPM Clarification Memo." 2007. https://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/73172-10.htm.

Guidehouse, Inc. Evaluation, Measurement, and Verification (EM&V) Plan for MEEIA Cycle 3 for Evergy Services, Inc. December 2020.

Rachel Brailove, John Plunkett, and Jonathan Wallach. *Retrofit Economics 201: Correcting Commons Errors in Demand-Side Management Benefit-cost Analysis.* Resource Insight, Inc. Circa 1990.

Acronyms and Abbreviations

C&I	Commercial and Industrial
CFM	Cubic Feet per Minute
CSM	Customer Solution Manager
EM&V	Evaluation, Measurement, and Verification
EUL	Effective Useful Life
FR	Free Rider(ship)
HVAC	Heating, Ventilation, and Air Conditioning
IC	Implementation Contractor
kW	Kilowatt
kWh	Kilowatt-Hour
LED	Light-Emitting Diode
MEEIA	Missouri Energy Efficiency Investment Act
MO	Missouri
NPSO	Nonparticipant Spillover
NTG	Net-to-Gross
O&M	Operations and Maintenance
OBEA	Online Business Energy Audit
PCT	Participant Cost Test
PSO	Participant Spillover
PY	Program Year
RCx	Retrocommissioning
RIM	Ratepayer Impact Measure
RUL	Remaining Useful Life
SCT	Societal Cost Test
SO	Spillover
SPM	Standard Practice Manual
TRC	Total Resource Cost
TRM	Technical Reference Manual
UCT	Utility Cost Test
W	Watts

1. Introduction

In accordance with the Missouri Energy Efficiency Investment Act (MEEIA) Rules and the Stipulation and Agreement, Evergy Services, Inc. (Evergy), on behalf of its affiliates Evergy Missouri West (Evergy MO West) and Evergy Metro, has contracted with Guidehouse to evaluate, measure, and verify the information tracked by Evergy MO West and Evergy Metro for its portfolio of three commercial and industrial (C&I) demand-side management programs and one educational and behavioral program for the 3-year program cycle from January 1, 2020 through December 31, 2022. The following Evergy programs are covered by this evaluation:

- C&I programs:
  - Business Energy Savings Program – Standard (Business Standard program)
  - Business Energy Savings Program – Custom (Business Custom program)
  - Business Energy Savings Program – Process Efficiency (Process Efficiency program)
- Educational and behavioral program:
  - Online Business Energy Audit (OBEA)

Guidehouse conducted the following tasks as part of its impact evaluation, process evaluation, and cost-effectiveness analysis for program year 3 (PY3):

- Evaluate the gross and net energy and peak demand savings from Evergy's energy efficiency C&I programs.
- Evaluate the effectiveness of and develop actionable recommendations to improve the design of Evergy's suite of C&I programs.
- Estimate the cost-effectiveness of Evergy's C&I programs.

The evaluation team consists of Guidehouse and NMR Group, Inc. (NMR). As the primary contractor, Guidehouse is the main point of contact for Evergy and the implementation contractors (ICs). Guidehouse has ultimate responsibility for managing the effort, controlling quality, and confirming deliverables are submitted on time and on budget. NMR led the Process Efficiency and OBEA program evaluations. Throughout this report, this team is referred to as Guidehouse or the evaluation team.

1.1 Document Structure

As agreed to with stakeholders and discussed during the Evergy DSM Advisory Group quarterly meetings (December 7, 2020, and January 27, 2021), Guidehouse is providing a condensed evaluation, measurement, and verification (EM&V) report that presents key impact evaluation findings and recommendations. This report also summarizes the PY3 process evaluation findings that address the five required questions per the Missouri Code of State 20 CSR 4240-22.070 (8) (Missouri regulations). This document is divided into the following sections:

- **Summary of Approaches:** Summarizes the evaluation approaches for the impact evaluation, including the process for using secondary sources. It also includes overviews of the net-to-gross (NTG), cost-effectiveness, and process research approaches.

- **Portfolio Findings and Evaluation Results:** Provides findings and recommendations at the portfolio and sector levels for gross and net savings, cost-effectiveness, and overarching process findings.

In addition to the condensed report, Guidehouse prepared several appendices to accompany the evaluation and provide further insight and documentation:

- **Appendix A. Introduction:** Provides an overview of the evaluation approach, including impact and process evaluation activities and cost-effectiveness.
- **Appendix B. Summary of Program Findings and Recommendations:** Details the findings and recommendations that resulted from each program's evaluation.
- **Appendix C. Cross-Cutting Methodologies:** Covers Guidehouse's overall approach toward cross-cutting methodologies, namely determining cost-effectiveness and NTG savings.
- **Appendix D-G. Program-Specific Methodologies:** Details program-specific impact and process evaluation methodologies, including any differences between the cross-cutting methodologies and those the evaluation team used for each program.
- **Appendix H. Survey Instruments:** Provides detailed survey guides, including participant, trade ally, and supplier interview guides, when applicable.
- **Appendix I. Cost-Effectiveness Data – CONFIDENTIAL:** Excel databook that contains the following:
  - All measure-specific input assumptions.
  - Program-level administrative costs incurred by the program administrator.
  - Detailed benefit and cost breakdowns by cost test and program or portfolio.
- **Appendix J. Excel Databook – CONFIDENTIAL:** Provides additional analytical data and figures for each program and summary results tables for the portfolio.

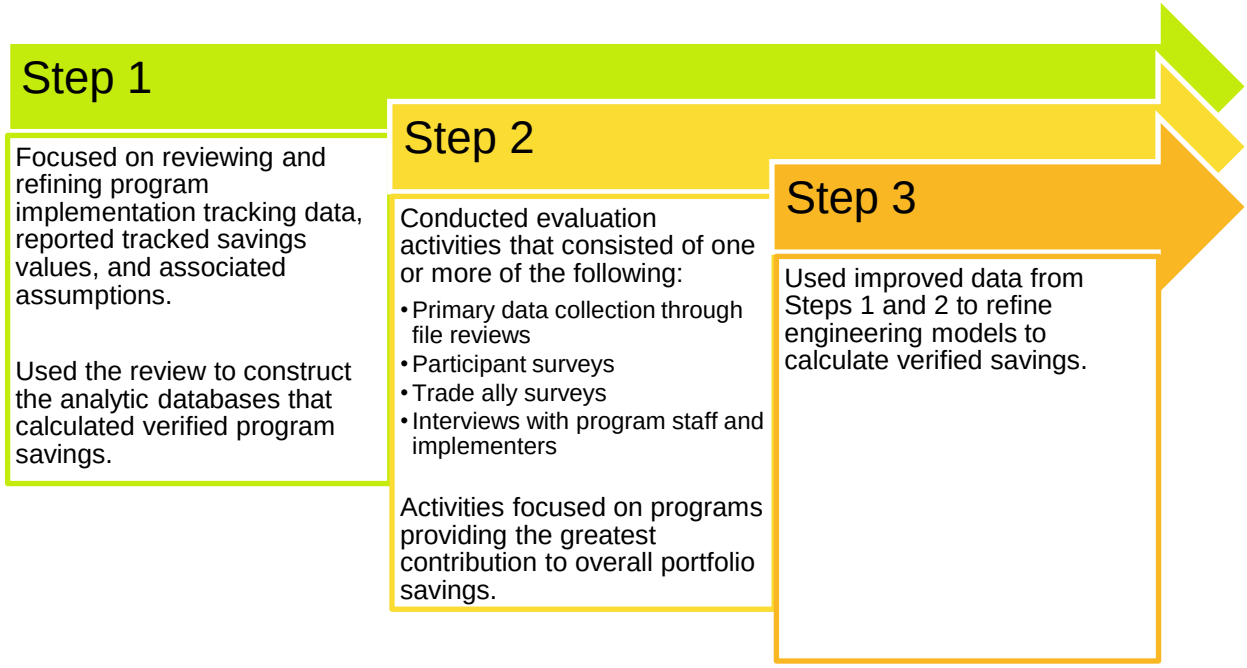
2. Summary of Approaches

The following sections summarize the evaluation team's approach and key methods for gross impact, net savings analysis, and process evaluation.

2.1 Impact Evaluation Approach

The evaluation team employed a variety of methods to evaluate, measure, and verify the energy and demand savings achieved by each of the evaluated programs. The team summarizes the approach for gross impact, net savings analysis, and process evaluation in Figure 2-1.

Figure 2-1. Gross Impact, Net Savings Analysis, and Process Evaluation Approach



Source: Guidehouse analysis

Per Missouri regulations,[1] Evergy Metro and Evergy MO West are required to complete an impact evaluation for each program using one or both of the methods and one or both of the protocols detailed as follows.

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.

[1] Missouri Code of State Regulations 20 CSR 4240-22.070 (8)

b. Comparisons between program and demand-side rate participants' loads and those of an appropriate control group over the same 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

Evaluators are also required to develop protocols to gather information and to provide estimates of program free ridership (FR), spillover (SO), and program NTG ratios.

Table 2-1 summarizes the evaluation team's methods and protocols, as they align with Missouri requirements, for the impact evaluation.

Table 2-1. Missouri Regulations' Impact Evaluation Methods and Protocols

Program		Impact Evaluation Method	Impact Evaluation Protocol
C&I Energy Efficiency Programs	Business Standard Program	1a	2a and 2b
	Business Custom Program	1a	2b
	Process Efficiency Program	1a	2b
Educational and Behavioral Programs	OBEA*	N/A	N/A

*Guidehouse does not recommend conducting an impact evaluation for this program because Evergy does not report savings. However, this type of program would likely be evaluated using 1b and 2a.

Source: Guidehouse analysis

2.1.1 Process for Using Secondary Sources

Evaluation results in MEEIA Cycle 3 reflect findings from research conducted concurrent with each program year. When all stakeholders and Evergy agree, these research findings are applied to current and following program years. For example, in PY3, Guidehouse conducted NTG research for the Business Standard program. The resulting NTG ratio from this research has been applied to PY3 gross savings for the Business Standard Program.

The evaluation team used primary in-state data when possible and when the team agreed with its applicability to Evergy's territories. Primary out-of-state data was used when primary in-state data was not available. Secondary out-of-state data was used when neither reliable primary in-state data or primary out-of-state data were available.

2.1.2 Net-to-Gross

Guidehouse used two primary methods to develop net verified savings for each program in PY3:

- **NTG ratios,** which involved the derivation of NTG components including FR and SO informed by participant and trade ally surveys
- **Deemed NTG estimates,** which applied predetermined estimates that did not warrant data collection or were informed by PY1 or PY2 research

For programs where Guidehouse developed NTG ratios, the components were based on survey data collected from participants and trade allies in PY1, PY2 and PY3 of MEEIA Cycle 3. Guidehouse used the following component definitions, provided by the Uniform Methods Project,[2] to calculate the NTG ratios.

- **FR:** The program savings attributable to free riders—i.e., program participants who would have implemented a program measure or practice in the absence of the program.
- **Participant SO (PSO):** The additional energy savings achieved when a program participant—as a result of the program's influence—installs energy efficient measures or practices outside the efficiency program after having participated.
- **Nonparticipant SO (NPSO):** The additional energy savings achieved when a nonparticipant implements energy efficient measures or practices as a result of the program's influence (for example, through exposure to the program) but that are not accounted for in program savings.

Using these definitions, the evaluation team calculated the NTG ratio as follows in Equation 2-1:

Equation 2-1. NTG Ratio

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

Where:

FR rate = Free ridership rate
PSO rate = Participant spillover rate
NPSO rate = Nonparticipant spillover rate

Participating end-use customers are in the best position to articulate the likelihood they are able to afford the increased efficiency equipment without rebates. Trade allies are best suited to comment on the influences of a program beyond the rebate (such as a program's influence on their technical knowledge, stocking patterns, and typical product specifications and recommendations). Programs that leverage the NTG component method include Business Standard and Business Custom.

To address the EM&V auditor's comments regarding FR estimates, Guidehouse made the following adjustments to its NTG approach in PY3. Relevant changes were included in the PY3 surveys[3]:

- Formalized the sensitivity analysis conducted on "don't know" responses in the FR and SO analyses

[2] Daniel M. Violette and Pamela Rathbun. "Estimating Net Savings: Common Practices," Chapter 23 in *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures*. 2014. http://energy.gov/sites/prod/files/2015/02/f19/UMPChapter23-estimating-net-savings_0.pdf.

[3] Guidehouse sent surveys to PY3 Custom, PY2 and PY3 Process Efficiency participants, and all Process Efficiency Trade Allies. Insufficient responses were received to develop updated NTG ratios for these programs.

- Eliminated FR questions from the trade ally survey
- Added a question to the trade ally NPSO survey asking the trade allies to describe the direct or indirect influences the program had on the high efficiency projects that did not receive program rebates

Additional detail on the NTG approach is provided in Appendix C.2.

2.2 Cost-Effectiveness Approach

Guidehouse calculated benefit-cost ratios and total net benefits at the program and sector levels for the five standard benefit-cost tests: total resource cost (TRC) test, societal cost test (SCT), utility cost test (UCT), participant cost test (PCT), and ratepayer impact measure (RIM) test. Benefit-cost ratios are informative because they show the value of monetary benefits relative to the value of monetary costs as seen from various stakeholder perspectives.

Cost-effectiveness values were calculated using Guidehouse's ProCESS model and leverage Guidehouse-verified EM&V findings including energy and demand impacts, operations and maintenance (O&M) savings, incremental costs, NTG ratios, participation numbers, program administrative costs, and measure lifetimes. Additionally, Evergy energy and demand avoided costs, end-use load shapes, retail rates, discount and inflation rates, and line loss factors were provided by Evergy or characterized by Guidehouse to support cost-effectiveness calculations.

The ProCESS model imports measure, program, and utility data where appropriate to determine granular cost-effectiveness results. These results are then summed to various levels of aggregation to yield ratios and net present value benefits. Where available, program and avoided cost data and discount rates are consistent with those used by Evergy in calculating cost-effectiveness as part of their annual filing. For inputs not accessible through Evergy's planning model, Guidehouse researched inputs consistent with previous Evergy cost-effectiveness evaluations. Guidehouse's ProCESS model formulation of the cost-benefit tests followed the 2001 California Standard Practice Manual (SPM)[4] and does not account for the subsequent 2007 SPM Clarification Memo.[5]

Table 2-2 summarizes how program costs and benefits are assigned to each of the cost tests consistent with the California SPM.

[4] California Public Utilities Commission. *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects*. October 2001. 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.

[5] California Public Utilities Commission. "2007 SPM Clarification Memo." 2007. https://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/73172-10.htm.

Table 2-2. Cost and Benefit Assignments by Cost Test

Item	TRC Test	SCT	UCT	PCT	RIM Test
Avoided Costs	Benefit	Benefit	Benefit	N/A	Benefit
O&M Savings	Benefit	Benefit	N/A	Benefit	N/A
Incentives	Transfer	Transfer	Cost	Benefit	Cost
Lost Revenue	Transfer	Transfer	N/A	Benefit	Cost
Administrative Costs	Cost	Cost	Cost	N/A	Cost
Participant Equip. Costs*	Cost	Cost	N/A	Cost	N/A

*Based on the California SPM, participant equipment costs are net costs for the TRC test and the SCT. Participant equipment costs are gross costs for the PCT.

Source: Guidehouse analysis

2.2.1 Source of Benefit and Cost Assumptions

The sources of data used in the benefit-cost analysis are summarized in Table 2-3. Many of the input assumptions used in Guidehouse's analysis came directly from Evergy. Critical assumptions that differed in the evaluation team's analysis were energy and peak demand savings (derived from verified data rather than reported estimates), NTG ratios, O&M benefits, effective useful life (EUL) and remaining useful life (RUL) values, and participant equipment costs. Reference Appendix I for detailed inputs and outputs from Guidehouse's benefit-cost model.

Table 2-3. Sources of Benefit and Cost Data

Data*	Source
Avoided energy costs	Provided by Evergy
Avoided capacity costs	Provided by Evergy
Retail rates	Provided by Evergy
Load shapes	Developed by Guidehouse
Discount rates	Provided by Evergy and classified by Evergy as highly confidential
O&M savings	Guidehouse analysis
Participant equipment costs	Business Standard Program: Illinois Technical Reference Manual (TRM) and Evergy-prescribed values Business Custom program: Incremental or total project cost as reported in the tracking database. The IC determines which type of cost is most appropriate given the type of project. Incremental cost used for major renovation grow facility projects. Process Efficiency: Total project cost as reported in the tracking database
Energy and peak demand savings	Guidehouse engineering analyses
EUL	Illinois TRM, program tracking data, Evergy-prescribed values
RUL	Guidehouse analysis based on lifetime of replaced equipment and related mortality analysis techniques
NTG	Guidehouse NTG analysis

Data*	Source
Line loss factors	Provided by Evergy
Incentives	Program tracking database
Participation	Program tracking database
Administrative costs	Provided by Evergy

*Guidehouse does not provide the avoided energy and capacity costs in this report because they are confidential to Evergy.

Source: Guidehouse analysis

2.3 Process Evaluation Approach

The evaluation team's process evaluation focused on addressing the five required questions per the Missouri regulations (shown in Figure 2-2) and identifying program process improvements to increase program participation and savings.

Figure 2-2. Five Required Questions per Missouri Regulations

Source: Guidehouse analysis

In PY3, Guidehouse performed the activities shown in Figure 2-3 to inform its process evaluation:

Figure 2-3. Process Evaluation Activities

Source: Guidehouse analysis

The evaluation team summarized findings for the Missouri-required process evaluation questions across all programs. PY3 program-specific process findings and recommendations are provided in Appendix B.

2.4 PY3 Evaluation Research Summary

This section presents Guidehouse's evaluation approach for the impact evaluation, process evaluation, and NTG research in PY3.

2.4.1 Gross Impact Evaluation Summary

The evaluation team employed a variety of methods to evaluate, measure, and verify energy and demand savings achieved by each of Evergy's C&I energy efficiency demand-side management programs in PY3.

2.4.1.1 Impact Evaluation Methods

Guidehouse followed impact evaluation and data collection methods as required by the Missouri regulations.

The team employed the evaluation methods shown in Table 2-4 with varying levels of rigor and different objectives to evaluate the impacts of Evergy's C&I programs.

Table 2-4. Summary of Impact Evaluation Activities

Sector	Program	Tracking System and Database Review	Deemed Savings Review	Analytic Database Development and Engineering Analysis	Desk/ Phone Review
C&I Programs	Business Custom Program	All Programs		✓	✓
	Business Standard Program		✓	✓	
	Process Efficiency Program		✓	✓	
Educational and Behavioral Programs	OBEA	No expected savings claimed in MEEIA Cycle 3			

Source: Guidehouse

- **Tracking system and database review.** Guidehouse reviewed program implementation databases and identified additional data required for calculating gross energy and demand savings.
- **Deemed savings review.** The evaluation team reviewed the algorithms and assumptions supporting current reported savings for all programs and measures. The team leveraged recent EM&V reports and other secondary sources for similar programs and measures to identify the operating characteristics that best reflect Evergy's service territories and program designs. These operating characteristics include hours of use, coincidence factors, and installation rates.
- **Analytic database development and engineering analysis.** Guidehouse updated the analysis tools that calculate savings based on engineering algorithms and project-specific equipment specifications and performance data provided in the implementation databases. The evaluation team's research from the MEEIA Cycle 2 through MEEIA Cycle 3 PY2 period was used to update these analytic databases.

  These savings verification tools will provide Evergy with an indication of how reported savings are tracking against verified values.
- **Desk/phone review.** For custom measures without deemed savings, the evaluation team conducted a thorough review of the reported savings models used to estimate impacts. The results of this review resulted in refinements to the algorithm, refinements to inputs to the algorithm, or an entirely new engineering model. The team reviewed the algorithms and assumptions supporting reported savings for all programs and leveraged recent EM&V reports and other secondary sources for similar programs and measures to identify the operating characteristics that best reflect the Evergy service territories and program designs. These operating characteristics include hours of use, coincidence factors, and installation rates.

2.4.2 Process Evaluation Summary

The primary objective of the process evaluation was to help program designers and managers structure their programs to achieve cost-effective energy savings while maintaining high levels of customer and trade ally program satisfaction. Timely process evaluations are critical for ensuring that:

- Each program is implemented effectively and efficiently.

- Appropriate performance metrics are being collected for ongoing program management decision-making and for program evaluation.
- Customer and trade ally marketing, recruitment, and onboarding processes support Evergy's long-term goal attainment.

Leveraging insights from the past two MEEIA Cycles, MEEIA Cycle 3 PY1 and PY2, and the team's online survey approach, Guidehouse's process evaluation efforts provide insights and recommendations to improve the future performance of each program and to ensure the reliability of inputs to the impact evaluation in a timely manner.

The evaluation team implemented process evaluation research in tandem with the impact evaluation efforts to coordinate data collection efforts and capture operational efficiencies to the greatest extent possible. Such integration enabled the team to make a closer link between the observed program impacts and the actual operation of the programs. It has the added benefit of minimizing the number of times respondents are contacted by the evaluation effort (i.e., minimize respondent fatigue).

For each program, Guidehouse's process evaluation activities for PY3 consisted of program manager/IC interviews and a review of new program material and information. The evaluation team conducted participant surveys for the Business Standard program and trade ally surveys for the Business Standard and Business Custom programs.

- **Program manager/IC interviews.** Each program's process evaluation included an in-depth, qualitative interview with Evergy program staff and ICs. Guidehouse used these interviews to gain an understanding of program design, procedures, implementation strategies, and current issues for each program. The evaluation team also used the interviews to identify research topics to include in potential future trade ally and customer surveys and to discuss available program materials (e.g., marketing and outreach materials, print and radio advertising copy) that can be used to support the evaluation.
- **Review of program information.** The evaluation team also reviewed new or updated program materials including application forms, marketing and outreach materials, web-based promotional content, point of purchase materials, print and radio advertising copy, and any cooperative marketing materials. This review helped to continue understanding how the programs are being marketed, determine whether the materials are complete, and explore other efforts that could improve program participation and manage levels of FR to the extent these issues are observed.
- **Participant and trade ally surveys.** Guidehouse conducted participant surveys for the Business Standard program, the Business Custom program, and the Process Efficiency program. The evaluation team leveraged the surveys developed in MEEIA Cycle 2 and MEEIA Cycle 3 PY1 with some modifications as recommended by the auditor to develop a NTG ratio for the Business Standard and Business Custom programs. Guidehouse developed a new survey for the Process Efficiency program. Trade ally surveys were conducted in PY3 for the Process Efficiency program. Insufficient responses were received to the Business Custom and Process Efficiency participant survey and the Process Efficiency trade ally survey to develop updated NTG ratios for these programs for PY3. Guidehouse leveraged the NTG ratio developed for the Business Custom program for PY2 to determine the net savings for the PY3 Process Efficiency program.

Table 2-5 summarizes the process evaluation activities that Guidehouse conducted in PY3.

Table 2-5. Summary of Process Evaluation Activities

Sector	Program	Program Manager/IC Interviews	Review of Program Information	Participant Surveys*	Trade Ally Surveys*
C&I Programs	Business Custom Program	All programs	All programs	✓	
	Business Standard Program			✓	
	Process Efficiency Program			✓	✓
Educational and Behavioral Programs	OBEA				

Source: Guidehouse
** Insufficient responses were received to the Business Custom and Process Efficiency participant survey and the Process Efficiency trade ally survey to develop updated NTG ratios for these programs for PY3.*

2.4.3 Net-to-Gross PY3 Research Summary

The Business Custom program applied a NTG ratio based on the FR and PSO values developed in MEEIA Cycle 3 PY1 and augmented by the addition of a NPSO value from the trade ally survey conducted in PY2. The Business Standard program applied a NTG ratio developed in PY3 informed by PY3 participant surveys and augmented by the addition of a NPSO value from the trade ally survey conducted in PY2. The evaluation team applied the Business Custom program NTG ratio developed in PY2 to the Process Efficiency program savings in PY3.

Guidehouse calculated net verified savings by multiplying gross verified savings by the NTG ratio. The evaluation team characterized savings as reported and verified. Reported savings represent project savings estimated at the time of measure installation and reported in the program tracking database. Verified savings represent energy savings verified at the time of the evaluation.

3. Portfolio Findings and Evaluation Results

The following sections summarize the evaluation team's findings in PY3 and for MEEIA Cycle 3 to date.

3.1 Gross and Net Impact Savings Summary

This section summarizes the gross and net savings achievements of the Evergy C&I energy efficiency portfolio for PY3 and the cumulative achievements for MEEIA Cycle 3 to date.

Table 3-1 and Table 3-2 indicate the portfolio achieved 31% of its 3-year energy target and 45% of its 3-year demand target in PY3. For energy, Evergy Metro and Evergy MO West achieved 24% and 40% of the target, respectively. For demand, Evergy Metro and Evergy MO West achieved 32% and 65% of the target, respectively.

Table 3-1. PY3 Energy Savings at the Customer Meter by Territory

Sector	Gross			Net		
	Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA Cycle 3 3-Year Target (kWh)	Verified PY3 Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
Evergy Metro	29,066,893	28,125,314	97%	103,671,720	25,004,403	24%
Evergy MO West	37,536,573	35,316,974	94%	77,133,113	30,722,710	40%
Evergy Total	**66,603,466**	**63,442,288**	**95%**	**180,804,833**	**55,727,113**	**31%**

Source: Guidehouse analysis

Table 3-2. PY3 Demand Savings at the Customer Meter by Territory

Sector	Gross			Net		
	Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA Cycle 3 3-Year Target (kW)	Verified PY3 Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
Evergy Metro	5,522	4,814	87%	13,538	4,273	32%
Evergy MO West	11,118	6,948	62%	9,328	6,032	65%
Evergy Total	**16,640**	**11,762**	**71%**	**22,866**	**10,305**	**45%**

Source: Guidehouse analysis

Table 3-3 and Table 3-4 indicate the portfolio has achieved 80% of its 3-year energy target and 115% of its 3-year demand target as of the close of PY3. For energy, Evergy Metro and Evergy MO West achieved 70% and 95% of the target, respectively. For demand, Evergy Metro and Evergy MO West achieved 96% and 142% of the target, respectively. The C&I energy efficiency portfolio fell short of achieving its 3-year MEEIA energy savings target but achieved its demand savings target at the conclusion of the cycle.

Table 3-3. MEEIA Cycle 3 to Date Energy Savings at the Customer Meter by Territory

Sector	Gross			Net		
	Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA Cycle 3 3-Year Target (kWh)	Verified 3 - Year Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
Evergy Metro	81,813,903	83,340,801	102%	103,671,720	72,110,659	70%
Evergy MO West	86,241,928	84,920,344	98%	77,133,113	73,126,861	95%
Evergy Total	**168,055,831**	**168,261,145**	**100%**	**180,804,833**	**145,237,520**	**80%**

Source: Guidehouse analysis

Table 3-4. MEEIA Cycle 3 to Date Demand Savings at the Customer Meter by Territory

Sector	Gross			Net		
	Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA Cycle 3 3-Year Target (kW)	Verified 3 - Year Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
Evergy Metro	15,775	15,054	95%	13,538	12,985	96%
Evergy MO West	20,788	15,329	74%	9,328	13,213	142%
Evergy Total	**36,564**	**30,384**	**83%**	**22,866**	**26,199**	**115%**

Source: Guidehouse analysis

Guidehouse has summarized the key PY3 and cumulative MEEIA Cycle 3 impact findings—first for Evergy Metro, then for Evergy MO West.

3.1.1 Evergy Metro Impact Results

In PY3, the C&I energy efficiency portfolio achieved 28,125,314 kWh and 4,814 kW in gross energy and demand savings at the customer meter. This corresponds to gross realization rates of 97% and 87%, respectively. The portfolio achieved 25,004,403 kWh and 4,273 kW in net verified energy and demand savings. This corresponds to the portfolio achieving approximately 24% and 32% of its 3-year MEEIA Cycle 3 energy and demand targets, respectively, in PY3. When considering MEEIA Cycle 3 to date, the portfolio achieved approximately 70% and 96% of its 3-year energy and demand targets, respectively.

Table 3-5 and Table 3-6 provide energy and demand evaluation findings for the Evergy Metro territory in PY3. Table 3-7 and Table 3-8 provide energy and demand evaluation findings for the Evergy Metro territory for MEEIA Cycle 3 to date.

Gross Energy Savings in PY3:
28,125,314 kWh

Gross Demand Savings in PY3:
4,814 kW

Gross Energy Savings in MEEIA Cycle 3 to date:
83,340,801 kWh

Gross Demand Savings in MEEIA Cycle 3 to date:
15,054 kW

The following points highlight key PY3 impact findings.

- **The Business Standard program achieved 31% and 33% of its 3-year MEEIA Cycle 3 targets for energy and demand, respectively.** This program represented approximately 63% of verified gross energy savings and approximately 62% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy Metro. The Business Standard program had realization rates of 91% and 86% for energy and demand, respectively. The energy and demand realization rates for the Business Standard program was driven primarily by adjustments to lighting measures, HVAC and cooling end-use measures. For the lighting measures, Guidehouse adjusted efficient fixture wattages based on the tracking database. For one new measure, Interior LED Fixture Replacing >850W HID Fixture, the tracking database indicated that many of these high wattage interior LED fixtures had a higher wattage than the assumed efficient wattage used to calculate deemed savings in the MEEIA TRM, resulting in lower savings than reported.

  The evaluation team also used verified waste heat factors and hours of operation by building type to calculate energy savings, contributing to the energy savings realization rate as well. The team adjusted the demand savings methodology for the HVAC and cooling end-use measures to align with the Illinois TRM v10. and used verified waste heat factors and coincidence factors by building type for lighting measures. These changes all contributed to the demand realization rate.

Net Energy Savings in PY3:
25,004,403 kWh

Net Demand Savings in PY3:
4,273 kW

Net Energy Savings in MEEIA Cycle 3 to date:
72,110,659 kWh

Net Demand Savings in MEEIA Cycle 3 to date:
12,985 kW

- **The Business Custom program achieved 28% and 31% of its 3-year MEEIA Cycle 3 target for energy and demand, respectively.** This program represented approximately 37% of verified gross energy savings and approximately 38% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy Metro. It has continued to drive participation in a diverse selection of end uses, particularly grow facility lighting and HVAC. The Business Custom program had realization rates of 108% and 89% for energy and demand, respectively. Realization rates were primarily driven by updates made to the baseline lighting inputs for indoor agriculture lighting projects using the Guidehouse Indoor Horticulture Baseline Memo and changes to baseline code assumptions.

  The evaluation team also conducted an engineering analysis for demand savings, whereas the IC applied a deemed demand factor to the energy savings. For non-lighting measures, the team applied 8,760 hourly weather data to capture impacts based on time of day and seasonality.

- **The Process Efficiency program completed two projects in PY3 after no participation in PY1 or PY2 due to slow program rollout driven by the COVID-19 pandemic.** This program represented approximately 0.09% of verified gross energy savings and approximately 0.08% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy Metro. The Process Efficiency program had realization rates of 100% for both energy and demand.

Table 3-5. PY3 Energy Savings at the Customer Meter, Evergy Metro

Sector	Program	Gross			Net		
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA 3-Year Target (kWh)	Verified PY3 Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	19,457,155	17,716,799	91%	53,977,377	16,512,056	31%
	Business Custom Program	9,584,681	10,383,458	108%	30,239,803	8,472,901	28%
	Process Efficiency Program	25,058	25,058	100%	19,454,539	19,445	0.1%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy Metro Total		**29,066,893**	**28,125,314**	**97%**	**103,671,720**	**25,004,403**	**24%**

Source: Guidehouse analysis

Table 3-6. PY3 Coincident Demand Savings at the Customer Meter, Evergy Metro

Sector	Program	Gross			Net		
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA 3-Year Target (kW)	Verified PY3 Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	3,460	2,974	86%	8,523	2,772	33%
	Business Custom Program	2,058	1,836	89%	4,834	1,498	31%
	Process Efficiency Program	4	4	100%	182	3	1.7%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy Metro Total		**5,522**	**4,814**	**87%**	**13,538**	**4,273**	**32%**

Source: Guidehouse analysis

Table 3-7. MEEIA Cycle 3 to Date Energy Savings at the Customer Meter, Evergy Metro

Sector	Program	Gross			Net		
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA 3-Year Target (kWh)	Verified 3-Year Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	46,837,410	45,568,218	97%	53,977,377	41,494,036	77%
	Business Custom Program	34,951,435	37,747,524	108%	30,239,803	30,597,177	101%
	Process Efficiency Program	25,058	25,058	100%	19,454,539	19,445	0.1%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy Metro Total		**81,813,903**	**83,340,801**	**102%**	**103,671,720**	**72,110,659**	**70%**

Source: Guidehouse analysis

Table 3-8. MEEIA Cycle 3 to Date Coincident Demand Savings at the Customer Meter, Evergy Metro

Sector	Program	Gross			Net		
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA 3-Year Target (kW)	Verified 3-Year Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	8,843	7,855	89%	8,523	7,152	84%
	Business Custom Program	6,929	7,195	104%	4,834	5,830	121%
	Process Efficiency Program	4	4	100%	182	3	1.7%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy Metro Total		**15,775**	**15,054**	**95%**	**13,538**	**12,985**	**96%**

Source: Guidehouse analysis

3.1.2 Evergy MO West Impact Results

In PY3, the C&I energy efficiency portfolio achieved 35,316,974 kWh and 6,948 kW in gross energy and demand savings at the customer meter. This corresponds to gross realization rates of 94% and 62%, respectively. The portfolio achieved 30,722,710 kWh and 6,032 kW in net verified energy and demand savings. This corresponds to the portfolio achieving approximately 40% and 65% of its 3-year MEEIA Cycle 3 energy and demand targets, respectively, in PY3. When considering MEEIA Cycle 3 to date, the portfolio achieved approximately 95% and 142% of its 3-year energy and demand targets, respectively.

Gross Energy Savings in PY3:
35,316,974 kWh

Gross Demand Savings in PY3:
6,948 kW

Gross Energy Savings in MEEIA Cycle 3 to date:
84,920,344 kWh

Gross Demand Savings in MEEIA Cycle 3 to date:
15,329 kW

Table 3-9 and Table 3-10 provide energy and demand evaluation findings for the Evergy MO West territory in PY3. Table 3-11 and Table 3-12 provide energy and demand evaluation findings for the Evergy MO West territory for MEEIA Cycle 3 to date.

The following points highlight key PY3 impact findings.

- **The Business Standard program achieved 33% and 39% of its 3-year MEEIA Cycle 3 target for energy and demand, respectively.** This program represented approximately 47% of verified gross energy savings and approximately 45% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy MO West. The Business Standard program had realization rates of 88% and 48% for energy and demand, respectively. The energy and demand realization rates for the Business Standard program was driven primarily by adjustments to lighting measures, HVAC and cooling end-use measures. For the lighting measures, Guidehouse adjusted efficient fixture wattages based on the tracking database. For one new measure, Interior LED Fixture Replacing >850W HID Fixture, the tracking database indicated that many of these high wattage interior LED fixtures had a higher wattage than the assumed efficient wattage used to calculate deemed savings in the MEEIA TRM, resulting in lower savings than reported.

  The evaluation team also used verified waste heat factors and hours of operation by building type to calculate energy savings, contributing to the energy savings realization rate as well. The team adjusted the demand savings methodology for HVAC and cooling end-use measures to align with the Illinois TRM v10 and used verified waste heat factors and coincidence factors by building type for lighting measures. These changes contributed to the lower demand realization rate and details are provided in the appendices.

- **The Business Custom program achieved 150% and 193% of its 3-year MEEIA Cycle 3 target for energy and demand, respectively.** This program represented approximately 52% of verified gross energy savings and approximately 54% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy MO West.

Net Energy Savings in P3:
30,722,710 kWh

Net Demand Savings in PY3:
6,032 kW

Net Energy Savings in MEEIA Cycle 3 to date:
73,126,861 kWh

Net Demand Savings in MEEIA Cycle 3 to date:
13,213 kW

It has continued to drive participation in a diverse selection of end uses, particularly grow facility lighting and HVAC. The Business Custom program had realization rates of 100% and 84% for energy and demand savings, respectively. Realization rates were primarily driven by updates made to the baseline lighting inputs for indoor agriculture lighting projects using the Guidehouse Indoor Horticulture Baseline Memo.

The evaluation team also conducted an engineering analysis for demand savings, whereas the IC applied a deemed demand factor to the energy savings. For non-lighting measures, the team applied 8,760 hourly weather data to capture impacts based on time of day and seasonality.

- **The Process Efficiency program completed one project in PY3 after two projects in PY2 and no participation in PY1 due to slow program rollout driven by the COVID-19 pandemic.** This program represented approximately 0.97% of verified gross energy savings and approximately 0.66% of verified gross demand savings of the C&I energy efficiency portfolio in Evergy MO West. The Process Efficiency program had realization rates of 102% and 87% for energy and demand, respectively. Realization rates were driven primarily by adjustments to the kW/cubic feet per minute (CFM) efficiency values used in the verified savings calculations.

Table 3-9. PY3 Energy Savings at the Customer Meter, Evergy MO West

Sector	Program	Gross			Net		
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA 3-Year Target (kWh)	Verified PY3 Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	18,832,545	16,532,559	88%	46,646,197	15,408,345	33%
	Business Custom Program	18,366,396	18,441,487	100%	10,016,241	15,048,254	150%
	Process Efficiency Program	337,632	342,927	102%	20,470,674	266,111	1.3%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy MO West Total		**37,536,573**	**35,316,974**	**94%**	**77,133,113**	**30,722,710**	**40%**

Source: Guidehouse analysis

Table 3-10. PY3 Coincident Demand Savings at the Customer Meter, Evergy MO West

Sector	Program	Gross			Net		
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA 3-Year Target (kW)	Verified PY3 Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	6,603	3,140	48%	7,514	2,926	39%
	Business Custom Program	4,462	3,762	84%	1,587	3,070	193%
	Process Efficiency Program	53	46	87%	227	36	16%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy MO West Total		**11,118**	**6,948**	**62%**	**9,328**	**6,032**	**65%**

Source: Guidehouse analysis

Table 3-11. MEEIA Cycle 3 to Date Energy Savings at the Customer Meter, Evergy MO West

Sector	Program	Gross			Net		
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA 3-Year Target (kWh)	Verified 3-Year Savings (kWh)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	45,166,494	44,509,947	99%	46,646,197	40,164,326	86%
	Business Custom Program	40,270,007	39,617,108	98%	10,016,241	32,246,061	322%
	Process Efficiency Program	805,427	793,290	98%	20,470,674	716,474	3.5%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy MO West Total		**86,241,928**	**84,920,344**	**98%**	**77,133,113**	**73,126,861**	**95%**

Source: Guidehouse analysis

Table 3-12. MEEIA Cycle 3 to Date Coincident Demand Savings at the Customer Meter, Evergy MO West

Sector	Program	Gross			Net		
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA 3-Year Target (kW)	Verified 3-Year Savings (kW)	Percentage of MEEIA 3-Year Target Achieved
C&I Energy Efficiency Programs	Business Standard Program	11,478	7,720	67%	7,514	7,007	93%
	Business Custom Program	9,184	7,497	82%	1,587	6,104	385%
	Process Efficiency Program	126	112	89%	227	102	45%
Educational and Behavioral Programs	OBEA	Online energy audit programs are not part of MEEIA targets for energy or demand savings.					
Evergy MO West Total		**20,788**	**15,329**	**74%**	**9,328**	**13,213**	**142%**

Source: Guidehouse analysis

3.1.3 Net-to-Gross Components

Table 3-13 and Table 3-14 summarize the surveys conducted over MEEIA Cycle 2 and MEEIA Cycle 3 for the Business Standard, Business Custom, and Business Process Efficiency programs. Table 3-15 summarizes the final PY3 FR, PSO, and NPSO estimates for each applicable program.

Table 3-13. Evergy Metro and Evergy MO West Business Standard Program Survey Sample Size and Responses

Year	Survey Type	Population Size	Completed Surveys	Response Rate
2022	Participant FR	291	52	17%
	Participant SO	204	14	7%
2021	Participant FR	328	52	16%
	Participant SO	610	61	10%
	Trade Ally	158	23	15%
2016	Participant	420	56	13%

Source: Guidehouse survey analysis

Table 3-14. Evergy Metro and Evergy MO West Business Custom Program Survey Sample Size and Responses

Year	Survey Type	Population Size	Completed Surveys	Response Rate
2022*	Participant FR	26	4	15%
	Participant SO	17	3	18%
2021	Trade Ally	50	10	20%
2020	Participant FR	69	13	19%
	Participant SO	135	21	16%
2019	Participant FR†	262	65	25%
	Participant SO	207	37	18%
	Trade Ally	57	18	32%
2018	Participant	270	63	23%
	Trade Ally	152	48	32%
2017	Participant	80	18	23%
	Trade Ally	56	11	20%

* Insufficient responses were received to the FR and PSO participant surveys in 2022 to update the NTG analysis
† Survey sent to MEEIA Cycle 2 PY3 participants (not surveyed in PY3) and MEEIA Cycle 2 PY4 participants.

Source: Guidehouse survey analysis

Guidehouse conducted a participant and trade ally survey for the Process Efficiency program in PY3. Two participants responded of the five total Process Efficiency participants across PY2 and PY3 and one of the two trade allies responded. Due to the low number of responses, Guidehouse did not develop a new NTG ratio and instead applied the NTG ratio developed for the Custom Program in PY2 to all PY3 Process Efficiency verified savings. The team did not collect primary data for the OBEA program as no savings were reported.

Table 3-15. PY3 NTG Components by Program, Evergy Metro and Evergy MO West

Program Name*	FR	PSO	NPSO	NTG Ratio
Business Standard Program	0.16	0.08	0.02	93%
Business Custom Program	0.24	0.04	0.02	82%
Process Efficiency Program	0.24	0.00	0.02	78%
OBEA	N/A – savings not claimed in PY3			

*NTG ratios are rounded to the nearest whole number.

Source: Guidehouse analysis

3.2 Cost-Effectiveness Summary

Guidehouse calculated benefit-cost ratios and total net benefits at the program and sector levels for the five standard benefit-cost tests. For this analysis, the sector-level results incorporate the benefits and savings from the C&I energy efficiency portfolio of programs, including Business Standard, Business Custom, and Process Efficiency. Evaluated cost tests include the TRC test, SCT, UCT, PCT, and RIM test.

Table 3-16 and Table 3-17 present program- and sector-level results for PY3.

- For the Business Standard program, based on Guidehouse's benefit-cost analysis, Evergy Metro achieves a TRC ratio of 0.86 and cost test ratios greater than 1.0 in the SCT, UCT, and PCT. Evergy MO West achieves a TRC ratio of 0.81, a SCT ratio of 0.97, and UCT and PCT ratios above 1.0.
- For the Business Custom program, based on Guidehouse's benefit-cost analysis, Evergy MO West achieves a cost test ratio greater than 1.0 in the TRC, SCT, UCT, and PCT. Evergy Metro achieves a TRC ratio of 0.98 and a SCT, UCT, and PCT above 1.0.
- For the Process Efficiency program, based on Guidehouse's benefit-cost analysis, Evergy Metro achieves a TRC ratio of 0.01. Evergy MO West achieved a TRC ratio of 0.12 due to high administrative costs relative to benefits.
- For the C&I sector total, Every Metro achieved a TRC ratio of 0.89 and Evergy MO West achieved a TRC ratio of 0.91.

Table 3-18 and Table 3-19 present the net benefits and costs for PY3 from the UCT perspective. Evergy Metro's C&I energy efficiency portfolio of programs achieved $5,062,133 in net benefits. Evergy MO West's C&I energy efficiency portfolio of programs achieved $7,245,653 in net benefits.

Table 3-16. PY3 Evergy Metro Benefit-Cost Ratios by Program and Cost Test

Sector	Program	TRC	SCT	UCT	PCT	RIM
C&I Energy Efficiency Programs	Business Standard Program	0.86	1.03	1.93	1.39	0.56
	Business Custom Program	0.98	1.26	1.73	1.82	0.55
	Process Efficiency Program	0.01	0.01	0.01	0.31	0.01
Evergy Metro Total		**0.89**	**1.09**	**1.79**	**1.53**	**0.55**

Notes: Ratios are based on net savings. Guidehouse performed benefit-cost calculations for the Business Standard, Business Custom, and Process Efficiency programs. These programs represent the C&I energy efficiency portfolio.

Source: Guidehouse analysis

Table 3-17. PY3 Evergy MO West Benefit-Cost Ratios by Program and Cost Test

Sector	Program	TRC	SCT	UCT	PCT	RIM
C&I Energy Efficiency Programs	Business Standard Program	0.81	0.97	1.99	1.33	0.55
	Business Custom Program	1.08	1.32	2.19	1.84	0.57
	Process Efficiency Program	0.12	0.12	0.12	4.80	0.10
Evergy MO West Total		**0.91**	**1.10**	**2.03**	**1.55**	**0.55**

Notes: Ratios are based on net savings. Guidehouse performed benefit-cost calculations for the Business Standard, Business Custom, and Process Efficiency programs. These programs represent the C&I energy efficiency portfolio.

Source: Guidehouse analysis

Table 3-18. PY3 Evergy Metro Program-Level Costs and Benefits Summary (USD)

Program	Rebate Costs	Direct Program Admin Costs	Total Costs	Benefits from Energy and Demand Savings	Total Net Benefits
Business Standard Program	$2,016,708	$1,632,983	$3,649,691	$7,054,058	$3,404,366
Business Custom Program	$1,010,377	$1,531,863	$2,542,239	$4,388,186	$1,845,947
Process Efficiency Program	$2,005	$188,580	$190,584	$2,404	-$188,180
Evergy Metro Total	**$3,029,090**	**$3,353,425**	**$6,382,515**	**$11,444,648**	**$5,062,133**

Source: Guidehouse analysis

Table 3-19. PY3 Evergy MO West Program-Level Costs and Benefits Summary (USD)

Program	Rebate Costs	Direct Program Admin Costs	Total Costs	Benefits from Energy and Demand Savings	Total Net Benefits
Business Standard Program	$1,919,575	$1,667,606	$3,587,180	$7,145,364	$3,558,183
Business Custom Program	$1,788,831	$1,447,980	$3,236,811	$7,087,909	$3,851,099
Process Efficiency Program	$11,237	$173,857	$185,093	$21,464	-$163,629
Evergy MO West Total	**$3,719,642**	**$3,289,442**	**$7,009,084**	**$14,254,737**	**$7,245,653**

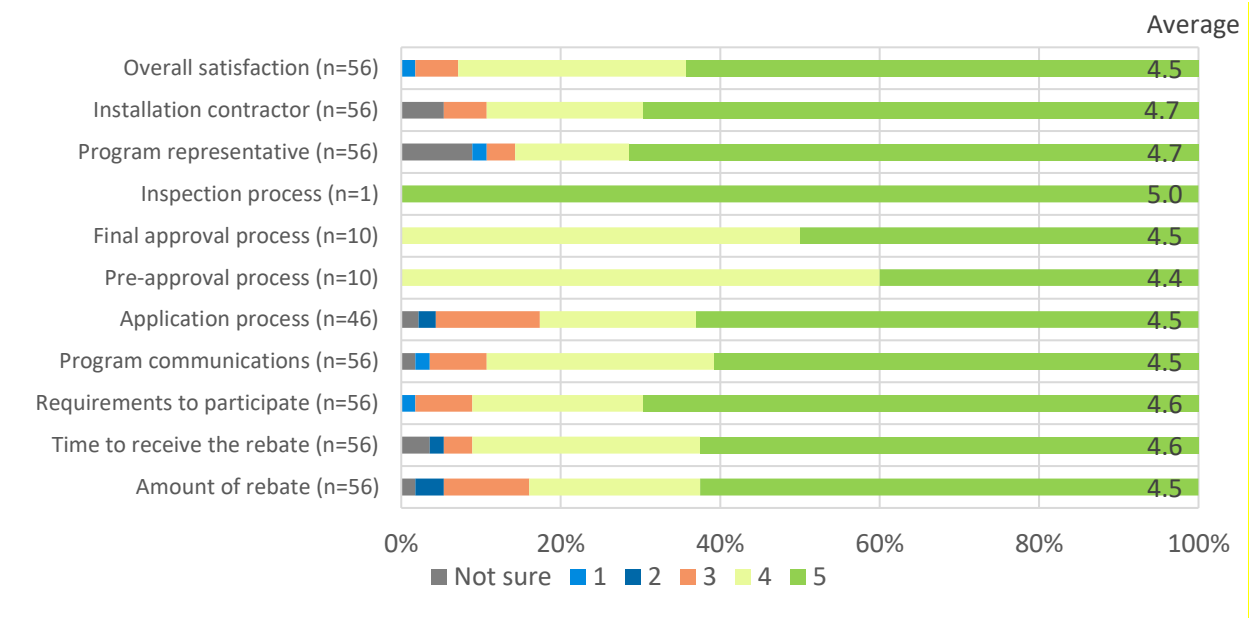
Source: Guidehouse analysis

3.3 Process Evaluation Summary

This section provides an overview of the MEEIA Cycle 3 PY3 process evaluation findings for the C&I energy efficiency programs. The evaluation team addressed the five Missouri-required questions for process evaluation through program manager/IC interviews and surveys.

Figure 3-1 shows PY3 Business Standard participant program satisfaction. Program participants ranked their satisfaction with the various aspects of the program highly, with all categories receiving an average ranking of 4.4 to 5.0 (on a 1-5 scale, where 1 is low and 5 is high). The average overall satisfaction with the program is 4.5. Participants are especially satisfied with the program representative and the installation contractor. They see the most room for improvement in the preapproval process.

Figure 3-1. PY3 Business Standard Program Participant Satisfaction with Program Aspects (n=56)



Source: Guidehouse survey analysis

Results of previous survey efforts in PY1 and PY2 are detailed in the PY2 Evaluation Report. In general, participating trade allies are satisfied with both the Business Custom and Business Standard programs. They are especially satisfied with the program representative and the amount and type of communication from the program. Trade allies see the most room for improvement in the amount of program incentives, though they are more satisfied with the Business Standard program incentives than the Business Custom program incentives. Also, the PY1 Business Custom program participants ranked their satisfaction with the various aspects of the program high, with all categories receiving an average ranking of 4.2 to 4.7. Satisfaction increased relative to PY4 of MEEIA Cycle 2 ratings in almost all categories, with particularly notable increases in program communications (from 4.2 to 4.6) and the preapproval process (from 3.9 to 4.5).

Table 3-20 summarizes the five Missouri process questions and the overarching findings across Evergy's Business Standard, Business Custom, and Process Efficiency programs—the three

C&I programs that reported savings in PY3. These findings are intended to provide the reader with a broad understanding of how these programs addressed each of the Missouri process questions in PY3. For specific findings for the programs evaluated in PY3, refer to Appendix B.

Guidehouse also summarized the process recommendations for Evergy's Business Standard, Business Custom, and Process Efficiency programs in Table 3-21. Evergy could implement these process recommendations throughout the remainder of MEEIA Cycle 3 to reduce barriers to participation and increase the diversity of participation from all the businesses served by Evergy. Refer to Appendix B for specific findings for the programs evaluated in PY3.

Table 3-20. Summary of Process Findings for Business Standard, Business Custom, and Process Efficiency Programs

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
1. What are the primary market imperfections that are common to the target market segment?	The business sector faces a high barrier to participation because of the high upfront installation cost and a lack of understanding of lifetime value for energy efficient products. Evergy addresses these barriers by providing incentives and education, which reduce the incremental cost and improve the understanding of the long-term benefits. For PY3, Evergy offered an end-of-the-year bonus to further incentivize project applications, which contributed toward increased participation in PY3 as compared with PY2.	Project types included in the Business Custom program can be complex and take many years to complete. Customers may not fully understand the available energy savings from these types of projects, which requires utility education initiatives and incentives.	PY1 was the first year for the Process Efficiency program offering. The program was slow to ramp up in PY1 and PY2 due to challenges posed by the COVID-19 pandemic. Because it is a new program and RCx can be perceived as complex, it takes time for customers and trade allies to better understand the program. However, the program had slightly more engagement in PY3 compared with prior years.
2. Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?	Evergy has a well-defined target market of large and small commercial businesses for the Business Standard program. Evergy and the IC track activity by trade ally and have bi-yearly Trade Ally Advisory Board meetings. At these meetings, Evergy provides a program status update and requests feedback from the trade ally representatives on the advisory board about all business programs. Evergy actively solicits feedback on the program by sending surveys to all customers that completed a project in the final email communication. Evergy reviews this feedback and incorporates it into the program design as warranted.	Guidehouse found that the target market is appropriately defined. All business customers are eligible to participate in the Business Custom program. Indoor agriculture projects provide the most energy savings to the program. The small and medium business customers are highly targeted by the Business Standard program because the application process and incentives are easier to complete and receive.	The program primarily targets industrial customers for implementing RCx projects. For the RCx sector, the target market is appropriately defined.

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
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?	The Business Standard program complements the Business Custom program by providing rebates for common energy efficiency upgrades, which continued to be primarily lighting measures in PY3. Evergy is working toward further aligning the Business Standard and Business Custom programs so that multiple end-use energy-saving projects can be easily served across the entire portfolio. While the Business Standard program includes measures that address a variety of energy end uses for a participant, including the HVAC, refrigeration, and cooking energy end uses, 84% of the projects in PY3 were for lighting or lighting control measures. Non-lighting measure participation has increased in PY3 to 16% compared with 10% in PY2 and 6% in PY1. Evergy and the IC are constantly evaluating the measure list to determine whether it is meeting the needs of customers. The other Evergy Business programs primarily address the end uses besides lighting, but they also tend to be dominated by new construction lighting projects.	Evergy has been successful in keeping the share of non-lighting measures well above 20% for the Business Custom program. In PY3, the program consisted of approximately 50% non-lighting measures. The inclusion of some large grow facility projects added to the diversity of the program as they included agriculture lighting and agriculture HVAC measures. Because the overall savings in the Business Custom program can be driven by one or two large projects, Guidehouse thinks program participation appropriately reflects the end-use needs within the target market segment.	The program is currently focused on providing services for RCx projects for industrial customers.

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
4. Are the communication channels and delivery mechanisms appropriate for the target market segment?	The IC works one-on-one with larger customers and those larger customers' customer solution managers (CSMs). The trade ally network addresses medium and smaller customers. During Cycle 3, the IC has also provided targeted marketing for sectors with historically lower participation. Communication around the PY3 end-of-the-year incentive bonus was clear and effective, leading to record-setting participant levels in Dec 2022.	Marketing and promotion of the Business Custom program is primarily through emails and online webinars available to customers and trade allies. The online communications throughout the year provided information about Evergy's business programs and supplemented the information available on Evergy's website. The Business Custom program communicates closely with the CSMs who represent the larger Tier 1 customers. The implementer has also worked with the CSMs to identify if any direct communication options with Tier 1 customers can be made available to allow for more direct marketing and engagement of these large Tier 1 customers.	The program is in its third year, and Evergy had challenges throughout promoting it due to the COVID-19 pandemic and the perception of the RCx measures being complex. However, all the communication channels are appropriate for the target market sector. The marketing and promotion activities involved an email campaign, direct mail, webinars, and an RCx-focused campaign for trade allies. The IC team marketing activities evolved over time to build on past efforts.
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?	In PY3, Evergy implemented some incentive changes to increase participation. Evergy also offered an end-of-the-year bonus to further incentivize project applications, which contributed to the highest monthly program participation in the program's history for Dec 2022.	Customers and trade allies need support to identify and implement large and non-standard energy efficiency projects that fall in the Business Custom program. In previous program years, trade allies reported an interest in learning about potential leads that program staff may have about customers that have shown interest in the program. Trade allies also reported a desire to shift more measures from the Business Custom program to the Business Standard program because incentive processing is easier. They also reported a desire for higher incentives for exterior lighting projects due to the higher labor costs for exterior projects.	The Process Efficiency program is not being continued in Cycle 3 PY4. If Evergy were to restart the program in future years, Evergy may want to pursue innovative approaches to encourage customer engagement with this program and within the overall C&I suite of programs.

Source: Guidehouse analysis

Table 3-21. Summary of Process Recommendations for Business Standard, Business Custom, and Process Efficiency Programs

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
1. What are the primary market imperfections that are common to the target market segment?	C&I customers appear to be driven by changes in incentives. Evergy provided increased incentives at the end of PY1 and PY3 to drive savings. Both times, these incentive increases appeared to be highly effective in increasing participation. C&I customers and trade allies may start to anticipate such end of year incentive increases and hold off on submitting projects as a result. The implementer has started offering facility assessments and the evaluation team recommend considering additional methods to drive participation outside of end of year incentive increases.	Some customers do not have the in-house engineering expertise to pursue complex custom projects or to understand the benefits of these projects. The program should continue efforts to offer technical support to: • Help identify non-standard energy efficiency projects that do not fall in the Business Standard program. • Help customers with the application process including the preapproval and post phase. • Develop new industry-specific outreach campaigns that help customers understand how custom projects benefit customers like them.	RCx projects can be complex and difficult to understand from a requirements standpoint. If the program were to restart in future years, then it should continue efforts to educate and offer additional technical support to the trade allies, customers, and CSMs to: • Understand the program better. • Help identify energy efficiency projects. • Develop RCx-specific outreach campaigns that help customers understand how these measures benefit customers like them.
2. Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?	The program should continue efforts to increase participation among the school strata and small businesses such that certain business types do not dominate the program. These efforts have included targeted webinars explaining the benefits of implementing energy conservation, increased incentives for small businesses, and direct outreach to public sector and municipal customers.	Evergy's Business Custom program should continue to work to identify new types of projects with the potential for energy savings. These new project types may be in business types that tend to have low participation in the Business Program. Survey respondents indicated that there are still a few measure types that Evergy did not offer a rebate for that they would like to see included. These may have been due to communication challenges or long payback periods. The IC should continue to work closely with the CSMs to identify opportunities to keep Tier 1 customers actively participating in Evergy's programs and meet the needs of these larger or national accounts.	Evergy should work with CSMs to ensure they have the training and expertise needed 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 IC to help identify potential projects and work with IC staff to support the customer through the application process.

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
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?	The program should continue the marketing and outreach efforts that led to the increased number of HVAC and cooling measures incentivized in PY3 compared to previous program years. The program could continue to research methods to increase participation in the cooking end-use category because that end-use is still seeing low participation even though significant potential for energy savings is likely. The program may need to continue to diversify from lighting measures more in upcoming years as new building codes require highly efficient lighting and lighting controls in certain spaces.	Trade allies and customers should continue to be encouraged to install non-lighting measures. As Evergy begins to conduct facility assessments, efforts could expand in PY4 to leverage these facility assessments to encourage participation in the various non-lighting measures available through the Business Custom program. Efforts should continue to educate customers and trade allies about the availability of peak load shifting because it can lead to significant savings.	Evergy could consider targeting and adding more measures similar to the compressed air leaks survey and repairs to facilitate engagement with the customers.
4. Are the communication channels and delivery mechanisms appropriate for the target market segment?	Guidehouse recommends the following to improve the program's communication channels and delivery mechanisms: • Continue education and training of new and existing trade allies to reduce rebate application errors. • Create accessible targeted marketing materials that can be available on the program's website.	Evergy should continue efforts to market and communicate about the Business Custom program as part of the broader marketing efforts of Evergy's business programs, including the Business Standard programs. These efforts were shown in previous program years to lead to increased participation among smaller business customers in the Business Custom program.	Evergy is leveraging multiple avenues to reach customers and trade allies. Evergy could consider RCx-focused events for customers to generate awareness about the measures similar to the C&I Business Energy Solution Forum event in the past. In addition, the IC team should continue with the plan to collect customer testimonials to help build trust and program awareness if the program were to restart.

Missouri Question	Business Standard Program	Business Custom Program	Process Efficiency Program
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?	The program can continue to develop targeted marketing and targeted incentive increases for measures or business types with lower participation. The program may also benefit by taking a closer look at the types of measures that may be going through the Custom program and consider whether there are ways to move those measure types to the Standard program to reduce the burden of the application process for those measures.	Evergy and the IC should continue to offer technical support and education accessible to all customers. Some survey respondents indicated that they would have preferred more transparency in the final rebate total. However, the overall satisfaction with the program was very high in PY2 and PY3 responses, indicating the communication mechanisms are appropriate for most of the target market. Further efforts to identify trade ally and customer challenges with the application process should continue to be pursued as respondents indicated the lowest satisfaction with the application process. Guidehouse recommends that incentive levels for all end uses be reviewed annually to ensure they are significant enough to maintain strong participation in the program without increasing FR and to consider the time and effort needed to complete the Business Custom application.	A key challenge to this program is that customers, trade allies, and CSMs may not completely understand it. Evergy could continue educating all the stakeholders and complete outreach efforts to generate awareness for the program. Evergy could also continue to look for innovative approaches to engage customers similar to the leaks survey and repair incentives being offered. As indicated by the IC, the program could allow wider RCx service provider participation with relevant training to get them up to speed on the program requirements.

Source: Guidehouse analysis

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