MEEIA Cycle III: Residential & Demand Response Measurement, and Verification Report
Evergy Metro and Missouri West: Main Report

Prepared for:

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1 Introduction

This report presents an evaluation of the performance of the Residential energy efficiency, and Demand Response programs offered by Evergy, Inc. for MEEIA Cycle, Program Year 1 (PY1). ADM associates is submitting this report to fulfill the requirements outlined by the Missouri Code of State Regulations 20 CSR 4240-22.070 (8) (Missouri regulations).

Evergy contracted with ADM to perform comprehensive program evaluation, measurement, and verification (EM&V) for the Residential and Demand Response programs. ADM's impact evaluation approaches are provided in Chapter 4 of this report. The tactics for ADM's process evaluation are presented in Chapter 5. Chapter 6 outlines the Cost Effectiveness Tests that were utilized, as well as the source of Cost Effectiveness input data for ADM's Cost-Effectiveness approach. Evaluation findings and results are provided in Chapter 6 of this report, while the evaluation methodologies of by program can be found in Chapter 7.

1.1 Reporting Period

MEIAA Cycle 3 Refers to programs implemented in the timeframe of program years 2020-2022(PY1- PY3). Program Year 1(PY1) refers to the 2020 program year.

1.2 How to Use This Report

Three key pieces:

- Main Report: This document—which provides the summary of our evaluation, measurement, and verification (EM&V) analyses and findings by program.
- Appendices:
    - Program Specific NTG Methodology
    - Program Specific Methodology and Results
    - Process Evaluation Results
    - Survey instruments
- Cost Effectiveness Results
- Master Results Table File

1.3 Document Structure

As agreed with Stakeholders and discussed during the Evergy Missouri Metro-West DSMAG EM&V Planning Meeting December 7, 2020, the ADM team is providing a

condensed EM&V report that presents key impact evaluation findings and recommendations for both Evergy Metro and Missouri West service territories.

Additionally, this report provides a summary of the MEEIA Cycle 3 PY1 process evaluation findings that address the five required questions per the Missouri Code of State Regulations 20 CSR 4240-22.070 (8) (Missouri regulations). ADM divided the document into the following sections:

- **Portfolio Findings and Evaluation Results:** This section provides findings and recommendations at the portfolio and sector level for gross and net savings, cost effectiveness, and overarching process findings.
- **Impact Evaluation Approach:** Provides a summary of the evaluation approaches for the impact evaluation and overviews of the approach for net-to-gross.
- **Cost Effectiveness Approach:** Provides a summary of the evaluation approaches for the cost effectiveness calculations, including methodology, inputs and sources.
- **Process Evaluation Approach:** Provides a summary of the evaluation approaches for the process evaluation and data collection activities.
- **Evaluation Methodology by Program:** Provides a condensed summary of program level evaluation activities. Full program level reports can be found in the appendices outlined below.

Several appendices accompany this document, including:

- **Appendix A. NTG Approaches by Program:** Includes program level specifics of how each program determines NTG savings.
- **Appendix B. Missouri Requirements for Impact Evaluation:** Provides an overview of MO regulation requirements for conducting an impact evaluation.
- **Appendix C – K. Program-Specific Methodologies:** Details program-specific methodologies
- **Appendix L - Survey Instruments** Provides detailed survey guides for participants and trade-allies.
- **Appendix M – Business Demand Response CBLs:** Details customer baselines used for the Business Demand Response program.
- **Appendix N. Excel Databook – CONFIDENTIAL:** Provides additional analytical data and figures for each program in addition to summary results tables for the portfolio.
- **Appendix O. Cost-Effectiveness Data – CONFIDENTIAL**: An Excel Databook containing 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/portfolio.

1.4 Report Definitions

1.4.1 Savings Types

Gross Reported Savings

Savings reported in the Evergy's annual reports prior to any EM&V ex-post gross adjustments and net-to-gross (NTG) adjustments.

Gross Verified Savings

Savings verified through ADM's impact evaluation methods prior to NTG adjustments.

Gross Realization Rates

The ratio of gross verified savings to gross reported savings.

Net Verified Savings

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

Missouri Energy Efficiency Investment Act (MEEIA)

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

Percentage of MEEIA Target Achieved

The ratio of net verified savings to the MEEIA target for the program cycle; reflects Evergy Metro & Evergy Missouri West's overall achievement toward the MEEIA target for the program cycle.

1.4.2 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 (EVERGY)

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 (NEVERGY)

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

Net Sales Analysis Approach to NTG

Approaches to estimating NTG that rely on the effect of program activity on total sales, yielding a market-level estimate of NTG that take FR, PSO, and NPSO into account

Billing Analysis Approach to NTG

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

2 Portfolio Findings and Evaluation Results

In PY1, Evergy offered customers five residential energy-efficiency programs. Evergy also offered customers three demand response programs, one residential and two commercial/industrial.

2.1 Gross and Net Savings Results Summary: Combined Territories

This section summarizes the gross and net savings achievements for the Evergy Metro & Missouri West service territory combined and presents the percent of MEEIA Cycle 3 PY1 program targets.

2.1.1 Summary of Annual Energy Savings: Combined Territories

Evergy's Residential and Demand Response programs reported gross annual energy savings (kWh) across both territories for the program year of 87,313,438 kWh. Total gross verified annual energy savings were 100,503,803 kWh, resulting in a realization rate for gross energy savings of 115%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross savings directly attributable to program influences. The residential and demand response program level net annual energy savings were 78,166,239 kWh.

2.1.2 Summary of Peak Demand Impacts: Combined Territories

Evergy's Residential and Demand Response programs reported peak demand reduction (kW) across both territories of 88,377.43 kW. Total gross verified peak demand reduction was 87,208.90 kW. The realization rate for peak demand reduction was 99%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross demand reduction directly attributable to program influences. The residential and demand response program level net annual peak demand reduction was 82,944.30 kW.

Table 2-1 summarizes the energy impacts of Evergy's energy efficiency and demand response programs for the program year.

Table 2-1: Combined Territories Energy Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA Target (kWh)	Verified Savings (kWh)	% of PY1 MEEIA3 Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	9,559,135	9,133,038	96%	10,582,901	6,786,008	64%
	Energy Saving Products	40,448,524	48,451,468	120%	25,191,811	28,460,934	113%
	Income-Eligible Multi-Family	1,595,087	1,599,653	100%	2,756,956	1,599,653	58%
	Residential EE Programs Subtotal	**51,602,746**	**59,184,159**	**115%**	**38,531,667**	**36,846,595**	**96%**
Educational Programs	Home Energy Report	34,352,064	39,330,143	114%	32,862,521	39,330,143	120%
	Income-Eligible Home Energy Report	374,416	942,567	252%	2,928,146	942,567	32%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**34,726,480**	**40,272,710**	**116%**	**35,790,668**	**40,272,710**	**113%**
DR Programs	Business Demand Response	The Business Demand Response Program did not claim any energy savings.					
	Residential Demand Response	964,709	964,709	100%	2,391,663	964,709	40%
	Business Smart Thermostat	19,503	82,225	422%	57,524	82,225	143%
	DR Programs Subtotal	**984,212**	**1,046,934**	**106%**	**2,449,187**	**1,046,934**	**43%**
Evergy Total		**87,313,438**	**100,503,803**	**115%**	**76,771,522**	**78,166,239**	**102%**

Table 2-2 summarizes the peak demand impacts of Evergy's energy efficiency and demand response programs during the program year.

Table 2-2: Combined Territories Coincident Demand Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA Target (kW)	Verified Savings (kW)	% of PY1 MEEIA3 Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	5,639.02	5,959.62	106%	4,740.07	4,407.13	93%
	Energy Saving Products	5,059.31	6,611.66	131%	1,844.24	3,899.55	211%
	Income-Eligible Multi-Family	187.32	198.70	106%	490.66	198.70	40%
	Residential EE Programs Subtotal	**10,885.65**	**12,769.98**	**117%**	**7,074.97**	**8,505.38**	**120%**
Educational Programs	Home Energy Report	7,718.00	6,702.00	87%	4,116.02	6,702.00	163%
	Income-Eligible Home Energy Report	39.58	232.00	586%	366.02	232.00	63%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**7,757.58**	**6,934.00**	**89%**	**4,482.04**	**6,934.00**	**155%**
DR Programs	Business Demand Response	60,350.00	59,566.26	99%	64,487.69	59,566.26	92%
	Residential Demand Response	9,224.60	7,850.51	85%	17,900.16	7,850.51	44%
	Business Smart Thermostat	159.60	88.15	55%	420.48	88.15	21%
	DR Programs Subtotal	**69,734.20**	**67,504.92**	**97%**	**82,808.33**	**67,504.92**	**82%**
Evergy Total		**88,377.43**	**87,208.90**	**99%**	**94,365.34**	**82,944.30**	**88%**

Table 2-3 provides a summary of the final free-ridership, spillover, and NTG ratios by program for both territories combined. Program specific NTG methodologies are provided in Appendix A.

Table 2-3: Combined Territories NTG Components by Program

Program Name	Free Ridership	Participant Spillover	Non-Participant Spillover	NTGR
Heating, Cooling and Home Comfort	26.0%	5.0%	2.0%	74.0%
Energy Saving Products	46.7%	7.0%	-	60.3%*
Income-Eligible Multi-Family	ADM assumed a net-to-gross (NTG) value of 1.0 for the IEMF program			
Home Energy Report	Program is designed as a randomized control trial, net-to-gross score of 1.0			
Business Demand Response	ADM assumed a net-to-gross (NTG) value of 1.0 for the Demand Response programs			
Residential Demand Response				
Business Smart Thermostats				

*Net to Gross calculations for Energy Saving Products contains an additional 1.6% reduction due to program spillover.

2.2 Gross and Net Savings Results Summary: Missouri West

2.2.1 Summary of Annual Energy Savings: Missouri West

Evergy's Residential and Demand Response programs reported annual energy savings (kWh) for the Missouri West territory of 48,366,500 kWh. Total gross verified annual energy savings were 57,191,500 kWh, resulting in a realization rate for gross energy savings of 118%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross savings directly attributable to program influences. The residential and demand response program level net annual energy savings were 45,281,417 kWh.

2.2.2 Summary of Peak Demand Impacts: Missouri West

The Residential and Demand Response programs reported peak demand reduction (kW) across the Missouri West territory of 55,435.04 kW. Total gross verified peak demand reduction was 53,931.11 kW. The realization rate for peak demand reduction was 97%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross savings directly attributable to program influences. The residential program and demand program net annual peak demand reduction was 51,600.12 kW.

Table 2-4 summarizes the energy impacts of Evergy's energy efficiency and demand response programs in the Missouri West territory during the program year.

Table 2-4: Missouri West Energy Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA3 PY1 Target (kWh)	Verified Savings (kWh)	% of MEEIA3 PY1 Target (kWh) Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	5,937,819	5,496,808	93%	7,236,542	3,963,157	55%
	Energy Saving Products	21,731,835	25,434,704	117%	13,038,632	15,058,272	115%
	Income-Eligible Multi-Family	879,280	885,014	101%	1,388,947	885,014	64%
	Residential EE Programs Subtotal	**28,548,934**	**31,816,526**	**111%**	**21,664,120**	**19,906,443**	**92%**
Educational Programs	Home Energy Report	19,340,629	24,864,459	129%	20,355,375	24,864,459	122%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**19,340,629**	**24,864,459**	**129%**	**20,355,375**	**24,864,459**	**122%**
DR Programs	Business Demand Response	The Business Demand Response Program did not claim any energy savings.					
	Residential Demand Response	466,496	466,496	100%	1,220,615	466,496	38%
	Business Smart Thermostat	10,441	44,019	422%	28,368	44,019	155%
	DR Programs Subtotal	**476,937**	**510,515**	**107%**	**1,248,983**	**510,515**	**41%**
Evergy Total		**48,366,500**	**57,191,500**	**118%**	**43,268,478**	**45,281,417**	**105%**

Table 2-5 summarizes the peak demand impacts of Evergy's energy efficiency and demand response programs in the Missouri West territory during the program year.

Table 2-5: Missouri West Coincident Demand Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA Target (kW)	Verified Savings (kW)	% of PY1 MEEIA3 Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	3,328.37	3,451.32	104%	3,133.00	2,524.83	81%
	Energy Saving Products	2,725.19	3,461.28	127%	955.17	2,056.78	215%
	Income-Eligible Multi-Family	110.87	121.78	110%	242.97	121.78	50%
	Residential EE Programs Subtotal	**6,164.43**	**7,034.38**	**114%**	**4,331.13**	**4,703.39**	**109%**
Educational Programs	Home Energy Report	4,037.81	3,453.00	86%	2,550.00	3,453.00	135%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**4,037.81**	**3,453.00**	**86%**	**2,550.00**	**3,453.00**	**135%**
DR Programs	Business Demand Response	40,680.00	39,383.72	97%	49,487.69	39,383.72	80%
	Residential Demand Response	4,454.80	3,989.42	90%	9,220.80	3,989.42	43%
	Business Smart Thermostat	98.00	70.59	72%	207.36	70.59	34%
	DR Programs Subtotal	**45,232.80**	**43,443.73**	**96%**	**58,915.85**	**43,443.73**	**74%**
Evergy Total		**55,435.04**	**53,931.11**	**97%**	**65,796.98**	**51,600.12**	**78%**

Table 2-6 provides a summary of the final Free-ridership, spillover, and NTG ratios by program in the Missouri West territory. Program specific NTG methodologies are provided in Appendix A.

Table 2-6: Missouri West NTG Components by Program

Program Name*	Free Ridership	Participant Spillover	Non-Participant Spillover	NTGR
Heating, Cooling and Home Comfort	28.0%	5.0%	2.0%	72.0%
Energy Saving Products	46.2%	7.0%	-	60.8%*
Income-Eligible Multi-Family	ADM assumed a net-to-gross (NTG) value of 1.0 for the IEMF program			
Home Energy Report	Program is designed as a randomized control, net-to-gross score of 1.0			
Business Demand Response	ADM assumed a net-to-gross (NTG) value of 1.0 for the Demand Response programs			
Residential Demand Response				
Business Smart Thermostats				

*Net to Gross calculations for Energy Saving Products contains an additional 1.6% reduction due to program spillover.

2.3 Gross and Net Savings Results Summary: Missouri Metro

2.3.1 Summary of Annual Energy Savings: Missouri Metro

The Residential & Demand Response programs reported annual energy savings (kWh) across the Missouri Metro territory for the program year of 38,572,521 kWh. Total gross verified annual energy savings were 42,369,736 kWh, resulting in a realization rate for gross energy savings of 110%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross savings directly attributable to program influences. The residential and demand response net annual peak demand reduction was 31,942,256 kWh.

2.3.2 Summary of Peak Demand Impacts: Missouri Metro

The Residential and Demand Response programs reported peak demand reduction (kW) across the Missouri West territory of 32,903.26 kW. Total gross verified peak demand reduction was 33,045.79 kW. The realization rate for peak demand reduction was 100%.

The Net-to-Gross (NTG) ratio indicates the percentage of gross savings directly attributable to program influences. The residential and demand response program level net annual peak demand reduction was 31,112.18 kW.

Table 2-7 summarizes the energy impacts of Evergy's energy efficiency and demand response programs in the Missouri Metro territory for the program year.

Table 2-7: Missouri Metro Energy Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kWh)	Verified Savings (kWh)	Realization Rate (%)	MEEIA Target (kWh)	Verified Savings (kWh)	% of PY1 MEEIA3 Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	3,621,316	3,636,230	100%	3,346,358	2,822,852	84%
	Energy Saving Products	18,716,688	23,016,764	123%	12,153,179	13,402,662	110%
	Income-Eligible Multi-Family	715,807	714,639	100%	1,368,009	714,639	52%
	Residential EE Programs Subtotal	**23,053,811**	**27,367,633**	**119%**	**16,867,546**	**16,940,153**	**100%**
Educational Programs	Home Energy Report	14,637,019	13,523,117	92%	9,579,000	13,523,117	141%
	Income-Eligible Home Energy Report	374,416	942,567	252%	2,928,146	942,567	32%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**15,011,435**	**14,465,684**	**96%**	**12,507,146**	**14,465,684**	**116%**
DR Programs	Business Demand Response	The Business Demand Response Program did not claim any energy savings.					
	Residential Demand Response	498,213	498,213	100%	1,171,048	498,213	43%
	Business Smart Thermostat	9,062	38,206	422%	29,156	38,206	131%
	DR Programs Subtotal	**507,275**	**536,419**	**106%**	**1,200,204**	**536,419**	**45%**
Evergy Total		**38,572,521**	**42,369,736**	**110%**	**30,574,897**	**31,942,256**	**104%**

Table 2-8 summarizes the peak demand impacts of Evergy's energy efficiency and demand response programs in the Missouri Metro territory during the program year.

Table 2-8: Missouri Metro Coincident Demand Savings at the Customer Meter – PY1

Sector	Program	Gross				Net	
		Reported Savings (kW)	Verified Savings (kW)	Realization Rate (%)	MEEIA Target (kW)	Verified Savings (kW)	% of PY1 MEEIA3 Target Achieved
Residential EE Programs	Heating, Cooling and Home Comfort	2,310.65	2,508.30	109%	1,607.00	1,882.30	117%
	Energy Saving Products	2,334.12	3,150.38	135%	889.07	1,842.77	207%
	Income-Eligible Multi-Family	76.45	76.92	101%	247.69	76.92	31%
	Residential EE Programs Subtotal	**4,721.22**	**5,735.60**	**121%**	**2,743.77**	**3,801.99**	**139%**
Educational Programs	Home Energy Report	3,641.06	3,017.00	83%	1,200.00	3,017.00	251%
	Income-Eligible Home Energy Report	39.58	232.00	586%	366.02	232.00	63%
	Online Home Energy Audit	Online Energy Audit programs are not part of MEEIA Targets for Energy or Demand Savings.					
	Educational Programs Subtotal	**3,680.64**	**3,249.00**	**88%**	**1,566.02**	**3,249.00**	**207%**
DR Programs	Business Demand Response	19,670.00	20,182.54	103%	15,000.00	20,182.54	135%
	Residential Demand Response	4,769.80	3,861.09	81%	8,679.36	3,861.09	44%
	Business Smart Thermostat	61.60	17.56	29%	213.12	17.56	8%
	DR Programs Subtotal	**24,501.40**	**24,061.19**	**98%**	**23,892.48**	**24,061.19**	**101%**
Evergy Total		**32,903.26**	**33,045.79**	**100%**	**28,202.26**	**31,112.18**	**110%**

Table 2-9 provides a summary of the final Free-ridership, spillover, and NTG ratios in the Missouri Metro territory by program. Program specific NTG methodologies are provided in Appendix A.

Table 2-9: Missouri Metro NTG Components by Program

Program Name*	Free Ridership	Participant Spillover	Non-Participant Spillover	NTGR
Heating, Cooling and Home Comfort	22.0%	5.0%	2.0%	78.0%
Energy Saving Products	47.2%	7.0%	0.0%	59.8%*
Income-Eligible Multi-Family	ADM assumed a net-to-gross (NTG) value of 1.0 for the IEMF program			
Home Energy Report	Program is designed as a randomized control, net-to-gross score of 1			
Business Demand Response	ADM assumed a net-to-gross (NTG) value of 1.0 for the Demand Response programs			
Residential Demand Response				
Business Smart Thermostats				

*Net to Gross calculations for Energy Saving Products contains an additional 1.6% reduction due to program spillover.

2.4 Cost-Effectiveness Summary

ADM calculated the annual cost-effectiveness of Evergy's programs based on reported total spending, verified net energy savings, and verified net demand reduction for each of the energy efficiency and demand response programs. Additional inputs to the cost effectiveness tests included estimates of line-loss adjustments, measure lives, discount rates, participant costs, and avoided costs. All program spending inputs were provided by Evergy as shown in Appendix O. The total residential and demand response program spending was $ $16,875,874. The methods used to calculate cost-effectiveness were informed by the California Standard Practice Manual.[1]

[1] California Standard Practice Manual: Economic Analysis of Demand Side Management Programs, October 2001. Available at: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf.

The specific tests used to evaluate cost-effectiveness for the Missouri Public Service Commission is the Total Resource Cost Test (TRC). The benefit-cost ratios for those tests as well as the Utility Cost Test (UCT), Rate Payer Impact test (RIM), Societal Cost Test (SCT), and the Participant Cost Test (PCT) are presented in Table 2-10 through

Table 2-12. In addition, total portfolio costs and benefits for the programs evaluated are shown in Table 2-13. Detailed cost-effectiveness assumptions and findings are presented in Appendix O.

Table 2-10: Benefit-Cost Ratios by Program and Cost Test for Evergy Metro and Evergy West Service Territories – PY1

Sector	Program	TRC	UCT	RIM	SCT	PCT
EE Programs	Heating, Cooling and Home Comfort	1.04	4.00	0.50	1.28	1.68
	Energy Saving Products	4.85	6.63	0.42	5.35	11.82
	Income-Eligible Multi-Family	0.41	0.40	0.25	0.48	12.92
	Home Energy Report	1.22	1.22	0.27	1.22	na
	Online Home Energy Audit*	na	na	na	na	na
	Income-Eligible Home Energy Report	0.29	0.29	0.16	0.29	na
EE Overall		***1.81***	***2.76***	***0.40***	***2.04***	***5.51***
DR Programs	Business Demand Response	1.83	1.83	1.83	1.83	na
	Business Smart Thermostat	0.72	0.79	0.52	0.84	4.99
	Residential Demand Response	1.49	1.73	1.22	1.73	2.39
DR Overall		***1.62***	***1.76***	***1.44***	***1.76***	***2.44***
Residential and DR Total		**1.74**	**2.27**	**0.55**	**1.93**	**5.29**

* ADM did not perform benefit-cost calculations for the Educational Programs because Evergy does not claim savings for these programs and therefore ADM did not verify savings.

Table 2-11: Benefit-Cost Ratios by Program and Cost Test for Evergy West Service Territory – PY1

Sector	Program	TRC	UCT	RIM	SCT	PCT
EE Programs	Heating, Cooling and Home Comfort	1.02	3.94	0.54	1.24	1.47
	Energy Saving Products	4.77	6.51	0.42	5.25	11.66
	Income-Eligible Multi-Family	0.43	0.44	0.26	0.50	7.38
	Home Energy Report	1.23	1.23	0.27	1.23	na
	Online Home Energy Audit*	na	na	na	na	na
	Income-Eligible Home Energy Report	na	na	na	na	na
EE Overall		***1.77***	***2.78***	***0.41***	***1.99***	***5.12***
DR Programs	Business Demand Response	1.82	1.82	1.82	1.82	na
	Business Smart Thermostat	0.98	1.08	0.70	1.14	5.06
	Residential Demand Response	1.48	1.71	1.27	1.72	2.12
DR Overall		***1.64***	***1.76***	***1.50***	***1.76***	***2.18***
Residential and DR Total		**1.72**	**2.26**	**0.57**	**1.91**	**4.94**

* ADM did not perform benefit-cost calculations for the Educational Programs because Evergy does not claim savings for these programs and therefore ADM did not verify savings.

Table 2-12: Benefit-Cost Ratios by Program and Cost Test for Evergy Metro Service Territory – PY1

Sector	Program	TRC	UCT	RIM	SCT	PCT
EE Programs	Heating, Cooling and Home Comfort	1.07	4.08	0.46	1.33	1.97
	Energy Saving Products	4.95	6.77	0.43	5.46	12.00
	Income-Eligible Multi-Family	0.40	0.35	0.23	0.45	na
	Home Energy Report	1.20	1.20	0.26	1.20	na
	Online Home Energy Audit*	na	na	na	na	na
	Income-Eligible Home Energy Report	0.29	0.29	0.16	0.29	na
EE Overall		***1.85***	***2.73***	***0.39***	***2.09***	***6.04***
DR Programs	Business Demand Response	1.86	1.86	1.86	1.86	na
	Business Smart Thermostat	0.43	0.47	0.32	0.51	4.90
	Residential Demand Response	1.50	1.76	1.18	1.74	2.65
DR Overall		***1.60***	***1.77***	***1.35***	***1.75***	***2.69***
Residential and DR Total		**1.76**	**2.28**	**0.53**	**1.97**	**5.75**

* ADM did not perform benefit-cost calculations for the Educational Programs because Evergy does not claim savings for these programs and therefore ADM did not verify savings.

Table 2-13: Program Costs and Benefits - PY1

Sector	Incentives	All Other Costs	Total Program Costs	Benefits from Energy and Demand Savings	Total Net Benefits
Missouri West	$3,419,332	$6,265,018	$9,684,350	$13,680,492	$16,640,946
Missouri Metro	$2,234,746	$4,956,778	$7,191,524	$10,917,649	$14,572,374
Residential and DR Total	**$5,654,078**	**$11,221,796**	**$16,875,874**	**$24,598,141**	**$31,213,320**

2.5 Process Evaluation Results Summary

This section provides an overview of the Residential & Demand Response PY1 process evaluation findings. Section 2.6 provides a summary of the 5 MO process questions and the overarching themes across Evergy Metro's portfolio of DSM programs. These findings are intended to provide the reader with a broad understanding of the portfolio and the progress made throughout the first program year of the cycle. For specific program findings, please refer to Appendix C through K.

2.6 Regulatory Research Questions

1. **What are the primary market imperfections that are common to the target market segment?**

We interpret "market imperfections" as used here to mean any factors that pose barriers to program participation. Historically, the primary barriers to program participation have been low awareness of program offerings, low motivation to reduce energy consumption, lack of understanding of value of efficient equipment (including the non-energy benefits) and of the technologies themselves, and the up-front cost of installing energy-saving equipment. Programs attempt to address these barriers through marketing and other educational activities to improve program awareness and to increase motivation and the understanding and through monetary incentives to reduce the financial barriers. As indicated below, however, other barriers may exist for specific customer subsectors.

Residential Energy Efficiency Programs

Evergy achieved the MEEIA overall target for residential energy efficiency programs and for the residential educational programs but not for the demand response programs. This suggests, at a minimum, that the energy efficiency and educational programs, taken together, are doing at least as well as expected. However, there was wide variation in how well individual programs performed. Among the energy efficiency programs, Energy Saving Products exceeded goals while Heating, Cooling and Home Comfort (HCHC) and Income-Eligible Multi-Family (IEMF) both fell short of goals. As a single program should not be expected always to outperform expectations, therefore, it is important to identify the factors that prevented HCHC and IEMF from achieving their respective savings targets.

The COVID-19 pandemic is part of the reason that HCHC did not achieve goals, as customer unwillingness to allow contractors in their home to perform air sealing and insulation reduced participation in that program component by half. Our evaluation did not find evidence of other substantial barriers, such as poor program awareness, resistance to energy reduction in general, or ineffectiveness of program incentives.

IEMF program staff identified challenges for the program that may have contributed to its failure to meet goals. First, they noted that limited capital for upgrades continues to be an

issue for this market segment. Second, they indicated that high turnover rates in the management of most multi-family housing complexes means that constant communication and familiarizing with the program is needed. Third, they suggested that there is not much support in Missouri for carrying out energy efficiency projects in this type of property: HERS ratings are not common, the lead finance agency does not push energy efficiency.

Even though the ESP program met savings goals, program staff reported that customer education and market saturation are challenges for the program. ADM's evaluation found that about half of surveyed customers who reported buying LEDs at participating stores through ESP were aware of the Evergy discount, which compares well to awareness rates we have identified in similar programs in other jurisdictions. Given that the program met goals, this may be adequate, but given program staff's concerns, increasing customer awareness of the discounts and that Evergy provided them may help improve the proper assignment of attribution of the savings resulting from the purchases.

Educational Programs

The Home Energy Reports (HER) program is the only of the two educational programs that claims energy savings. It well exceeded its MEEIA energy savings goals. As an educational program, there is no issue of up-front cost. As an opt-out program, there is no issue of awareness of the program itself. The primary potential barriers to program effectiveness would appear to be lack of customer motivation to save energy, lack of understanding of how to save energy, and differences in among customer sub-segments in either of those two items. In this light, the primary barriers that our evaluation identified are that: 1) the rate with which report recipients review the reports in detail could be higher; 2) a notable minority of recipients may misunderstand the basis on which the report compares their home to that of other homes, which may lead to frustration and failure to accept the report's suggestions; 3) report recipients were no more familiar with other Evergy program offerings than were the matched controls. Our evaluation provided little evidence that the HERs' effectiveness differs for older versus younger or more- versus less-educated recipients.

Although the Online Home Energy Analyzer (OHEA) program does not have specific energy saving goals, it has a general purpose of educating Evergy customers to be more knowledgeable about saving energy, including by taking advantage of Evergy energy efficiency programs. As with the HER program, there is no up-front cost. There is a potential concern about awareness of the OHEA tools. Program staff contacts noted that the biggest challenge for the program was customer awareness and education, and fewer than 10% of customers have accessed the tools. Other possible barriers to the program's effectiveness, identified by our evaluation, are: 1) inconsistent use of the tools (user most commonly have engaged "a few times"); 2) possible misunderstanding of the basis on

which the “Compare” tool compares their home to that of other homes; and 3) some possibly overly complex language and lack of clarity in the FAQ section.

Demand Response Programs

Although the Business Smart Thermostat (BST) program exceeded its MEEIA savings goal, the Residential Demand Response (RDR) program fell short of its much higher goal, and so, therefore, did the demand response programs in general. The Business Demand Response (BDR) program did not claim energy savings. In terms of demand savings, all programs fell short of goals, although the BDR program, with by far the highest demand goals, came closest to meeting goals.

Feedback from program staff identified two factors that contributed to BST not meeting goals. First, delays in the contracting and developing of the online portal for the customer co-payment contributed to a later program launch than expected. Second, midway through 2020, Google acquired Nest and instituted changes that made Evergy unable to enroll customers with Nest thermostats – the top-selling thermostat – into the program.

Staff feedback indicated that the primary reason for BDRnot meeting demand goals was a program design change in Cycle 3 to a pay-for-performance program. As a result of the change, some customers had challenges understanding how the baseline was constructed and how that affected the incentive structure. These changes made recruitment more difficult compared to previous years.

ADM’s evaluation identified two factors that may have contributed to the RDR program not meeting goals. First, like BDR, RDR underwent a program design change and had to begin recruiting all new customers, while in previous years, the program had been able to roll participants over from one year to the next. Second, Evergy froze all marketing activities for the program in March 2020 because of the COVID-19 pandemic, which may have reduced recruitment. In addition to the above, it is possible that the COVID-19 pandemic created changes in households (e.g., more people at home) that resulted in more overrides and advance opt-outs than normal.

2. **Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?**

The Evergy residential programs cover most subsegments of the residential market. The HCHC, ESP, HER, and RDR all serve homeowners and renters, and IEMF serves lower- and middle-income customers. ADM’s evaluation did not identify clear evidence that any specific program fails to serve any specific part of its target audience. We do note that the HCHC participant survey respondents were highly skewed toward homeowners, small households (one or two occupants), and very highly educated customers. Similarly, the HER and OHEA participant survey respondents skewed older, more educated, and more likely to be homeowners than the Evergy general population. However, we cannot be certain that either of these reflects a bias in participation or in survey response.

Based on the above, we cannot conclude that there is any need for any changes in how Evergy targets the residential market. However, in future evaluations, we will seek additional information to shed light on whether program participation is biased.

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?**

Of the various programs covered in our evaluation, only HCHC, IEMF, and ESP provide incentives for the installation of energy saving measures or provide direct-install measures. Between these three programs, Evergy offers a wide range of residential measures. However, limited uptake of some measure types may hamper program savings.

HCHC offers energy saving measures through three program components: 1) an Energy Savings Kit with an assortment low-cost measures (LED lightbulbs, faucet aerators, low-flow showerheads, pipe insulation, and advanced power strips); 2) insulation and air sealing measures; and 3) HVAC measures. HCHC participants and trade allies were generally satisfied with the program, and two-thirds of trade allies were satisfied with the equipment that the program offers. However, for trade allies, that satisfaction level was lower than the levels for program paperwork and the rebates offered. The primary substantive suggestion that trade allies made regarding the program offerings was to push higher-SEER (>17) air conditioning.

IEMF provides a wide range of measure types, various direct-install measures (low-flow showerheads, kitchen faucet aerators, and advanced power strips); prescriptive rebates for LED lighting, appliances (dishwashers, washing machines, dryers), HVAC (air conditioners, heat pumps), bathroom fans, refrigerator replacement, and air sealing; and custom rebates for larger projects. However, LED lighting and direct-install measures make up a very large proportion of program savings. Increasing uptake of the other measures offered could increase overall program savings.

ESP provides upstream discounts for energy efficient products, which currently are limited to a selection of LED lighting measures.

4. **Are the communication channels and delivery mechanisms appropriate for the target market segment?**

Our evaluation found that Evergy and its program implementers use a variety of methods to communicate about the programs to customers and trade allies. Some findings pointed to potential shortcomings of some aspects of the program communication channels and delivery mechanisms.

Our evaluation found that HCHC has consistent structures in place with rebate distribution, a well-developed internal marketing team, and continued trade ally support.

HCHC participants and trade allies were satisfied with program processes and interactions. However, some TAs reported that the application process has many required components that can be easily overlooked and suggested ways to improve the process.

IEMF participants were satisfied with the program processes. Most IEMF participants (property managers) learned about the program via outreach from program staff, indicating they were not aware of the program before being contacted. Program staff reported that IEMF "is not a TA-driven program" and so it relies on contact by the implementer to generate projects. Nevertheless, prior program awareness may be helpful in securing participation and generating greater program-related savings.

ESP participants also were satisfied with the program. Our evaluation found that about half of surveyed customers who reported buying LEDs at participating stores through ESP were aware of the Evergy discount, which compares well to awareness rates we have identified in similar programs in other jurisdictions. Given that the program met goals, this may be adequate, but program staff indicated concerns about market saturation, and so increasing customer awareness of the discounts and that Evergy provided them may help improve the proper assignment of attribution of the savings resulting from the purchases.

The primary finding from the demand response programs is that participants in both the RDR and BST indicated they would like more advance notice of events.

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?**

<u>Heating, Cooling and Home Comfort Recommendations</u>

- Add fields for additional customer household characteristics information to the data collection process. Collect the number of stories of customers' homes to supplement the savings calculations for the air sealing and attic insulation measures. This is needed to estimate Minimum Ventilation Rate (MVR) and would allow for program administrators to more readily examine if homes are being sealed within allowable guidelines that maximize energy savings while ensuring maintenance of indoor air quality.
- Monitor installation rates on an ongoing basis for the Energy Savings Kit sub-program. The sub-program has moved from direct install to virtual install, and this comes with trade-offs of lower administration costs but greater risk of non-installation or measure removal.
- Track installation rates and satisfaction rates along with customer demographics (age, income, etc.) to identify if there are customer sub-groups that prefer the virtual installation process to assess if this option should remain in the program long-term.

- Periodically review the incentive structure for higher-efficiency HVAC systems in the program. When examining the benefit-cost ratios for higher-efficiency HVAC systems, Evergy can assess if incentives can be or need to be revised. Metrics for this may assessment include:
    - Balance between UCT and PCT ratios. If the UCT ratio exceeds the PCT ratio, Evergy can rebalance by increasing incentives.
    - Percent of incremental cost covered by incentives. If incremental cost coverage is below 50%, Evergy can consider increasing incentives while remaining within boundaries of industry norms for this measure group.
- Develop a simplified and more automated application process. As it is, some trade allies reported that the application process has many required components that can be easily overlooked. Drop-down options with pre-programmed equipment and AHRI numbers could be utilized to reduce the time it takes for trade allies to look up the information themselves and would reduce input error.

Energy Saving Products Recommendations

- Continue to build on the success of the online marketplace. Program staff indicated that the online marketplace was successful in 2020. Program staff can explore additional avenues for marketing the availability of the online marketplace and opportunities to add measures for purchase.

Income-Eligible Multi-Family Recommendations

- Create short interactive surveys for tenants and property managers. During the installation process, offer the tenant or manager the option to complete a survey using a tablet or a link sent to their phones to encourage immediate feedback. Have automatic reminders set-up a week after in case the survey has not been completed.
- Create an infographic or report of IEMF program success and post on social media. Report year energy goal savings every year and highlight major projects on social media platforms. Use these numbers to increase project leads and increase program credibility within the service territory.

Home Energy Report Recommendations

- Oracle should consider ways to make the information on home comparisons (as well as how to provide for more accurate feedback on the home's energy usage) more obvious to HER recipients and Energy Analyzer users. Incorrect beliefs about how the comparisons are made or of the option for providing for a more accurate comparison may create frustration, leading some customers to make minimal use of the reports.
- Oracle may also consider discontinuing the practice of telling recipients (and Energy Analyzer users) they are being compared to their "neighbors." A one-mile radius

encompasses far more homes than many individuals may consider to be a neighbor. This practice may reinforce an inaccurate interpretation of how the comparison is made. One alternative phrasing could be to state that they are being compared to "homes in your neighborhood".

Online Home Energy Audit Recommendations

- Evergy and Oracle should consider developing ways to tailor messaging to the different groups of customers that represent different levels of readiness to take steps to reduce energy use. Tailoring messaging to the "unknowledgeable intent," "unknowledgeable concern," and "concern, no intent" groups may provide the needed nudge or knowledge to turn them into effective energy savers.
- Oracle should also consider reviewing the Energy Analyzer to ensure its readability level reaches all customers. This could be checked against the Flesch-Kinkaid Reading Ease formula (or other acceptable metric of linguistic ease), with a goal of a Flesch-Kinkaid score of 65 out of 100 to balance professionalism with reading ease2.

Business Smart Thermostat Recommendations

- Evergy's Business Smart Thermostat program received high satisfaction ratings from program participants. However, the survey respondents indicated they wanted better notification of upcoming DR events. Therefore, Evergy staff should consider additional ways to provide event notification, including sending reminder emails to program participants. Evergy can ensure that its program application process captures and updates participant email addresses.
- Continue efforts to reduce evaluation risk using modeled annual counterfactual baseline (CBL) selection for each participant.
- Currently, enrollment eligibility for the program is restricted to manufacturers that total less than 30% of market share for smart thermostats. Evergy should engage with other major smart thermostat manufacturers to obtain the required data access permissions to facilitate their enrollment as this is a structural barrier to program scale.

Residential Demand Response Recommendations

- Evergy's Residential Smart Thermostat program received high satisfaction ratings from program participants. However, the survey respondents indicated they wanted better notification of upcoming DR events. Therefore, Evergy staff should consider additional ways to provide event notification, including sending reminder emails to

[2] This would align language with a 7th – 9th grade reading level.

program participants. Evergy can ensure that its program application process captures and updates participant email addresses.

- Continue efforts to reduce evaluation risk using modeled annual counterfactual baseline (CBL) selection for each participant.
- Evergy can continue to look for ways to expand the eligibility of smart thermostats, as this strategy will make the program more affordable. Evergy should also continue its research into smart thermostat technology to identify additional devices in the next program year.

2.6.1 Program Satisfaction

Figure 2-1 and Figure 2-2 below summarize customer and trade ally program satisfaction analyzed over the MEEIA Cycle 3 PY1. Customers and trade allies were asked to rank their satisfaction with the respective programs in which they participated (on a scale of 1 through 5, 1 being the lowest, 5 being the highest). The predominant response provided by survey respondents ranked was a five, or highly satisfied. The average participant satisfaction score for all programs surveyed ranked above a four. Seventy two percent of all trade-allies surveyed in the HCHC program were highly satisfied. The consistently high satisfaction scores among program participants and trade allies are indicative of Evergy's leadership and Product Managers focus on addressing their specific market needs, removing barriers to participation, offering an extensive and comprehensive array of measures and broadening means of communicating with customers and key market players.

Figure 2-1: Overall Program Satisfaction Reported by Program Participants

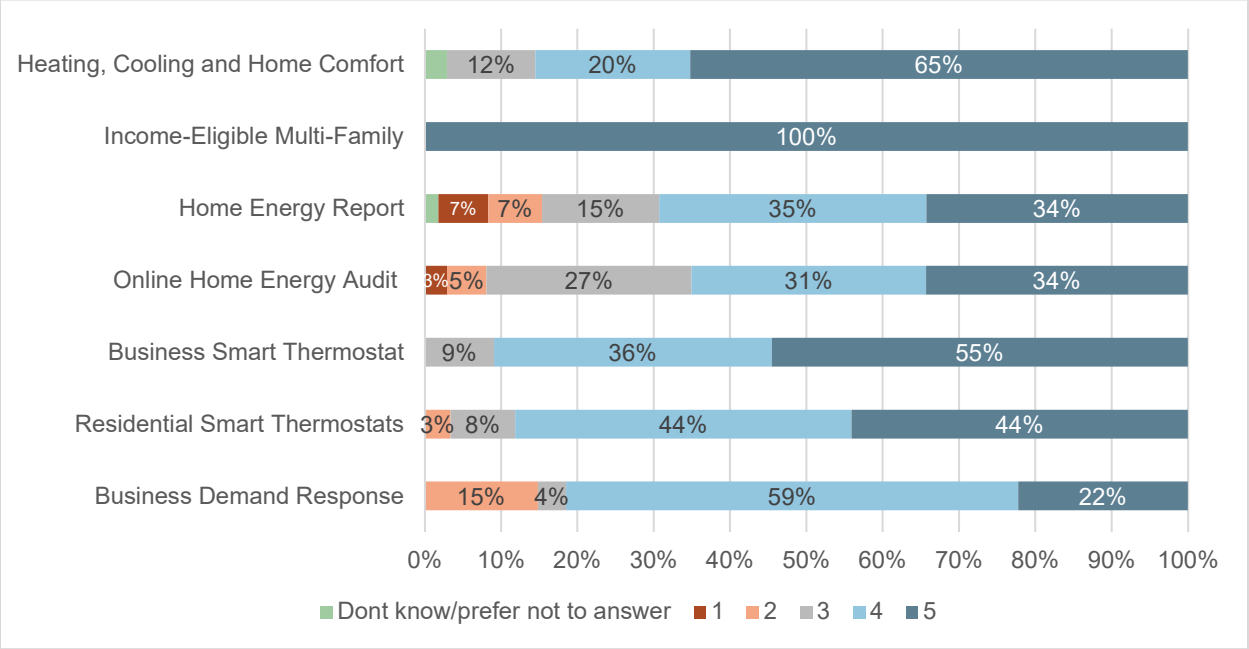
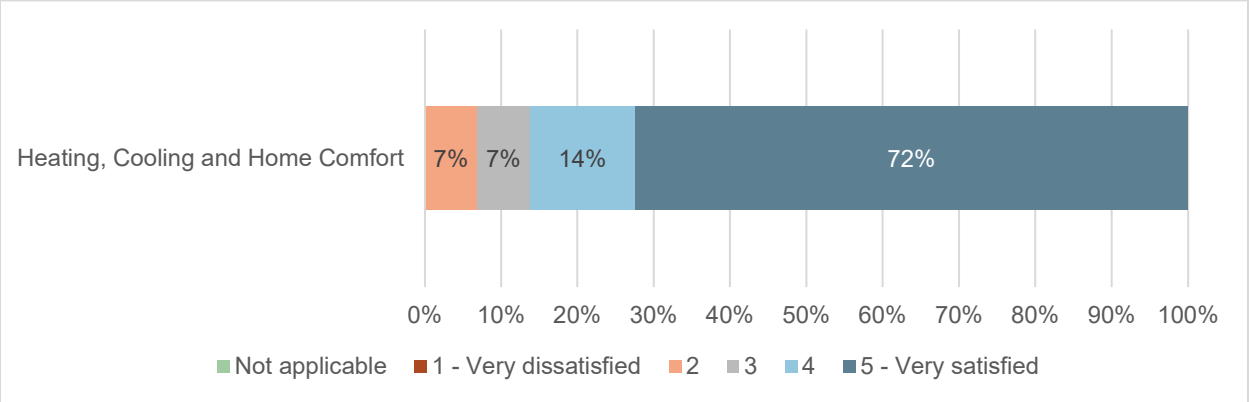


Figure 2-2: Overall Program Satisfaction Reported by Trade-Allies



3 Impact Evaluation Approaches

This report section describes the impact evaluation activities that ADM performed for Evergy's MEEIA Cycle III Residential and Demand Response Programs

In accordance with the Missouri Energy Efficiency Investment Act (MEEIA) Rules and the Stipulation and Agreement, Evergy Services, Inc. (ESI) (hereafter referred to as Evergy) on behalf of its affiliates Evergy MO West and Evergy Metro, has contracted with ADM Associates to evaluate, measure, and verify the information tracked by Evergy MO West and Evergy Metro for its portfolio of Seven Residential programs and 3 Demand Response programs for the 3-year program cycle beginning January 1, 2020 through December 31, 2022. Specific Evergy programs covered by this evaluation include:

Residential Programs:

- Heating Cooling & Home Comfort
- Energy Savings Products
- Income-Eligible Multi-Family
- Home Energy Report
- Income Eligible Home Energy Report: Metro Only
- Online Home Energy Audit
- Products & Services Incubator
- PAYS

Demand Response Programs

- Business Demand Response
- Residential Demand Response
- Business Smart Thermostat

In accordance with the Missouri Code of State Regulations 20 CSR 4240-22.070 (8) (Missouri regulations), Evergy is required to complete an impact evaluation for each program using one or both methods detailed below.

Method 1: *At a minimum, comparisons of one (1) 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:*

Comparisons of pre-adoption and post-adoption loads of program or demand-side rate participants, corrected for the effects of weather and other inter-temporal differences; and

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

Method 2: *The* evaluator *shall 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, hourly load data, load research data, end-use load metered data, building and equipment simulation models, and survey responses; or

Audit and survey data on appliance and equipment type, size and efficiency levels, household characteristics, or energy-related building characteristics.

Table 3-1 presents ADM's methods and protocols for the impact evaluation with the associated MO requirement.

Table 3-1: MO Regulations Impact Evaluation Methods and Protocols

Sector	Program	Impact Evaluation Method	Impact Evaluation Protocol
Residential	Heating Cooling & Home Comfort	1A	2B
	Energy Saving Products	1A	2B
	Low Income Multi-Family	1A	2B
	Home Energy Reports	1B	2A
	Online Audits	NA	NA
	Incubator Programs & PAYS	NA	NA
	Residential Smart Thermostat	1B	2B
Demand Response	Business Custom Demand Response	1A	2A
	Business Smart Thermostat	1B	2B

3.1 Data collection and Measure Verification

ADM reviewed data tracking systems associated with the program to ensure that the data provides sufficient information to calculate energy and demand impacts. The data review included an assessment of whether savings reported in the tracking system comply with energy savings calculations and guidelines set by the Evergy Technical Reference Manual (Evergy TRM). Data sources used for the evaluation of programs for which ADM calculated kWh and kW impacts are reported in Table 3-2 below.

Table 3-2: Data Sources Used for Residential and Demand Response Program Evaluation

Data Sources Used	Heating Cooling and Home Comfort	Energy Savings Products	Income Eligible Multi-Family	Home Energy Report	Business Demand Response	Smart Thermostats
Program tracking data from Nexant's Energy Data tracking system	X	X	X	X		X
Program tracking data from Evergy's Distributed Energy Management Resource System (DERMS).					X	
Unit savings algorithms from the Evergy Technical Reference Manual	X	X	X			
Program applications and supporting documentation;	X					
Participant survey data collected through online survey	X			X		
Property manager survey data			X			
General population survey data from Evergy customers obtained via online survey	X	X		X		
Secondary data from ENERGY STAR databased of Certified Products and/or AHRI	X	X	X			
Geospatial map (shapefile) of Evergy Missouri West and Evergy Missouri Metro service territories		X				
Billing Consumption Data (Monthly)				X		
Billing Consumption Data (15 Minute Interval)					X	
Schedule of Program Events					X	X
National Oceanographic and Atmospheric Administration (NOAA) Weather Data				X	X	X

Table 3-3 below summarizes the data collection activities and corresponding impact evaluation research objectives.

Table 3-3: Summary of Approaches and Data Collection

Data Collection Activity	Impact Evaluation Research Objectives
Program Tracking Data Review and Audit: Nexant IEnergy & DERMS	Verify that the tracking data provides sufficient information to calculate energy and demand impacts
	Verify proper application of unit energy savings estimates and algorithms
	Audit data to insure there are no duplicate or erroneous entries
Online Participant Survey	Verify measure installation
	Assess customer purchasing and decision-making processes; estimate net-to-gross ratio
	Assess customer satisfaction with measures and overall program
General Population Email Survey	Verify upstream measure installation
	Assess customer purchasing and decision-making processes; estimate net-to-gross ratio
	Assess customer satisfaction with recent purchases of program promoted measures
	Determine drive times for leakage analysis
Program applications and supporting documentation	Verify tracking data inputs
Property manager survey data	Determine installation rates and locations for Multi-Family program
Secondary data from ENERGY STAR databased of Certified Products and or AHRI	Verify claimed wattage and HVAC SEER
Geospatial map (shapefile) of Evergy Missouri West and Evergy Missouri Metro service territories	Used for leakage analysis of upstream products
Billing Consumption Data	Inputs in regression models
Schedule of Program Events	
National Oceanographic and Atmospheric Administration (NOAA) Weather Data	

Table 3-4 below summarizes sample sizes for each evaluated program.

Table 3-4: Sample Size by Program

Program	Measure	Sample Size
Heating Cooling & Home Comfort	DI Kit Measures	Sample of participants for 90% confidence with ± 10% precision[3]
	Home Envelope and Weatherization Measures	
	Energy-Efficient HVAC Equipment	
Energy Savings Products	LED lighting measures	Sample of 553 customers
Income Eligible Multi-Family	DI Kit Measures and Prescriptive or Custom Rebates	Sample of 9 property decision-makers (53%)
Home Energy Report		Census of participants
Business Demand Response	Commercial Customer Incentive	Census of participants
Smart Thermostats	Business Smart Thermostats and Residential Demand Response	Census of participants

3.1.1 Estimating Net Savings

3.1.1.1 Net-to-Gross Ratio

Program implementation is designed to minimize free-ridership and maximize net-to-gross ratios, while ensuring the program does the following: appropriately influences customer decisions, accurately tracks and verifies equipment and its installation, and drives market transformation.

[3] A minimum sample size of 68 participants per jurisdiction was needed for the participant survey. In PY1, there were a total of 143 completed participant surveys (70 completes from Missouri West and 73 completes from Missouri Metro).

ADM used self-reported data collected as part of program participant, general population, and trade ally surveys, to assess free ridership. A separate free ridership estimate was developed for each category of measures by program. ADM assessed spillover at the at the program level as described below.

Self-report approaches were used for both free ridership and spillover assessment. Self-report free ridership assessment relied upon responses from program participants. Program participants were identified from the tracking data.

3.1.1.2 Free Ridership

The free ridership self-report uses participant and trade ally surveys to develop an estimate of savings that would have occurred absent the program. Data was collected on contextual factors that influence customers' decisions in addition to customers' perceptions of program influence to estimate free ridership. Customers were be asked questions about the circumstances around the decision to implement measure. The surveys focused on factors that limit energy efficiency investments that the program may directly address. For example,

- Would the customer have been financially able to install the measure or allocated the money for the efficiency improvement without the program incentive?
- Did the customer already have plans to install the equipment before learning of the program or is the program effectively reaching customers who would otherwise not be engaged in making the efficiency improvement?
- Did the customer have previous experience with similar efficiency measures that demonstrate a familiarity with them? Were they aware that they could save on energy costs before exposure to program informational supports such as energy audits?

The participant survey included questions that directly ask customers to estimate the influence of the program and/or their likelihood of taking the same action if the program was not available. The responses to the questions about the decision-making context provide more information to help make decisions about program design and implementation than responses to rating scale questions.

For some projects, there may be program influences that are not directly observable by program participants. In such cases the participant's response creates an incomplete picture of the program's influence. For example, a contractor's recommendation may have influenced a customer's decision and that contractor's recommendation may have in turn been influenced by the program. In the case of the HCHC program, we used enhanced self-report methodologies that incorporated self-reports from other market actors in addition to participant self-reports.

Survey respondents were asked a series of questions to elicit feedback regarding influences on their decision to participate in the program. Each respondent was assigned a free ridership score based on a consistent free ridership scoring algorithm. The participant surveys, trade ally surveys, and a flow charts showing the free ridership scoring algorithm from the survey are provided in the accompanying appendices.

3.1.1.3 Participant and Non-Participant Spillover

Spillover refers to energy-saving purchases or actions that result from program influence but did not receive direct program support, such as incentives. This can occur both with participants and non-participants. Among participants, the program influence typically is understood to be the program participation itself. Among non-participants, the program influence could result from program marketing or outreach, including engagement with program representatives or trade allies. “Like spillover” refers to program-induced actions participants make outside the program that are of the same type as those made through the program.

Like spillover was assessed by asking survey respondents (participants and non-participants) if they have implemented any efficient equipment in the service territory without receiving a program incentive. Respondents that indicate that they did implement such equipment were asked a series of follow-up questions to facilitate estimation of the energy savings associated with the equipment and to assess the program’s influence on the equipment implementation

4 Process Evaluation Approach

This chapter describes the process evaluation activities that ADM will performed for Evergy's Residential & Demand Response programs.

The process evaluations included the following activities:

- Annual reviews of the program database and materials and in-depth interviews with Evergy and implementer staff
- Participant surveys
- Feedback from surveys and/or interviews with program contractors and installers

4.1 Program Tracking Review

The first critical task was to review the program databases that complemented the impact evaluation review of the program databases. Specifically, this review determined that the program databases are capturing all critical information. The database review included summaries of the essential program metrics such as:

- Number of measures installed by program and program delivery channel
- Number of unique participants by program and by utility relative to program participation estimates
- Review of unit level savings assumptions

4.1.1 Program Marketing Materials and Website Review

ADM reviewed current program marketing materials. This including examining relevant program documents such as program marketing materials, application/rebate forms, and website materials.

The findings from this review will be summarized in an overall assessment of the effectiveness of current marketing and outreach activities, especially those targeting trade allies. Specifically, ADM will provide a summary of the overall effectiveness of these materials, including any available data on web site visits, click-throughs, and associated metrics. The review also will compare the current market tactics to industry best practices for marketing residential energy-efficiency programs.

4.2 Program Staff and Implementer Review

ADM conducted interviews with both the program staff and implementer staff. ADM conducted interviews with the utility program staff responsible for deploying the programs. The in-depth interviews were conducted though video conferences. These interviews discussed the respondent's roles and responsibilities for the program, the effectiveness

of current program design, assessed overall program operations, outreach and marketing approaches, customer and contractor satisfaction, barriers to participation and areas for program improvement.

ADM also conducted interviews with appropriate staff from the various implementation contractors involved in program operations. The in-depth interviews were conducted via video conference. Discussions covered the same process evaluation topics to ensure consistency across interview guides.

4.3 Trade Ally Surveys and Interviews

ADM conducted trade ally surveys and interviews to provide additional information regarding specific downstream and midstream program activities, as well as to provide inputs for our improved spillover estimation method. The annual online survey of trade allies for the HCHC program include questions to inform the Net to Gross analysis as well as questions addressing program awareness, contractor satisfaction, barriers to program participation, and current installation rates and market trends.

4.4 Property Manager Interviews

As a part of ADM's process evaluation for the IEMF program, ADM conducted an email and phone interview campaign of property owners or managers who participated in the program. ADM utilized program tracking data to contact property managers or owners. The interview gathered data on participant knowledge and awareness of the program, business practices, satisfaction, reasons for participating, decision-making process, as well as general attitudes and behaviors regarding energy efficiency, the IEMF program, and Evergy as their utility.

4.5 Participant Surveys

ADM conducted an email survey of a sample of PY1 participants for the Heating, Cooling, and Home Comfort Program. These will be online surveys to assessed satisfaction and customer decision-making, including free ridership and spillover questions, and to identify areas for program improvement.

4.6 General Population Survey

ADM conducted an online general population survey in the residential sector for PY1 MEEIA 3 program cycle. The purposes of this survey are to:

1) Provide insights regarding overall awareness of Evergy's Program offerings among program non-participants

2) Assess the influence of programs and trade allies (contractors and distributors) on equipment purchases to assess spillover rates

Evergy customer records were used to develop the sample frame for the general population survey. The sample and programed survey link was developed by ADM and provided to the Evergy customer engagement team to send out. This approach allowed Evergy to operate within the customer email contact guideline while allowing ADM to independently collect the data necessary for the evaluation effort.

5 Cost-Effectiveness Approach

5.1 Calculation

Cost-effectiveness ratios were calculated using an Excel based model that incorporated ADM-verified EM&V findings, including energy and demand impacts, incremental costs, NTG ratios, and measure lifetimes. Avoided costs, discount rates, and program data was provided by Evergy. Incremental costs were calculated using inputs from the Evergy PY1 TRM. A table listing Cost Effectiveness Calculation inputs is provided in Section 5.3.

5.2 Cost Tests Utilized

ADM performed the Participant Cost Test (PCT), Ratepayer Impact Measure (RIM), Utility Cost Test (UCT), Total Resource Cost test (TRC), and Societal Cost Test (SCT) for PY1. These tests give an all-encompassing perspective on the program's annual cost effectiveness.

A common misperception is that there is a single best perspective for evaluation of cost-effectiveness. Each test is useful and accurate, but the results of each test are intended to answer a different set of questions. The questions to be addressed by each cost test[4] are shown in Table 5-1.

Table 5-1: Questions Addressed by the Various Cost Tests

Cost Test	Questions Addressed
Total Resource Cost Test (TRC)	■ What is the regional benefit of the energy efficiency project including the net costs and benefits to the utility and its customers? ■ Are the benefits greater than the costs (regardless of who pays the costs and who receives the benefits)? ■ Is more or less money required by the region to pay for energy needs?
Utility Cost Test (UCT – also referred to as the Program Administrator Cost Test or PACT)	■ Do total utility costs increase or decrease? ■ What is the change in total customer bills required to keep the utility whole?
Ratepayer Impact Measure (RIM)	■ What is the impact of the energy efficiency project on the utility's operating margin? ■ Would the project require an increase in rates to reach the same operating margin?

[4] National Action Plan for Energy Efficiency (2008) Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers. *Energy and Environmental Economics, Inc., and Regulatory Assistance Project. Last accessed March 2020 via:* https://www.epa.gov/sites/production/files/2015-08/documents/cost-effectiveness.pdf

Cost Test	Questions Addressed
Societal Cost Test (SCT)	■ What is the overall benefit to the community of the energy efficiency project? ■ Are the benefits greater than the costs (regardless of who pays the cost and who receives the benefits)?
Participant Cost Test (PCT)	■ Is it worth it to the customer to install energy efficiency? ■ Is the customer likely to want to participate in a utility program that promotes energy efficiency?

The results of all five-cost effectiveness tests provide a more comprehensive picture than the use of any one test alone. The TRC and SCT cost tests help to answer whether energy efficiency is cost-effective overall. The PCT, UCT, and RIM help to answer where the selection of measures and design of the program is balanced from participant, utility, and non-participant perspectives, respectively. The scope of the benefit and cost components included in each test ADM performed are summarized in Table 5-2.

Table 5-2: Summary of Benefits and Costs Included in Cost-Effectiveness Test

Test	Benefits	Costs
TRC (Benefits and costs from the perspective of all utility customers in the utility service territory)	■ Energy-related costs avoided by the utility ■ Capacity-related costs avoided by the utility, including generation, transmission, and distribution ■ Applicable tax credits	■ Program overhead costs ■ Program installation costs ■ Incremental measure costs
UCT (Perspective of utility, government agency, or third party implementing the program)	■ Energy-related costs avoided by the utility ■ Capacity-related costs avoided by the utility, including generation	■ Program overhead costs ■ Utility/program administrator incentive & installation costs
RIM (Impact of efficiency measure on non-participating ratepayers overall)	■ Energy-related costs avoided by the utility ■ Capacity-related costs avoided by the utility, including generation, transmission, and distribution	■ Program overhead costs ■ Utility/program administrator incentive & installation costs ■ Lost revenue due to reduced energy bills
SCT (Benefits and cost to all in the utility service territory, state, or nation)	■ Energy-related costs avoided by the utility ■ Capacity-related costs avoided by the utility, including generation, transmission, and distribution	■ Program overhead costs ■ Program installation costs ■ Incremental measure costs
PCT (Benefits and costs from the perspective of the customer installing the measure)	■ Incentive payments ■ Bill Savings ■ Applicable tax credits or incentives	■ Incremental equipment costs ■ Incremental installation costs

5.3 Source of Cost Effectiveness input data

Table 5-3: Inputs and Sources for Cost Effectiveness Calculations

Input	Source
Avoided energy costs	Provided by Evergy
Avoided capacity costs	
Retail rates	
Load shapes	
Discount rates	
Line loss factors	
Program Costs	
EUL	Evergy TRM (2020-05-01) and IL TRM v7
Equipment Costs	
Energy and peak demand savings	ADM program evaluations
NTG	
Program Incentives	Program Tracking Data

6 Evaluation Methodology by Program

6.1 Heating, Cooling and Home Comfort

The Heating, Cooling, and Home Comfort Program provides educational and financial incentives to residential customers by increasing awareness and incorporation of energy efficiency into their homes, while also generating cost-effective energy and demand savings for Evergy. The program encourages home improvements that increase operational energy efficiency and home comfort. It consists of three primary components: 1) Energy Savings Kit, 2) Insulation and Air Sealing, and 3) HVAC.

The program seeks to provide financial incentives on a variety of categorically applicable measures and drive market adoption of energy efficient measures and practices through the education of customers and the community of local contractors. This program is eligible to customers that own or rent a residence or are building a new residence. HVAC contractors are also eligible for participation as trade allies for the program. In PY1, customers could receive the following eligible equipment upgrades:

Table 6-1: Program Equipment Offered

Program Component	Measure
Energy Savings Kit	LED Lightbulbs
	Faucet Aerators
	Low Flow Showerheads
	Pipe Insulation
	Advanced Power Strips
Insulation and Air Sealing	Attic/Ceiling Insulation
	Air Sealing
HVAC	Central AC
	Air Source Heat Pump
	Ground Source Heat Pump
	Ductless Mini-Split Heat Pump

PY1 performance metrics are summarized in Table 6-2. Overall, gross verified energy savings were close to the targeted value, while the gross verified peak demand savings exceeded the targeted value.

Table 6-2 Heating, Cooling, and Home Comfort Program Performance Metrics

Metric	PY1	West	Metro
Number of Participants*	4,640		
Energy Savings (kWh)			
Targeted Energy Savings	10,582,900	7,236,542	3,346,358
Reported Energy Savings	9,559,135	5,937,819	3,621,316
Gross Verified Energy Savings	9,133,038	5,496,808	3,636,230
Net Verified Energy Savings	6,786,008	3,963,157	2,822,852
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	4,740.00	3,133.00	1,607.00
Reported Peak Demand Savings	5,639.02	3,328.37	2,310.65
Gross Verified Peak Demand Savings	5,959.62	3,451.32	2,508.30
Net Verified Peak Demand Savings	4,407.13	2,524.83	1,882.30
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	1.04	1.02	1.07

*Represents the number of unique account numbers in the program

6.1.1 Gross Impact Methodologies

The methods used to calculate and verify energy savings (kWh) and peak demand reduction (kW) consisted of:

- Program tracking data census. The tracking data was reviewed for a census of homes and measures. The data was verified for duplicate participation within the program and to ensure there were no discrepancies within the tracking data.
- Measure installation verification. In-service rates (ISR) were calculated by measure for a sample of program participants using data from the participant survey.
- HVAC efficiency verification. The AHRI data from a sample of approximately 180 HVAC units (70 central ACs, 40 air source heat pumps, and 17 ductless mini-split heat pumps) and from the program were pulled. The efficient SEER and EER values reported in the tracking data were then verified using the AHRI database for each unit.
- HVAC early replacement verification. A sample of 100 HVAC units (70 central ACs and 30 air source heat pumps) from the program were pulled. The project documentation from those units was requested from the program implementer (ICF) and then reviewed to ensure the sampled HVAC units listed as early replacements in the tracking data were verified to be replaced before burnout.

- Reported savings review. Reported savings calculations were reviewed for all measures to determine the cause of savings discrepancies.
- Standard for verification of savings. The calculation of gross energy savings and demand impacts primarily relied on energy savings calculations and algorithms from the Evergy TRM. The data collected from the participant survey, along with program tracking data were used as inputs to the savings algorithms as listed in the Illinois Technical Reference Manual (IL TRM) as outlined in the Evergy TRM.

6.1.2 Net-to-Gross (NTG) Estimation

The net to gross estimation for the program includes calculation of measure-level free ridership score, project-level free ridership score, and spillover score. Both the participant survey and trade ally survey include questions relating to program participation and free ridership. For customers who completed projects that did not include HVAC measures, the free ridership score is based entirely on responses to questions in the participant survey. For customers who completed projects that included HVAC measures and who reported that equipment information or a recommendation from their trade ally was highly influential in their decision to implement the HVAC measures, the assessment of free ridership includes information from the service provider survey. This is because program education and outreach efforts for HVAC measures may influence trade allies' selling of efficient equipment in ways that are not apparent to customers.

6.1.3 Impact Evaluation Summarized Findings

Table 6-3 through Table 6-5 summarize the verified gross and net energy and demand savings for the Heating, Cooling, and Home Comfort Program.

Table 6-3: Program Gross Energy Savings (kWh) and Peak Demand Reduction (kW)

Jurisdiction	Reported Energy Savings (kWh)	Reported Demand Reductions (kW)	Gross Verified Energy Savings (kWh)	Gross Verified Demand Reductions (kW)	RR_{kWh}	RR_{kW}
Missouri West	5,937,819	3,328.37	5,496,808	3,451.32	93%	104%
Missouri Metro	3,621,316	2,310.65	3,636,230	2,508.30	100%	109%
Total	**9,559,135**	**5,639.02**	**9,133,038**	**5,959.62**	**96%**	**106%**

Table 6-4: Verified Gross and Net Annual Energy Savings (kWh)

Jurisdiction	Spillover (Participant)	Spillover (Non-Participant)	Free Ridership	NTG Ratio	Gross Verified Energy Savings (kWh)	Net Energy Savings (kWh)
Missouri West	5%	2%	28%	72%	5,496,808	3,963,157
Missouri Metro	5%	2%	22%	78%	3,636,230	2,822,852
Total			**26%**	**74%**	**9,133,038**	**6,786,008**

Table 6-5: Verified Gross and Net Peak Demand Reduction (kW)

Jurisdiction	Spillover (Participant)	Spillover (Non-Participant)	Free Ridership	NTG Ratio	Gross Verified Demand Reductions (kW)	Net Demand Reductions (kW)
Missouri West	5%	2%	27%	73%	3,451.32	2,524.83
Missouri Metro	5%	2%	25%	75%	2,508.30	1,882.30
Total			**26%**	**74%**	**5,959.62**	**4,407.13**

6.2 Energy Saving Products

The Energy Saving Products (ESP) program focuses on promoting, cultivating, and facilitating the adoption of energy efficient products in residential settings. The program has been designed with two key focuses:

- Education – the expansion of both residential customer and sales associate knowledge of and familiarity with the advantages of various energy efficient products available; and
- Efficient Product Adoption – market transformation resulting from increased awareness of the benefits of energy efficient technology and is supported through financial, point-of-sale incentives for the purchase of products that meet high efficiency standards.

Through the ESP program, customers can receive instant discounts for a variety of efficient measures. In PY1 these included a selection of LED lighting measures, including standard, specialty, and smart bulbs. In PY2021 and PY2022, the program may be expanded to include other measures such as room air conditioners, advanced power strips, smart thermostats, and others.

Table 6-6: Measures and Quantities

Distribution Type	Measure Type	Package Quantity	Bulb Quantity	Reported kWh	Reported kW
Missouri Metro	Standard LED	84,737	321,052	11,791,295	1,432.88
	Specialty LED	49,732	162,647	6,925,393	901.24
Missouri West	Standard LED	102,893	378,664	13,872,435	1,687.54
	Specialty LED	61,139	182,648	7,859,401	1,037.65
Totals		**298,501**	**1,045,011**	**40,448,524**	**5,059.31**

Table 6-7 provides program performance metrics.

Table 6-7: Energy Savings Products Program Performance Metrics

Metric	PY1	West	Metro
Number of Rebated Packages*	298,501	164,032	134,469
Energy Savings (kWh)			
Targeted Energy Savings	25,191,811	13,038,632	12,153,179
Reported Energy Savings	40,448,524	21,731,835	18,716,688
Gross Verified Energy Savings	48,451,468	25,434,704	23,016,764
Net Verified Energy Savings	28,460,934	15,058,272	13,402,662
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	1,844.24	955.17	889.07
Reported Peak Demand Savings	5,059.31	2,725.19	2,334.12
Gross Verified Peak Demand Savings	6,611.66	3,461.28	3,150.38
Net Verified Peak Demand Savings	3,899.55	2,056.78	1,842.77
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	4.85	4.77	4.95

*Represents the number of packages sold in the program

6.2.1 Data Sources

Several primary and secondary data sources were used for the evaluation. Tracking data and supporting documentation for the program was obtained from the program implementor. A general population survey was sent to a randomly selected, representative sample of Evergy's residential customers. ADM also conducted in-depth interviews with program staff at Evergy and the implementation contractor.

6.2.2 Gross Impact Methodologies

The methods used to calculate and verify energy savings (kWh) and peak demand reduction (kW) consisted of:

- Program tracking data census. The tracking data was reviewed for a census of homes and measures. The data was verified for consistency and to ensure there were no discrepancies within the tracking data.
- Measure installation verification. In-service rates (ISR) were calculated by measure for a sample of program participants using data from the participant survey.
- Hours of Use were calculated using data from the participant survey.

6.2.3 Net-to-Gross (NTG) Estimation

Net-to-Gross was calculated using responses from the online survey of participants for the measure-level free ridership score, project level free ridership score, and spillover score. Questions relating to the assessment of net-to-gross (NTG) address both free ridership and spillover.

6.2.4 Impact Evaluation Summarized Findings

Table 6-8 through Table 6-10 summarize the verified gross and net energy savings and demand reduction.

Table 6-8: Program Gross Energy Savings (kWh) and Peak Demand Reduction (kW)

Jurisdiction	Reported Energy Savings (kWh)	Reported Demand Reductions (kW)	Gross Verified Energy Savings (kWh)	Gross Verified Demand Reductions (kW)	RR_{kWh}	RR_{kW}
Missouri West	21,731,835	2,725.19	25,434,704	3,461.28	117%	127%
Missouri Metro	18,716,688	2,334.12	23,016,764	3,150.38	123%	135%
Total	**40,448,524**	**5,059.31**	**48,451,468**	**6,611.66**	**120%**	**131%**

Table 6-9: Verified Gross and Net Energy Savings (kWh)

Jurisdiction	Spillover		Free Ridership	NTG Ratio	Leakage	Gross Verified Energy Savings (kWh)	Net Energy Savings (kWh)
	Participant	Non-Participant					
Missouri West	7.0%	0.0%	46%	61%	1.6%	25,434,704	15,058,272
Missouri Metro	7.0%	0.0%	47%	60%	1.6%	23,016,764	13,402,662
Total			**47%**	**60%**	**1.6%**	**48,451,469**	**28,460,934**

Table 6-10: Verified Gross and Net Peak Demand Reduction (kW)

Jurisdiction	Spillover		Free Ridership	NTG Ratio	Leakage	Gross Verified Demand Reduction (kW)	Net Demand Reduction (kW)
	Participant	Non-Participant					
Missouri West	7.0%	0.0%	46%	61%	1.6%	3,461.28	2,056.79
Missouri Metro	7.0%	0.0%	47%	60%	1.6%	3,150.38	1,842.77
Total			**46%**	**61%**	**1.6%**	**6,611.66**	**3,899.56**

6.3 Income-Eligible Multi-Family

The Income-Eligible Multi-Family (IEMF) program provides qualifying, income-eligible properties with assistance through energy assessments, program applications, technical support, and upgrade incentives. The program consists of two components. The first component provides direct install kits, including a suite of measures installed in the units and common areas to benefit occupants and property/building managers/owners. Measures may include low-flow faucet aerators and showerheads, advanced power strips, LEDs, and other measures. The second component of the program provides incentives for upgrading in-unit and common area measures in the form of prescriptive or custom rebates. The two components provide benefits to both the resident and the property manager by increasing the value of the property, reducing utility bills, and making the property more comfortable, healthier, and safer.

Table 6-11: Program Equipment Installed in PY1

	Measure
Direct Install	In-Unit LEDs
	Smart Power Strip
	Faucet Aerators
	Low-Flow Showerhead
Prescriptive	ASHP
	Programmable Thermostat
	Bathroom Exhaust Fan
	Dryer
	Washing Machine
	Dishwasher
Custom	Interior LED Lighting
	Exterior LED Lighting
	LED Exit Sign
	Ceiling Fan
	In-Unit LED
	Refrigerator
	New Construction

PY1 performance metrics are summarized in Table 6-12. Reported annual energy savings exceeded program projections. Overall, gross verified energy savings and demand reduction developed through ADM's impact evaluation were higher than reported savings and reported demand reduction, representing a gross realization rate over 100% for both.

Table 6-12: Income-Eligible Multi-Family Program Performance Metrics

Metric	PY1	West	Metro
Number of Sites	17	8	9
Energy Savings (kWh)			
Targeted Energy Savings	2,756,956	1,388,947	1,368,009

Reported Energy Savings	1,595,087	879,280	715,807
Gross Verified Energy Savings	1,599,653	885,014	714,639
Net Verified Energy Savings	1,599,653	885,014	714,639
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	491.00	243.00	248.00
Reported Peak Demand Savings	187.32	110.87	76.45
Gross Verified Peak Demand Savings	198.70	121.78	76.92
Net Verified Peak Demand Savings	198.70	121.78	76.92
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	**0.41**	**0.43**	**0.40**

*Represents the number of unique account numbers in the program

6.3.1 Data Sources

Data collection IEMF program activities consisted of program materials and surveys and interviews with participating property owners/managers. Evergy uses Sightline project tracking database in conjunction with Nexant reporting services as its central tracking and reporting system. Property owner/manager surveys provided self-reported data for the impact analysis and process evaluation. A total of 9 property decision-makers (53%) completed the survey. The process evaluation gained additional perspective from In-depth interviews with Evergy and ICF.

6.3.2 Gross Impact Methodologies

The method used to calculate and verify energy savings (kWh) and demand savings (kW) consisted of:

- Reviewed the Program tracking data to determine the scope of the Program and to ensure there were no duplicate or erroneous project entries.
- Attempted a survey of a census of properties, first with emailed surveys, followed by direct calls to property contacts at each of the 17 properties in the program. A survey of tenants was not attempted as not all tenants are home when improvements are made, and ADM has found that tenant survey in low-income multi-family residences yield low responses and unreliable data.
- ADM conducted a detailed desk review for each project. The desk review process includes a thorough examination of all available project materials, including invoices, equipment cut sheets, pre- and post-inspection reports, and estimated savings calculators.

- ADM then calculated verified gross savings. The sources for savings algorithms are the Evergy TRM (2020-05-01) and Illinois TRM.

6.3.3 Net-to-Gross (NTG) Estimation

The Net-To-Gross Ratio (NTGR) for the Income-Eligible Multi-Family program is stipulated at 1.00, due to (1) the specific targeting of the low-income sector; and (2) the small contributions of the program to the overall portfolio saving, which do not justify the cost of conducting primary research needed to adjust the NTGR from stipulated values.

6.3.4 Impact Evaluation Summarized Findings

Table 6-13, Table 6-14, and Table 6-15 summarize the verified gross and net energy and demand savings. Verified energy savings and demand reductions are further explored in Appendix E.

Table 6-13: Program Gross Energy Savings (kWh) and Peak Demand Reduction (kW)

Jurisdiction	Reported Energy Savings (kWh)	Reported Demand Reduction (kW)	Gross Verified Energy Savings (kWh)	Gross Verified Demand Reduction (kW)	RR_{kWh}	RR_{kW}
Missouri West	879,280	110.87	885,014	121.78	101%	110%
Missouri Metro	715,807	76.45	714,639	76.92	100%	101%
Total	**1,595,087**	**187.32**	**1,599,653**	**198.70**	**100%**	**106%**

Table 6-14: Verified Gross and Net Annual Energy Savings (kWh)

Jurisdiction	NTG Ratio	Gross Verified Energy Savings (kWh)	Net Energy Savings (kWh)
Missouri West	100%	885,014	885,014
Missouri Metro	100%	714,639	714,639
Total	**100%**	**1,599,653**	**1,599,653**

Table 6-15: Verified Gross and Net Peak Demand Reduction (kW)

Jurisdiction	NTG Ratio	Gross Verified Demand Reduction (kW)	Net Demand Reduction (kW)
Missouri West	100%	121.78	121.78
Missouri Metro	100%	76.92	76.92
Total	**100%**	**198.70**	**198.70**

6.3.5 Program Metrics

MEEIA Cycle 3 specifies two program metrics to be used in evaluating the performance of the Income-Eligible Multi-Family program.

- Average Percent Energy Savings per Project: "The Average Percent Energy Savings Per Project performance element will be calculated using a pre-project property energy benchmarking tool to identify each project's energy usage and the TRM's energy savings calculations. Each Program Year, the total number of projects will be divided by the total number of kWh's saved for a project average."[5]
- Spend of at least 85% of Budget: "The Spend of at least 85 percent of Budget performance element will create a threshold criterion that ensures at least 85 percent of the Commission-approved annual budget (administrative cost, plus customer incentive cost) for the program year is spent. The actual spend will be reported directly out of the Company's accounting system and included in the EM&V report. The Company will also provide a list of 'lock-in projects' and their locked-in date for inclusion for the program year spend."[6]

Average Percent Energy Savings per Project

ADM reviewed the total site consumption for each project reported in the program tracking data and calculated reported savings as a percentage of total site consumption prior to project completion. The average precent energy savings per project was found to be 16%.

Spend of at least 85% of Budget

The program budget, actual spending, and long-lead spending (rebates approved in PY1 but scheduled for PY2) for the 2020 program year of the Income-Eligible Multi-Family program is shown in Table 6-16, below.

[5] MEEIA 3 (2019 – 2022) filing, Nov 29, 2018. pg 59

[6] MEEIA 3 (2019 – 2022) filing, Nov 29, 2018. pg 59

Table 6-16: Program Budget and Spending in PY2020

Service Territory	Program Budget	Program Spending	Long-Lead Program Spending	Total Program Spending (% of Budget)
MO Metro	$820,134	$611,718.49	$175,958.50	96%
MO West	$936,918	$725,765.44	$181,781.45	97%
Total	**$1,757,052**	**$1,337,483.93**	**$357,739.95**	**96%**

The total program spending was therefore found to total 96% of program budget, meeting the MEEIA Cycle 3 requirement of program Spend of at least 85% of budget across both service territories.

6.4 Home Energy Report

The Home Energy Report Program is designed to provide information to residential customers intended to educate and influence customer's behavior to lower energy usage. The Home Energy Report is delivered in paper, and/or email format, and is composed of several modules of information to help customers understand and manage their energy use. The household receives personalized information about their own kWh consumption and comparison to household energy usage information with similar types of customers, or "neighbors". Also included on the reports is information on other Evergy energy efficiency programs to encourage additional home improvements towards reduced energy usage. This normative information on electric usage and targeted tips on energy saving behaviors is aimed to reduce the participant household's energy consumption.

Table 6-17: Summary of Evergy Home Energy Report Program Participation

Territory	Cohort	Treatment Start Date	Treatment Group Size		Control Group Size	
			Number in Cohort	Number at EOY 2019	Number in Cohort	Number at EOY 2019
Missouri West	201308_E	September 2013	59,298	29,337	29,763	14,749
	201503_E_GMO	March 2015	13,238	8,246	9,660	5,988
	201604_E_GMO	April 2016	77,434	45,541	9,705	5,736
	201706_E_GMO	June 2017	25,003	14,629	11,597	6,823
	201904_E_GMO	April 2019	59,873	32,616	23,505	12,854
	202002_E_GMO	March 2020	9,998	4,930	3,926	1,953
Missouri Metro	201407_E_High_Users	April 2014	91,354	50,144	12,207	6,700
	201503_E_KMO	May 2015	12,213	3,256	9,684	2,539
	201607_E	June 2016	17,320	7,084	11,099	4,546
	202002_E_KMO	July 2020	19,989	14,411	9,991	7,146
Missouri Metro: Low-Income	201407_E_Low_Income	August 2014	20,381	8,468	12,221	5,162
Total			**406,101**	**218,662**	**143,358**	**74,196**

PY1 performance metrics are summarized in Table 6-18.

Table 6-18: Home Energy Report Program Performance Metrics

Metric	PY1	West	Metro	Metro Low-Income
Number of Participants*	233,112	147,711	76,758	8,644
Energy Savings (kWh)				
Targeted Energy Savings	32,862,521	20,355,375	9,579,000	2,928,146
Reported Energy Savings	34,352,064	19,340,629	14,637,019	374,416
Gross Verified Energy Savings	39,330,143	24,864,459	13,523,117	942,567
Net Verified Energy Savings	39,330,143	24,864,459	13,523,117	942,567
Peak Demand Reduction (kW)				
Targeted Peak Demand Savings	4,116.02	2,550.00	1,200.00	366.02
Reported Peak Demand Savings	7,718.00	4,037.81	3,641.06	39.58
Gross Verified Peak Demand Savings	6,702.00	3,453.00	3,017.00	232.00
Net Verified Peak Demand Savings	6,702.00	3,453.00	3,017.00	232.00
Benefit / Cost Ratios				
Total Resource Cost Test Ratio	1.22	1.23	1.20	
Total Resource Cost Test (Income-Eligible HER)	0.29			0.29

*Represents the number of unique account numbers in the program

6.4.1 Data sources

Data for this analysis included pre- and post-treatment monthly electric billing data for 406,101 participants and 143,358 non-participants that started on June 1, 2012 and ended on January 1, 2021. Tracking data included: participant and nonparticipant account active and account inactive dates, including date of installation and verified kWh savings for each measure installed.

6.4.2 Gross impact methodologies

The work effort was divided into five distinct steps:

- Data preparation and cleaning, including true-up and calendarization
- Validity testing of remaining treatment and control groups during the baseline period
- Estimate monthly and annual billed consumption differences between treatment and control groups via regression modeling
- Estimate and remove joint savings from other programs
- Estimate demand savings
- Estimate program attrition

The evaluators explored several linear regression models for the impact evaluation of the Home Energy Report program. Each approach involves panel linear regression models to estimate energy savings for the treatment group. The explored methods required monthly billing data for the program participants and a comparable counterfactual group. All groups passed equivalency tests and therefore did not require the evaluators to create any ad-hoc control groups. The evaluator also re-ran the regression models provided by the implementation contractor to determine the reason any significant differences in savings estimates. All final regressions used for ex post savings were applied independently of the implementation regressions.

6.4.3 Net-to-Gross (NTG) Estimation

Because the HERs program is designed as a randomized control trial, ADM uses a net-to-gross score of 1.

6.4.4 Impact Evaluation Summarized Findings

The evaluators found the Home Energy Report Program verified savings to be 39,330,143 kWh with an average annual household savings value of 169 kWh. A summary of gross and net verified energy and demand savings is shown in Table 6-23.

Table 6-19 Reported Gross Energy and Demand Savings

Jurisdiction	Reported Energy (kWh)	Reported Demand (kW)	Gross Verified Energy (kWh)	Gross Verified Demand (kW)	RR_{kWh}	RR_{kW}
Missouri West	19,340,629	4,037	24,864,459	3,453	128.6%	85.5%
Missouri Metro	15,011,435	3,681	14,465,684	3,249	96.4%	88.3%
Total	**34,352,064**	**7,718**	**39,330,143**	**6,702**	**114.5%**	**86.8%**

Table 6-20: Home Energy Report Program Impact Evaluation Results

Wave	Ex-Ante kWh Savings (kWh)	Ex-Ante Demand Savings (kW)	Verified kWh Savings (kWh)	Verified Demand Savings (kW)	Verified kWh Realization Rate	Verified kW Realization Rate
kcpl_201309_e	6,707,539	1,068.23	8,315,900	979.23	123.98%	91.67%
kcpl_201503_e_gmo	2,246,308	432.27	2,766,753	361.39	123.17%	83.60%
kcpl_201604_E_gmo	4,633,486	1,055.63	5,460,203	766.60	117.84%	72.62%
kcpl_her_201706_e_gmo	1,666,987	470.27	2,090,151	348.60	125.38%	74.13%
kcpl_her_201904_e_gmo	3,835,393	957.41	4,791,719	877.35	124.93%	91.64%
kcpl_her_202002_e_gmo	250,916	54	1,439,733	120.04	573.79%	223.91%
kcpl_201407_e_high_users	12,274,496	3,242.01	9,060,748	2276.38	73.82%	70.22%
kcpl_201503_e_kmo	816,666	45.96	632,929	68.27	77.50%	148.55%
kcpl_201607_e	1,586,226	228.09	2,742,333	312.04	172.88%	136.80%
kcpl_her_202002_e_kmo	-40,369	125	1,087,107	360.59	-2692.93%	287.81%
kcpl_201407_e_low_income	374,416	39.58	942,567	231.77	251.74%	585.62%
Total	**34,352,064**	**7,718**	**39,330,143**	**6702.28**	**114.49%**	**86.84%**

6.5 Business Demand Response

The Business Demand Response (BDR) Program is designed to reduce participant load during peak periods to improve system reliability, offset forecasted system peaks that could result in future generation capacity additions, and/or provide a more economical option to generation or purchasing energy in the wholesale market. The Program can call events from June 1 to September 30 and within designated curtailment hours of 12:00 p.m. to 8:00 p.m., Monday through Friday excluding Holidays.

The BDR Program provides an incentive for those commercial customers who reduce their electrical load during events. The incentive for customers enrolled in the program for one year is calculated as:

$$Incentive = \$28.00 \times kW\ Enrolled \times Percentage\ of\ Enrolled\ kW\ Achieved$$

For incentive purposes, “kW Enrolled” refers to the electrical load that participants with assistance from Evergy have identified that can be eliminated or shifted (curtailed) during demand response events. After events, Evergy estimates what the electric load would have been if an event had not taken place and subtracts the actual energy usage to

determine the kW achieved during events. This “kW achieved” is then divided by the “kW enrolled” to calculate the “Percentage of Enrolled kW Achieved.”

The incentive for customers enrolled in the program for multiple years is calculated as:

$$Incentive = \$30.00 \times kW\ Enrolled \times Percentage\ of\ Enrolled\ kW\ Achieved$$

There were two DR events in 2020: on August 10 and August 25; each ran from 4 p.m. through 6 p.m. CDT.

PY1 performance metrics are summarized in Table 6-21.

Table 6-21: Business Demand Response Program Performance Metrics

Metric	PY1	West	Metro
Number of Participants	119	106	14
Energy Savings (kWh)			
Targeted Energy Savings	0	0	0
Reported Energy Savings	0	0	0
Gross Verified Energy Savings	0	0	0
Net Verified Energy Savings	0	0	0
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	64,487.69	49,487.69	15,000.00
Reported Peak Demand Savings	60,350.00	60,680.00	19,670.00
Gross Verified Peak Demand Savings	59,566.26	39,383.72	20,182.54
Net Verified Peak Demand Savings	59,566.26	39,383.72	20,182.54
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	1.83	1.82	1.86

*Represents the number of unique account numbers in the program

6.5.1 Data Sources

Data used for this evaluation include program tracking data that identifies which customers participated in the program and contains data fields such as contract curtailment amount, hourly usage, hourly baseline estimates, 15-minute interval meter data (AMI) for each customer participating in the BDR program, and a full schedule of BDR program events, including the time of the event. ADM also collected recorded weather data from the National Oceanographic and Atmospheric Administration (NOAA) to estimate the impact of weather on usage.

6.5.2 Gross Impact Methodologies

In the evaluation of demand response programs, energy savings are estimated by comparing a participant's load shape during a demand response event with a baseline load shape. This baseline load is assumed to be a good estimate of the counterfactual load—that is, the load that would have manifested had there not been an event called that day.

6.5.3 Net-to-Gross (NTG) Estimation.

In demand response programs, it is typically assumed that there are neither spillover effects (customers are not expected to curtail without participating), nor free-ridership. Although customers can find workarounds to make up for lost productivity due to demand response events, they are compensated only if they reduce their load during the peak demand window, the primary program goal. As such, the net-to-gross ratio for this program is assumed to be 100%.

6.5.4 Impact Evaluation Summarized Findings

Table 6-22 summarize the verified peak demand reduction for the Business Demand Response Program. The difference in the average realized kW per customer is due to the Metro service territory having much higher usage participants enrolled in the program allowing them to make greater reductions during events. The average kW in August from 2-6pm for Metro participants was 4,102 while West participants averaged 523 kW. Evergy does not claim energy savings for DRI; thus, the evaluation team did not calculate energy savings.

Table 6-22: Peak Demand Reduction (kW)

Service Area	# of Customer	# of Service Point IDs	Expected kW	Realized kW	Realization Rate
Missouri West	106	319	40,680	39,384	97%
Missouri Metro	14	75	19,670	20,183	103%
Total	**119**[7]	**394**	**60,350**	**59,567**	**99%**

[7] One participant had service point IDs in Missouri Metro and Missouri West

6.6 Residential Demand Response

The Residential Demand Response (RDR) Program uses smart thermostat, automatic event call technology to reduce energy use during peak demand periods. Participating customers receive an incentive to participate in curtailment events. Prior to an event, customers receive a notification on their smart device application, and the smart thermostat pre-cools the home. During the event, the smart thermostat increases a customer's setpoint from between 2- and 5-degrees Fahrenheit. The program includes both customer-installed and professional-installed options.

There were two DR events in 2020: on August 10 and August 25; each ran from 4 p.m. through 6 p.m. CDT.

Table 6-23 reports the smart thermostat devices that were included in the program during the evaluation period.

Table 6-23 Device Types by Service Area

Service Area	Device Type	Number of Devices
Missouri West	Ecobee	1,394
Missouri West	Google Nest	2,239
Missouri Metro	Ecobee	1,315
Missouri Metro	Google Nest	2,462

PY1 performance metrics are summarized in Table 6-24.

Table 6-24: Residential Demand Response Program Performance Metrics

Metric	PY1	West	Metro
Number of Participants	5,403	2,618	2,785
Energy Savings (kWh)			
Targeted Energy Savings	2,391,663	1,220,615	1,171,048
Reported Energy Savings	964,709	466,496	498,213
Gross Verified Energy Savings	964,709	466,496	498,213
Net Verified Energy Savings	964,709	466,496	498,213
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	17,900.16	9,220.80	8,679.36
Reported Peak Demand Savings	9,224.60	4,454.80	4,769.80
Gross Verified Peak Demand Savings	7,850.51	3,989.42	3,861.09
Net Verified Peak Demand Savings	7,850.51	3,989.42	3,861.09
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	1.49	1.48	1.50

*Represents the number of unique account numbers in the program

6.6.1 Data Sources

Program data used for this evaluation include:

- Program tracking data for 2020. This data identifies which customers participated in the program and contains data fields such as thermostat installation date, number of devices installed, thermostat device type, measure type, and other relevant data fields.
- 15-minute interval meter data (AMI) for each customer participating in the RDR program, and,
- A full schedule of RDR Program events, including the time of the event.
- ADM collected recorded weather data from the National Oceanographic and Atmospheric Administration (NOAA) to estimate the impact of weather on usage.

ADM reviewed the data tracking systems associated with the program to ensure that the data provides sufficient information to calculate energy and demand impacts. ADM determined that all the relevant data fields were included in the tracking data and savings reported in the tracking system complied with the energy savings calculations and guidelines set by the Evergy Technical Reference Manual.

In addition, the heating and cooling equipment type for a sample of 30 customers were reviewed to ensure tracking data was entered correctly (e.g., efficiency and unit tonnage). The review of equipment data fields was only relevant to customers that have the smart thermostat professionally installed and was performed using the AHRI database. ADM found most unit tonnages reported for sampled units were accurate when compared to the AHRI database; however, the efficiency reported in the tracking database did not match either the SEER or the EER found in the AHRI database. ADM did not use the efficiency for any part of the analysis; however, the discrepancy is notable.

6.6.2 Gross Impact Methodologies

Demand savings (kW) for the demand response portion of the program was estimated using a weather-adjusted Linear Fixed Effects Regression (LFER) model.

Annual energy savings (kWh) was calculated energy savings calculations from the Evergy Technical Resource Manual (TRM). This specifies 197.00 kWh/unit for smart thermostats. The total annual energy savings (kWh) for the program were calculated by taking the kWh/unit TRM value and multiplying by the number of thermostat units considered part of the program in 2020.

6.6.3 Net-to-Gross (NTG) Estimation

In demand response programs, it is typically assumed that there are neither spillover effects nor free-ridership (only participating customers are expected to curtail usage). As such, the net-to-gross ratio for this program is assumed to be 100%

6.6.4 Impact Evaluation Summarized Findings

Total program impact is presented in Table 6-29 and Table 6-30. Definitions for Eligible and Responding Units are provided in Appendix I.

Table 6-25 Residential Demand Response Peak Reduction (kW)

Service Area	Expected kW/Unit Savings	Realized kW/Unit Savings	Eligible Units	Responding Units	Expected kW Savings	Realized kW Savings	RR
Missouri West	1.40	1.52	3,182	2,618	4,454.80	3,989.42	90%
Missouri Metro	1.40	1.39	3,407	2,785	4,769.80	3,861.09	81%
Total			**6,589**	**5,403**	**9,224.60**	**7,850.51**	**85%**

Table 6-26: Residential Annual Energy Savings (kWh)

Service Area	Expected kWh/Unit Savings	Realized kWh/Unit Savings	Eligible Units	Expected kWh Savings	Realized kWh Savings	RR
Missouri West	197	197	2,368	466,496	466,496	100%
Missouri Metro	197	197	2,529	498,213	498,213	100%
Total			**4,897**	**964,709**	**964,709**	**100%**

6.7 Business Smart Thermostat

The Business Smart Thermostat Program uses automatic event call technology to reduce energy use during peak demand periods. Participating customers receive an incentive to participate in curtailment events. Prior to an event, customers receive a notification on their smart device application, and the smart thermostat pre-cools the home. During the event, the smart thermostat increases a customer's setpoint between 2 to 5 degrees Fahrenheit.

Depending upon the thermostat type, customers could choose to receive a $50.00 incentive if they installed their own thermostat (BYOT) or to purchase a qualifying thermostat at a discounted price via Evergy's new online customer portal. Customers could also schedule and pay for the installation of the qualifying thermostat through Evergy's customer center or online Portal.

Table 6-27: Device Types by Service Area

Service Area	Device Type	# of Devices
Missouri West	Ecobee	32
Missouri West	Google Nest	43
Missouri Metro	Ecobee	14
Missouri Metro	Google Nest	37

PY1 performance metrics are summarized in the following table.

Table 6-28: Business Smart Thermostats Program Performance Metrics

Metric	PY1	West	Metro
Number of Participants*	114	70	44
Energy Savings (kWh)			
Targeted Energy Savings	57,524	28,368	29,156
Reported Energy Savings	19,503	10,441	9,062
Gross Verified Energy Savings	82,225	44,019	38,206
Net Verified Energy Savings	82,225	44,019	38,206
Peak Demand Reduction (kW)			
Targeted Peak Demand Savings	420.48	207.36	213.12
Reported Peak Demand Savings	159.60	98.00	61.60
Gross Verified Peak Demand Savings	88.15	70.59	17.56
Net Verified Peak Demand Savings	88.15	70.59	17.56
Benefit / Cost Ratios			
Total Resource Cost Test Ratio	0.72	0.98	0.43

*Represents the number of unique account numbers in the program
Benefit/Cost Ratios for Business Smart Thermostats are included with Residential Demand Response.

6.7.1 Data Sources

Program data used for this evaluation include program tracking data for 2020. This data identifies which customers participated in the program and contains data fields such as thermostat installation date, number of devices installed, thermostat device type, measure type, and other relevant data fields. Additional data included: 15-minute interval meter data (AMI) for each customer participating in the RDR program, a full schedule of RDR program events, including the time of the events; and ADM collected recorded weather data from the National Oceanographic and Atmospheric Administration (NOAA) to estimate the impact of weather on usage.

6.7.2 Gross Impact Methodologies

Demand savings (kW) for the demand response portion of the program was estimated using a weather-adjusted Linear Fixed Effects Regression (LFER) model.

Annual energy savings for smart thermostat customers were estimated using a weather-adjusted Lagged Dependent Variable (LDV) ordinary least-squares (OLS) regression model. A matched comparison group was created using a propensity score matching (PSM) approach.

6.7.3 Net-to-Gross (NTG) Estimation

In demand response programs, it is typically assumed that there are neither spillover effects nor free-ridership (only participating customers are expected to curtail usage). As such, the net-to-gross ratio for this program is assumed to be 100%.

6.7.4 Impact Evaluation Summarized Findings

Total program impact is presented in Table 6-29 and Table 6-30. Definitions for Eligible and Responding Units are provided in Appendix J.

Table 6-29: BST Peak Reduction (kW)

Service Area	Expected kW/Unit Savings	Realized kW/Unit Savings	Eligible Units	Responding Units	Expected kW Savings	Realized kW Savings	RR
Missouri West	1.40	1.22	70	2958	98.00	70.59	72%
Missouri Metro	1.40	0.47	44	38	61.60	17.56	29%
Total			**114**	**96**	**159.60**	**88.15**	**55%**

Table 6-30: BST Annual Energy Savings (kWh)

Service Area	Expected kWh/Unit Savings	Realized kWh/Unit Savings	Eligible Units	Expected kWh Savings	Realized kWh Savings	RR
Missouri West	197	831	53	10,441	44,019	422%
Missouri Metro	197	831	46	9,062	38,206	422%
Total			**99**	**19,503**	**82,225**	**422%**

6.8 Programs with Process Evaluation Only

The following programs did not report kWh and kW savings. A process evaluation was performed and can be found in the following appendices.

- Online Home Energy Audit: Appendix G
- Pilot Programs: Appendix K
  - **Energy Efficiency Nonprofits Program (EENP)**
  - **HVAC Quality Installation Program (QI)**
  - **Pay as You Save (Pays)**