BEFORE THE

ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF ARKANSAS OKLAHOMA GAS CORPORATION FOR APPROVAL OF QUICK START ENERGY EFFICIENCY PROGRAMS	**)**	**DOCKET NO. 07-077-TF**

COMPREHENSIVE ENERGY EFFICIENCY PLAN

PROGRAM YEAR 2025

ANNUAL REPORT

April 30, 2026

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1.0 Executive Summary

This document is provided to the Arkansas Public Service Commission ("Commission") as the annual review of Arkansas Oklahoma Gas Corporation's ("AOG" or "Company") Comprehensive Energy Efficiency Plan ("CEE Plan" or "Plan") for the 2025 Program Year ("Program Year"), pursuant to Order No. 18 in Docket No. 06-004-R.

Historical Background

In the *Application of Arkansas Oklahoma Gas Corporation for Approval of its 2024-2026 Energy Efficiency Program Plans and Budgets* filed on August 1, 2023, in Docket No. 07-077-TF, and subsequently approved for the 2024 PY in Order No. 72 in Docket No. 13-002-U, AOG proposed the continuation of the following four programs previously approved by the Commission:

1. AOG Weatherization Program ("AOGWP");
2. Commercial/Industrial Solutions ("CIS") Program;
3. Equipment Rebate Program ("ERP"); and
4. Low-Income Pilot Program ("LIPP").

This CEE Plan was designed to achieve an annual energy savings target of 0.50% of 2022 retail sales in program years 2024 - 2026, per Order No. 68 in Docket No. 13-002-U. The Plan was deemed comprehensive, pursuant to Order No. 17 in Docket No. 08-144-U and approved by the Commission on June 17, 2019, in Order No. 88 in Docket No. 07-077-TF.

Major Accomplishments and Milestones

The 2025 Program Year represents AOG's best efforts to develop and implement a portfolio of comprehensive energy efficiency programs designed to meet or exceed the Commission's energy savings goals in Arkansas. AOG is proud to report that the 2025 Program Year results exceeded the energy savings target set by the Commission. Overall, AOG captured 145% of its Commission-ordered net energy savings target while expending 92% of the 2025 budget. Additionally, AOG's portfolio of programs achieved a Total Resource Cost (TRC) ratio of 1.71. AOG's historical portfolio TRC ratios are as follows:

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2.67	1.98	1.77	2.07	1.50	2.00	2.10	2.03	1.96	1.71

Goals and Objectives for the EE Portfolio

As presented in the CEE Plan, AOG had the following objectives for its portfolio of EE programs in 2025:

1. Reduce end-use natural gas consumption in a cost-effective manner to save money for consumers and conserve nonrenewable resources;
2. Protect the environment by encouraging installation of efficiency measures that help reduce carbon dioxide emissions and air pollutants;
3. Increase residential and commercial customer awareness of available energy efficiency opportunities by encouraging equipment upgrades and behavioral changes;

4. Generate greater customer awareness of the energy efficiency programs available through AOG to support their energy efficiency objectives;
5. Identify cost-effective natural gas saving measures for program participants;
6. Improve relationships with customers, trade allies, and stakeholders by providing value-added energy efficiency services, training and education, hardware, verification and support;
7. Support a more robust local and statewide economy by utilizing local labor and helping Arkansas residents reduce their monthly energy expenses.

In AOG's CEE Plan, energy savings goals were set for each program. These goals were developed to ensure that the successful implementation of each individual program would result in the total portfolio of AOG programs meeting the Commission-ordered savings target. AOG's Commission-ordered net energy savings target for 2025 was 316,267 therms.

Progress Achieved Versus Goals and Objectives

AOG captured net annual energy savings of 459,889 therms during the 2025 Program Year. This represents 145% of the net energy savings that AOG was tasked with obtaining by order of the Commission. In addition to exceeding the Commission's energy savings target, AOG's CEE Plan was successful in increasing energy efficiency awareness in all markets and developing positive relationships with customers, trade allies, and stakeholders.

Portfolio Savings, Participation Levels, and Prior Year Comparison

AOG's historical net energy savings (therms) are as follows:

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
534,421	536,202	500,829	492,071	459,387	458,151	491,429	528,592	488,074	459,889

Customer participation is critical to the success of AOG's EE programs. Participation levels were consistent with the net energy savings performance of each individual program in AOG's 2025 EE portfolio.

EE Portfolio Summary

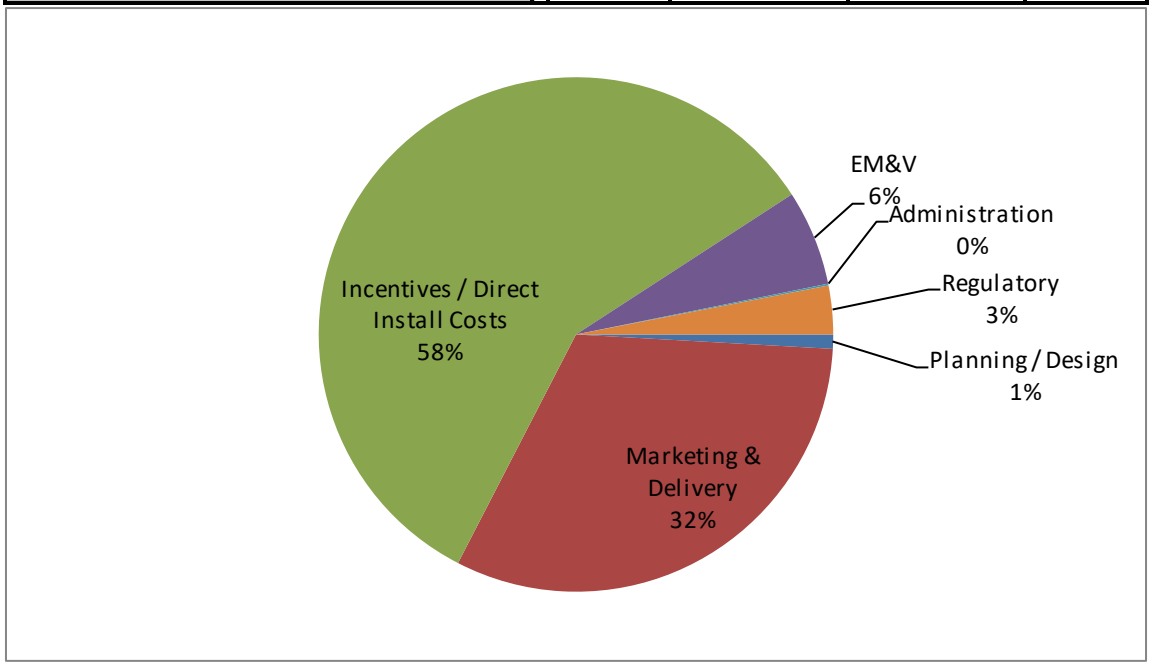
2025 Portfolio Summary										
Net Energy Savings		Costs			Cost-Effectiveness			Goal Achievement		
Demand Therms	Energy Therms	Actual Expenditures	LCFC	Performance Incentives	TRC Net Benefits (NPV)	TRC Ratio	PAC Ratio	Commission Established Target % of Baseline	Actual Savings Achieved % of Baseline	% of Target Achieved (%)
n/a	459,889	$ 2,320,838	$ 1,709,215	$ 201,208	$ 2,248,062	1.71	1.87	0.50%	0.73%	145%

EE Portfolio Summary by Program

EE Portfolio Expenditures by Program					
			2025		
Program Name	Target Sector	Program Type	Budget ($)	Actual ($)	% of Budget
AOG Weatherization	Residential	Whole Home	1,138,923	1,103,037	97%
Low Income Pilot Program	Residential	Whole Home	256,675	236,146	92%
Equipment Rebate	Res/Small Business	Prescriptive/Standard Offer	530,437	408,263	77%
Commercial/Industrial	Small Business/C&I	Other	507,104	502,524	99%
Regulatory	-	-	81,955	70,868	86%
		Total	**2,515,094**	**2,320,838**	**92%**

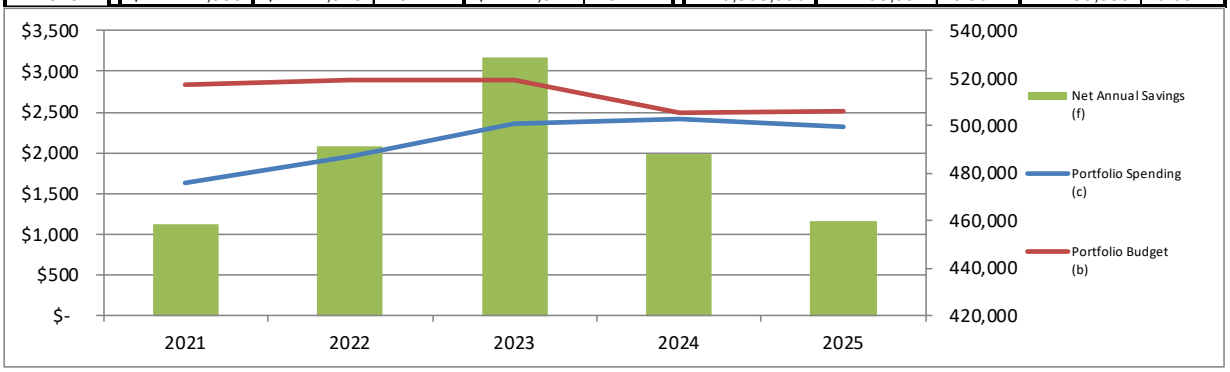
EE Portfolio Summary by Cost Type

EE Portfolio Expenditure Summary by Cost Type				
	2025 Total Expenditures			
Cost Type	% of Total	Budget ($)	Actual ($)	% of Total
Planning / Design	1%	19,009	20,698	1%
Marketing & Delivery	28%	705,902	735,487	32%
Incentives / Direct Install Costs	62%	1,548,215	1,352,004	58%
EM&V	6%	158,294	139,173	6%
Administration	0%	1,719	2,608	0%
Regulatory	3%	81,955	70,868	3%
	100%	**2,515,094**	**2,320,838**	100%



Company Statistics

Company Statistics											
Program Year	Revenue and Expenditures					Energy					
		Budget		Actual			Plan		Evaluated	
	Total Revenue (a) ($000's)	Portfolio Budget (b) ($000's)	% of Revenue (%=b/a)	Portfolio Spending (c) ($000's)	% of Revenue (%=c/a)	Total Annual Energy Sales (d) (Therms)	Net Annual Savings (e) (Therms)	% of Energy Sales (%=e/d)	Net Annual Savings (f) (Therms)	% of Energy Sales (%=f/d)
2021	$ 47,089	$ 2,834	6.0%	$ 1,627	3.5%	73,302,890	457,858	0.62%	458,151	0.63%
2022	$ 61,124	$ 2,901	4.7%	$ 1,962	3.2%	78,030,660	461,620	0.59%	491,429	0.63%
2023	$ 62,526	$ 2,901	4.6%	$ 2,347	3.8%	71,174,694	461,620	0.65%	528,592	0.74%
2024	$ 58,831	$ 2,489	4.2%	$ 2,414	4.1%	71,727,580	433,091	0.60%	488,074	0.68%
2025	$ 74,590	$ 2,515	3.4%	$ 2,321	3.1%	76,868,090	433,091	0.56%	459,889	0.60%



2.0 Portfolio Programs

AOG's portfolio of programs is designed to comply with the definition of "comprehensive" and to achieve the energy savings targets directed by the Commission in Order No. 17 in Docket No. 08-144-U. These programs allow AOG to achieve energy savings by enabling consumers to change their behaviors, attitudes, awareness, and knowledge about energy savings and the utilization of energy efficient technologies.

2.1 AOG Weatherization Program

2.1.1 Program Description

The AOG Weatherization Program targets energy-inefficient homes for weatherization. The program improves comfort and reduces energy costs by upgrading the thermal envelope of qualified homes. By partnering with electric utilities including OG&E, this program exhibits cross-fuel cooperation that results in a comprehensive program offering to residential customers, with lower administrative costs.

2.1.2 Program Highlights

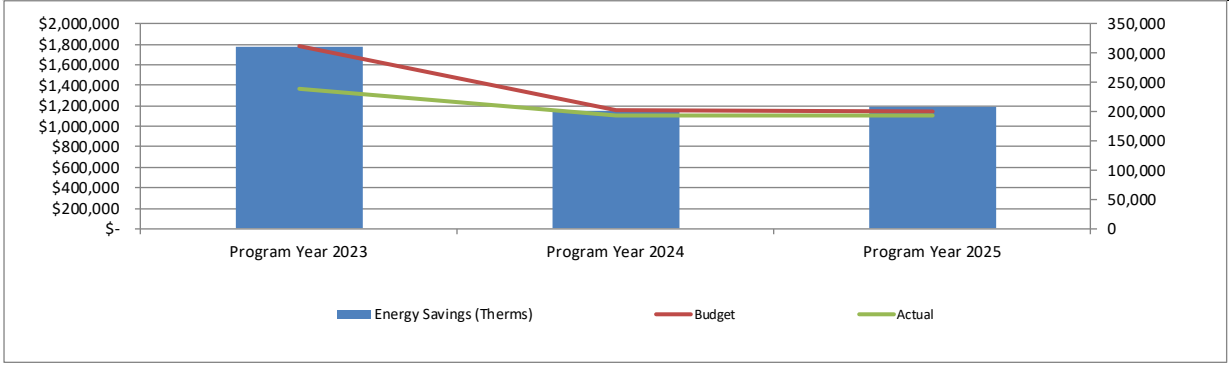
- This program began on July 1, 2011, and continued through the 2025 Program Year.
- The program has become the cornerstone of the residential portion of AOG's CEE Plan.

- On December 9, 2014, in Order No. 22 in Docket No. 13-002-U, the Commission approved the *Recommended Weatherization Approach to Provide Consistent Weatherization Programs across All Utilities in Arkansas*. This Core Program was modeled after the thriving AOG/OG&E Weatherization Program.
- The program is implemented by CLEAResult, a contractor for other utilities adhering to the state's Consistent Weatherization Approach (CWA) including Black Hills Energy, SWEPCO, OG&E, and Summit Utilities Arkansas. CLEAResult provides quality assurance inspections of weatherized homes by BPI-certified personnel and engages an experienced network of trade allies. These trade allies receive rigorous training adhering to best practices according to Factor 1 as designated by the Arkansas Public Service Commission.
- AOGWP is very successful. In 2025, the program weatherized 835homes and captured net energy savings of 209,188 therms.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 1.70.
- The program is remarkably popular and requires a minimal marketing budget.
- AOG receives a considerable amount of positive feedback from participants of this program.

2.1.3 Program Budget, Savings, and Participants

AOG Weatherization

	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2023	$ 1,778,492	$ 1,372,105	77%	216,543	311,684	144%	n/a	n/a	-	857	873	102%
Program Year 2024	$ 1,158,971	$ 1,107,130	96%	193,808	202,212	104%	n/a	n/a	-	721	742	103%
Program Year 2025	**$ 1,138,923**	**$ 1,103,037**	**97%**	**193,808**	**209,188**	**108%**	**n/a**	**n/a**	**-**	**721**	**835**	**116%**



2.1.4 Description of Participants

Participants of the AOGWP include homeowners or leaseholders of a single-family home, duplex, triplex or 4-plex structures, or manufactured home constructed prior to 2015 or have monthly usage (as shown on the bill) of 10 cents per square foot or higher. The eligible dwelling must have been occupied for the previous 12 months and not received identical weatherization measures through a utility weatherization program in the past five years.

2.1.5 Challenges and Opportunities

AOG continues to exceed its net savings goals through consistent and reliable program operations. With a strong conversion rate from completed audits to installed measures, the program achieved an average savings of 263 therms per home.

2.2 Commercial/Industrial Solutions Program

2.2.1 Program Description

The primary goal of the Commercial/Industrial Solutions Program is to produce cost-effective natural gas energy savings by offering incentives for installation of energy efficiency measures in commercial and industrial facilities. The program is implemented by CLEAResult and consists of three major components, which provide multiple opportunities for customers to participate and capture energy savings:

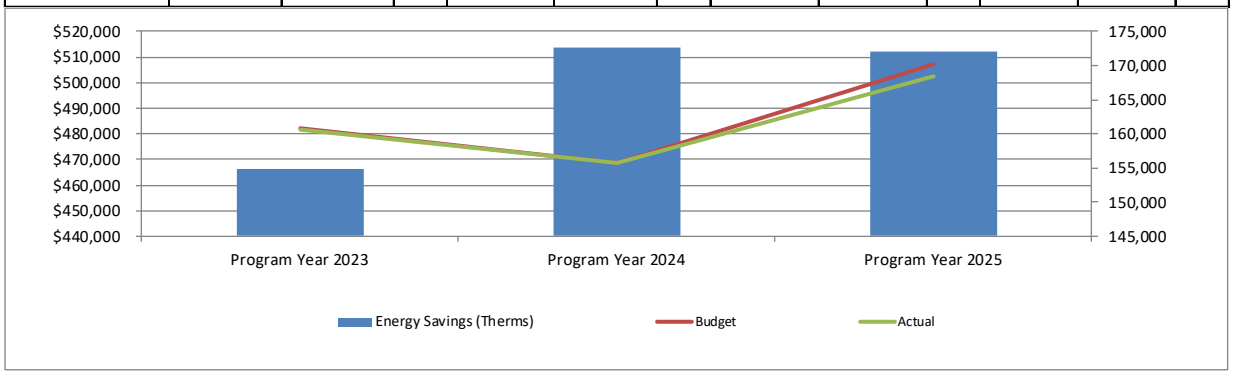
1. Direct Install – Primarily targets commercial customers. Energy efficiency measures include pre-rinse spray valves, faucet aerators, low-flow showerheads, and door sweeps. This program component provides convenient delivery of EE measures at no cost to the customer.
2. Prescriptive – Targets both commercial and smaller industrial customers. The program offers prescriptive rebates for a wide variety of high-efficiency commercial natural gas equipment. This includes, but is not limited to, ENERGY STAR® commercial kitchen equipment, commercial boilers, and boiler controls.
3. Custom – Targets both commercial and industrial customers. This program offers custom incentives for installation of energy efficiency measures in a variety of categories. This includes, but is not limited to, boiler upgrades, HVAC systems, steam system insulation, and steam trap replacements. The value of each custom incentive varies according to project scope and is calculated based on the verified energy savings of each measure installed. This allows AOG and CLEAResult to adapt the offering of the CIS Program to accommodate commercial and industrial customers of any size.

2.2.2 Program Highlights

- This program began on July 1, 2011, and continued through the 2025 Program Year.
- The program targets AOG's larger customers, ensuring comprehensiveness of the CEE Plan.
- The program is managed by AOG and is implemented by CLEAResult.
- The program captured net energy savings of 171,970 therms in 2025.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 1.69.
- Satisfaction with the program operation is very high. The program builds goodwill with both trade allies and customers.

2.2.3 Program Budget, Savings, and Participants

Commercial/Industrial												
	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2023	$ 481,885	$ 481,860	100%	160,908	154,809	96%	n/a	n/a	-	1,276	799	63%
Program Year 2024	$ 468,603	$ 468,357	100%	166,725	172,533	103%	n/a	n/a	-	1,399	59	4%
Program Year 2025	**$ 507,104**	**$ 502,524**	**99%**	**166,725**	**171,970**	**103%**	**n/a**	**n/a**	**-**	**1,399**	**42**	**3%**



2.2.4 Description of Participants

The CIS Program is offered to all AOG commercial and industrial customers.

2.2.5 Challenges and Opportunities

The CIS Program remains a cornerstone of AOG's commitment to its commercial and industrial partners. By offering specialized services and technical expertise, AOG continues to strengthen long-standing relationships with businesses of all sizes, ensuring they have the support needed to optimize their operations while driving economic stability throughout their communities.

2.3 Equipment Rebate Program

2.3.1 Program Description

The Equipment Rebate Program is designed to encourage the installation of high-efficiency natural gas heating and water heating equipment as well as smart thermostats. The program targets residential and commercial customers in both new and existing homes and businesses. AOG offers a financial incentive in the form of a cash rebate to customers who purchase and install qualifying equipment.

AOG relies heavily on trade allies to assist in promoting the ERP to participants. AOG recognizes that HVAC and plumbing contractors play a significant role in helping many customers select their heating and water heating equipment, both in new construction and equipment replacements. To acknowledge the importance of this role and further promote the use of high-efficiency natural gas heating equipment, AOG also offers an incentive to installers of qualifying equipment.

To encourage the installation of high-efficiency natural gas heating equipment, the following tiered rebates/incentives were offered:

Equipment	Efficiency	Customer Rebate	Trade Ally Incentive
Natural Gas Furnace	90-94.9% AFUE[1]	$400	$50
	95% or higher AFUE[1]	$800	$50
Natural Gas Water Heaters	0.90 UEF[2] or higher	$700	$50
Smart Thermostats	ENERGY STAR-certified	$100	-

[1] Annual Fuel Utilization Efficiency, [2] Uniform Energy Factor

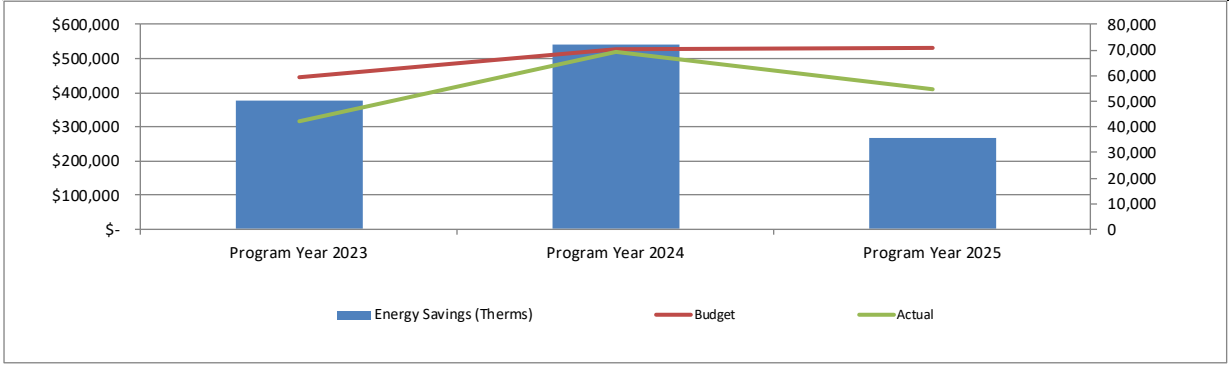
2.3.2 Program Highlights

- This program began in 2010 and continued through the 2025 Program Year.
- This program was implemented by AOG, with the assistance of local trade allies.
- The ERP captured net energy savings of 35,844 therms in 2025.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 1.39.
- Customer satisfaction with the program is very high. This includes interactions with AOG employees, rebate processing times, savings realized from program participation, and ease of the application process. Overall, this has been a successful change due to the cost savings and the stability of customer satisfaction, and initial challenges with data aggregation and participation learning curves has been mitigated, resulting in increased participation and savings achievements.

2.3.3 Program Budget, Savings, and Participants

Equipment Rebate

	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2023	$ 443,809	$ 318,029	72%	74,081	50,336	68%	n/a	n/a	-	1,038	528	51%
Program Year 2024	$ 525,735	$ 517,978	99%	31,928	71,957	225%	n/a	n/a	-	482	703	146%
Program Year 2025	**$ 530,437**	**$ 408,263**	**77%**	**31,928**	**35,844**	**112%**	**n/a**	**n/a**	**-**	**482**	**489**	**101%**



2.3.4 Description of Participants

The ERP is offered to all AOG residential and small commercial natural gas heating and water heating customers for both new construction and existing homes and businesses.

2.3.5 Challenges and Opportunities

AOG remains committed to balancing the requirement for measure-specific data – especially regarding commercial water heaters – with the goal of providing a seamless, low-barrier experience for program participants. Furthermore, as rising equipment costs create challenges for participation, AOG is dedicated to helping customers overcome these hurdles to fully realize the program's benefits.

2.4 Low-Income Pilot Program

2.4.1 Program Description

The Low-Income Pilot Program is a comprehensive energy efficiency program targeting severely energy-inefficient homes for customers who meet the income eligibility requirements of the Low-Income Home Energy Assistance Program (LIHEAP) to improve comfort and reduce energy costs by upgrading the thermal envelope and installing water conservation measures in qualified homes at no cost to the participants.

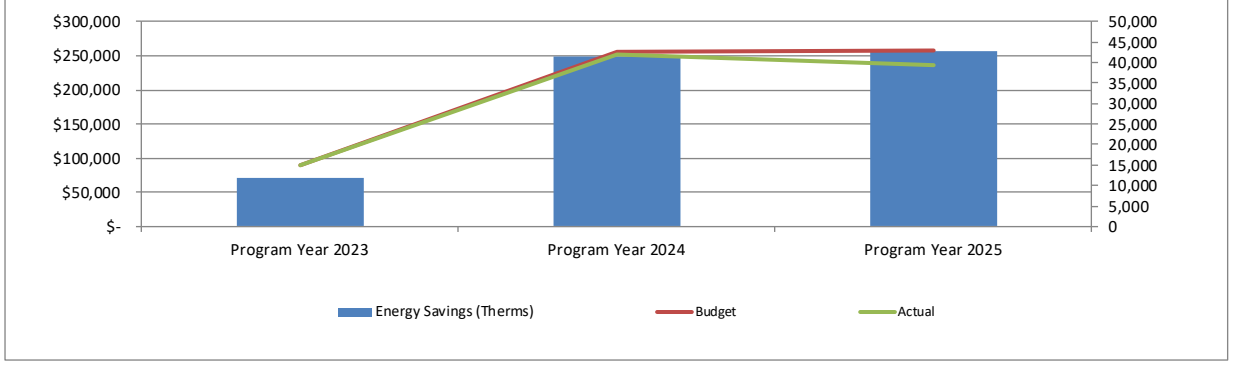
2.4.2 Program Highlights

- The program was developed to comply with Act 1102 of the 91st Arkansas General Assembly.
- This program began on January 1, 2020.
- The program is implemented by CLEAResult.
- LIPP is very successful. In 2025, the program completed 169 homes and captured net energy savings of 42,887 therms.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 2.84.
- The program is popular and requires a minimal marketing budget.
- As CLEAResult also implemented the AOGWP, many of the benefits realized in that program were also garnered within the LIPP.

2.4.3 Program Budget, Savings, and Participants

Low Income Pilot Program

	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2023	$ 89,742	$ 89,713	100%	10,088	11,763	117%	n/a	n/a	-	35	67	191%
Program Year 2024	$ 256,435	$ 251,076	98%	40,630	41,372	102%	n/a	n/a	-	120	131	109%
Program Year 2025	**$ 256,675**	**$ 236,146**	**92%**	**40,630**	**42,887**	**106%**	**n/a**	**n/a**	**-**	**120**	**169**	**141%**



2.4.4 Description of Participants

Participants of the LIPP include homeowners or leaseholders of a single-family home, duplex, triplex or 4-plex structures or manufactured home. Eligible customers must meet the current income eligibility requirements of LIHEAP.

2.4.5 Challenges and Opportunities

AOG will continue to examine methods of increasing benefits for customers through the LIPP, particularly in health and safety measures and spending. The conversion rate was strong and the program achieved an average of 284 therms per home.

3.0 Supplemental Requirements

3.1 Staffing

The current CEE Program includes two employees with regulatory, implementation, financial, and energy efficiency expertise to plan, implement, and assist in the evaluation of the individual programs in the CEE Plan. These employees also supervise the contractors and consultants who work with AOG to deliver and evaluate the EE programs. Additionally, there are several other employees who are involved in AOG's EE efforts. These efforts include contributions to program development, marketing, engineering, regulatory compliance, education, training, delivery, and evaluation on an as-needed basis.

3.2 Stakeholder Activities

AOG personnel attended and provided numerous training and outreach events throughout the 2025 Program Year. AOG personnel attended several seminars covering energy efficiency topics and also conducted training sessions both internally and externally. Training was implemented to educate AOG personnel about the EE programs, and external training was provided to EE program participants, trade allies, and stakeholders to raise awareness and ensure that program procedures are followed.

AOG personnel attended several seminars covering energy efficiency-related topics. These trainings were provided by Association of Energy Services Professionals, CLEAResult, American Gas Association and Arkansas Advanced Energy Association. AOG also participated in trainings conducted by CLEAResult, the implementer for both AOGWP and LIPP, designed to instruct trade allies in program procedures and ensure quality performance.

Internal Training

Event No.	Start Date	Class	Class Description	Training Location	Sponsor	No. of Attendees (A)	Length of Session (B)	Training Session Man-Hours (A x B)	Any Certificates Awarded? (Y or N)	# of Certificates Awarded
1.	3/24/25	Summit Down South	Live innovation pitch competition to insightful discussions led by seasoned leaders in the industry. Industry experts speaking on gas hot topics, program pilots, RES/COMM updates from other	Charleston, SC	Franklin Energy	2	24	48	N	0
2.	4/1/25	Arkansas Advanced Energy Association & Arkansas Advanced Energy Foundation Joint Meeting	Association and Foundation Board Meetings	Little Rock, AR	AAEA & AAEF	1	3.5	4	N	0
3.	8/13/25	CLEAResult Energy Forum	Gas Utility Hot Topics, Collaboration with Other Utilities	Chicago, IL	CLEAResult	2	28	56	N	0
4.	9/4/25	American Gas Association Climate & Sustainability Conference	Exploration of advanced technologies, legislative challenges, regulatory frameworks, and investments in new, large-scale, advanced technologies	Washington, D.C.	AGA	2	20	40	N	0
Totals:	Events:	4				7		148		0

External Training

Event No.	Start Date	Class	Class Description	Training Location	Sponsor	No. of Attendees (A)	Length of Session (B)	Training Session Man-Hours (A x B)	Any Certificates Awarded? (Y or N)	# of Certificates Awarded
1.	1/21/25	Weatherization Contractor Lunch	WX Kick-off Meeting/ Meet contractors and go over 2025 program	Fort Smith	AOG & CLEAResult (hosted in the Fort Smith office)	2	4	8	N	0
2.	2/14/25	Fort Smith Builders Association Home Show	Represent AOG to local community	Fort Smith	Fort Smith Homebuilders	2	24	48	N	0
Totals:	Events:	2				4		56		0

3.3 Information Provided to Consumers to Promote EE

AOG believes a successful marketing strategy is critical to the overall success of the CEE Plan, so AOG takes pride in delivering effective marketing to AOG customers and EE program participants. AOG's marketing efforts are driven through multiple channels, including both customer-direct outreach and marketing through contractors and other trade allies. AOG utilizes a mixture of print, web (including social media), radio, and word-of-mouth advertising.

AOG values the practice of continuous improvement, particularly with regard to the marketing of EE programs. AOG seeks a prudent balance of advertising efforts to maintain EE program participation and net energy savings results without stimulating program oversubscription. Maintaining this balance contributes to the success of the CEE Plan and ensures judicious use of ratepayers' money.

4.0 Appendix A: Carbon Calculator Scenarios

The TRC results in the PY 2025 report include natural gas benefits and Non-Energy Benefits (NEBs) in alignment with prior program years:

- kWh
- kW
- Water
- Avoided replacement costs
- Deferred replacement costs

AOG has provided estimates of the cost of carbon under low, middle, and high-cost scenarios. They are summarized in the SARP workbook on the "Carbon Calculator" tab. The cost of carbon is not included in AOG's estimate of system benefits in any of the cost-effectiveness tests at this time.

Emissions Calculations

Gas	CO2 Equivalent
CO2	1

Conversions for listed units

Conversion factors	
therms per mmBTU	10
kilograms to metric tons	0.001
pounds to metric tons	0.00045

Emissions factors for natural gas

Fuel	kg CO2 per mmBtu
Natural Gas	53.06

Local emissions factors for electricity in Arkansas

Region	Non-Baseload Emission Factors CO2 lb / MWh	
SPSO (SPP South)	1,662.5	Choose the region using dropdown (in cell A18
Utility Specific (Enter value here==>)		

Calculated emissions per unit

CO2 tons / kWh	0.00075
CO2 tons / therm	0.00531

Scenario	CO2 Price per ton	¢ / kWh	¢ / therm	
Per dollar for calculations	per $	0.08	0.5	
Low case (Enter low case here ==>)	$0	0	0	Utility's lowest value
Middle case (Enter mid case here ==>)	$5	0.4	2.7	Utility's median value
High case (Enter high case here ==>)	$15	1.1	8	Utility's highest value

Rates	¢ / kWh	¢ / therm
Per unit energy charge (per kWh or therm rate)	6.99	81.80

Rate Impacts	% Change per kWh	% Change per therm
Low case	0.0%	0.0%
Middle case	5.7%	3.3%
High case	15.7%	9.8%

5.0 Appendix B: EM&V Contractor Reports

EVALUATION, MEASUREMENT AND VERIFICATION REPORT FOR THE 2025 ARKANSAS OKLAHOMA GAS ENERGY EFFICIENCY PORTFOLIO

Pursuant to Section 9 the Rules for Conservation and Energy Efficiency Programs: Annual Reporting Requirements, Order No. 29, Docket No. 06-004-R, May 20, 2014

Submitted To: ARKANSAS OKLAHOMA GAS, A DIVISION OF SUMMIT UTILITIES

Submitted On: April 27, 2026

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ENERGY FOR LIFE

Acknowledgements

We would like to thank the staff at Arkansas Oklahoma Gas for their time and effort in contributing to the EM&V of the PY2025 programs. This evaluation was conducted with regular coordination with staff at AOG, who provided quick feedback and turnaround to the requests of the evaluation team as well as open and forthright insights into the operations of their programs.

Further, we would like to acknowledge our gratitude towards AOG customers, implementation contractor staff, and trade allies. As with the staff at AOG, their active participation allowed the evaluation team to collect all needed data for this effort.

In final, we would like to thank staff at the Independent Evaluation Monitor for their involvement in providing thorough answers and clarification to the evaluation team when higher-level questions arose over the course of the PY2025 EM&V effort.

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Acronyms/Abbreviations

TABLE 0-1 COMMONLY USED ACRONYMS AND ABBREVIATIONS

Acronym	Term
AC	Air Conditioner
ACTU	AC Tune-up
AOGWP	Arkansas Oklahoma Gas Weatherization Program
AOH	Annual Operating Hours
APS	Advanced Power Strip
APSC	Arkansas Public Service Commission
C&EE	Conservation and Energy Efficiency
C&I	Commercial and Industrial
CEE	Consortium for Energy Efficiency
CF	Coincidence factor
CFL	Compact Fluorescent Lamp (bulb)
CFM	Cubic feet per minute
DI	Direct Install
DLC	Design Lights Consortium
EEA	Energy Efficiency Arkansas
EER	Energy efficiency ratio
EFLH	Equivalent Full-Load Hours
EISA	Energy Independence and Security Act
EL	Efficiency loss
EM&V	Evaluation, Measurement, and Verification
ERP	Equipment Rebate Program
EUL	Estimated Useful Life
ES	ENERGY STAR®
FR	Free-rider
GPM	Gallons per minute
HDD	Heating Degree Days
HID	High Intensity Discharge
HOU	Hours of Use
HP	Heat pump
HSP	Home Solutions Program
HSPF	Heating seasonal performance factor
HW	Home Weatherization Pathway
HVAC	Heating, Ventilation, and Air Conditioning
IEF	Interactive Effects Factor
IEM	Independent Evaluation Monitor
IEER	Integrated Energy Efficiency Ratio
IOU	Investor-Owned Utility
IPLV	Integrated Part Load Value
IPMVP	International Performance Measurement and Verification Protocol
ISR	In-service rate

Acronym	Term
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light Emitting Diode
LIHEAP	Low-Income Home Energy Assistance Program
LIPP	Low-Income Weatherization
M&V	Measurement and Verification
NC	New Construction
NEB	Non-Energy Benefit
MW	Megawatt
MWh	Megawatt-hour
NGS	Natural Gas Savings
NTG	Net-to-Gross
OLAT	Online Audit Tool
PCT	Participant Cost Test
PY	Program Year
QA	Quality Assurance
QC	Quality Control
RCA	Refrigerant charge adjustment
RIM	Ratepayer Impact Measure
ROB	Replace-on-Burnout
SEER	Seasonal Energy Efficiency Ratio
SO	Spillover
TRC	Total Resource Cost
TRM	Technical Reference Manual
UCT	Utility Cost Test
VFD	Variable Frequency Drive

Savings Types

TABLE 2 TYPES OF SAVINGS REFERENCED IN THIS EVALUATION REPORT

Savings Types	Definition
Energy Savings (Therms/kWh)	The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated.
Demand Reductions (kW)	The time rate of energy flow. Demand usually refers to electric power measured in kW (equals kWh/h) but can also refer to natural gas, usually as Btu/hr., kBtu/hr., therms/day, etc.
Other Fuels (Electricity, Natural gas, and Liquid Propane)	Other fuel savings, such as electricity, propane and natural gas, which are estimated based on dual fuel savings that are not incentivized by either of the utilities that participated in the project.
Water (Gallons)	Water savings that are reported in association with the installation of water saving devices.
Ex-Ante Gross	Latin for “from something done beforehand” gross savings. The change in energy consumption and/or peak demand that results directly from program-related actions taken by participants in a program, regardless of why they participated.
Ex-Post Gross	Latin for “from something done afterward” gross savings. The energy and peak demand savings estimates reported by the Evaluator after the gross impact evaluation and associated M&V efforts have been completed.
Ex-Post Net	The energy and peak demand savings estimates reported by the Evaluator after application of the results of the net impact evaluation. Typically calculated by multiplying the *ex post* gross savings by a NTG ratio.
Annual Savings	Energy and demand savings expressed on an annual basis, or the amount of energy and/or peak demand a measure or program can be expected to save over the course of a typical year. The AR TRM v10.0 provides algorithms and assumptions to calculate annual savings and are based on the sum of the annual savings estimates of installed measures or behavior change.
Lifetime Savings	Energy savings expressed in terms of the total expected savings over the useful life of the measure. Typically calculated by multiplying the annual savings of a measure by its EUL. The TRC Test uses savings from the full lifetime of a measure to calculate the cost-effectiveness of programs.

1 Executive Summary

1.1 Introduction

In August 2023, the Arkansas Public Service Commission (APSC) approved the Arkansas Oklahoma Gas (AOG, a Division of Summit Utilities) three-year energy efficiency Plan (the Plan), covering program years 2024 – 2026, filed in compliance with Order No. 65 of Docket No. 13-002-U, which required investor-owned utilities in Arkansas to capture energy savings equivalent to 0.50% of their 2022 energy sales. As in previous APSC rulings, the Arkansas utilities retain flexibility to make up to 10% adjustments to program budgets and may adjust energy savings and as appropriate within the modified budgets. Thus, AOG's 2025 budgets and energy savings goals, reflecting allowable adjustments as described above, serve as the basis against which its portfolio of programs was evaluated in 2025.

AOG's Plan includes a portfolio of energy efficiency programs designed to facilitate energy savings in every customer class. AOG services approximately 45,000 customers in Arkansas. AOG's service area encompasses the City of Fort Smith and several nearby municipalities.

In accordance with APSC Rules for Conservation and Energy Efficiency Programs (C&EE Rules), AOG engaged ADM Associates, LLC., a Qualus Company (ADM) to conduct an evaluation, measurement, and verification (EM&V) of its portfolio. The ADM staff, collectively referred to as the Evaluator, evaluated the AOG portfolio.

1.2 Portfolio Overview

In PY2025, AOG offered a portfolio of four energy efficiency programs, which provided a comprehensive range of customer options for natural gas efficiency. AOG designed its programs to achieve the following objectives:

- Program plan net savings target of 433,091 therms;
- Significant energy-savings opportunities for all customers and market segments;
- Broad ratepayer benefits; and
- Comprehensiveness in seven areas (comprehensiveness factors) defined by the APSC.[1]

Those programs and pathways are described below.

- Equipment Rebate Program (ERP): The Equipment Rebate Program promotes high-efficiency natural gas heating and water heating equipment in new and existing homes and businesses. AOG's staff provide overall strategic direction as well as program management and administration. An online rebate portal and a paper application process were made available to AOG customers.
- C&I Solutions: The Commercial/Industrial Solutions (CIS) Program was designed to produce cost-effective natural gas energy savings by offering incentives for installation of energy efficiency

[1] As defined by the APSC in the C&EE Rules of Order No. 17 in Docket 08-144-U.

measures in commercial and industrial facilities. The program is implemented by CLEAResult and consists of direct install, prescriptive, and custom measures.

- AOG Weatherization Program: The AOG Weatherization Program ("AOGWP") is a comprehensive long-term energy efficiency program targeting severely energy-inefficient homes to improve comfort and reduce energy costs by upgrading the thermal envelope and installing water conservation measures in qualified homes at no cost to participants. The AOGWP is jointly implemented with participating utilities in overlapping service territories. The AOGWP is AOG's implementation of the Consistent Weatherization Approach.
- Low-Income Program: The Low-Income Program is a comprehensive long-term energy efficiency program targeting severely energy-inefficient homes for customers who met the income eligibility requirements of the Low-Income Home Energy Assistance Program (LIHEAP). It improves comfort and reduces energy costs by upgrading the thermal envelope and installing water conservation measures in qualified homes at no cost to participants. The program is developed to be compliant with Act 1102 of the 91st Arkansas General Assembly and is AOG's income-qualified version of the Consistent Weatherization Approach.

Table 1-1 shows a list of the PY2025 programs with savings goals and targets by pathway.

TABLE 1-1 ENERGY EFFICIENCY PORTFOLIO SAVINGS GOALS

Program	PY2025 Net Therm Savings Goal
AOG Weatherization Program (AOGWP)	193,808
Commercial & Industrial Solutions Program (C&I)	166,725
Equipment Rebate Program (ERP)	31,928
Low-Income Program (LIPP)	40,630
Portfolio Total	**433,091**
Sums may differ due to rounding.	

1.3 Evaluation Objectives

The following activities were performed through the EM&V effort:

- Verify program tracking data and correctly apply the AR TRM v10.0 to calculate savings following AR TRM v10.0 Volume 1 Protocol A and estimate gross and net energy impacts at the pathway, program, and portfolio levels.
- Adjust program-reported gross savings using the results of evaluation research, relying primarily on tracking system and engineering desk reviews, on-site verification, and application of accepted protocols such as IPMVP for custom measures and achieve a minimum precision of ±10% of the gross realized savings estimate with 90% confidence at the program level;.
- In consultation with the IEM, estimate Net-to-Gross (NTG) ratios, which was performed following AR TRM v10.0 Volume 1 Protocol H and provide complete documentation and transparency of all evaluated savings estimates.
- Provide ongoing technical reviews and guidance to implementers and administrators throughout the evaluation cycle and review tracking system data to assess data captured for new measure offerings following AR TRM v10.0 Volume 1 Protocol A.

- Support the calculation of portfolio non-energy benefits (NEB) in accordance with AR TRM v10.0 Volume 1 Protocol L.
- Complete process evaluation activities as discussed in Section 3.2.
- Update the assessment of success in achieving the goals and objectives established in the Commissions Comprehensiveness Checklist.
- As applicable, conduct EM&V research to support updates for the next version of the AR TRM.

1.4 Sections of the Report

This report is structured as shown below:

- Section 1 Executive Summary
- Section 2 Evaluation Findings
- Section 3 Evaluation Methodology
- Section 4 Equipment Rebate Program
- Section 5 Commercial and Industrial Solutions Program
- Section 6 AOG Weatherization Program
- Section 7 Low-Income Program
- Appendix A – Program Surveys
- Appendix B – Cost-effectiveness Analysis
- Appendix C – Survey-based Net-to-Gross Results
- Appendix D – C&I Site-level Reports
- Appendix E – Residential Site Visit Findings

2 Evaluation Findings

The portfolio achieved 107% of planned net energy (433,091 Therms) savings. In addition to verifying the savings reported, the Evaluator calculated lifetime impacts.

Table 2-1 shows the AOG goals, reported gross impacts, first-year ex-ante gross therm savings (473,273 therms), gross realization rate (100.0%), net impacts (459,889 therms), overall net-to-gross (NTG) ratio of 97.2%, and net lifetime impacts (7,884,452 therms). The levelized cost of energy for the portfolio is $0.576 per net therm.

TABLE 2-1 PORTFOLIO EVALUATION RESULTS

Impact	Metric	AOGWP	C&I Solutions	ERP	LIPP	Portfolio
Energy Savings (Therms)	Goals (Net)	193,808	166,725	31,928	40,630	**433,091**
	Ex-Ante (Gross)	215,157	174,796	41,025	42,295	**473,273**
	Ex-Post (Gross)	214,046	171,970	44,266	42,887	**473,168**
	Realization Rate	99.5%	98.4%	107.9%	101.4%	**100.0%**
	Ex-Post (Net)	209,187	171,970	35,846	42,887	**459,889**
	NTG Ratio	97.7%	100.0%	81.0%	100.0%	**97.2%**
	% of Goal (Net)	107.9%	103.1%	112.3%	105.6%	**106.2%**
	Lifetime (Net)	4,642,740	1,504,271	779,700	957,740	**7,884,452**
Sums may differ due to rounding.						

The following subsections provide a summary of the portfolio-level findings and any cross-cutting evaluation activities that occurred over the course of the EM&V effort. Specifically, this includes:

- A summary of EM&V activities and expenditures;
- A summary of program and portfolio performance; and
- High-level findings that cut across programs.

2.1 Summary of Evaluation Effort

Table 2-2 summarizes the total EM&V expenditures and total program expenditures.

TABLE 2-2 AOG PORTFOLIO EM&V EXPENDITURES

Total EM&V Expenditures	Total Program Expenditures	EM&V as % of Expenditures
$139,173	$2,320,838	6.00%

2.1.1 Overview of Data Collection Activities

Specific primary data collection activities are included in the tables below.

TABLE 2-3 SUMMARY OF SITE VISIT DATA COLLECTION EFFORTS

Prog.	Pathway	Sample Design Quota	Mode	Total Pop.	Pop. Targeted	Completed Site Visit	Call Response Rate	# of Site Visits	Precision
AOGWP	-	30	Phone & email	1,305	260	31	23.5%	31	13.9%
LIPP	-	15		554	73	13	16.3%	13	20.7%

There were no commercial site visits completed in PY2025.

Table 2-4 summarizes the survey data collection efforts. The C&I Solutions Program surveys were administered to participants in AOG, Summit, and Black Hills Energy Programs and the counts reflect participation across programs.

TABLE 2-4 SUMMARY OF SURVEY AND INTERVIEW DATA COLLECTION EFFORTS

Program	Type	Mode	# of Times Contacted	Target	Survey Completions	Response Rate
C&I Solutions – Prescriptive Rebate Participants	Participant Survey	Email	3	20	7	6.0%
C&I Solutions – Direct Install Participants	Participant Survey	Email & Telephone	3	5	8	11.0%

2.2 Summary of Impact Evaluation Findings

The table below outlines the claimed ex-ante gross energy savings (therms).

TABLE 2-5 AOG PORTFOLIO EX-ANTE SAVINGS SUMMARY

Program/ Pathway	Ex-Ante Energy Savings (Therms)	Count of Measures	Incentive Spend ($)
C&I Solutions	**174,796**	**42**	**$128,337**
Custom	102,226	5	$67,576
Prescriptive	0	0	$0
Direct Install	72,570	37	$60,761
Equipment Rebate	**41,025**	**489**	**$313,813**
Residential	27,734	454	$288,963
Commercial	13,290	35	$24,850
AOG Weatherization	**215,157**	**2,405**	**$749,174**
Low-Income Weatherization	**42,295**	**517**	**$162,530**
Total	**473,273**	**3,453**	**$1,353,854**
Sums may differ due to rounding.			

The table below outlines ex-post gross energy and water savings of the programs and pathways.

TABLE 2-6 AOG PORTFOLIO EX-POST GROSS SAVINGS SUMMARY

Program/ Pathway	Ex-Post Gross Energy Savings (Therms)	Ex-Post Energy Savings (kWh)	Ex-Post Demand Reductions (kW)	Gross Water (Gallons)	Gross ARCs ($)
C&I Solutions	**171,970**	**50,294**	**35.44**	**0**	**$0**
Custom	102,226	0	0.00	0	$0
Prescriptive	0	0	0.00	0	$0
Direct Install	69,744	50,294	35.44	0	$0
Equipment Rebate	**44,266**	**61,941**	**0**	**0**	**$91,793**
Residential	36,910	59,818	0.00	0	$87,628
Commercial	7,356	2,123	0.00	0	$4,165
AOG Weatherization	**214,046**	**384,592**	**249.87**	**199,711**	**$541**
Low-Income Weatherization	**42,887**	**81,743**	**56.55**	**1,187**	**$325**
Total	**473,168**	**578,570**	**341.86**	**200,897**	**$92,659**
Sums may differ due to rounding.					

The table below outlines ex-post net energy savings (therms) by program and pathway.

TABLE 2-7 AOG PORTFOLIO EX-POST NET SAVINGS SUMMARY

Program/ Pathway	Ex-Post Net Energy Savings (Therms)	Ex-Post Net Lifetime Energy Savings (Therms)	Net-to-Gross Ratio
C&I Solutions	**171,970**	**1,504,271**	**100.0%**
Custom	102,226	737,091	100.0%
Prescriptive	0	0	100.0%
Direct Install	69,744	767,180	100.0%
Equipment Rebate	**35,846**	**779,700**	**81.0%**
Residential	29,465	629,924	79.8%
Commercial	6,381	149,777	86.7%
AOG Weatherization	**209,187**	**4,642,740**	**97.7%**
Low-Income Weatherization	**42,887**	**957,740**	**100.0%**
Total	**459,889**	**7,884,452**	**97.2%**
Sums may differ due to rounding.			

The contribution to portfolio energy savings (therms) by program is summarized in the figure below.

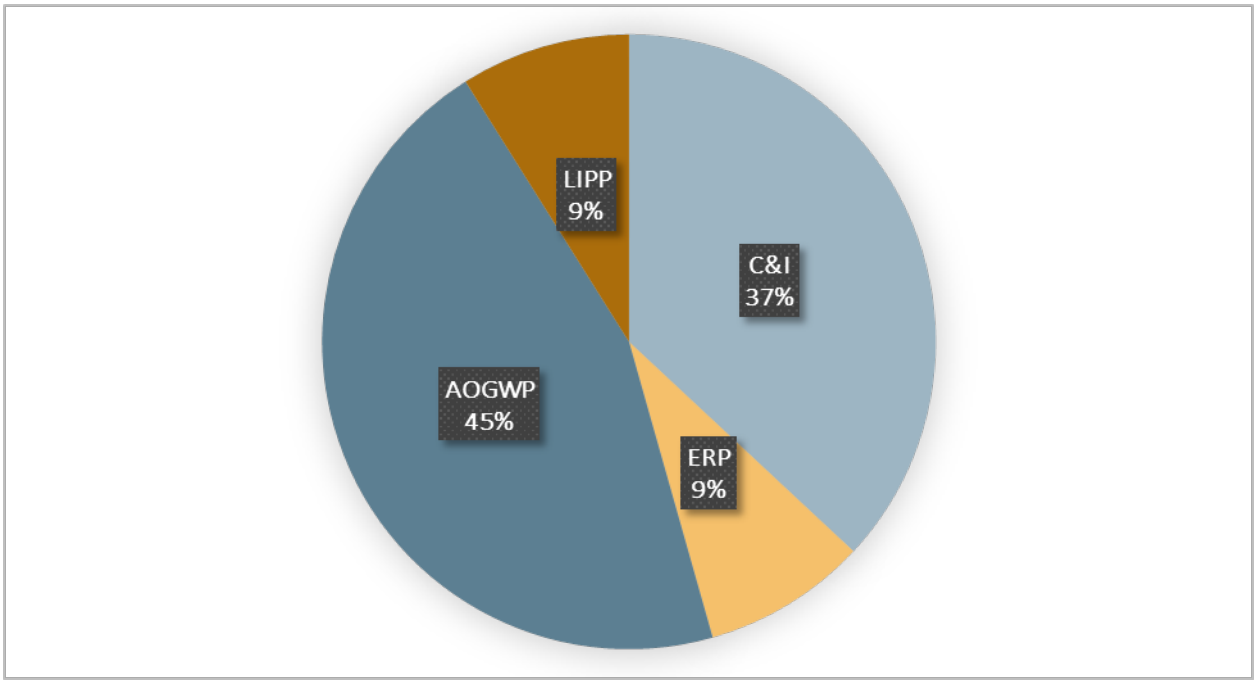

FIGURE 2-1 CONTRIBUTION TO PORTFOLIO EX-ANTE THERM SAVINGS BY PROGRAM

The figures below represent the contribution of ex-ante gross energy savings (therms), by end use[2] and sector, in the portfolio.

2 End use is defined within the AR TRM. The end use selected will match the correlating section heading in the TRM (e.g., aerators are within Domestic Hot Water Measures, etc.). In the case of the educational category, this captures incentives spent on educational efforts, such as assessments (virtual or otherwise).

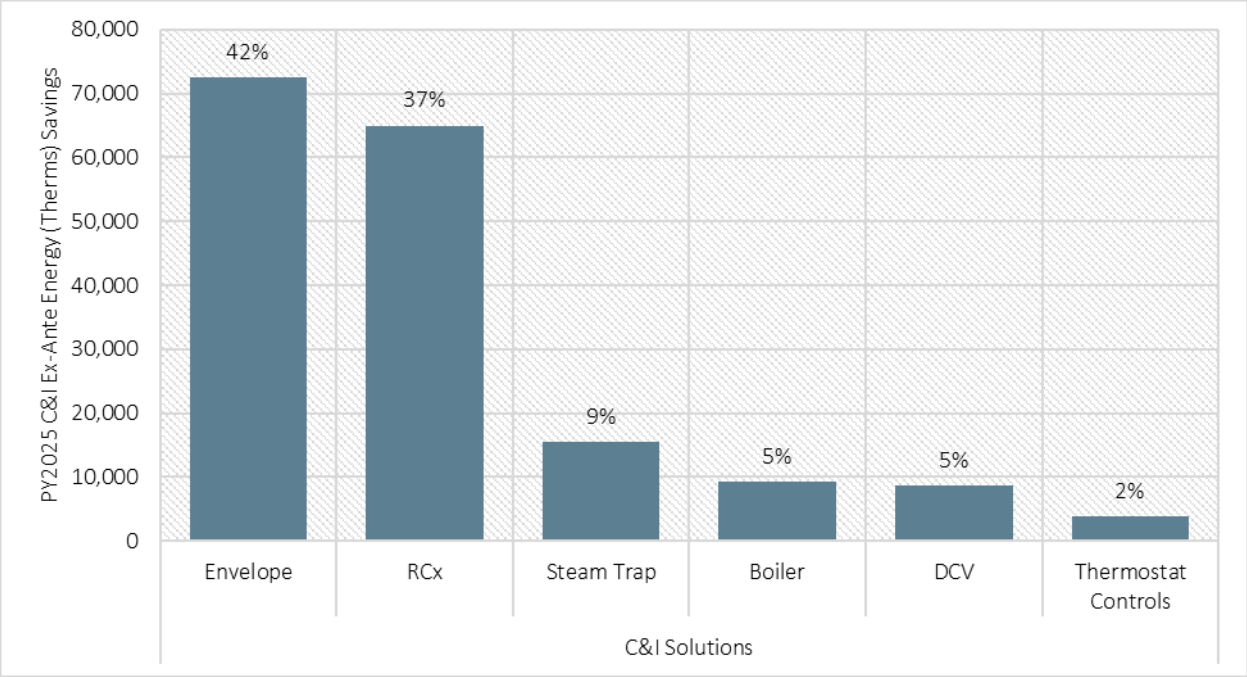

FIGURE 2-2 EX-ANTE GROSS ENERGY SAVINGS (THERMS) BY END USE OR THE C&I SOLUTIONS PROGRAM

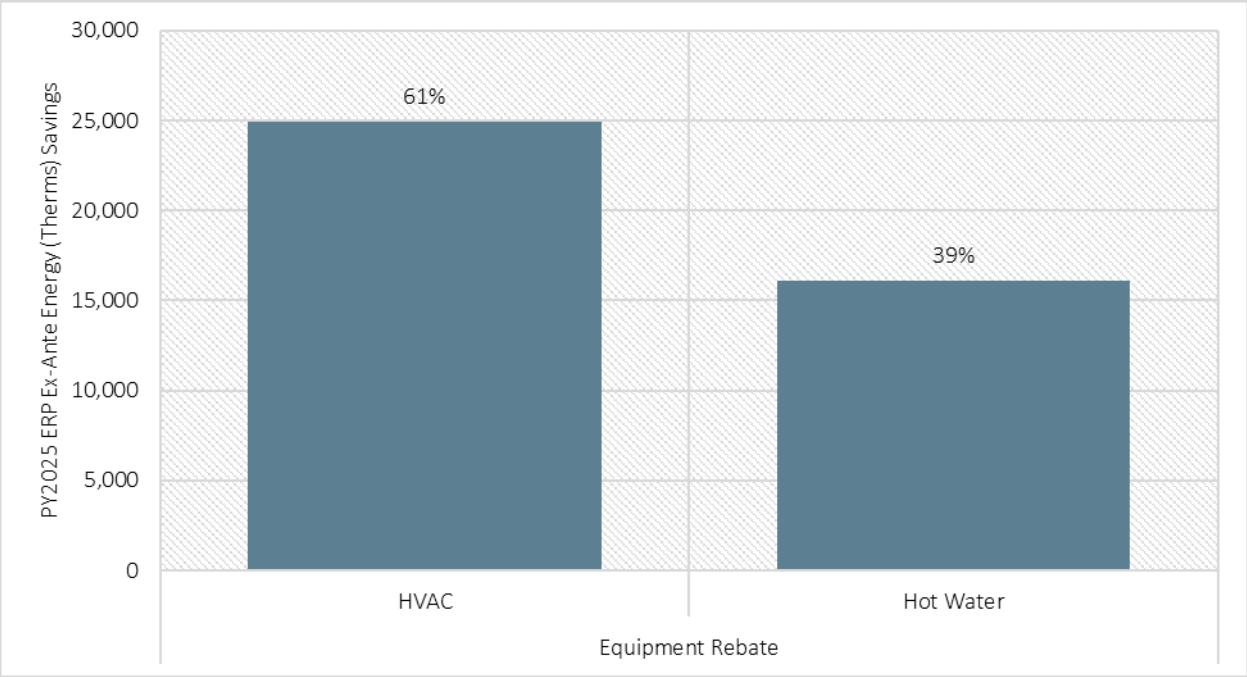

FIGURE 2-3 EX-ANTE GROSS ENERGY SAVINGS (THERMS) BY END USE FOR THE EQUIPMENT REBATE PROGRAM

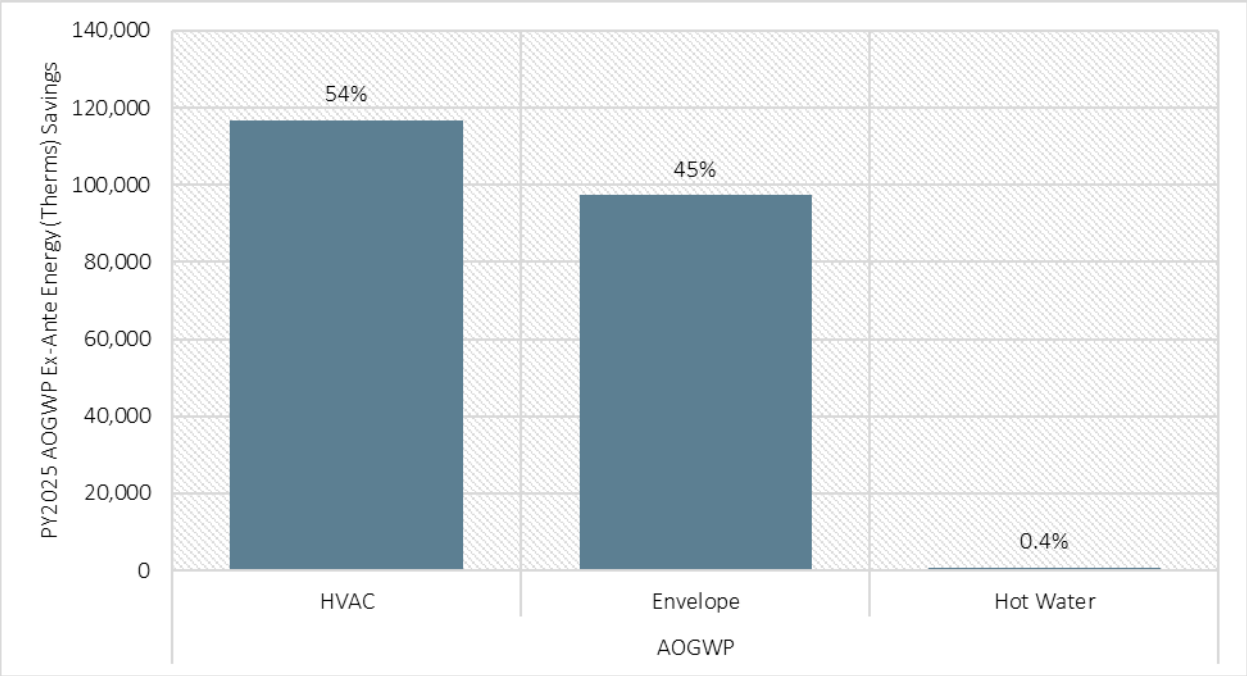

FIGURE 2-4 EX-ANTE GROSS ENERGY SAVINGS (THERMS) BY END USE FOR THE AOG WEATHERIZATION PROGRAM

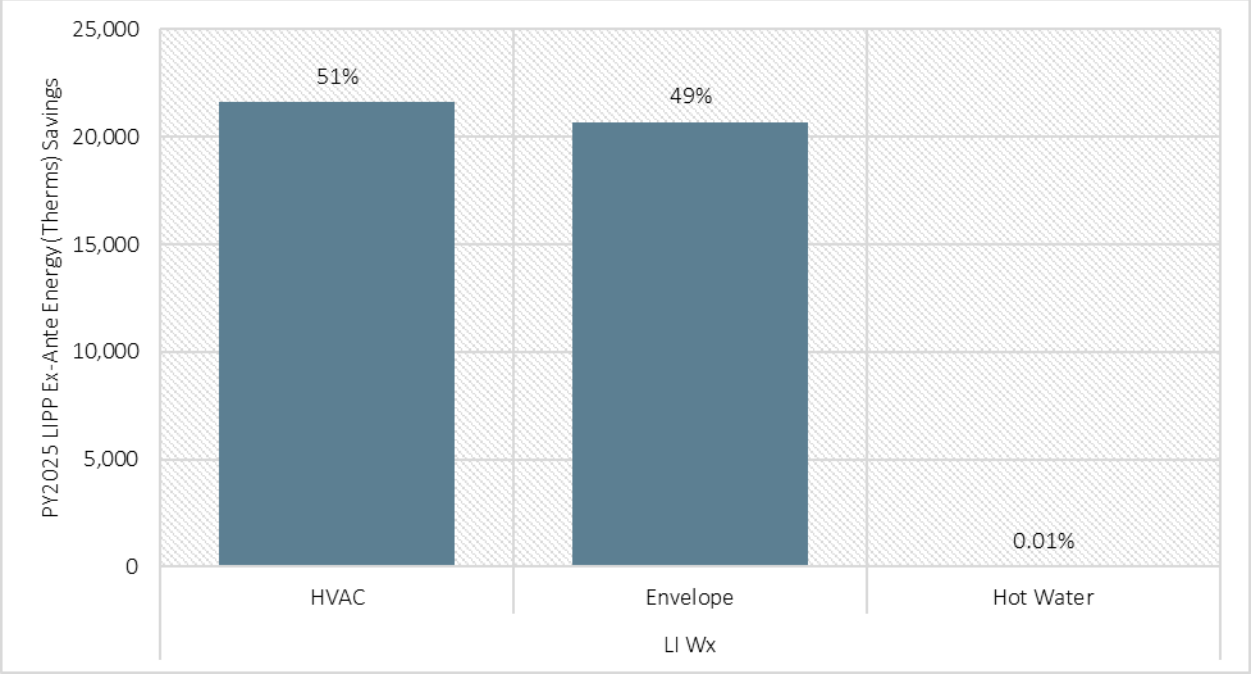

FIGURE 2-5 EX-ANTE GROSS ENERGY SAVINGS (THERMS) BY END USE FOR THE LOW-INCOME WEATHERIZATION PROGRAM

The figure below shows the contributions to ex-ante gross energy savings (therms) for measures in the C&I Solutions Program.

Weather-stripping (42%), retro-commissioning (37%), and steam trap retrofits (9%) are the HIM in the C&I Solutions Program and account for 88% of program ex-ante energy savings (therms).

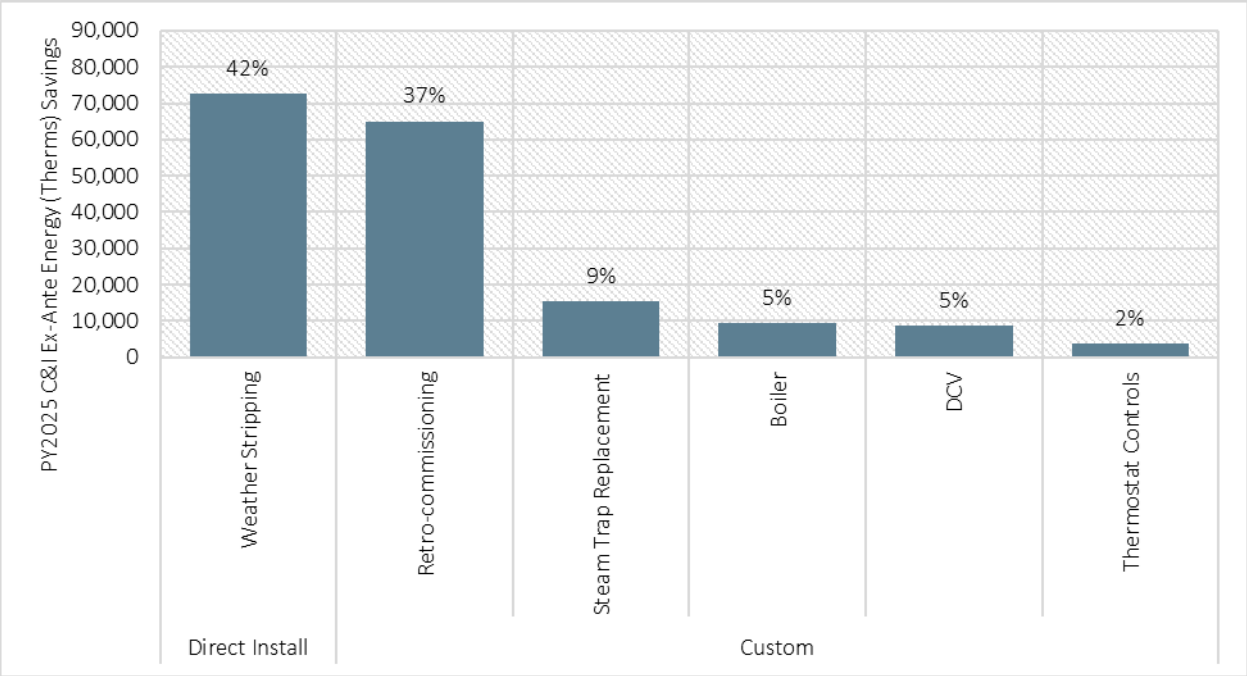

FIGURE 2-6 EX-ANTE GROSS (THERMS) BY MEASURE IN THE C&I SOLUTIONS PROGRAM

The figure below shows the contributions to ex-ante gross energy savings (therms) for each measure in the Equipment Rebate Program.

Water heaters (39%) accounted for the most energy savings of the program, while the furnaces accounted for the second most savings (34%). In total, there were three distinct measures in the program.

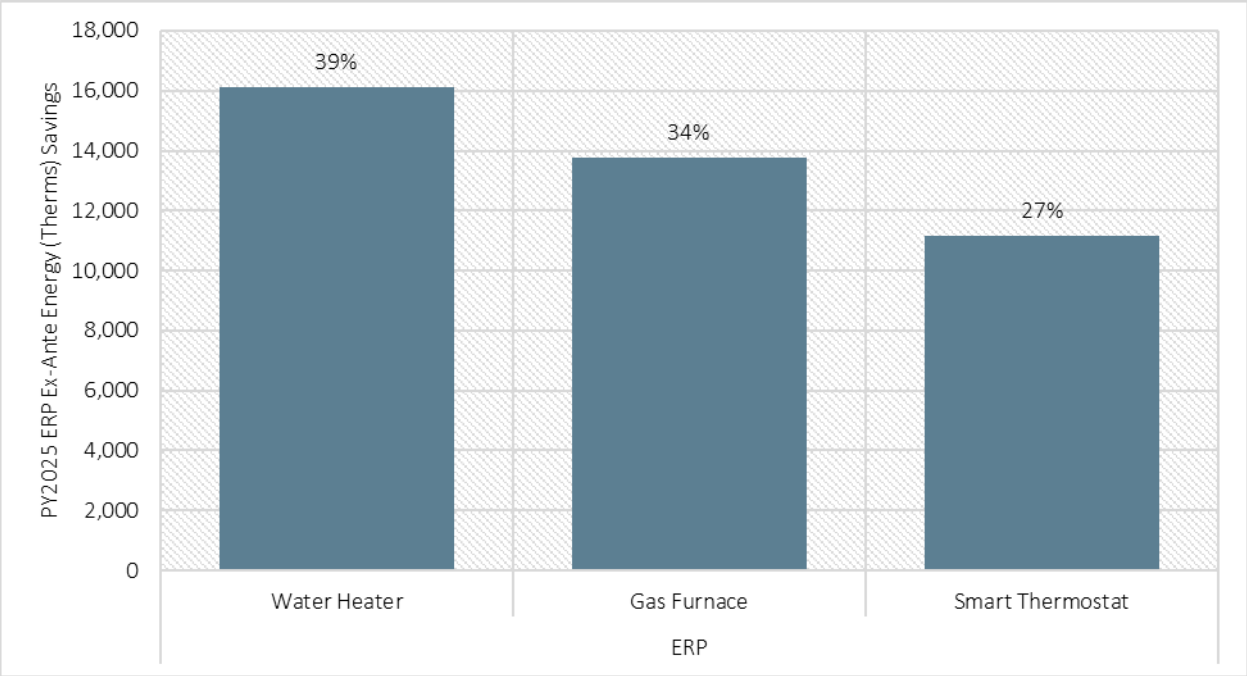

FIGURE 2-7 EX-ANTE GROSS (THERMS) BY MEASURE IN THE EQUIPMENT REBATE PROGRAM

The figure below shows the contributions to ex-ante gross energy savings (therms) for each measure in the AOG Weatherization Program.

Duct sealing (54%), air infiltration (23%), and ceiling insulation (22%) are the HIMs in the AOGWP, accounting for 99.6% of program ex-ante energy savings (therms).

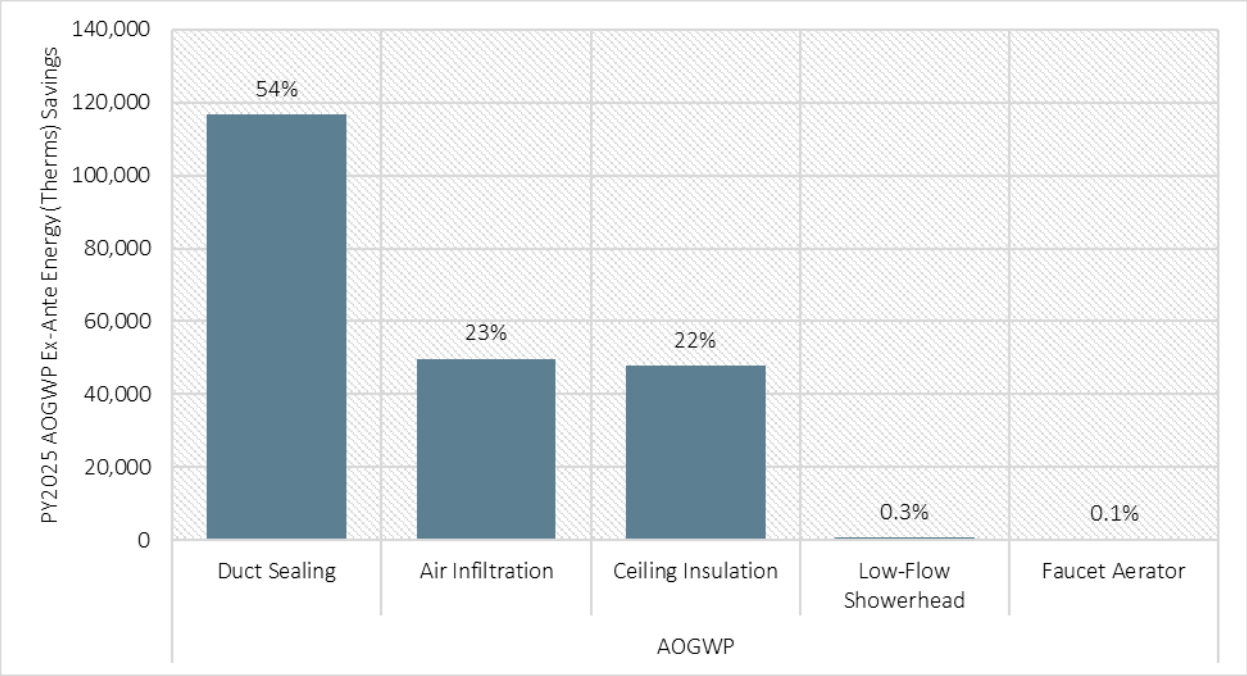

FIGURE 2-8 EX-ANTE GROSS (THERMS) BY MEASURE IN THE AOG WEATHERIZATION PROGRAM

Duct sealing (51%), air infiltration (25%), and ceiling insulation (24%) are the HIMs in the LIPP, accounting for 99.9% of program ex-ante energy savings (therms).

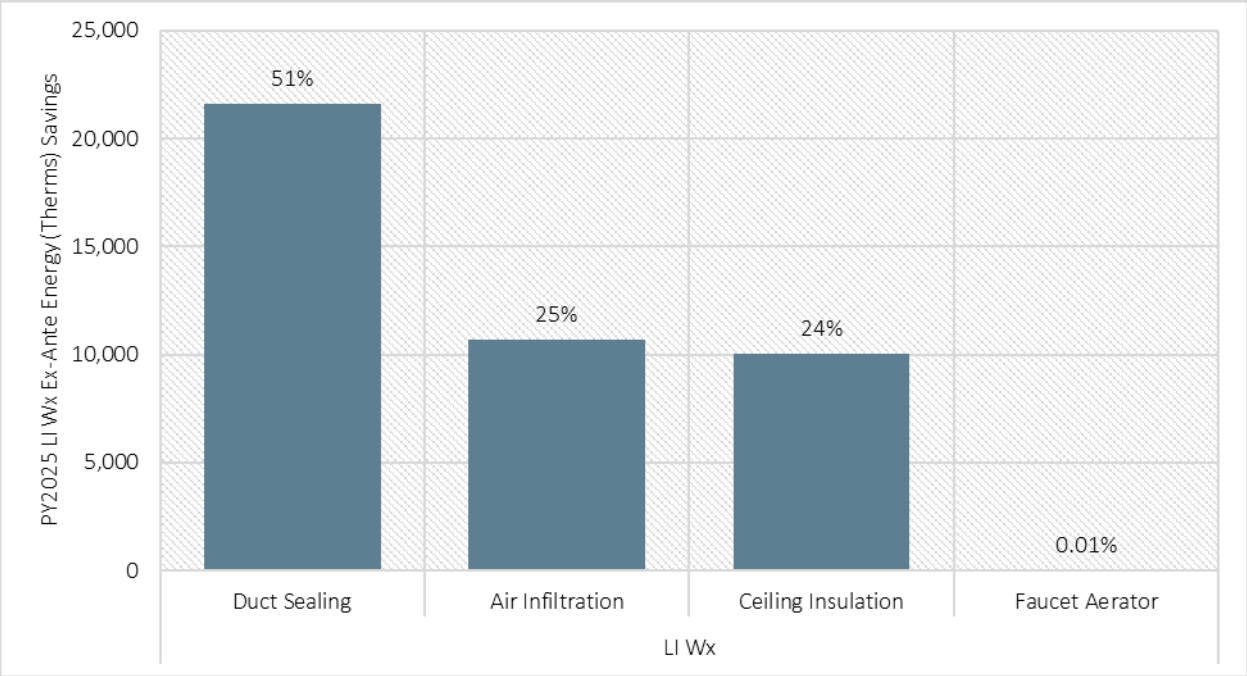

FIGURE 2-9 EX-ANTE GROSS (THERMS) BY MEASURE IN THE LOW-INCOME WEATHERIZATION PROGRAM

The table below summarizes the performance against goals of programs evaluated in this report.

TABLE 2-8 PERFORMANCE AGAINST GOALS

Program	Net Therm Savings Goal	Ex-Post Net Energy Savings (Therms)	% of Goal Attained
C&I Solutions	166,725	171,970	103.1%
Equipment Rebate	31,928	35,846	112.3%
AOG Weatherization	193,808	209,187	107.9%
Low-Income Weatherization	40,630	42,887	105.6%
Total	**433,091**	**459,889**	**106.2%**
Sums may differ due to rounding.			

The budgets and actual spending are summarized in Table 2-9 below.

TABLE 2-9 SUMMARY OF BUDGETS AND ACTUAL SPEND

Program/ Pathway	Budget ($)	Actuals ($)	% of Budget Spent
C&I Solutions	$507,104	$502,524	99.1%
Equipment Rebate	$530,437	$408,263	77.0%
AOG Weatherization	$1,138,923	$1,103,037	96.8%
Low-Income Weatherization	$256,675	$236,146	92.0%
Planning	$0	$0	N/A
Regulatory	$81,955	$70,868	86.5%
Total	**$2,515,094**	**$2,320,838**	**92.3%**
Sums may differ due to rounding.			

2.3 Summary of Cost-Effectiveness Evaluation Findings

The table below outlines the results from the cost-effectiveness analysis performed on the portfolio, by program, along with the net benefits for the total resource cost (TRC) test.

TABLE 2-10 COST-EFFECTIVENESS BY PROGRAM[3]

Program	TRC	UCT	RIM	PCT	TRC Net Benefits
Commercial & Industrial Solutions Program	1.69	1.87	0.52	5.15	$407,138
Equipment Rebate	1.39	1.00	0.39	2.04	$166,676
AOG Weatherization	1.70	2.20	0.50	1.87	$1,309,747
Low-Income	2.84	2.13	0.50	3.63	$435,369
Energy Efficiency Arkansas (EEA)	0.00	0.00	0.00	0.00	$0
Regulatory	0.00	0.00	0.00	0.00	-$70,868
Total	**1.71**	**1.84**	**0.49**	**2.34**	**$2,248,063**
Sums may differ due to rounding.					

In PY2025, the TRC ratio decreased to 1.71 from 1.96 in PY2024, with net benefits totaling $2,248,063.

The incorporation of Non-Energy Benefits (NEB) into cost-effectiveness testing in Arkansas has resulted in a change in the relational pattern across the various benefit-cost ratios. For example, the Low-Income Weatherization Program has a higher TRC than UCT. Under a narrower approach to TRC (without NEB), the TRC would always be lower than the UCT under the assumption that incentives are less than or equal to incremental cost.

Although the TRC score is slightly lower than PY2024, NEBs were a significant contributor to TRC benefits in PY2025, accounting for 21.4% of total TRC benefits across the portfolio. Figure 2-10 and Figure 2-11 below summarize TRC benefits by benefit source by program, and are shown in $1,000s.

3 Cost-effectiveness is evaluated and reported by program and portfolio, not the pathway. Per *Section 6: Benefit/Cost Tests* of the Rules for Conservation and Energy Efficiency Program filed in Docket: 10-101-R.

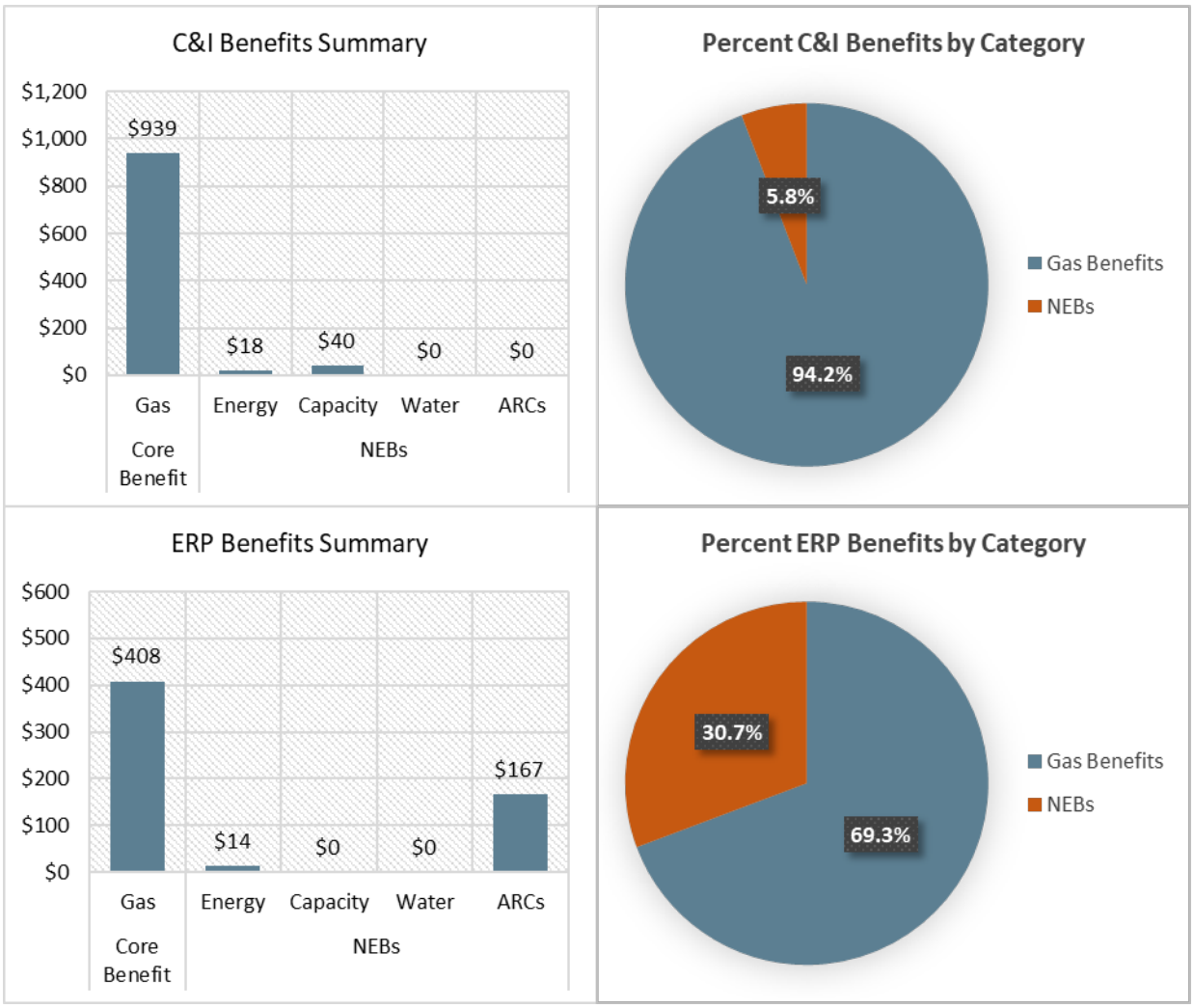

FIGURE 2-10 NEB BENEFIT SUMMARY BY PROGRAM – C&I AND ERP

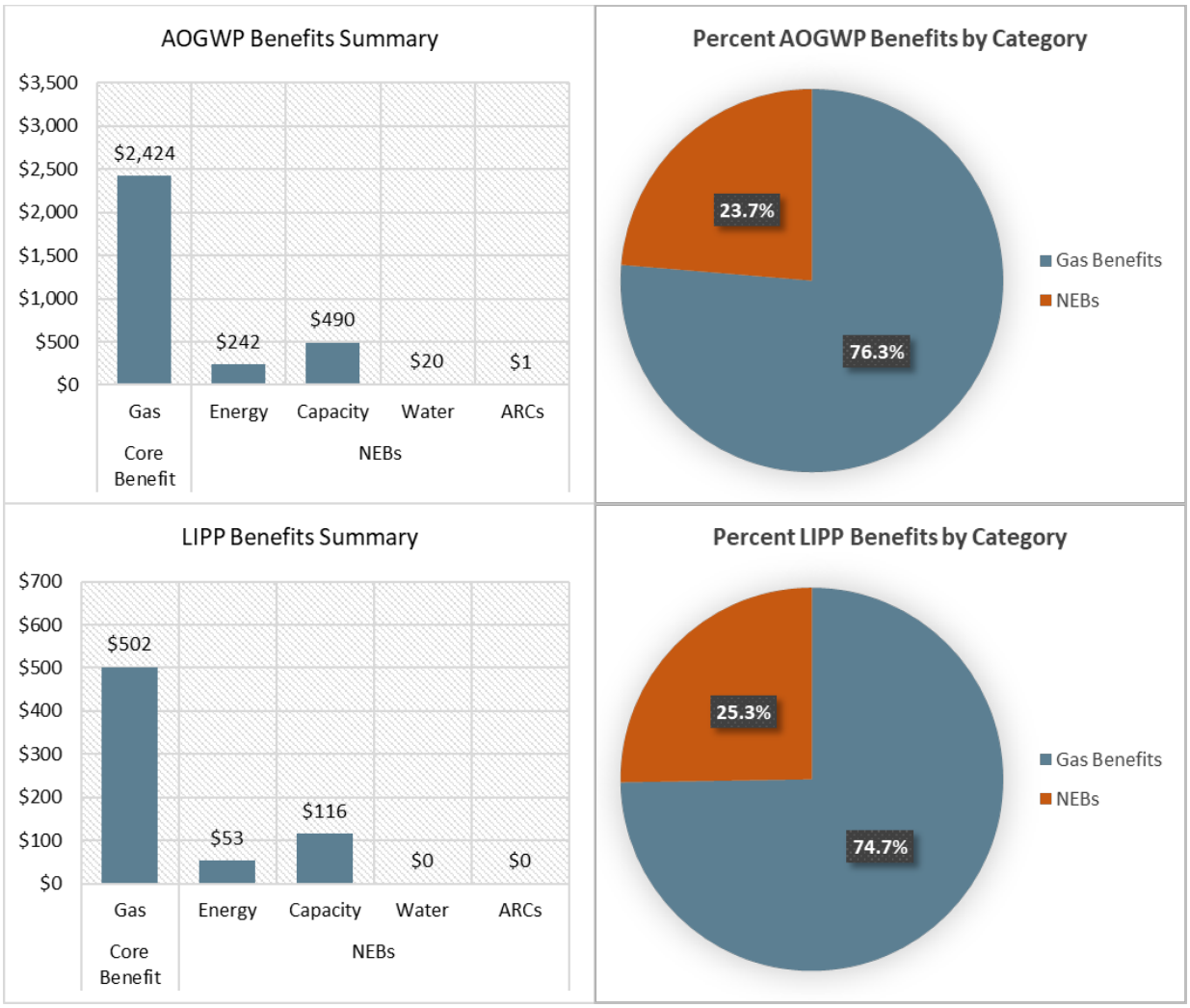

FIGURE 2-11 NEB BENEFIT SUMMARY BY PROGRAM – AOGWP AND LIPP

2.3.1 Cost-Effectiveness Methodology

See Appendix B of this report for additional details on the Evaluator approach and results.

2.3.2 Non-Energy Benefits

The ex-post gross, and ex-post net Non-Energy Benefits (NEB) are shown in the tables below.

TABLE 2-11 EX-POST GROSS NON-ENERGY BENEFIT SUMMARY

Program/ Pathway	Gross Electricity (kWh)	Gross Electricity Peak (kW)	Gross Water (Gallons)	Gross ARC ($)	Gross DRC ($)
Equipment Rebate	**61,941**	**0.00**	**0**	**$91,793**	**$109,789**
Residential	59,818	0.00	0	$87,628	$109,789
Commercial	2,123	0.00	0	$4,165	$0
C&I Solutions Program	**50,294**	**35.44**	**50,294**	**$0**	**$0**
Custom	0	0.00	0	$0	$0

Prescriptive	0	0.00	0	$0	$0
Direct Install	50,294	35.44	50,294	$0	$0
AOG Weatherization	**384,592**	**249.87**	**199,711**	**$541**	**$0**
Low-Income Program	**81,743**	**56.55**	**1,187**	**$325**	**$0**
Total	**578,570**	**341.86**	**200,897**	**$92,659**	**$109,789**
Sums may differ due to rounding.					

TABLE 2-12 EX-POST NET NON-ENERGY BENEFIT SUMMARY

Program/ Pathway	Net Electricity (kWh)	Net Electricity Peak (kW)	Net Water (Gallons)	Net ARC ($)	Net DRC ($)
Equipment Rebate	**37,904**	**0.00**	**0**	**$78,427**	**$88,788**
Residential	36,605	0.00	0	$74,737	$88,788
Commercial	1,299	0.00	0	$3,690	$0
C&I Solutions Program	**50,294**	**35.44**	**0**	**$0**	**$0**
Custom	0	0.00	0	$0	$0
Prescriptive	0	0.00	0	$0	$0
Direct Install	50,294	35.44	0	$0	$0
AOG Weatherization	**382,549**	**244.20**	**195,177**	**$529**	**$0**
Low-Income Program	**81,743**	**56.55**	**1,187**	**$325**	**$0**
Total	**552,491**	**336.19**	**196,364**	**$79,281**	**$88,788**
Sums may differ due to rounding.					

The Net Present Value (NPV) of NEB for each program and pathway are shown in the table below.

TABLE 2-13 NET PRESENT VALUE (NPV) OF NON-ENERGY BENEFITS (NEB)

Program/ Pathway	NPV Electricity ($)	NPV Electricity Demand ($)	NPV Water ($)	NPV ARC ($)	NPV DRC ($)
Equipment Rebate	**$13,801**	**$0**	**$0**	**$78,427**	**$88,788**
Residential	$13,328	$0	$0	$74,737	$88,788
Commercial	$473	$0	$0	$3,690	$0
C&I Solutions Program	**$18,312**	**$39,928**	**$0**	**$0**	**$0**
Custom	0	$0	$0	$0	$0
Prescriptive	$0	$0	$0	$0	$0
Direct Install	$18,312	$39,928	$0	$0	$0
AOG Weatherization	**$242,040**	**$490,043**	**$19,592**	**$529**	**$0**
Low-Income Program	**$53,107**	**$116,039**	**$119**	**$325**	**$0**
Total	**$327,260**	**$646,010**	**$19,711**	**$79,281**	**$88,788**
Sums may differ due to rounding.					

2.3.3 Cost of Carbon

The Evaluator has incorporated a low, medium, and high value for the cost of carbon. The cost-effectiveness analysis results are presented in these three different scenarios.

2.3.4 Marginal Line Losses

The Evaluator used marginal line losses provided by AOG.

2.3.5 Avoided Costs and Real Economic Carrying Charge

The Evaluator included avoided costs using the Real Economic Carrying Charge (RECC) approach.

2.4 Summary of Evaluation Findings and Recommendations

Below is an overview of the evaluation findings, by program, for the PY2025 programs.

2.4.1 Equipment Rebates

2.4.1.1 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the Equipment Rebate Program.

Overall, the ERP performed well, achieving 112.3% of its net therms goal. Although there were minor discrepancies in methodologies between the ex-ante estimations and ex-post savings, the overall realization rate for the program us 107.9%. Discrepancies in methodology include:

- Commercial smart thermostats assumed enormous square footages in ex-ante estimations; and
- Residential furnace savings were estimated assuming 'Replace-on-Burnout' regardless of replacement scenario in tracking data.

Program staff indicated that the Equipment Rebate Program did not undergo changes to its design or operating procedures during the program year. Staff described rebate intake and processing as consistent with prior years, with customers continuing to submit applications through mail, email, or the online portal. The implementer's role in processing rebates and providing weekly status updates also remained unchanged. Staff did not identify any modifications to eligibility criteria, incentive levels, processing workflows, or marketing responsibilities during the year.

AOG staff described their own internal processes—such as providing weekly customer account data updates and funding the implementer's rebate account on a prepaid basis—as stable and unchanged. Staff noted that no internal tracking or reporting procedures had been revised since prior years. Although staff acknowledged that broader economic conditions could affect future participation levels, they did not attribute this to program design or operational changes.

2.4.2 Commercial and Industrial Solutions Program

2.4.2.1 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the Commercial and Industrial Solutions Program.

Overall, the C&I Solutions Program performed well, achieving 103.1% of its net therms goal. In PY2025, there were 5 total custom projects completed and weather-stripping projects completed through the Direct Install pathway. The Evaluator did not find discrepancies in methodologies between the ex-ante estimations and the ex-post calculations.

Staff did not describe any design or operational changes to the C&I Solutions program during the year. The implementer continued to perform engineering assessments, run combustion safety testing, and work directly with facility managers and contractors. AOG staff reported that their internal role, primarily budget monitoring, invoice review, and incentive payment for custom projects, remained consistent with

previous years. The process for implementing both direct install (DI) and custom C&I offerings was also described as stable. Staff did not identify modifications to these workflows or to the implementer's responsibilities related to outreach, marketing, or facility engagement.

2.4.3 AOG Weatherization

2.4.3.1 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the AOG Weatherization Program.

Overall, the AOGWP performed well, achieving 107.9% of its net therms goal. The program achieved 99.5% of its expected therms savings. The Evaluator did not find discrepancies in ex-ante estimations. All differences in verified therms are attributed to the field verification findings.

Program staff reported no substantive changes to the design or operations of the AOG Weatherization Program during the program year. Processes for contractor management, lead assignment, documentation requirements, and intake were described as consistent with prior years.

Staff from both interviews emphasized that the system used by trade allies to submit project information had remained unchanged for "the last couple years." The implementer continued assigning leads daily, conducting processing and QA reviews, and managing coordination with OG&E for dual-fuel homes using the same approach as in prior periods.

The only requirement described as a recent adjustment was the 2024 adoption of a BPI Building Analyst Professional (BPIP) certification requirement, where each contractor team must include at least one certified staff member. This requirement was described as having begun the previous year rather than a change introduced during the current program year.

Staff did note the addition of an insulation-only contractor to support capacity.

2.4.4 Low-Income Weatherization

2.4.4.1 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the Low-Income Program.

Overall, the LIPP performed well, achieving 105.6% of its net therms goal. The program achieved 99.5% of its expected therms savings. The Evaluator did not find discrepancies in ex-ante estimations. All differences in verified therms are attributed to the field verification findings.

As with the AOG Weatherization Program, program staff did not report any significant changes in the program design or delivery process. The low-income program continued to allow additional health and safety measures compared to the standard pathway, but staff did not identify any updates to these offerings during the year. Staff also reported no changes to lead intake, contractor roles, documentation requirements, or coordination between AOG and CLEAResult.

2.4.5 Progress on Previous Recommendations

The progress on PY2024 recommendations is summarized in the table below.

TABLE 2-14 STATUS OF PREVIOUS RECOMMENDATIONS

PY	Prog.	Recommendation	Response	Notes
24	**Equipment Rebates**	Program staff may consider requesting facility-specific assumptions from customers (if available) to calculate DHW load inputs for commercial water heaters. - The Evaluator performed online research to review commercial water heaters installed in various facility types in PY2024. There were a few projects that were categorized as 'Other' for facility type that the Evaluator adjusted to align with the AR TRM 9.2. Further, the Evaluator took time to apply the appropriate input assumptions to calculate water usage for each project.	In Progress	

2.5 Comprehensiveness Checklist

This section outlines how the AOG portfolio performed against the seven factors approved by the APSC with Order No. 17 in Docket No. 08-144-U on December 10, 2010.

The Evaluator reviewed the AOG programs and portfolio to assess whether it followed the APSC Comprehensiveness Goals. In assessing these metrics, the Evaluator scored them on various subcomponents.

The scoring methodology is as follows:

- ● : Meets all requirements and is in full compliance with this performance indicator
- ◐ : Meets some requirements and is in partial compliance with this performance indicator
- ○ : Is not in compliance with this performance indicator

NA: Performance indicator is not applicable to this program

2.5.1 Factor One: Education, Training, Marketing, and Outreach

The Evaluator reviewed Factor 1 as three separate components: 1) education, 2) training, and 3) marketing and outreach. Education, training, marketing, and outreach activities for AOG programs are summarized below.

Education and Training

- CLEAResult conducts an annual kickoff meeting with AOG and OG&E, introducing teams and reviewing program requirements, safety standards, and customer service expectations.
- Trade allies are required to have at least one BPI-certified professional per team (requirement implemented in 2024).
- New trade allies receive individualized onboarding sessions and initial QA oversight for several weeks to ensure compliance.
- Twice-yearly meetings are held with AOG, OG&E, and contractors to review program performance and address issues.

Marketing and Outreach

- Weatherization Program: Minimal marketing; participation is largely organic through word-of-mouth and referrals. Occasional bill inserts are used. Trade allies have access to one co-branded flyer for customer referrals.
- Equipment Rebate Program: AOG manages marketing through email campaigns, website updates, bill inserts, and promotional materials. CLEAResult processes rebate applications.
- Commercial & Industrial Program: CLEAResult manages marketing and outreach, including maintaining program forms and content on AOG's website.
- No formal advertising campaigns (e.g., digital ads, radio) were reported for AOG programs.

Coordination

- AOG and CLEAResult maintain coordination on educational activities and program communications, with regular monthly updates and collaborative planning.

The scoring for customer education is in Table 2-15. We assigned partial scores for AOG Weatherization Program and Low-Income Program because these programs are not heavily promoted. We note however, that the programs are meeting savings goals without these additional expenditures.

TABLE 2-15 ASSESSMENT OF CUSTOMER EDUCATION BY PROGRAM

Program	Provides Educational Materials	Outreach Through Multiple Channels	Education Targeted to Specific Market Barriers
Residential Equipment Rebates	●	●	●
C&I Solutions	●	●	●
AOG Weatherization Program	●	◐	●
Low-Income Program	●	◐	●

2.5.1.1 AOG approached training in a comprehensive manner.

The Evaluator reviewed each program to assess whether:

- Whether the program is contractor-driven;
- If not, whether it could or should be contractor-driven;
- The program provides training classes to support its offerings; and
- Whether the programs require contractor certification.

Training Activities:

- AOG and CLEAResult conduct an annual kickoff meeting for all weatherization trade allies and program partners, reviewing program requirements, safety standards, and customer service expectations.
- New weatherization trade allies receive individualized onboarding sessions and initial QA oversight for several weeks to ensure compliance.
- Twice-yearly meetings are held to review program performance and address issues.

- CLEAResult provides program manuals outlining technical requirements and customer engagement expectations.

Contractor Certification:

- Beginning in 2024, all weatherization trade allies must have at least one BPI-certified professional per team.
- Certification ensures adherence to building performance standards and proper implementation of measures.

TABLE 2-16 ASSESSMENT OF CONTRACTOR TRAINING

Program	Contractor Training Offered	Training Requirements Adhere to Best Practices	Trade Allies Participate in Training
Equipment Rebate	●	●	●
C&I Solutions	●	●	●
AOG Weatherization Program	●	●	●
Low-Income Program	●	●	●

2.5.1.2 AOG approached marketing and outreach in an appropriate and targeted manner

The Evaluator reviewed the marketing and outreach strategies associated with each of the AOG programs. These strategies were assessed to determine whether they addressed participant barriers, the extent of trade ally involvement in marketing, and whether materials were correctly targeted to promote a comprehensive approach to energy efficiency.

Overall Assessment:

- Weatherization relies heavily on organic referrals and lead assignment rather than proactive marketing.
- Equipment rebate program uses multiple outreach channels managed by AOG.
- C&I marketing is primarily handled by CLEAResult through direct engagement with customers and website updates.

After reviewing the marketing and outreach materials, the Evaluator concluded that:

- Most programs have marketing materials that address specific barriers associated with the targeted segments or technologies.
- The AOG programs are marketed through a diverse range of channels, including mass-media advertising, online advertising, meetings and training sessions with professional organizations and trade groups, and partnered marketing with municipal governments.

TABLE 2-17 ASSESSMENT OF MARKETING & OUTREACH BY PROGRAM

Program/Pathway	Marketing Approach	Assessment
Residential Equipment Rebates	AOG-managed, multi-channel: email campaigns, website content/updates, bill inserts, and promotional materials.	Appropriate: AOG channels reach customers in different ways; contractor

Program/Pathway	Marketing Approach	Assessment
	Contractors promote high-efficiency options and may assist with rebate paperwork.	incentives align with role in driving sales.
C&I Solutions	CLEAResult-led, relationship-driven: CLEAResult manages website forms/content and all C&I marketing/outreach. Engineers conduct on-site assessments, coordinate directly with facility managers, and scope projects; contractors implement measures. Direct install offer provides entry to facility.	Appropriate: Technical, direct engagement fits C&I decision processes. Direct install offer provides program representatives with opportunity to speak with customers.
AOG Weatherization Program	Minimal, organic participation: Primarily word-of-mouth/referrals; occasional bill inserts. Trade allies provided one co-branded flyer for referrals.	Appropriate: Program is self-sustaining with consistent participation; TA-driven delivery and daily lead assignment reduce need for broad marketing. Limited collateral is adequate given organic demand and joint operations in dual-fuel homes.
Low-Income Program	Mirrors standard weatherization: Same minimal/organic approach; use of the co-branded flyer for referrals. Eligibility is self-reported (LIHEAP-eligible or 65+).	Appropriate: Organic outreach combined with daily assignments is sufficient per staff discussion and goal achievement.

2.5.2 Factor Two: Budgetary, Management, and Program Delivery Resources

Whether the program and/or portfolio have adequate budgetary, management, and program delivery resources to plan, design, implement, oversee, and evaluate energy efficiency programs.

To evaluate budget and resource sufficiency, the Evaluator assessed performance indicators associated with the adequacy of budget allocations, the cost per kWh saved and whether program staff and contractor support was sufficient to support program goals. The Evaluator found that AOG has achieved the Factor 2 objectives.

2.5.2.1 Program budgets were sufficient to implement the programs.

The portfolio exceeded its net energy savings (therms) goal (433,091 therms) by 7%, while spending 92% of its allocated budget, at an overall cost of $5.05/net therm (levelized cost of $0.576 per therm). All programs stayed within budget. AOG's resource acquisition cost at a portfolio level is below average for utilities across the country with programs that have been run for several years.[4]

4 EPA estimates that energy efficiency programs will cost program administrators $0.58 cents up front per kWh saved in the first year for low savings levels, with costs declining to $0.46 and then $0.35 cents as programs ramp up. Source: http://aceee.org/sites/default/files/cost-of-ee.pdf

Program and implementation staff reported that they had sufficient budget to cover program implementation. Table 2-18 shows the spending and energy savings (therm) percentages for each program, along with the cost per therm of savings.

TABLE 2-18 BUDGET ALLOCATION AND PROGRAM GOAL ATTAINMENT

Program	Spending (Percentage of Budget)	Net Energy Savings (Percentage of Net Therm Goal)	Levelized Cost per Net Therm
Commercial & Industrial Solutions Program	99.1%	103.1%	$0.4775
Equipment Rebate	77.0%	112.3%	$0.9420
AOG Weatherization	96.8%	107.9%	$0.5633
Low-Income Program	92.0%	105.6%	$0.4163
Total	**92.3%**	**106.2%**	**$0.5755**
Sums may differ due to rounding.			

2.5.2.2 Program staffing was sufficient for effective program management and timely delivery of resources.

During staff interviews, both AOG and CLEAResult emphasized the strength of their long-standing partnership and structured coordination processes. AOG manages budgeting, funding, and reporting, while CLEAResult oversees implementation, lead assignment, and quality assurance. Both parties meet monthly to review progress toward goals and budgets, supplemented by weekly updates to ensure no gaps in communication. In addition, kickoff meetings at the start of the year and year-end reviews provide opportunities to address issues and plan improvements. Staff reported no concerns with internal or implementer staffing and noted that issues are rare and resolved quickly when they arise. This collaborative environment, combined with clear roles and proactive planning, demonstrates that AOG has sufficient resources and effective program management to support successful program delivery.

Table 2-19 below outlines the acquisition costs for the portfolio.

TABLE 2-19 ACQUISITION COSTS & GOAL ATTAINMENT

Program	Budgeted Spend	Actual Spend	Budget $ per Net Therm	Actual $ per Net Therm	Net Therm Savings Goal	Net Therm Savings
C&I Solutions Program	$507,104	$502,524	$2.95	$2.92	166,725	171,970
Equipment Rebate	$530,437	$408,263	$14.80	$11.39	31,928	35,846
AOG Weatherization	$1,138,923	$1,103,037	$5.44	$5.27	193,808	209,187
Low-Income Program	$256,675	$236,146	$5.98	$5.51	40,630	42,887
Regulatory	$81,955	$70,868	$0.00	$0.00	0	0
Total	**$2,515,094**	**$2,320,838**	**$5.47**	**$5.05**	**433,091**	**459,889**
Sums may differ due to rounding.						

The Factor Two scoring for each program is presented in Table 2-20.

TABLE 2-20 ASSESSMENT OF BUDGETARY, MANAGEMENT, AND RESOURCES BY PROGRAM

Program	Budget is Sufficient to Support Program Goals	Cost per-Therm Aligns with Program Plan	Program Has Sufficient Staffing	Program Has Sufficient Contractor Support
C&I Solutions Program	●	●	●	●
Equipment Rebate	●	●	●	●
AOG Weatherization	●	●	●	●
Low-Income	●	●	●	●

2.5.3 Factor Three: Major End-Uses Addressed

Whether the programs and/or portfolio reasonably address all major end-uses of electricity or natural gas, or electricity and natural gas, as appropriate.

To assess Comprehensiveness Checklist Factor 3, the Evaluator identified the end-uses addressed by each program. AOG designed programs to offer customers a range of choices. The Evaluator determined that AOG continued to meet the objectives of Factor 3. All major end uses in the AR TRM v10.0 were utilized by the residential program.

- HVAC (54.6%) and envelope (39.7%) are the high-impact measures (HIMs) in the residential sector, and equal 94.3% of portfolio ex-ante energy savings (therms).
- Water heating was the high-impact measure for the commercial sector, accounting for 80.4% of savings. Envelope and HVAC measures accounted for 8.2% and 6.8% of ex-ante therms, respectively.

Table 2-21 details the percentage of participants in each program, specifically those with offerings for multiple end-uses, who installed measures that spanned several end-uses. AOG successfully motivated participants in various programs to adopt measures encompassing multiple end-uses.

TABLE 2-21 INSTALLATION OF MULTIPLE END-USE PROJECTS

Program	On-site Assessment and/or Diverse Direct Install Measures Offered	Single End Use (% of installations)	Multiple End Use (% of installations)
Equipment Rebate Program	No	89.3%	10.7%
C&I Solutions	Yes	88.2%	11.8%
AOG Weatherization Program	Yes	0.0%	100.0%
Low-Income Program	Yes	0.0%	100.0%

*Measures were grouped into the following end-uses: Appliance, HVAC, plug load, water heating, lighting, envelope, refrigeration, C&I kitchen, compressed air, SEM/RCx, and industrial process.

The factor three scoring for each program is in Table 2-22. The Evaluator identified the end-uses served by each of the AOG programs. Most AOG programs are designed around a specific technology or end-use.

TABLE 2-22 ASSESSMENT OF END-USES ADDRESSED BY PROGRAM

Program	HVAC	Hot Water	Food Service	Building Envelope	Industrial Process	Behavioral
Equipment Rebate Program	●	●	NA	○	NA	○

C&I Solutions	●	●	●	●	●	●
AOG Weatherization Program	●	●	NA	●	NA	○
Low-Income Program	●	●	NA	●	NA	○

2.5.4 Factor Four: Comprehensively Address Customer Needs

To assess Factor 4, the Evaluator reviewed AOG programs to discern the extent of:

- Program-provided technical assistance;
- Incentives of comprehensive projects/measure suites; and
- Tiered incentives for higher efficiency levels.

The AOG portfolio has no specific requirements for installation of multiple measures. Customers can participate to an extent of their choice. This is a program best-practice in enabling customers to engage in energy efficiency in a manner in accordance with their budget constraints.

Findings from the assessment of this factor included:

Contractor Incentives (Trade-Ally Rebates):

- AOG prescriptive programs consistently offer trade ally rebates of $50 for each qualifying installation—applicable to gas furnaces (90–94.9% AFUE and ≥ 95% AFUE), and tankless water heaters (≥0.90 UEF).

Tiered Incentives for Premium Efficiency:

- Residential Furnaces: $800 rebate for furnaces with ≥ 95% AFUE; $400 for 90–94.9% AFUE. Trade ally rebate remains $50 per install.
- Water Heaters: $700 rebate for high-efficiency tankless units (≥0.90 UEF). Note: Non-condensing vs condensing is not distinguished—it's a flat tier for qualifying tankless units.
- Commercial Food Service: Tiered incentives available for ENERGY STAR ovens, fryers, and other food service equipment.
- C&I Solutions (Custom Program): Incentives are paid per verified therm saved. For boilers, rebates are $1,400/MMBtu for 90–93.9% efficient units and $2,000/MMBtu for ≥ 94% efficient units.

Bundled On-Site Technical Assistance + Direct Install:

- The C&I Solutions program includes direct-install measures (e.g., pre-rinse spray valves, aerators, weather stripping) as part of its offering. This indicates bundled assistance alongside installed measures.
- The Low-Income Program, AOG Weatherization Program, and C&I Solutions programs provide on-site technical support funded by AOG.

TABLE 2-23 ASSESSMENT OF PROJECT COMPREHENSIVENESS BY PROGRAM

Program	Technical Assistance and/or Audits	Information Provided Comprehe	Bundled Incentives for	Tiered Incentives for	Contractor Incentives for

		nsive for Efficiency	Multiple Measures	Premium Efficiency	Premium Efficiency
Equipment Rebate Program	◐	●	○	●	●
C&I Solutions	●	●	●	●	●
AOG Weatherization Program	●	●	●	●	○
Low-Income Program	●	●	●	●	○

2.5.5 Factor Five: Targeting Market Sectors & Leveraging Opportunities

The Evaluator reviewed whether the AOG portfolio offered a comprehensive range of energy efficiency opportunities to all major customer sectors. Table 2-24 summarizes the market sectors and what programs target or allow each sector.

TABLE 2-24 ASSESSMENT OF TARGETED CUSTOMER SECTORS BY PROGRAM

Program	Residential	Multifamily	Mobile Home	Small Commercial	Large Commercial	Industrial	Agricultural	Public Sector
Equipment Rebate	●	●	NA	●	NA	NA	NA	●
C&I Solutions	NA	NA	NA	●	●	●	◐	●
AOG Weatherization Program	●	●	●	NA	NA	NA	NA	NA
Low-Income Program	●	●	●	NA	NA	NA	NA	◐

Each sector has several programs for which they are eligible, and at least one program that targets them. Segments with fewer targeted outreach avenues include:

- Mobile/manufactured housing is often not targeted as there is a much higher prevalence of electric space and water heating.
- Agriculture and Industrial sectors are not specifically targeted by the Commercial Equipment Rebate Program as the equipment used by these facilities generally requires custom calculations.
- Public Sector facilities are targeted with a wide range of programs. This has included residential programs that reach out to public housing authorities.

In addition, the Evaluator reviewed the extent of collaboration and leveraging of available partnership opportunities by AOG.

Examples of cross-utility coordination included joint delivery of the AOG Weatherization Program with Oklahoma Gas & Electric (OG&E). Program staff explained that both utilities use CLEAResult as the third-party implementer, and CLEAResult manages lead assignment, contractor coordination, and implementation for both service territories. When a household receives service from both AOG and OG&E, costs are shared between the two utilities. When the household receives electric service from a municipal utility or rural cooperative, AOG funds the weatherization work directly. Staff noted that OG&E is the primary electric-utility partner for joint weatherization delivery due to substantial service-territory

overlap. They also recalled limited coordination with SWEPCO in the past but indicated that such joint work does not appear to be active at this time.

Program staff also noted alignment across gas utilities in the commercial and industrial (C&I) program area. AOG uses CLEAResult to implement the C&I Solutions Program and reported that CLEAResult applies similar program structures and incentive levels across AOG, Summit Utilities Arkansas (SUA), and Black Hills Energy Arkansas (BHEA). According to staff, this alignment has helped streamline program delivery and reduce administrative burden for the C&I portfolio.

2.5.6 Factor Six: Cost-effectiveness

Whether the programs and/or portfolio enable the delivery of all achievable, cost-effective energy efficiency within a reasonable period and maximize net benefits to customers and the utility system.

To evaluate Factor 6, the Evaluator assessed three key performance indicators: 1) whether programs achieved their Plan goals, 2) NTG values and 3) program cost-effectiveness.

2.5.6.1 Goal Achievement

In PY2025, all AOG programs exceeded their respective net therm savings goals.

2.5.6.2 Cost-Effectiveness

Table 2-25 presents program and portfolio level NTG and benefit/cost ratios for each test. The UCT[5] and PCT results were particularly relevant to Comprehensiveness Factor 6, as these test results indicate when a portfolio benefits exceeded its costs from the utility and customers' perspectives, respectively.

TABLE 2-25 NTG AND COST-EFFECTIVENESS RESULTS

Program	Net Savings Goal Achieved	NTG	TRC	UCT	RIM	PCT
C&I Solutions Program	171,970	100.0%	1.69	1.87	0.52	5.15
Equipment Rebate	35,846	81.0%	1.39	1.00	0.39	2.04
AOG Weatherization	209,187	97.7%	1.70	2.20	0.50	1.87
Low-Income Weatherization	42,887	100.0%	2.84	2.13	0.50	3.63
Total	**459,889**	**97.2%**	**1.71**	**1.84**	**0.49**	**2.34**

Table 2-26 outlines the scoring for Factor Six. For "Met Net Savings Goal", a half Harvey Ball was assigned if the program achieved more than 80% of the net energy savings (therms) goal. An empty Harvey Ball was assigned if the program achieved less than 80% of the net energy savings (therms) goal.

5 The UCT is, in some cases, also referred to as the Program Administrator Cost Test (PACT).

TABLE 2-26 ASSESSMENT OF COST-EFFECTIVENESS

Program	NTG Ratio Within Industry Norms	Met Net Savings Goal	Program TRC
C&I Solutions Program	●	●	●
Equipment Rebate	●	●	●
AOG Weatherization	●	●	●
Low-Income	●	●	●

2.5.7 Factor Seven: EM&V Procedures

The Evaluator conducted a review of EM&V procedures by program:

- Quality Assurance and Quality Control (QA/Q)C and EM&V procedures by AOG program staff;
- QA/QC and EM&V procedures by third-party implementation staff (where applicable)
- QA/QC and EM&V procedures by the Evaluator.

The EM&V of the AOG programs incorporated industry best practices and was conducted in an iterative process that incorporated feedback from AOG and implementation contractors as well as the Independent Evaluation Monitor (IEM). The Evaluator developed EM&V plans that corresponded to protocols set out in the AR TRM v10.0.

Finally, the Evaluator reviewed the quality of program tracking data in order to assess whether the data allowed for complete evaluation. Further, the Evaluator reviewed the extent to which individual savings calculations were performed using facility-specific inputs into the AR TRM v10.0 algorithms versus the use of simplifying assumptions Table 2-27. The results of the review are summarized in Table 2-27.

TABLE 2-27 ASSESSMENT OF DATA & QA/QC PROCEDURES BY PROGRAM

Program	Tracking Contains Necessary Fields	Savings Calculations Performed and Reported	Savings Calculations Based on Facility Data	QA/QC Inspections by Program Staff
C&I Solutions Program	●	●	●	●
Equipment Rebate	●	●	●	●
AOG Weatherization	●	●	●	●
Low-Income	●	●	●	●

3 Evaluation Methodology

The following subsections provide an overview of both the impact and process evaluations for each of the program's list in the table above.

3.1 Impact Evaluation

3.1.1 Gross Impact

The Evaluator approach to savings analysis depends largely on the types of measures installed.

In the following subsections gross savings calculation methodologies are detailed by measure category, as is appropriate.

3.1.1.1 Arkansas TRM v10.0 Algorithms and Inputs

Deemed savings values and algorithms from the AR TRM v10.0[6] were used to determine verified ex-post gross energy (therms) impacts except as noted in Section 3.1.1.3. Care was taken to ensure any assumptions were reasonable and current, and that there were no errors in the algorithms. For each measure in the program, total ex-post gross energy (therms) savings were determined as a product of the number of measures verified as qualifying for an incentive and the deemed or partially deemed savings per measure.

3.1.1.2 Energy Savings (Therms) Calculations

The following sections outline the impact evaluation approach for each program. For equipment and retrofits incentivized through the program, calculation methodologies were performed as described in the AR TRM v10.0. The table below identifies the sections that were used for verification of measure-level savings.

The gross impact evaluation effort included the following:

- **Desk Reviews.** The Evaluator utilized the AR TRM v10.0 values in assessing ex-post gross energy savings (therms) and NEB from the measures. In addition, the Evaluator also examined Excel workbooks and supplemental documentation used by the third-party implementor staff (CLEAResult) to assess savings by measure. The workbook utilizes savings algorithms with Contractor inputs to calculate savings based on the measure and input parameters.
- **Data Tracking Review**: For all pathways, project data from the implementers was reviewed to ensure that tracking systems followed Protocol A, B1 and B2 of the AR TRM v10.0.
- **Site Visits**. The Evaluator performed site visits in PY2025.
    - **Consistent Weatherization Approach Program:**
        - **Weatherization component**: 31 site visits completed.
        - **Low-Income Weatherization component:** 13 site visits completed.

6 *Ibid*, 1.

See the table below for the list of measures and their associated AR TRM v10.0 sections.

TABLE 3-1 AR TRM V10.0 SECTIONS BY MEASURE TYPE

Measure Category	Measure	Subsection(s)
Domestic Hot Water Measures	Commercial Water Heater	3.3.1
	Faucet Aerator	2.3.4
	Low-Flow Showerhead	2.3.5
	Residential Water Heater	2.3.1
Envelope Measures	Air Infiltration (Residential)	2.2.9
	Ceiling Insulation	2.2.2
	Commercial Weather Stripping	3.2.10
HVAC	Commercial Furnace	3.1.8
	Duct Sealing	2.1.11
	Residential Furnace	2.1.3
	Smart Thermostat (Residential)	2.1.12
	Boiler Replacement	3.1.7
Lighting	LED Lamp	2.5.1, 2.5.2
Other	Steam Trap Replacement	3.1.15

3.1.1.3 Diversions from the AR TRM v10.0

Aside from the typical custom approaches that are required for commercial custom projects, there were no diversions from the AR TRM v10.0.

3.1.1.4 Tracking System Review

The impact evaluation began with a review of program tracking data. The tracking data included a separate row for each measure installed. Every premise in the program had a unique incentive identifier, so each premise had multiple rows to reflect the different measures completed.

3.1.1.5 Site Visits

In PY2025, there were no on-site visits conducted for any of the commercial projects in the C&I Solutions Program.

For the residential programs, the Evaluator completed site visits to verify measures that were installed/performed in the AOGWP and LIPP programs. In PY2025, site visits were conducted in 44 residential homes. All homes were also serviced by Oklahoma Gas & Electric (OG&E) and are considered dual-fuel homes. Compared to PY2024, the Evaluator completed verification work in a total of 62 residential homes and included 36 OG&E dual-fuel homes. The table below shows a site visit comparison between PY2024 and PY2025.

TABLE 3-2 RESIDENTIAL SITE VISIT SUMMARY BY PROGRAM YEAR

Program	PY2024	PY2025
AOGWP	45	31
LIPP	17	13
OG&E AR Homes	36	44

Total	**62**	**44**
Sums reflect the number of homes that were visited in each program year.		

Overall, the Evaluator executed site visits between August and November of 2025. More specifically, the visits were performed one week at a time, for 5 weeks, within the aforementioned timeline.

The primary goal of these site visits was to verify the installation and accuracy of information collected on the application, with an emphasis on achieving 90% confidence and 10% precision. A random sampling process, with a focus on high-impact measures (HIM), determined the selected sites.

In total, out of the 333 homes included in the sample, the Evaluator verified 89 sampled projects completed in 44 sites. The sample frame, developed on a measure-level basis for HIM (including air infiltrations, ceiling insulation, duct sealings, faucet aerators, LED lamps, low-flow showerheads), meets the criteria of 90% confidence and ±10% precision at the program level. More precisely, the actual precision achieved is ± 7.46%.

Additional details can be found in Section 2.1.1.

These site visit impacts, in some cases, were triangulated with results from previous years in the same planning period (e.g., in this case, PY2024) or literature review results. Literature review results are found in the following section.

See additional site visit notes in Appendix E Residential Site Visit Findings.

3.1.1.6 Residential Program In-Service Rates

3.1.1.6.1 LITERATURE REVIEWS FOR MEASURE IN-SERVICE RATES

Literature reviews were performed to evaluate gross impacts of measures that were not found in site visits or had low samples. In cases where there are small samples, the literature review may be averaged with the site visit impact. Those literature reviews are summarized below.

TABLE 3-3 AIR INFILTRATION LITERATURE REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY2023 EM&V Report	AOG	Air Infiltration	TA Installed	108.1%
PY2023 EM&V Report	Summit AR	Air Infiltration	TA Installed	105.2%
PY2023 EM&V Report	SWEPCO AR	Air Infiltration	TA Installed	99.0%
PY2023 EM&V Report	BHE AR	Air Infiltration	TA Installed	104.3%
IL V11.0 TRM	NA	Air Infiltration	TA DI	100.0%
Average ISR				**103.3%**

TABLE 3-4 CEILING INSULATION LITERATURE REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY2023 EM&V Report	AOG	Ceiling Insulation	TA Installed	100.0%
PY2023 EM&V Report	Summit AR	Ceiling Insulation	TA Installed	100.0%

PY2023 EM&V Report	SWEPCO AR	Ceiling Insulation	TA Installed	97.0%
PY2023 EM&V Report	BHE AR	Ceiling Insulation	TA Installed	100.0%
PY8 EM&V Report	SWEPCO LA	Ceiling Insulation	TA DI	100.0%
Average ISR				**99.4%**

TABLE 3-5 DUCT SEALING LITERATURE REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY2023 EM&V Report	AOG	Duct Sealing	TA Installed	101.4%
PY2021 EM&V Report	OG&E AR	Duct Sealing	TA Installed	100.0%
PY2023 EM&V Report	SWEPCO AR	Duct Sealing	TA Installed	99.7%
PY11 EM&V Report	ENO	Duct Sealing	TA Installed	94.4%
Rhode Island TRM 2021	-	Duct Sealing	TA DI	100.0%
Average ISR				**99.9%**

TABLE 3-6 FAUCET AERATOR LITERATURE REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	MF DHW	TA Installed Wx	100.0%
IL TRM V11.0	NA	Aerator	DI ISR	93.0%
New Orleans TRM 8.0	NA	Aerator	DI ISR	98.0%
IIA TRM V7.0	NA	Aerator	DI ISR	95.0%
PY23 EM&V Report	OG&E AR	Aerator	TA Installed Wx	100.0%
Average ISR				**97.2%**

TABLE 3-7 LOW-FLOW SHOWERHEAD REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	MF DHW	TA Installed Wx	100.0%
2022 Hawaii TRM	NA	Showerheads	DI ISR	93.0%
IL TRM V11.0	NA	Showerheads	DI ISR	96.0%
New Orleans TRM 7.0	Entergy New Orleans	Showerheads	DI ISR	98.0%
IA TRM V7.0	NA	Showerheads	DI ISR	98.0%
PY2023 EM&V Report	OG&E AR	Showerheads	TA Installed Wx	100.0%
Average ISR				**97.5%**

TABLE 3-8 LED LAMP REVIEW RESULT

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	MF DHW	TA Installed Wx	100.0%
2022 Hawaii TRM	NA	Showerheads	DI ISR	93.0%
IL TRM V11.0	NA	Showerheads	DI ISR	96.0%

New Orleans TRM 8.0	Entergy New Orleans	Showerheads	DI ISR	98.0%
IA TRM V7.0	NA	Showerheads	DI ISR	98.0%
PY2023 EM&V Report	OG&E AR	Showerheads	TA Installed Wx	100.0%
Average ISR				**97.5%**

3.1.1.6.2 IN-SERVICE RATES APPLIED

The tables below summarize the in-service rates (ISR) which were applied in each desk review. The rates are a combination of participant surveys, site visits, literature reviews, and historical measure-level ISR values.

TABLE 3-9 IN-SERVICE RATES FOR AOGWP

AOGWP Measure	Participant Survey ISR	Site Visit ISR	Lit Review ISR	PY2024 ISR	PY2025 ISR
AOGWP	**NA**	**31 On-sites**	**NA**		
Air Infiltration	NA	108.5%	NA	102.8%	105.7%
Ceiling Insulation	NA	100.0%	NA	99.8%	99.9%
Duct Sealing	NA	93.8%	NA	99.6%	96.7%
Faucet Aerator	NA	NA	NA	99.1%	99.1%
LED Lamp (Standard)	NA	NA	NA	98.4%	98.4%
Low-Flow Showerhead	NA	NA	NA	99.2%	99.2%

TABLE 3-10 RATES AND IMPACTS FOR LIPP

LIPP Measure	Participant Survey ISR	Site Visit ISR	Lit Review ISR	PY2023 ISR	PY2024 ISR
LIPP	**NA**	**13 On-sites**	**NA**		
Air Infiltration	NA	107.2%	NA	102.8%	105.0%
Ceiling Insulation	NA	100.0%	NA	100.0%	100.0%
Duct Sealing	NA	101.3%	NA	99.6%	100.5%
Faucet Aerator	NA	NA	NA	99.1%	99.1%
LED Lamp (Standard)	NA	NA	NA	98.4%	98.4%
Low-Flow Showerhead	NA	NA	NA	99.2%	99.2%

3.1.1.7 Early Replacement of Furnaces

For residential furnaces, early retirement AFUE was calculated by a degradation factor of a 78% AFUE unit. This is calculated as:

AFUE_base_early) = (Base AFUE)×(1-M)^age

Base AFUE = efficiency of the existing equipment when new, 78% AFUE.

M = maintenance factor, 0.01.

age = the age of the existing equipment, in years.

Following this, lifetime savings are determined based on the Remaining Useful Life (RUL) of the old equipment. The AR TRM v10.0 updated the RUL table, which has been reflected in Table 3-11.

TABLE 3-11 RESIDENTIAL FURNACE RUL

Unit Age	RUL	Unit Age	RUL
5	14.7	19	3.6
6	13.7	20	3.2
7	12.7	21	2.9
8	11.8	22	2.6
9	10.9	23	2.4
10	10.0	24	2.1
11	9.1	25+	0.0
12	8.3		
13	7.5		
14	6.8		
15	6.2		
16	5.5		
17	4.5		
18	4.0		

The Evaluator assessed whether a unit qualified for early retirement using data collected through the following survey questions:

Was the replaced [BASELINE]…

- Fully functional and not in need of repair?
- Functional, but needed minor repairs?
- Functional, but needed major repairs?
- Not functional?

How old was the [BASELINE] at the time you replaced it?

How long do you think your [BASELINE] would have lasted if you had not replaced it?

Figure 3-1 summarizes how the data collected was used to classify replacements as early retirement or replaced on burnout.

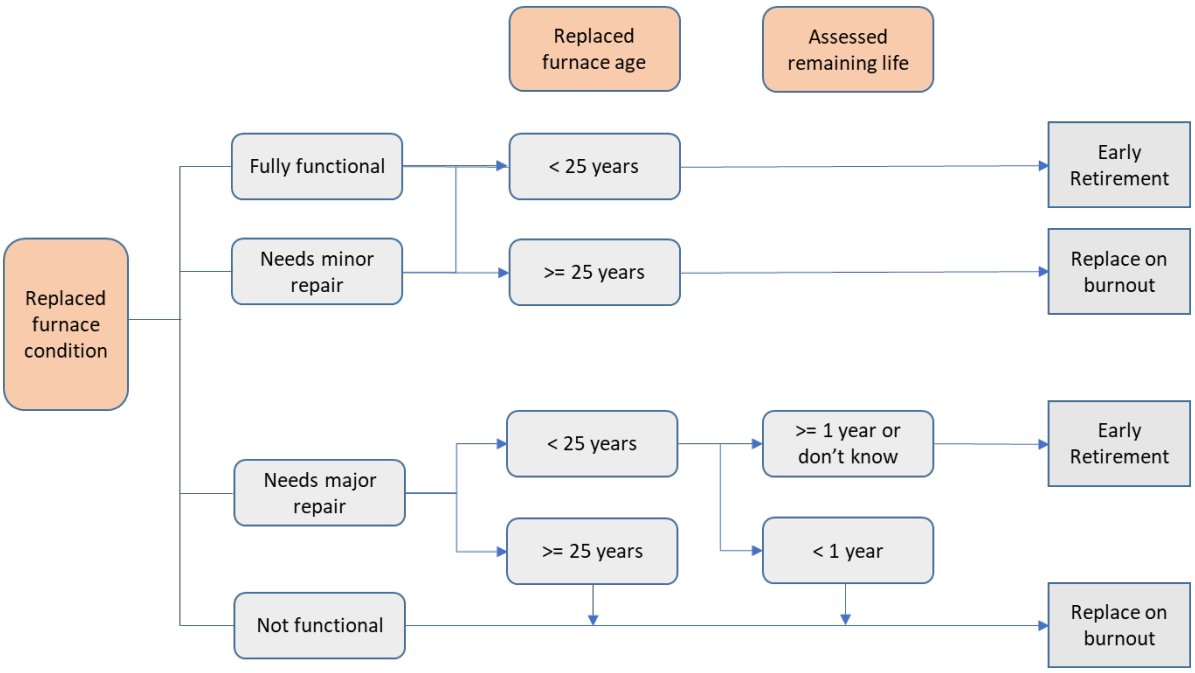

FIGURE 3-1 RESIDENTIAL FURNACE EARLY RETIREMENT DETERMINATION FLOWCHART

In total, in the PY2023 survey the Evaluator found that 57.6% of AOG furnace retrofits were early retirement. The average age of qualifying units was 16.84 years. Using the degradation assumptions from the TRM and the equation listed above, this resulted in an estimated baseline AFUE of 0.6754 for early retirement cases.

For early replacement units, the remaining useful life was determined using Table 3-11 to be an average of four years, after which savings were calculated using the normal replacement baseline. Final savings estimates for each residential retrofit unit were calculated as a weighted average of the early and normal replacement baselines. Based on the proportion of early versus normal replacements reported in the survey, the weighted average baseline AFUE was 0.7282.

3.1.2 Net Impact

This section discusses the approaches used to estimate net savings.

3.1.2.1 Residential Programs

3.1.2.1.1 OVERALL APPROACH AND DATA COLLECTION

Table 3-12 summarizes the net savings approach used for each of the residential programs.

TABLE 3-12 SUMMARY OF PROGRAM NET SAVINGS APPROACHES

Pathway/Component	Net Savings Approach
Equipment Rebate	Applied PY2023/PY2024 value
AOG Weatherization	Applied PY2023/PY2024 value
Low-Income Program	Deemed Value

Table 3-13 summarizes net-to-gross ratios from prior research and deemed values that were used to estimate the Equipment Rebate, AOG Weatherization, and Low-Income Programs.

TABLE 3-13 NET-TO-GROSS RATIOS FOR RESIDENTIAL EQUIPMENT REBATE, AOG WEATHERIZATION, AND LOW-INCOME

Program	Measure	NTG
Residential Equipment Rebate	Residential Furnaces	79.9%
	Commercial Furnaces	83.5%
	Residential WH	73.2%
	Commercial WH	88.6%
	Thermostats	61.2%
	Other Measures	76.8%
	New Construction	91.0%
AOG Weatherization	All	97.7%
Low-Income Program	All	100.0%

3.1.2.2 Commercial and Industrial Solutions Program

3.1.2.2.1 OVERALL APPROACH

Table 3-14 summarizes the net savings approach used for each of the program pathways.

TABLE 3-14 SUMMARY OF COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM NET SAVINGS APPROACHES

Program	Net Savings Approach
C&I Solutions– Direct Install	Participant Self-Report (Cross gas utility survey)
C&I Solutions– Prescriptive	Participant Self-Report (Cross gas utility survey)
C&I Solutions– Custom	Evaluator Pre-Install Reviews

3.1.2.2.2 PARTICIPANT SELF-REPORT FREE-RIDER APPROACH

Several criteria were used to determine which portion of a participant's savings was attributed to free-ridership. The corresponding survey questions are listed below. For direct install measures, the question wording was adjusted to reflect that the equipment was provided at no cost to the customer, rather than referencing an incentive.

The first criterion came from responses to the following questions:

- "Would you have been financially able to install the equipment or measures without the financial incentive from the Program?"
- "To confirm, your organization would NOT have allocated the funds to complete a similar energy saving project if the program incentive was not available. Is that correct?"

If a customer answered "No" to the first question and confirmed the response by saying "Yes" to the second question, a free-ridership score of 0 was assigned to the project. That is, if a customer required financial assistance from the program to undertake a project, that customer was not deemed a free-rider.

For decision makers who indicated they could undertake energy efficiency projects without financial assistance from the program, three additional factors determined what percentage of savings was attributable to free-ridership. The three factors were:

- Plans and intentions of the customer to install a measure even without support from the program;
- Influence that the program had on the decision to install a measure; and
- A customer's previous experience with a measure installed under the program.

For each of these factors, rules were applied to decision-maker survey responses to develop binary variables indicating whether a participant showed free-ridership behavior. The first required step was to determine if a participant stated that their intention was to install an energy efficiency measure without program assistance by applying a set of rules to the decision-maker's survey response. Two binary variables were constructed to account for customer plans and intentions: one based on a more restrictive set of criteria that described a high likelihood of free-ridership, and a second based on a less restrictive set of criteria that described a relatively lower likelihood of free-ridership.

The first, more restrictive criteria (Definition 1) indicating customer plans and intentions that likely signified free-ridership were as follows:

- The respondent answered "Yes" to the following two questions: "Did you have plans to install the measure before participating in the program?" and "Would you have gone ahead with this planned installation of the measure even if you had not participated in the Program?"
- The respondent answered "No, the program did not affect level of efficiency that we chose for equipment" in response to the following question: "How did the availability of information and financial incentives through the Program affect the level of energy efficiency you chose for [Equipment/Measure]?"

The second, less restrictive criteria (Definition 2) indicating customer plans and intentions that likely signified free-ridership were as follows:

- The respondent answered either "Definitely would have installed" or "Probably would have installed" to the following question: "Would you have completed the [Equipment/Measure] project even if you had not participated in the program?"
- The respondent answered "No, the program did not affect level of efficiency that we chose for equipment" in response to the following question: "How did the availability of information and financial incentives through the Program affect the level of energy efficiency you chose for [Equipment/Measure]?"

The second required factor was determining if a customer reported that a recommendation from a program representative or experience with the program was influential in the decision to install a piece of equipment or measure. This criterion indicated that the program's influence may have lowered the likelihood of free-ridership when any of the following conditions were true:

- The respondent answered "Very important" to the following question: "How important was previous experience with the Program in making your decision to install [Equipment/Measure]?"

- The respondent answered “Definitely would not have” or “Probably would not have” to the following question: “If the Program representative had not recommended implementing the [Equipment/Measure], how likely is it that you would have implemented it anyway?”

The third required factor was determining if a participant in the program indicated that they had previously installed an energy efficiency measure similar to one that they installed under the program without an energy efficiency program incentive during the last three years. A participant indicating that they had installed a similar measure was considered to have a higher likelihood of free-ridership.

The criteria indicating that previous experience may have signified a higher likelihood of free-ridership were as follows:

- The respondent answered “Yes” to the following question: “Not including the project that your organization received an incentive for in [PROGRAM YEAR], has your organization completed any significant energy efficiency projects in the last three years?” and the respondent stated that they completed some of those projects without a program incentive.
- The respondent answered “Yes” to the following question: “Thinking about all of the projects you completed in the last three years; did you implement any energy efficient equipment or projects similar to the [Equipment/Measure] that you implemented at your facility located at [LOCATION] as part of any of those projects?”

Figure 3-2 summarized the scoring of free-ridership for downstream incentives. In keeping with the Arkansas TRM requirement, all participants were assigned a score of 0 or 1 for free-ridership for a given measure (i.e., no partial free-ridership was assigned) by rounding the final free-ridership score.

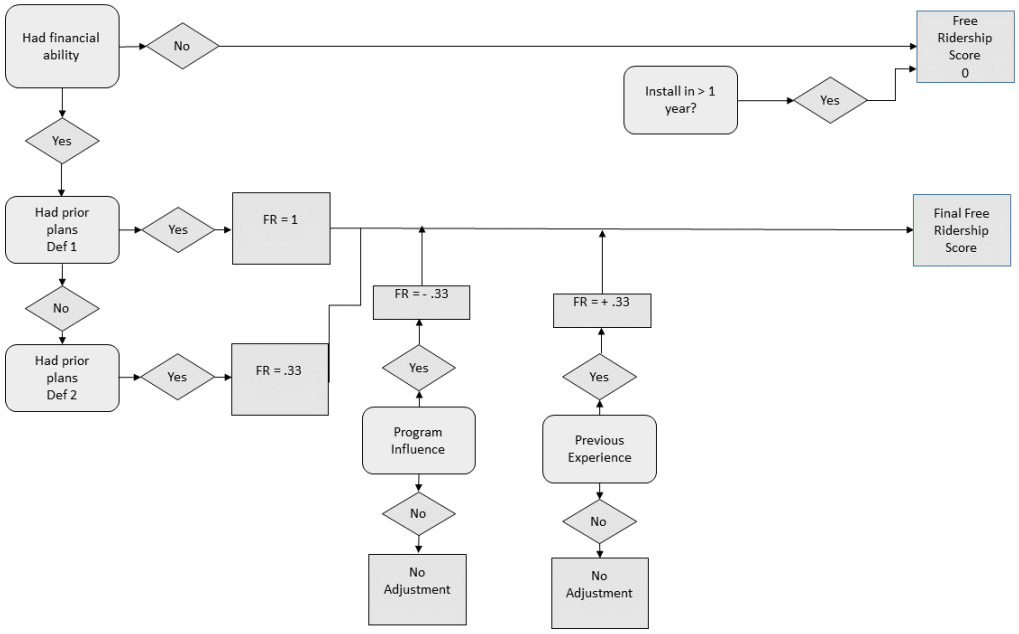

FIGURE 3-2 C&I FREE-RIDERSHIP SCORING CHART

3.1.2.2.3 PARTICIPANT SPILLOVER APPROACH

To assess participant spillover savings, survey respondents were asked whether they implemented any additional energy saving measures for which they did not receive a program incentive. Respondents were also asked to provide information on the measures implemented for use in estimating the associated energy savings (therms).

To determine if the savings from the reported measures are attributable to the program, survey respondents were asked questions about the degree to which their experience with the program influenced them to implement the measures and the likelihood of implementing the measures in the absence of the program. Specifically, respondents were asked the following questions:

- SO1: How important was your experience with the [PROGRAM] in your decision to install this equipment?
- SO2: If you had NOT participated in the [PROGRAM], how likely is it that your organization would still have installed this equipment?

The responses to these questions are used to develop a spillover score as follows: Spillover = Average (SO1, 10 – SO2)

Savings from measures associated with a spillover score greater than 7 were considered attributable to the program.

The final NTG estimates for the program is calculated as: NTG = 1 – free-ridership + participant spillover

3.1.2.2.4 CUSTOM C&I PRE-INSTALL FREE-RIDERSHIP ASSESSMENT

For custom projects from the C&I Solutions program, the Evaluator completed the free-ridership assessment through pre-project interviews with program participants as notified by program staff. During these interviews, customers were asked about the following:

- The program's role in informing them about the measure.
- The effect of the incentive on the payback threshold.
- Whether the project was planned prior to applying to the program and if the installation was in progress when they applied.
- Whether the program affected the timing, scope, or efficiency of the project.

Figure 3-3 summarized the process for determining whether or not the participant was a free-rider based on the information they provided about the project and the role of the program in the decision to complete it.

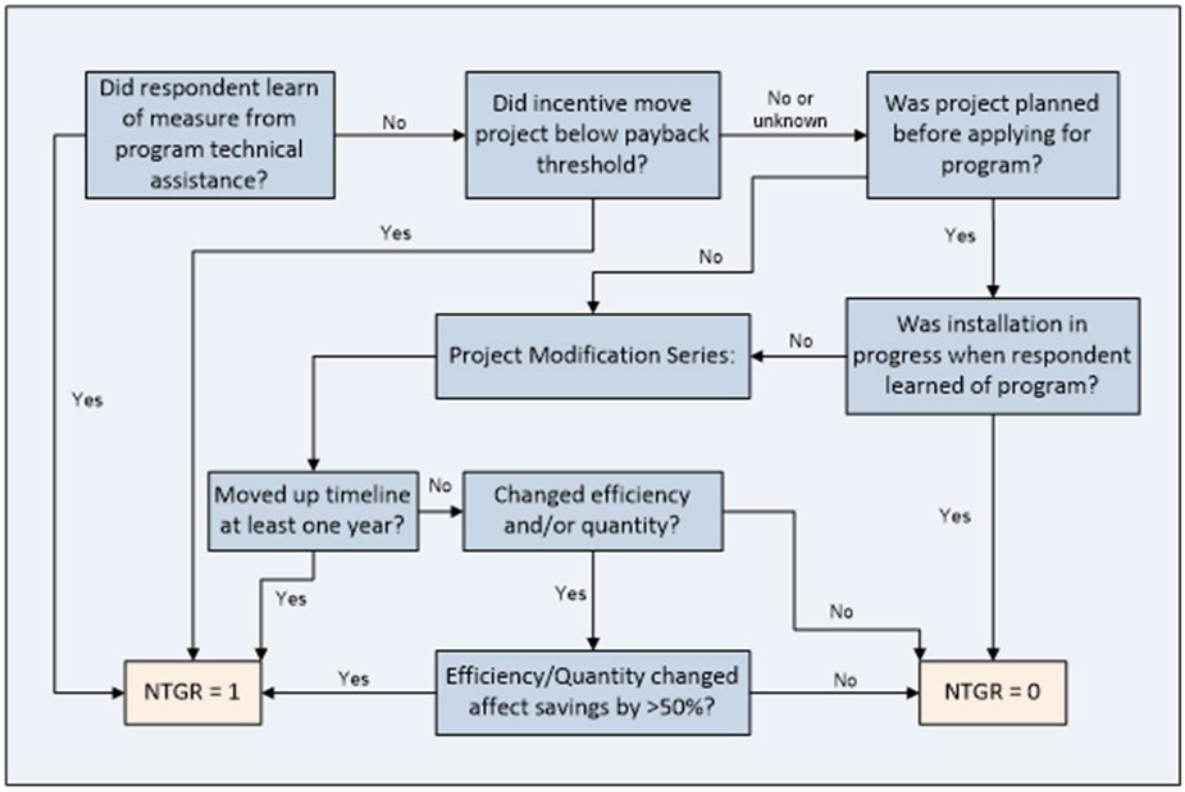

FIGURE 3-3 C&I SOLUTIONS CUSTOM PROJECT FREE-RIDERSHIP DIAGRAM

3.1.3 Non-Energy Benefits

Electric energy efficiency programs claimed primary fuel savings after the installation of measures that achieve energy (kWh) savings and demand (kW) reductions. Savings are monetized with the avoided costs. In Arkansas, the IEM, in coordination with investor-owned utilities (IOUs) and other stakeholders through the Parties Working Collaboratively (PWC), has also acknowledged that other non-energy benefits (NEBs) are associated with the implementation of these measures. These other benefits can include reductions in water usage, fossil fuel consumption, and avoided and deferred replacement costs.

These NEBs are an addition to Arkansas programs under the authorization of AR TRM 6.1. Volume 1 – Protocol L. After reviewing the guidance from the PWC, the Commission issued Order No. 30 on December 10, 2015, which provided direction and guidance regarding the inclusion of Non-Energy Benefits ("NEBs") in the Technical Reference Forum (p. 21 of 21).[7]

"The Commission therefore directs that the IEM be requested to recommend an approach for quantification of deferred equipment replacement NEBs in individual instances when they are material and quantifiable. Approval of deferred customer equipment NEBs, however, is conditioned as follows: The Commission directs that each recommended approach for customer deferred equipment replacement NEB quantification shall be included within the annual TRM update filing, and that its reasonableness shall be addressed in testimony by the IEM and/or Staff, and may be addressed by other parties, so that the Commission may approve or disapprove such proposed NEB quantifications.

The Commission therefore orders and directs that the following three categories of NEBs be consistently and transparently accounted for in all applications of the TRC test, as it is applied to measures, programs, and portfolios:

- *benefits of electricity, natural gas, and liquid propane energy savings (i.e., other fuels);*
- *benefits of public water and wastewater savings;*
- *benefits of avoided and deferred equipment replacement costs as conditioned herein."*

Per this Protocol8 the recommended approach to quantify the NEBs fell within these three categories.

3.1.3.1 Non-Energy Benefit Protocol

Per Commission Order, NEB is concentrated on other fuels, water, and deferred equipment costs. In response to the Commission Order for NEB, a recent protocol addition is Protocol L, which encompasses NEB:

- Protocol L1: Non-Energy Benefits for Electricity, Natural gas, and Liquid Propane ("other fuels");
- Protocol L2: Non-Energy Benefits for Water Savings; and
- Protocol L3: Non-Energy Benefits of Avoided and Deferred Equipment Replacement Costs.

The program tracking system captures inputs needed for NEB calculations based on the AR TRM v10.0 algorithm. In reviewing NEB development, the Evaluator review included assessing the consistency of inputs for all assumptions for each measure.

3.1.3.2 Potential NEB by Sector and Measure

The tables below outline the potential residential and C&I NEB for the portfolio.

7 The Arkansas TRM, Protocol L.
8 *Ibid.*

TABLE 3-15 RESIDENTIAL NEB BY MEASURE[9]

Measure	Water	Other Fuel	ARC/ DRC	AR TRM v10.0 Section
Furnace (Early Retirement only)			X	2.1.3
Duct Sealing		X		2.1.11
Smart Thermostat		X		2.1.12
Attic insulation		X		2.2.2
Air Infiltration		X		2.2.9
Water Heater (Gas Tankless)			X	2.3.1
Faucet Aerator	X			2.3.4
Low-Flow Showerhead	X			2.3.5
LED Lamp		X	X	2.5.1

TABLE 3-16 C&I NEB BY MEASURE

Measure	Water	Other Fuel	ARC / DRC	TRM v10.0 Section
Weather Stripping		X		3.2.11
Water Heater (Gas Tankless)			X	3.3.1
Steam Leak Repair	X			3.1.15
Steam Trap Replacement	X			3.1.15

NEB estimates are found in each of the program chapters within this report.

3.2 Process Evaluation

Our approach to the process evaluation was to:

- Gain in-depth understanding of program operations, challenges, and evaluation needs through key staff interviews, complemented with program documentation review including implementation contractor status reports.
- Update assessment of success in achieving the goals and objectives established in the Commission's Comprehensiveness Checklist.
- Report findings on customer experiences with the program and demographic characteristics collected as part of survey efforts, including demographics related to Act 1102 requirements to benefit LIHEAP-eligible customers and customers aged 65 and older.
- Follow AR TRM v10.0 Volume 1 Protocol C, leverage prior year's process information and conduct limited process evaluations for all programs.

9 This tables represents potential NEBs for each measure. In some cases, there is either not enough data available to calculate those NEBs, or that NEB was not applicable in that application.

Process evaluations in general assess organizational and procedural aspects of programs to provide feedback on aspects of programs that are functioning well and contribute recommendations when areas of improvement are identified. The Evaluator has consulted and followed TRM v10.0 Volume 1 Protocol C, to determine whether conducting a process evaluation is appropriate for a specific program, as well as the appropriate timing for the process evaluation. Specifically, Protocol C defines the criteria that require a process evaluation be undertaken as well as criteria justifying conducting a process evaluation. Table 3-17 provides details on specific criteria that must be met prior to proceeding with a process evaluation.

TABLE 3-17 AR TRM V10.0 VOLUME 1 PROTOCOL C: PROCESS EVALUATION GUIDANCE

Criteria for Process Evaluations
Process evaluation required if… ▪ Program is new/modified ▪ No process evaluation has been undertaken during current funding cycle ▪ A change in program implementation occurred.
Process evaluation potentially needed if… ▪ Program impacts are lower than expected ▪ Goals (both informational and educational) are not being achieved ▪ Rates of participation are lower/slower than expected ▪ Program's operational system is slow to get up and running ▪ Cost effectiveness of the program is less than expected ▪ Participants (customers & market actors) report problems/low rates of satisfaction with program

After reviewing process evaluation activities already completed, including information provided by implementation contractors at the project kick-off meeting, the level of process evaluation was determined. The criteria that would indicate that the conditions were appropriate to complete a process evaluation.

TABLE 3-18 DETERMINATION OF PROCESS EVALUATION

Criterion	Equipment Rebates	Weather-ization	Low-Income	C&I
Determining Appropriate Timing				
New and innovative components	No	No	No	No
Process evaluation completed during funding cycle	No-2023	No-2023	No-2023	Yes-2024
New vendor or implementation Trade Ally	No	No	No	No
Determining Appropriate Conditions				
Impact problems	No	No	No	No
Information/ educational objectives not met	No	No	No	No
Participation problems	No	No	No	No
Operational challenges	No	No	No	No
Program is cost effective	Yes	Yes	Yes	Yes
Negative feedback	No	No	No	No
Problems with program or low satisfaction	No	No	No	No
Level of Effort in PY2025	**Limited**	**Limited**	**Limited**	**Limited**

3.2.1 Review of Program Materials

To prepare for and understand program design and delivery, the Evaluator reviewed program materials and documentation provided by AOG. This included the program filing, program manuals, monthly progress reports provided by CLEAResult, and the program website. Additionally, the program team reviewed program tracking data to understand how the program tracks and documents program participation and key variables.

3.2.2 Program Staff Interviews

To understand AOG's energy efficiency program design and delivery across the portfolio, the Evaluation team conducted semi-structured interviews with AOG program staff to discuss the full set of programs offered, including the Equipment Rebate Program, AOG Weatherization and Low-Income Program, and Commercial and Industrial Solutions Program. These interviews focused on program design, operational practices, recent changes to program delivery, and implementation successes and challenges. In addition, the Evaluation team conducted semi-structured interviews with the implementation contractor to gather detailed perspectives on the design and delivery of the residential programs. The Evaluator also reviewed the program manuals for Commercial and Industrial Solutions and for the AOG Weatherization and Low-Income Programs.

3.2.3 Participant Surveys

As a key evaluation activity, the Evaluator completed surveys of participants in the following pathways:

- C&I Solutions Pathway – Direct Install
- C&I Solutions Prescriptive Rebates

The survey data collected was used to verify project completion, estimate net-to-gross ratios, and assess program participant experience with the pathways.

Section 3.5.2 presents additional details on the administration of the surveys.

3.3 Cost Effectiveness Analysis

The methodology for calculating cost-effectiveness results can be found in Appendix B.

3.3.1 Cost of Carbon

Separate from this report, in the performance of cost effectiveness analysis, the Evaluator incorporated the cost of carbon in the cost benefit analysis, a low ($0/CO2 price per ton), medium ($15/CO2 price per ton), and high value ($30/CO2 price per ton).

3.3.2 Avoided Costs and Real Economic Carrying Charge

The Evaluator used the economic inputs provided by AOG for the cost benefit analysis, this included avoided costs that were estimated using the RECC approach.

3.3.3 Marginal Line Losses

The Evaluator, in partnership with AOG, has incorporated marginal line losses from cross-fuel NEBs into the cost effectiveness analysis.

3.4 Sampling

In adherence to industry standards, evaluations commonly apply 90% confidence intervals and allow for a margin of error of ±10% (referred to as 90/10 confidence and precision). This level of confidence and precision means that if new estimates were to be repeatedly derived using the same methodology, the average value would fall within ±10% of the sample value 90% of the time.

The Evaluator designed samples to minimize sampling error to within generally accepted industry standards of ±10% precision at the 90% confidence level (i.e., 90/10 precision and confidence) at the program level. We used sampling strategies that comply with AR TRM v10.0 Volume 1, Protocol B4. The two sample design procedures we used were:

- Simple random sampling.
- Stratified random sampling.

Note that in some cases, such as the administration of participant surveys, the Evaluator attempted to complete a census of all participants for whom contact information was available at the time of the research.

3.4.1 Simple Random Sampling Methodology

To estimate the sample size requirements under a simple random sampling approach, the Evaluator used the following equations to estimate sample size requirements for each program and fuel type. Required simple random sample sizes were estimated as follows:

EQUATION 3-1: SAMPLE SIZE FOR INFINITE SAMPLE SIZE

$$n = \left(\frac{Z \times CV}{d}\right)^2$$

EQUATION 3-2: SAMPLE SIZE FOR FINITE POPULATION SIZE

$$n_0 = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

Where:

n = Sample size

Z = Z-value for a two-tailed distribution at the assigned confidence level.

CV = Coefficient of variation

d = Precision level

N = Population

For a sample that provides 90/10 precision, Z = 1.645 (the critical value for 90% confidence) and d = 0.10 (or 10% precision). The remaining parameter is CV, or the expected coefficient of variation of measures for which the claimed savings may be accepted. A CV of .5 was assumed for planning purposes, which

yields a sample size of 68 for an infinite population. Sample sizes were adjusted for smaller populations via the method detailed in Equation 3-2.

3.5 Data Collection

3.5.1 Site Visit Data Collection

Additional information about the Evaluator alternative approach can be found in Section 3.1.1.7 Site Visits.

3.5.2 Survey and Interview Data Collection

The Evaluator administered participant surveys to samples of program estimates to collect data for use in estimating free-ridership and spillover to calculate net savings; and to collect data on the participant experience with the program to inform the process evaluation.

The following section summarizes survey data collection procedures.

3.5.2.1 Commercial and Industrial Solutions Program Survey Data Collection

The Evaluator administered surveys to participants in the natural gas utility prescriptive and direct install programs in November 2025 and January and February or 2026. Survey data were collected through web and phone surveys. Table 3-19 summarizes the data collection activities.

- **Web survey:** Respondents with available emails were sent an invitation to the survey. Non-respondents were sent up to two reminder emails.
- **Phone survey:** Some program participants were missing emails and were contacted by telephone. Additionally, the Evaluator attempted to complete the survey by telephone with participants that did not respond to the email invitation.

TABLE 3-19 C&I SOLUTIONS SURVEY COUNTS BY PATHWAY

Component	Respondent Group	Data Collection	Frame Source	Mode	Stratification Approach	Sample Size	Timing
Prescriptive Pathways	Participants	NTG & program satisfaction	Tracking Data	Web & Telephone	Census of participants	8	Nov-25, Feb-26
Direct Install	Participants	NTG & program satisfaction	Tracking Data	Email	Census of participants	8	Jan-26, Feb-26

The following chapters show the results of the evaluation for each program.

4 Equipment Rebate Program

4.1 Summary

The tables below report ex-ante gross, ex-post gross, ex-post net energy savings (therms) (both annual and lifetime), participation, incentive spend, and ex-post net NEBs, by pathway and measure, where applicable.

TABLE 4-1 EQUIPMENT REBATE PROGRAM ENERGY SAVINGS (THERMS)

Pathway / Measure	Ex-Ante Gross Savings (Therms)	Realization Rate (Therms)	Ex-Post Gross Savings (Therms)	NTG	Ex-Post Net Savings (Therms)
Commercial Gas Furnace Replacement	1,935	89.5%	1,732	83.5%	1,445
Commercial Smart Thermostat	6,238	2.8%	175	61.2%	107
Commercial Water Heater	5,117	106.5%	5,449	88.6%	4,828
Residential Gas Furnace Replacement	11,819	159.0%	18,794	80.9%	15,199
Residential Incentive Adjustment	0	100.0%	0	100.0%	0
Residential Smart Thermostat	4,916	100.0%	4,916	61.2%	3,008
Residential Water Heater	10,999	120.0%	13,199	85.3%	11,257
Total	**41,025**	**107.9%**	**44,266**	**81.0%**	**35,846**
Sums may differ due to rounding.					

TABLE 4-2 EQUIPMENT REBATE PROGRAM LIFETIME ENERGY SAVINGS (THERMS)

Measure	EUL	Ex-Post Gross Lifetime Energy Savings (Therms)	Ex-Post Net Lifetime Energy Savings (Therms)
Commercial Gas Furnace Replacement	36	62,347	52,035
Commercial Smart Thermostat	11	1,925	1,178
Commercial Water Heater	20	108,989	96,564
Residential Gas Furnace Replacement	24	456,877	371,683
Residential Incentive Adjustment	1	0	0
Residential Smart Thermostat	11	54,077	33,092
Residential Water Heater	20	263,984	225,149
Total	**21**	**948,199**	**779,700**
Sums may differ due to rounding.			

TABLE 4-3 EQUIPMENT REBATE COUNT OF MEASURES AND INCENTIVE SPEND

Measure	Count of Participants	Sum of Measures	Incentive Spend ($)
Commercial Gas Furnace Replacement	7	8	$6,650
Commercial Smart Thermostat	2	2	$200
Commercial Water Heater	9	25	$18,000
Residential Gas Furnace Replacement	115	127	$106,350
Residential Incentive Adjustment	1	1	$50
Residential Smart Thermostat	79	88	$8,563
Residential Water Heater	234	238	$174,000
Total	**447**	**489**	**$313,813**
Sums may differ due to rounding.			

TABLE 4-4 EQUIPMENT REBATE PROGRAM EX-POST NET NEB

Pathway / Measure	Ex-Post Net ARCs ($)	Ex-Post Net DRCs ($)	Ex-Post Net Electricity (kWh)	Ex-Post Net Electricity Demand (kW)	Ex-Post Net Water Savings (gallons)
Commercial Gas Furnace Replacement	$0	0	0	0.00	0
Commercial Smart Thermostat	$0	0	1,299	0.00	0
Commercial Water Heater	$3,690	$0	0	0.00	0
Residential Gas Furnace Replacement	$0	$88,788	0	0.00	0
Residential Incentive Adjustment	$0	$0	0	0.00	0
Residential Smart Thermostat	$0	$0	36,605	0.00	0
Residential Water Heater	$74,737	$0	0	0.00	0
Total	**$78,427**	**$88,788**	**37,904**	**0.00**	**0**

The subsections of this chapter outline the evaluation approach and findings for each measure and pathway of the Residential Solutions Program.

4.2 Equipment Rebate Program Description

The Equipment Rebate Program promotes high-efficiency natural gas heating and water heating equipment in new and existing homes and businesses. AOG's staff provide overall strategic direction as well as program management and administration. An online rebate portal and a paper application process were made available to AOG customers.

The history of program performance and expenditures is presented in Table 4-5.

TABLE 4-5: EQUIPMENT REBATE PERFORMANCE AGAINST GOALS

Program Year	# Participants			Budget			Net Therms		
	Actual	Goal	% Met	Spent	Allocated	% Spent	Ex-Post	Goal	% Met
2010	1,250	1,445	87%	$96,259	$164,870	58%	26,411	44,020	60%
2011	1,663	1,680	99%	$143,325	$229,835	62%	45,098	44,904	100%
2012	2,380	1,632	146%	$284,486	$285,555	100%	69,843	41,838	167%
2013	1,740	1,536	113%	$336,073	$279,523	120%	74,493	25,446	293%
2014	1,563	1,536	102%	$384,142	$232,679	165%	45,182	25,446	178%
2015	390	216	181%	$348,455	$255,763	136%	42,181	12,096	349%
2016	492	216	228%	$421,884	$255,763	165%	102,817	12,096	850%
2017	594	829	72%	$385,881	$480,524	80%	52,038	92,438	56%
2018	842	829	102%	$462,805	$462,805	100%	55,983	92,438	61%
2019	796	829	96%	$391,456	$481,948	81%	49,446	92,438	53%
2020	824	969	85%	$407,599	$460,479	89%	59,606	66,482	90%
2021	679	1,004	68%	$316,439	$466,605	68%	43,551	70,304	62%
2022	565	1,038	54%	$302,694	$478,809	63%	52,966	74,081	71%
2023	528	1,038	51%	$318,028	$443,809	72%	50,336	74,081	68%
2024	711	482	148%	$518,228	$525,735	99%	71,957	31,928	225%
2025	396	482	82%	$410,113	$530,437	77%	35,846	31,928	112%

4.2.1 Marketing and Outreach

The marketing for the Equipment Rebate Program is managed primarily by AOG. AOG is responsible for promoting the program and developing outreach materials, while CLEAResult focuses on rebate processing and maintaining program information on the website. AOG conducts marketing through multiple channels, including email campaigns, website updates, bill inserts, and other promotional materials. These efforts cover both residential and commercial equipment rebate offerings.

CLEAResult does not lead marketing for the equipment rebate program but supports the commercial component by maintaining forms and program information on AOG's website.

4.2.2 Program Contractors

Contractors play a key role in supporting customer participation in the Equipment Rebate Program. Their primary responsibility is to promote high-efficiency equipment options to customers and inform them about available rebates. Program staff explained that contractors are encouraged to highlight rebate opportunities during sales and installation, helping customers choose qualifying equipment.

Contractors may assist customers with completing rebate applications, although this is not a program requirement. In many cases, customers complete the paperwork themselves. To incentivize contractor engagement, the program offers a trade ally incentive for each qualifying installation. For example, when a high-efficiency furnace is installed, the customer receives a rebate, and the contractor receives a separate incentive if they have submitted the necessary documentation and maintain an active W-9 on file.

While contractors are not required to market the program independently, their role in promoting efficient equipment and facilitating rebate submissions is considered important for program success.

4.2.3 Equipment Rebate Incentives

The Equipment Rebate Program provides incentives to customers for installing high-efficiency equipment, such as furnaces, tankless water heaters, and smart thermostats. Rebate applications can be submitted through multiple channels to accommodate customer preferences. The primary method is an online portal managed by CLEAResult, which processes all rebate submissions. Customers also have the option to submit applications by mail or email. Mailed applications are directed to CLEAResult's processing center in Lansing, Michigan. In some cases, customers send applications directly to AOG, and utility staff forward these to the processing center.

CLEAResult is responsible for verifying rebate applications and maintaining weekly reporting to AOG on processed rebates and any applications requiring additional information. AOG funds the rebate account in advance, and CLEAResult draws down these funds as rebates are paid. When the account balance is low, CLEAResult notifies AOG, which replenishes the funds.

The table below presents the incentives for the Equipment Rebate Program.

TABLE 4-6 EQUIPMENT REBATE PROGRAM INCENTIVE LEVELS

Measure	Incentive Level
Gas furnace with 95% or higher AFUE	$800
Gas furnace with 90%-94.9% AFUE	$400
Smart thermostat	$100
Tankless water heater with UEF ≥ 0.90	$700

4.3 Evaluation Approach

The sections below outline the evaluation approaches for the Residential Solutions Program.

4.3.1 Gross Impact Evaluation

The following sections outline the impact evaluation approach for the Equipment Rebate Program. The calculation methodologies were performed as described in the AR TRM v10.0. Section 3.1.1.2 identifies the sections in the AR TRM v10.0 that were used for verification of measure-level savings.

The gross impact evaluation effort included the following:

- **Desk Reviews.** The Evaluator utilized the AR TRM v10.0 values in assessing ex-post gross energy savings (therms) and NEBs. In addition to the AR TRM v10.0, the Evaluator also examined the Excel workbook used by the third-party implementor (CLEAResult) to assess savings by measure. The workbook utilizes AR TRM v10.0 savings algorithms with contractor inputs to calculate savings based on the measure and input parameters. The Evaluator verified the factor tables for each measure to ensure the values were appropriate.
- **Data Tracking Review**: For all pathways, project data from CLEAResult was reviewed to ensure that tracking systems followed Protocol A, B1 and B2 of the AR TRM v10.0.

For additional details, see Section 3.1.1 Gross Impact.

4.3.2 Net Impact Evaluation

Section 3.1.2 summarizes the net savings approach.

4.4 Evaluation Findings

4.4.1 Gross Impact Findings

After reviewing the tracking data and inputs for savings calculations, the Evaluator provided verified ex-post savings per AR TRM v10.0 Protocols. The savings from the measures below were verified, and matched, to the calculations provided by CLEAResult.

4.4.1.1 Equipment Rebate

The ex-post annual and lifetime energy saving impacts are summarized in Table 4-7 and Table 4-8.

TABLE 4-7 EQUIPMENT REBATE PATHWAY ANNUAL SAVINGS SUMMARY

Measure	Number of Measures	Number of Premises	Ex-Ante Energy Savings (Therms)	Ex-Post Energy Savings (Therms)	Realization Rate (Therms)
Commercial Gas Furnace Replacement	8	7	1,935	1,732	89.5%
Commercial Smart Thermostat	2	2	6,238	175	2.8%
Commercial Water Heater	25	9	5,117	5,449	106.5%
Residential Gas Furnace Replacement	127	115	11,819	18,794	159.0%
Residential Incentive Adjustment	1	1	0	0	100.0%
Residential Smart Thermostat	88	79	4,916	4,916	100.0%
Residential Water Heater	238	234	10,999	13,199	120.0%
Total	**489**	**396**	**41,025**	**44,266**	**107.9%**
Sums may differ due to rounding.					

TABLE 4-8 EQUIPMENT REBATE PATHWAY LIFETIME SAVINGS SUMMARY

Measure	Ex-Post Energy Savings (Therms)	EUL	Ex-Post Gross Lifetime (Therms)	Ex-Post Net Lifetime (Therms)
Commercial Gas Furnace Replacement	1,732	36	62,347	52,035
Commercial Smart Thermostat	175	11	1,925	1,178
Commercial Water Heater	5,449	20	108,989	96,564
Residential Gas Furnace Replacement	18,794	24	456,877	371,683
Residential Incentive Adjustment	0	1	0	0
Residential Smart Thermostat	4,916	11	54,077	33,092
Residential Water Heater	13,199	20	263,984	225,149
Total	**44,266**	**21**	**948,199**	**779,700**
Sums may differ due to rounding.				

4.4.1.1.1 DISCUSSION OF REALIZATION RATES

Overall, the program realized 108% of expected natural gas savings. There were a few measures for which the ex-post savings were slightly higher than the claimed ex-ante savings. The Evaluator reviewed all rebated units through the AHRI database to ensure the accuracy of the reported efficiencies.

There were 8 commercial furnace projects total in PY2025. The project ex-ante savings were calculated utilizing the residential methodology. The Evaluator reviewed the premises and determined that 3 of the projects aligned with the residential methodology. Ex-post savings for the other 5 projects were calculated utilizing the commercial methodology with the provided building types and premise conditioned square footage. This methodology difference resulted in fewer realized natural gas savings.

There were two smart thermostat projects that were installed in premises that are metered at the commercial rate. The Evaluator was unable to recreate the ex-ante estimations, as the ex-ante savings estimations were calculated with large assumed square footages. Given that that assumed square footages were larger than 15,000 sq ft, the Evaluator took a conservative approach and utilized the provided square footages for each project, resulting in significantly fewer verified therm savings.

Residential water heater projects had slightly higher realized natural savings due to a difference in calculation assumptions. The Evaluator determined that ex-ante estimations assumed water loads that aligned with a medium draw and a storage size of 40 gal for all projects. The Evaluator adjusted assumptions on a per-unit basis based on the specifications gathered from the AHRI database. This resulted in slightly higher realization rates.

4.4.2 Non-Energy Benefits Findings

Protocol L of the AR TRM v10.0 states that EM&V of demand-side management (DSM) programs in Arkansas must account for NEBs resulting from each program. Specifically, the categories of NEBs that are to be calculated for each DSM program are as follows:

- Benefits of electricity, natural gas, and liquid propane energy savings (i.e., other fuels);
- Benefits of public water and wastewater savings; and
- Benefits of avoided and deferred equipment replacement costs.

As discussed below, the NEBs applicable to the Equipment Rebate Program are avoided replacement cost, propane, electricity energy savings and demand savings, and water savings. Section 3.1.3 discusses the methods used to calculate the NEBs.

Measures with zero entries are included to ensure consistency of table structure and to demonstrate that no measures or potential energy and non-energy impacts were omitted.

4.4.2.1 NEB Summary

The tables below summarize the Equipment Rebate Program NEBs.

TABLE 4-9 SUMMARY OF EQUIPMENT REBATE PROGRAM EX-POST GROSS NEB BY MEASURE TYPE

Measure	Ex-Post Gross Electricity (kWh)	Ex-Post Gross Demand (kW)	Ex-Post Gross Water (Gallons)	Ex-Post Gross ARC ($)	Ex-Post Gross DRC ($)
Commercial Gas Furnace Replacement	0	0.00	0	$0	$0
Commercial Smart Thermostat	2,123	0.00	0	$0	$0
Commercial Water Heater	0	0.00	0	$4,165	$0
Residential Gas Furnace Replacement	0	0.00	0	$0	$109,789
Residential Incentive Adjustment	0	0.00	0	$0	$0
Residential Smart Thermostat	59,818	0.00	0	$0	$0
Residential Water Heater	0	0.00	0	$87,628	$0
Total	**61,941**	**0.00**	**0**	**$91,793**	**$109,789**
Sums may differ due to rounding.					

TABLE 4-10 SUMMARY OF EQUIPMENT REBATE EX-POST NET NEB BY MEASURE TYPE

Measure	Ex-Post Net Electricity (kWh)	Ex-Post Net Demand (kW)	Ex-Post Net Water (Gallons)	Ex-Post Net ARC ($)	Ex-Post Net DRC ($)
Commercial Gas Furnace Replacement	0	0.00	0	$0	$0
Commercial Smart Thermostat	1,299	0.00	0	$0	$0
Commercial Water Heater	0	0.00	0	$3,690	$0
Residential Gas Furnace Replacement	0	0.00	0	$0	$88,788

Residential Incentive Adjustment	0	0.00	0	$0	$0
Residential Smart Thermostat	36,605	0.00	0	$0	$0
Residential Water Heater	0	0.00	0	$74,737	$0
Total	**37,904**	**0.00**	**0**	**$78,427**	**$88,788**
Sums may differ due to rounding.					

TABLE 4-11 SUMMARY OF RESIDENTIAL SOLUTIONS NPV OF NEB

Program	NPV kWh ($)	NPV kW ($)	NPV Water ($)	NPV ARC ($)	NPV DRC ($)
Equipment Rebate	$13,801	$0	$0	$78,427	$88,788

4.4.3 Process Evaluation Findings

A limited process evaluation was completed. Information from the interviews with program staff are summarized in Section 4.2.

4.4.4 Protocol A Database Review

The tracking system in the database conforms reasonably well to the tracking system protocol developed for use in Arkansas. The table below shows a summary of how well the program tracking systems meets the components of the protocol.

TABLE 4-12: EQUIPMENT REBATE PROTOCOL A SUMMARY

Category	Field	Status	Description of Issue(s)
Participating Customer Information	Unique customer identifier, such as account number	✓	
	Customer contact information – name, mailing address, telephone number	✓	
	Date/s of major customer milestones such as rebate application date, approval date, rebate processing date, etc.	✓	
Measure-Specific Information	Measure Group (Equipment Type)	✓	
	Equipment Fuel/Energy Source	-	Heating type is not explicitly provided, but it is assumed all equipment is gas fuel based.
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	×	
	Equipment Useful Life	×	
	Measure Name – Text Description	✓	
	Measure Name – Numerical Code	-	
	Serial Number	✓	
	Reported age of equipment replaced	-	Reported age is not included in tracking data. The Evaluator has historically included questions about existing equipment age in participant surveys.
	Reported measure type of equipment replaced	✓	

	Other inputs necessary for the use and compliance with the TRM	✓	
Vendor-Specific Information	Name and Contact Information for Contractor	✓	
	Contractor Type	-	The tracking data does not specify trade ally type.
	Date of Installation	✓	
	Cost of the installed equipment	✓	
	Efficiency level of the installed equipment	✓	
Program Tracking Information	Date of the initial program contact/rebate information	✓	
	Date of rebate/incentive paid	✓	
	Incentive amount paid to-date	✓	
	Incentive amounts remaining	✓	
	Application Status (i.e., number of applications approved, pending, or denied)	✓	This is not included in the tracking data, but program staff have noted that this can be provided upon request.
	Reason and reason code for application denial	✓	Only approved and paid-out rebates are provided in tracking data. However, the Evaluator acknowledges that this information is readily available upon request.
Program Costs	Overall program budgets	✓	
	Program expenditures to-date	✓	
	Incentive Costs	✓	
	Administrative Costs	✓	
	Marketing/Outreach Costs	✓	
	Evaluation Costs	✓	
Marketing and Outreach Activities	Advertising and marketing spending levels	-	Not itemized from total marketing costs in data provided to the Evaluator.
	Media schedules	-	
	Summary of number of community events/outreach activities	✓	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	✓	

4.5 Key Findings and Recommendations

Overall, the ERP performed well, achieving 112.3% of its net therms goal. Although there were minor discrepancies in methodologies between the ex-ante estimations and ex-post savings, the overall realization rate for the program is 107.9%. Discrepancies in methodology include:

- Commercial smart thermostats assumed enormous square footages in ex-ante estimations; and
- Residential furnace savings were estimated assuming 'Replace-on-Burnout' regardless of replacement scenario in tracking data.

Program staff indicated that the Equipment Rebate Program did not undergo changes to its design or operating procedures during the program year. Staff described rebate intake and processing as

consistent with prior years, with customers continuing to submit applications through mail, email, or the online portal. The implementer's role in processing rebates and providing weekly status updates also remained unchanged. Staff did not identify any modifications to eligibility criteria, incentive levels, processing workflows, or marketing responsibilities during the year.

AOG staff described their own internal processes—such as providing weekly customer account data updates and funding the implementer's rebate account on a prepaid basis—as stable and unchanged. Staff noted that no internal tracking or reporting procedures had been revised since prior years. Although staff acknowledged that broader economic conditions could affect future participation levels, they did not attribute this to program design or operational changes.

5 Commercial and Industrial Solutions Program

5.1 Summary

The verified ex-post gross energy savings (therms) for the Commercial and Industrial Solutions Program are summarized in the table below. Overall, the ex-post gross energy savings (therms) of 171,970 therms are equal to 98.4% of the ex-ante gross energy savings (therms) for the program.

TABLE 5-1 COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM ENERGY SAVINGS (THERMS)

Pathway / Measure	Ex-Ante Gross Savings (Therms)	Realization Rate (Therms)	Ex-Post Gross Savings (Therms)	NTG	Ex-Post Net Savings (Therms)
Custom	**102,226**	**100.0%**	**102,226**	**100.0%**	**102,226**
Retro-commissioning	65,014	100.0%	65,014	100.0%	65,014
Boiler	9,286	100.0%	9,286	100.0%	9,286
Thermostat Controls	3,774	100.0%	3,774	100.0%	3,774
DCV	8,667	100.0%	8,667	100.0%	8,667
Steam Trap Replacement	15,485	100.0%	15,485	100.0%	15,485
Prescriptive	**0**	**100.0%**	**0**	**100.0%**	**0**
Direct Install	**72,570**	**96.1%**	**69,744**	**100.0%**	**69,744**
Overhead Door Weather-Stripping	64,121	96.1%	61,628	100.0%	61,628
Weather-Stripping	8,449	96.1%	8,115	100.0%	8,115
Program Total	**174,796**	**98.4%**	**171,970**	**100.0%**	**171,970**
Sums may differ due to rounding.					

TABLE 5-2 COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM LIFETIME ENERGY SAVINGS (THERMS)

Pathway / Measure	EUL	Ex-Post Gross Lifetime Energy Savings (Therms)	Ex-Post Net Lifetime Energy Savings (Therms)
Custom	**7**	**737,091**	**737,091**
Retro-commissioning	5	325,071	325,071
Boiler	20	185,720	185,720
Thermostat Controls	5	18,870	18,870
DCV	15	130,005	130,005
Steam Trap Replacement	5	77,425	77,425
Prescriptive	**0**	**0**	**0**
Direct Install	**11**	**767,180**	**767,180**
Overhead Door Weather-Stripping	11	677,911	677,911
Weather-Stripping	11	89,269	89,269
Program Total	**9**	**1,504,271**	**1,504,271**
Sums may differ due to rounding.			

TABLE 5-3 COMMERCIAL SOLUTIONS COUNT OF MEASURES AND INCENTIVE SPEND

Pathway / Measure	Count of Participants	Sum of Measures	Incentive Spend ($)
Custom	**5**	**5**	**$67,576**
Retro-commissioning	1	1	$37,522
Boiler	1	1	$8,357
Thermostat Controls	1	1	$3,397
DCV	1	1	$7,800
Steam Trap Replacement	1	1	$10,500
Prescriptive	**0**	**0**	**0**
Direct Install	**10**	**37**	**$60,761**
Overhead Door Weather-Stripping	5	22	$55,488
Weather-Stripping	5	15	$5,273
Program Total	**15**	**42**	**$128,337**

TABLE 5-4 COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM EX-POST NET NEB

Pathway / Measure	Ex-Post Net ARCs ($)	Ex-Post Net DRCs ($)	Ex-Post Net Electricity (kWh)	Ex-Post Net Electricity Demand (kW)	Ex-Post Net Water Savings (gallons)
Custom	**$0**	**$0**	**0**	**0.00**	**0**
Retro-commissioning	$0	$0	0	0.00	0
Boiler	$0	$0	0	0.00	0
Thermostat Controls	$0	$0	0	0.00	0
DCV	$0	$0	0	0.00	0
Steam Trap Replacement	$0	$0	0	0.00	0
Prescriptive	**$0**	**$0**	**0**	**0.00**	**0**
Direct Install	**$0**	**$0**	**50,294**	**35.44**	**0**
Overhead Door Weather-Stripping	$0	$0	44,436	31.30	0
Weather-Stripping	$0	$0	5,858	4.14	0
Program Total	**$0**	**$0**	**50,294**	**35.44**	**0**
Sums may differ due to rounding.					

5.2 Commercial and Industrial Solutions Program Description

CISP's historical performance is summarized in Table 5-5.

TABLE 5-5 C&I SOLUTIONS HISTORICAL PERFORMANCE AGAINST GOALS

Program Year	# Participants			Budget			Net Therms		
	Actual	Goal	% Achieved	Spent	Allocated	% Spent	Ex-Post	Goal	% Achieved
2011	78	127	61%	$82,115	$129,478	63%	31,528	29,766	106%
2012	68	162	42%	$132,970	$155,499	86%	80,347	39,890	201%
2013	123	2,009	6%	$271,858	$387,244	70%	267,250	175,049	153%
2014	157	2,009	8%	$369,939	$387,224	96%	341,703	218,811	156%
2015	165	149	111%	$335,369	$387,244	87%	256,546	175,049	147%
2016	186	149	125%	$372,156	$387,244	96%	232,038	175,049	133%
2017	53	146	36%	$424,060	$378,721	112%	193,139	194,361	99%
2018	36	146	25%	$398,136	$398,136	100%	194,054	194,361	100%
2019	26	146	18%	$419,003	$424,435	99%	220,683	194,361	114%
2020	34	82	41%	$395,147	$415,881	95%	162,774	161,132	101%
2021	13	83	16%	$399,356	$428,492	93%	174,241	160,923	108%
2022	12	83	14%	$427,527	$446,885	96%	153,347	160,908	95%
2023	34	83	41%	$481,860	$481,885	100%	154,809	160,908	96%
2024	56	166	38%	$476,457	$468,603	102%	172,533	166,725	103%
2025	15	166	9%	$502,524	$507,104	99%	171,970	166,725	103%

5.2.1 Marketing and Outreach

Marketing and outreach for the Commercial and Industrial (C&I) program is managed primarily by CLEAResult rather than AOG. Utility staff indicated that CLEAResult is responsible for maintaining program information and forms on AOG's website and for developing any marketing materials related to the C&I

offerings. This includes updates to program documentation and ensuring that customers have access to accurate and current resources.

CLEAResult also handles outreach activities for the C&I program, which may include direct engagement with commercial customers and coordination of marketing efforts. AOG does not actively market the C&I program; its role is limited to oversight and coordination with CLEAResult.

5.2.2 Trade Allies

Contractors in the Commercial and Industrial (C&I) program primarily serve as service providers for implementing energy efficiency measures identified during assessments conducted by CLEAResult engineers. CLEAResult manages customer engagement and project scoping, working directly with facility managers to determine eligible measures. Once recommendations are made, customers hire contractors to complete installations, such as boiler replacements or tune-ups, while CLEAResult facilitates coordination and verifies project completion for incentive processing. Contractors do not lead marketing or outreach for the C&I program and have no role in eligibility verification or project intake.

The program manual further clarifies the formal process for becoming a Trade Ally. A Trade Ally is defined as a contractor or service provider that elects to affiliate with the program. To participate, businesses must sign a Trade Ally Agreement, specify the services or products they will provide, and identify the geographic areas they serve. Trade Allies are required to attend a program training session to become familiar with program processes and requirements before being listed on the AOG website. While participants may choose any contractor, including those not enrolled as Trade Allies, they remain responsible for complying with program rules and designating a point of contact for coordination. AOG and the program implementer do not endorse or warrant specific contractors.

5.2.3 Custom Pathway

The Custom Pathway provides incentives based on reductions in natural gas consumption. The incentive rate is $0.90/therm of annual first year savings for small business participants. Small business participants are defined as customers whose natural gas usage is 200,000 therms a year or less. Incentives for large customers that use more than 200,000 therms a year are $0.80/therm saved.

The program works closely with participants to develop an appropriate measurement and verification approach for the incentivized project. Examples of measures eligible for incentives include:

- Steam trap survey and replacement
- Steam and hot water pipe insulation
- Schedule optimization
- Demand control ventilation
- Recirculating hot water pump controls
- Process boiler
- Linkless controls and burner
- Process equipment
- Space-heating equipment
- Process controls
- Waste heat recovery

5.2.4 Prescriptive Pathway

The Prescriptive Pathway provides incentives based on the specific equipment type. Table 5-6 summarizes program incentives.

TABLE 5-6 PRESCRIPTIVE PATHWAY INCENTIVES

Measure	Requirements	Incentive
90% - 93.9% Efficient Boiler	Commercial hot water boiler for comfort heating only. Must be between 100,000 BTU – 4 MMBTU.	$1,400 MMBTU/hour input
≥94% Efficient Boiler	Commercial hot water boiler for comfort heating only. Must be between 100,000 BTU – 4 MMBTU.	$2,000 MMBTU/hour input
Burner Replacement	Fully modulating or 6-step modulation burners only. Not eligible for new boilers.	$1,000 MMBTU/hour input, up to 25% of the equipment cost
Boiler Controls	Assumes 3.8% annual gas savings from controls	$150 per system
Boiler Vent Damper	Assumes 7% annual gas savings from vent damper	$150 per system
High Efficiency Combi Oven	ENERGY STAR® or Food Service Technology Center qualified equipment	$1,500
High Efficiency Conveyer Oven	ENERGY STAR® or Food Service Technology Center qualified equipment	$1,000
High Efficiency Convection Oven	ENERGY STAR® or Food Service Technology Center qualified equipment	$400
High Efficiency Rotating Rack Oven	ENERGY STAR® or Food Service Technology Center qualified equipment	$1,500
High Efficiency Fryer	ENERGY STAR® or Food Service Technology Center qualified equipment	$500

5.2.5 Direct Install Pathway

The Direct Install Pathway installs low cost measures in customer facilities at no cost to the customer. The measures available are:

- Faucet Aerators
- Pre-Rinse Spray Valves
- Showerheads
- Door Sweeps & Weather-stripping
- Steam Trap Replacements
- DrySmart™ Dryer Controls

Participants sign a participation agreement, and measures are provided on a first-come, first-served basis. On the installation date, the participant signs a second agreement acknowledging the installation locations and quantities of measures.

5.3 Evaluation Approach

This section provides a brief overview of the data collection activities, gross and net impact calculation methodologies, and process evaluation activities that the Evaluator employed in the evaluation of the C&I Solutions Program. The evaluation activities conducted are summarized in Table 5-7.

TABLE 5-7 CISP EVALUATION ACTIVITIES

Impact Evaluation	NTG	Process Evaluation
Database and document review, TRM deemed savings calculation review, desk reviews of project documentation, and custom EM&V savings verification.	Participant self-report survey for prescriptive and direct install projects. Free-ridership reviews for custom projects.	Utility Staff interview Surveys of program participants

5.3.1 Data Collection

Data was collected through review of program materials and end-use metering data, and interviews with participating customers and service providers. The Evaluator completed a review of a census of Commercial and Industrial Solutions Program projects.

The table below shows the sample design that was used. Stratum classifications were based on verified measure installations.

5.3.2 Gross Impact Estimation

The evaluation of gross energy savings (therms) from projects incentivized through the Commercial and Industrial Solutions Program can be broken down into the following steps:

- First, the program tracking database was reviewed to determine the scope of the program and to ensure there were no duplicate project entries. Based on this review, the Evaluator reviewed a census of projects.
- Next, a detailed desk review was conducted for each project sampled. The desk review process included a thorough examination of all project materials including invoices, equipment cut sheets, pre- and post-inspection reports, and estimated savings calculators. This review process informed the Evaluator fieldwork by identifying potential uncertainties, missing data, and sites where monitoring equipment was needed to verify key inputs to the ex-ante savings calculations. Additionally, the review process involved assessing the reasonableness of deemed savings values and calculation input assumptions.
- Next, custom projects and sites with discrepancies in project documentation and tracking data were identified for potential on-site verification visits. In PY2025, there were no on-site visits that were conducted as the project documentation had sufficient information to complete the evaluation.
- Next, if applicable, the data collected during the site visit was used to revise savings calculations, as necessary.

5.3.3 Net Impact Evaluation

See Section 3.1.2 for information on the net savings approach.

5.4 Evaluation Findings

5.4.1 Gross Impact Findings

To estimate energy (therms) savings for the program, data were collected and analyzed for a census of incentivized projects. The tables below outline gross impacts for the Commercial and Industrial Solutions Program by measure type.

The sections that follow present the energy savings (therms) for the Commercial and Industrial Solutions Program at the measure level.

5.4.1.1 Prescriptive Measures

In PY2025, there were no prescriptive measures that were rebated.

5.4.1.2 Custom Measures

The ex-post annual and lifetime energy saving impacts are summarized in Table 5-8.

5.4.1.2.1 CUSTOM PROJECT SUMMARY

The Evaluator opted for a census of custom projects to capture the full variability associated with these projects; the measures are often unique with idiosyncratic issues, and as such extrapolation from the M&V of other projects would be inappropriate.

TABLE 5-8 AOG C&I SOLUTIONS CUSTOM PROJECT SUMMARY

Project ID	Facility Type	Measure Name	Ex-Ante Therms
EA-0002450403	General Medical	Building Retro-Commissioning	65,014
EA-0004077109	Manufacturing	HW Boiler	9,286
EA-0006107545	Large Office	Smart Thermostats	3,774
EA-0005406060	Retail	Demand Control Ventilation	8,667
EA-0005906951	General Medical	Steam Trap Replacement	15,485
Total			**102,226**
Sums may differ due to rounding.			

Individual site reports detailing these analyses are provided in Appendix D C&I Site Level Reports. All custom projects were post-inspected with M&V as described in the site-level analyses.

5.4.1.2.2 DISCUSSION OF REALIZATION RATES

As is the case with custom commercial projects, the Evaluator and Implementation team discussed potential discrepancies in methodologies before final close-out savings are reported. The realization rates for these projects are 100% as a consensus of methodology was reached.

5.4.1.3 Direct Install Measures

The ex-post annual and lifetime energy saving impacts are summarized in Table 5-9 and Table 5-10.

TABLE 5-9 DIRECT INSTALL MEASURES ANNUAL SAVINGS SUMMARY

Measure	Number of Measures	Number of Premises	Ex-Ante Energy Savings (Therms)	Ex-Post Energy Savings (Therms)	Realization Rate (Therms)
Overhead Door Weather-Stripping	22	5	64,121	61,628	96.1%
Weather-Stripping	15	5	8,449	8,115	96.1%
Total	**37**	**10**	**72,570**	**69,744**	**96.1%**
Sums may differ due to rounding.					

TABLE 5-10 DIRECT INSTALL MEASURES LIFETIME SAVINGS SUMMARY

Measure	Ex-Post Energy Savings (Therms)	EUL	Ex-Post Gross Lifetime (Therms)	Ex-Post Net Lifetime (Therms)
Overhead Door Weather-Stripping	61,628	11	677,911	677,911
Weather-Stripping	8,115	11	89,269	89,269
Total	**69,744**	**11**	**767,180**	**767,180**
Sums may differ due to rounding.				

5.4.1.3.1 DISCUSSION OF REALIZATION RATES

Overall, the Evaluator did not find any discrepancies in the ex-post savings. The slightly lower realization rate is due to the historical ISR of 96.1% that was applied to the weather-stripping projects.

5.4.2 Net Impact Findings

5.4.2.1 Free-ridership and Spillover Findings

As discussed in Section 3.1.2, the Evaluator used responses to participant surveys to develop net savings for the C&I Solutions – Prescriptive and Direct Install Measures. Survey data from customers across multiple natural gas utility programs were combined to increase sample sizes.

Project pre-reviews were used to assess free-ridership for the custom measures of the C&I Solutions Program.

TABLE 5-11 SUMMARY OF NET SAVINGS DATA COLLECTION

Pathway	Type of Data Collection	Ex-Post Net Energy Savings (Therms)	Net-to-Gross Ratio	Population Targeted	Number of Surveys Completed	Absolute Precision (90% Conf. Level)
Prescriptive Measures	Participant Survey	0	92.3%	73	8	10.4%
Direct Install Measures	Participant Survey	69,744	100.0%	116	7	N/A

The table below summarizes the estimated free-ridership, spillover, and net-to-gross ratios for the estimates developed through self-report.

TABLE 5-12 SUMMARY OF FREE-RIDERSHIP, SPILLOVER, AND NTG RATIOS DEVELOPED THROUGH SELF REPORT

Measure Type	Free-Ridership	Spillover	NTG Ratio
Prescriptive Measures	N/A	N/A	N/A
Direct Install Measures	0.0%	0.0%	100.0%

The gross and net ex-post energy savings (therms) of the Commercial and Industrial Solutions Program are summarized in the table below.

TABLE 5-13 GROSS EX-POST AND NET EX-POST KWH BY PATHWAY

Pathway	Ex-Ante Gross Energy (Therms)	Ex-Post Gross Energy (Therms)	Realization Rate	NTG	Ex-Post Net Energy (Therms)
Custom	102,226	102,226	100.0%	100.0%	102,226
Prescriptive	0	0	N/A	N/A	0
Direct Install	72,570	69,744	96.1%	100.0%	69,744
Total	**174,796**	**171,970**	**98.4%**	**100.0%**	**171,970**
Sums may differ due to rounding.					

5.4.3 Non-Energy Benefits Findings

Per Protocol L of the Arkansas TRM v10.0, the Evaluator calculated NEB for the program. Program measures provide the following categories of NEB:

- Benefits of electricity, natural gas, and liquid propane[10] savings as in 'other fuel' savings;
- Benefits of public water and wastewater savings; and
- Benefits of avoided replacement costs.

The NEBs attributable to the Commercial and Industrial Solutions Program are presented below. Section 3.1.3 discusses the methods used to calculate the NEBs.

Measures with zero entries are included to ensure consistency of table structure and to demonstrate that no measures or potential energy and non-energy impacts were omitted.

5.4.3.1 NEB Summary

The tables below summarize the Commercial and Industrial Solutions Program NEBs.

10 Though propane savings ('other fuel') were zero (0) in PY2025, we include this here to provide a comprehensive description of the measure offerings.

TABLE 5-14 SUMMARY OF COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM EX-POST GROSS NEB BY MEASURE TYPE

Measure	Ex-Post Gross Electricity (kWh)	Ex-Post Gross Demand (kW)	Ex-Post Gross Water (Gallons)	Ex-Post Gross ARC ($)	Ex-Post Gross DRC ($)
Custom	**0**	**0.00**	**0**	**$0**	**$0**
Retro-commissioning	0	0.00	0	$0	$0
Boiler	0	0.00	0	$0	$0
Thermostat Controls	0	0.00	0	$0	$0
DCV	0	0.00	0	$0	$0
Steam Trap Replacement	0	0.00	0	$0	$0
Prescriptive	**0**	**0.00**	**0**	**$0**	**$0**
Direct Install	**50,294**	**35.44**	**0**	**$0**	**$0**
Overhead Door Weather-Stripping	44,436	31.30	0	$0	$0
Weather-Stripping	5,858	4.14	0	$0	$0
Total	**50,294**	**35.44**	**0**	**$0**	**$0**
Sums may differ due to rounding.					

TABLE 5-15 SUMMARY OF COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM EX-POST NET NEB BY MEASURE TYPE

Measure	Ex-Post Net Electricity (kWh)	Ex-Post Net Demand (kW)	Ex-Post Net Water (Gallons)	Ex-Post Net ARC ($)	Ex-Post Net DRC ($)
Custom	**0**	**0.00**	**0**	**$0**	**$0**
Retro-commissioning	0	0.00	0	$0	$0
Boiler	0	0.00	0	$0	$0
Thermostat Controls	0	0.00	0	$0	$0
DCV	0	0.00	0	$0	$0
Steam Trap Replacement	0	0.00	0	$0	$0
Prescriptive	**0**	**0.00**	**0**	**$0**	**$0**
Direct Install	**50,294**	**35.44**	**0**	**$0**	**$0**
Overhead Door Weather-Stripping	44,436	31.30	0	$0	$0
Weather-Stripping	5,858	4.14	0	$0	$0
Total	**50,294**	**35.44**	**0**	**$0**	**$0**
Sums may differ due to rounding.					

TABLE 5-16 SUMMARY OF COMMERCIAL AND INDUSTRIAL SOLUTIONS PROGRAM NPV OF NEB

Pathway	NPV kWh ($)	NPV kW ($)	NPV Water ($)	NPV ARC ($)	NPV DRC ($)
Custom	$0	$0	$0	$0	$0
Prescriptive	$0	$0	$0	$0	$0
Direct Install	$18,312	$39,928	$0	$0	$0
Total	**$18,312**	**$39,928**	**$0**	**$0**	**$0**
Sums may differ due to rounding.					

5.4.4 Process Evaluation Findings

A limited process evaluation was conducted for the C&I Solutions program. Findings from the interviews with program staff are summarized in Section 5.2.

5.4.5 Protocol A Database Review

The tracking system in the database conforms reasonably well to the tracking system protocol developed for use in Arkansas. The table below shows a summary of how well the program tracking systems meets the components of the protocol.

TABLE 5-17: PRESCRIPTIVE PROTOCOL A SUMMARY

Category	Field	Status	Description of Issue(s)
Participating Customer Information	Unique customer identifier, such as account number	✓	This applied to the Custom, DI, and the Prescriptive components.
	Customer contact information – name, mailing address, telephone number	✓	This applies to all components.
	Date/s of major customer milestones such as rebate application date, approval date, rebate processing date, etc.	✓	This applied to the Custom, DI, and the Prescriptive components.
Measure-Specific Information	Measure Group (Equipment Type)	✓	
	Equipment Fuel/Energy Source	-	Not explicitly provided, but equipment is assumed to be gas fueled.
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	✓	
	Equipment Useful Life	✓	
	Measure Name – Text Description	✓	
	Measure Name – Numerical Code	N/A	
	Serial Number	N/A	
	Reported age of equipment replaced	N/A	
	Reported measure type of equipment replaced	N/A	
	Other inputs necessary for the use and compliance with the TRM	✓	
Vendor-Specific Information	Name and Contact Information for Contractor	✓	
	Contractor Type	✓	
	Date of Installation	✓	
	Cost of the installed equipment	✓	
	Efficiency level of the installed equipment	✓	
Program Tracking Information	Date of the initial program contact/rebate information	✓	
	Date of rebate/incentive paid	✓	
	Incentive amount paid to-date	✓	
	Incentive amounts remaining	✓	
	Application Status (i.e., number of applications approved, pending, or denied)	-	This is not applicable for the Custom nor the Prescriptive components of the C&I Solutions Program. However, the Evaluator

			notes that this is available upon request.
	Reason and reason code for application denial	✓	
Program Costs	Overall program budgets	N/A	This is not applicable for the Custom nor the Prescriptive components of the C&I Solutions Program.
	Program expenditures to-date	N/A	
	Incentive Costs	N/A	
	Administrative Costs	N/A	
	Marketing/Outreach Costs	N/A	
	Evaluation Costs	N/A	
Marketing and Outreach Activities	Advertising and marketing spending levels	N/A	Not itemized from total marketing costs in data provided to the Evaluator.
	Media schedules	N/A	
	Summary of number of community events/outreach activities	N/A	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	N/A	

5.5 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the Commercial and Industrial Solutions Program.

Overall, the C&I Solutions Program performed well, achieving 103.1% of its net therms goal. In PY2025, there were 5 total custom projects completed and weather-stripping projects completed through the Direct Install pathway. The Evaluator did not find discrepancies in methodologies between the ex-ante estimations and the ex-post calculations.

Staff did not describe any design or operational changes to the C&I Solutions program during the year. The implementer continued to perform engineering assessments, run combustion safety testing, and work directly with facility managers and contractors. AOG staff reported that their internal role, primarily budget monitoring, invoice review, and incentive payment for custom projects, remained consistent with previous years. The process for implementing both direct install (DI) and custom C&I offerings was also described as stable. Staff did not identify modifications to these workflows or to the implementer's responsibilities related to outreach, marketing, or facility engagement.

6 AOG Weatherization Program

6.1 Summary

The tables below report ex-ante gross, ex-post gross, ex-post net energy savings (therms) (both annual and lifetime), participation, incentive spend, and ex-post net NEBs, by pathway and measure, where applicable.

TABLE 6-1 AOG WEATHERIZATION PROGRAM ENERGY SAVINGS (THERMS)

Measure	Ex- Ante Gross Savings (Therms)	Realization Rate (Therms)	Ex-Post Gross Savings (Therms)	NTG	Ex-Post Net Savings (Therms)
Air Infiltration	49,726	105.6%	52,502	97.7%	51,310
Assessment	0	100.0%	0	100.0%	0
Ceiling Insulation	47,784	100.0%	47,775	97.7%	46,690
Duct Sealing	116,819	96.7%	112,965	97.7%	110,401
Faucet Aerator	181	99.1%	180	97.7%	176
Health & Safety	0	100.0%	0	100.0%	0
LED Lamp (Standard)	0	100.0%	-18	97.7%	-17
Low-Flow Showerhead	647	99.2%	641	97.7%	627
Total	**215,157**	**99.5%**	**214,046**	**97.7%**	**209,187**
Sums may differ due to rounding.					

TABLE 6-2 AOG WEATHERIZATION PROGRAM LIFETIME ENERGY SAVINGS (THERMS)

Measure	EUL	Ex Post Gross Lifetime Energy Savings (Therms)	Ex Post Net Lifetime Energy Savings (Therms)
Air Infiltration	20	1,050,032	1,026,197
Assessment	1	0	0
Ceiling Insulation	30	1,433,246	1,400,711
Duct Sealing	20	2,259,308	2,208,022
Faucet Aerator	10	1,798	1,757
Health & Safety	1	0	0
LED Lamp (Standard)	12	-220	-215
Low-Flow Showerhead	10	6,415	6,269
Total	**22**	**4,750,579**	**4,642,740**
Sums may differ due to rounding.			

TABLE 6-3 AOG WEATHERIZATION COUNT OF MEASURES AND INCENTIVE SPEND

Measure	Count of Participants	Sum of Measures	Incentive Spend ($)
Air Infiltration	328	328	$106,999
Assessment	569	567	$107,100
Ceiling Insulation	359	359	$378,462
Duct Sealing	318	354	$89,956
Faucet Aerator	81	108	$540
Health & Safety	235	639	$64,288
LED Lamp (Standard)	24	210	$1,065
Low-Flow Showerhead	51	51	$765
Total	**1,965**	**2,616**	**$749,174**
Sums may differ due to rounding.			

TABLE 6-4 AOG WEATHERIZATION PROGRAM EX-POST NET NEB

Measure	Ex-Post Net ARCs ($)	Ex-Post Net DRCs ($)	Ex-Post Net Electricity (kWh)	Ex-Post Net Electricity Demand (kW)	Ex-Post Net Water Savings (gallons)
Air Infiltration	$0	$0	42,254	32.23	0
Assessment	$0	$0	0	0.00	0
Ceiling Insulation	$0	$0	135,865	93.90	0
Duct Sealing	$0	$0	202,708	117.82	0
Faucet Aerator	$0	$0	0	0.00	44,277
Health & Safety	$0	$0	0	0.00	0
LED Lamp (Standard)	$529	$0	1,722	0.25	0
Low-Flow Showerhead	$0	$0	0	0.00	150,900
Total	**$529**	**$0**	**382,549**	**244.20**	**195,177**
Sums may differ due to rounding.					

The subsections of this chapter outline the evaluation approach and findings for the AOG Weatherization Program.

6.2 AOG Weatherization Program Description

The AOG Weatherization Prorgam is designed to train contractors and home energy consultants to analyze the energy use for single and multifamily homes and identify specific energy efficiency improvements which may be undertaken by the customer. The pathway is AOG's implementation of the Consistent Weatherization Approach and provides energy assessments, along with direct installation of low-cost measures and pre-qualification for building envelope improvements.

Direct install measures include:

- Faucet aerators;
- LED lamps (paid for by OG&E); and
- Low-flow showerheads.

Weatherization measures include:

- Air infiltration;
- Duct sealing; and
- Ceiling insulation.

The program is implemented by CLEAResult. There is no cost to AOG customers to participate in the program.

The history of program performance and expenditures is presented in Table 6-5.

TABLE 6-5 AOG WEATHERIZATION PERFORMANCE AGAINST GOALS

Program Year	Budget			Net Therms		
	Spent	Allocated	% Spent	Ex Post	Goal	% Achieved
2018	$1,564,105	$1,564,105	100%	250,792	158,145	159%
2019	$1,424,484	$1,600,745	89%	221,942	158,145	140%
2020	$1,280,586	$1,747,200	73%	230,147	216,543	106%
2021	$770,478	$1,754,746	44%	227,257	216,543	105%
2022	$1,047,088	$1,786,892	58%	270,805	216,543	125%
2023	$1,372,105	$1,778,492	77%	311,684	216,543	150%
2024	$1,072,507	$1,158,971	93%	202,212	193,808	104%
2025	$1,103,037	$1,138,923	97%	209,187	193,808	108%

6.2.1 Marketing and Outreach

Marketing for the AOG Weatherization Program is limited. Program staff reported that AOG does not actively promote the program because it is considered self-sustaining, with consistent participation. As a result, there were no formal marketing campaigns or dedicated outreach efforts. That said, AOG may include information about weatherization in bill inserts, but this is not routine. Most participation occurs organically, either through word-of-mouth referrals or through leads generated by CLEAResult. For example, customers may learn about the program from neighbors or through incidental exposure to OG&E marketing (the electric utility whose service area overlaps with AOG), as many homes in the service territory have dual fuel service.

CLEAResult does not conduct separate marketing for AOG weatherization beyond managing leads and assigning them to contractors. The program does have a co-branded flier that is available to trade allies as a PDF or printed.

6.2.2 Program Trade Allies

Trade Allies are responsible for implementing all weatherization measures in participating homes. Their work includes air sealing, duct sealing, insulation, and direct install (DI) items such as faucet aerators, showerheads, and LED lighting. Contractors also conduct pre- and post-installation assessments and are expected to review findings with customers before and after work is completed. This includes explaining what measures will be installed and summarizing results after the visit.

Trade Allies are required to complete program training before participating in the AOG Weatherization Program. At the start of each program year, the implementer conducts a kickoff meeting that reviews program requirements, safety protocols, measure specifications, and customer service expectations. Attendance at this meeting is mandatory for Trade Allies already enrolled in the program. Contractors who join mid-year receive individual onboarding sessions covering the same material to ensure compliance with program standards. This process ensures that all contractors understand program rules and procedures before accepting leads or completing projects.

Contractors must upload documentation for each project into the program portal. Required materials include the audit report, pre- and post-installation photos (with ruler measurements for insulation), invoices, and pre/post test results for air and duct sealing. They also provide photos of DI measure installations. These submissions are reviewed by the processing team and program staff before incentives are approved.

Projects are primarily assigned by the implementer rather than generated by contractors. CLEAResult vets leads and distributes them daily based on contractor capacity and geographic coverage. Contractors receive an email each evening listing assigned leads. Program staff estimate that less than 5% of projects originate from contractor outreach. While contractors may share a co-branded flyer with customers for referrals, they are not required to market the program.

6.2.3 AOG Weatherization Incentives

Incentives provided to contractors are summarized in the table below.

TABLE 6-6 CONTRACTOR INCENTIVE LEVELS

Measure	Measure Levels/Requirements	Arkansas Oklahoma Gas Only	Arkansas Oklahoma Gas Joint with Electric Utility
Home Energy Assessment	N/A	$300.00	$150.00
Ceiling Insulation	Baseline R-0 - R-1	$1.10/sq. ft.	$0.55/sq. ft.
Ceiling Insulation	Baseline R-2 - R-4	$1.05/sq. ft.	$0.53/sq. ft.
Ceiling Insulation	Baseline R-5 - R-8	$1.00/sq. ft.	$0.50/sq. ft.
Ceiling Insulation	Baseline R-9 - R-14	$0.95/sq. ft.	$0.48/sq. ft.
Ceiling Insulation	Baseline R-16 - R-22	$0.95/sq. ft.	$0.48/sq. ft.
Air Infiltration	Per CFM50 Reduction	$0.28	$0.14
Duct Sealing	Minimum 25% reduction	$1.50/CFM Reduction	$0.75/CFM Reduction
Wall Insulation	None installed. Insulated to R-13. May only be installed where vinyl siding can be removed to drill and fill from the outside	$1.20/sq. ft. of insulated wall	$1.20/sq. ft. of insulated wall

Direct Install Item	Requirements	Arkansas Oklahoma Gas Only	Arkansas Oklahoma Gas Joint with Electric Utility
LED (A19, B11, G25)	Replaces Halogen and Incandescent in High use areas indoors or outdoors – pre/post pics are required	$5.00/ unit	Paid by electric program
LED BR30	Replaces Halogen and Incandescent in High use areas indoors or outdoors – pre/post pics are required	$8.00/unit	Paid by electric program
Energy Efficient Faucet Aerators	1.5 GPM	$15.00/ unit	Paid by electric program
Energy Efficient Showerheads	1.5 GPM	$5.00/ unit	Paid by electric program

6.3 Evaluation Approach

The sections below outline the evaluation approaches for the AOG Weatherization Program.

6.3.1 Gross Impact Evaluation

The following sections outline the impact evaluation approach for the AOG Weatherization Program. For equipment and retrofits incentivized through the program, calculation methodologies were performed as described in the AR TRM v10.0. Section 3.1.1.2 identifies the sections in the AR TRM v10.0 that were used for verification of measure-level savings.

The gross impact evaluation effort included the following:

- **Desk Reviews.** The Evaluator utilized the AR TRM v10.0 values in assessing ex-post gross energy savings (therms) and NEBs. In addition to the AR TRM v10.0, the Evaluator also examined the Excel workbook used by the third-party implementor (CLEAResult) to assess savings by measure. The workbook utilizes AR TRM v10.0 savings algorithms with contractor inputs to calculate savings based on the measure and input parameters. The Evaluator verified the factor tables for each measure to ensure the values were appropriate.
- **Data Tracking Review**: For all pathways, project data from CLEAResult was reviewed to ensure that tracking systems followed Protocol A, B1 and B2 of the AR TRM v10.0.
- **Site Visits.** The Evaluator performed verification site visits for the AOG Weatherization Program projects in PY2025. In total, the Evaluator completed 31 site visits. Additional details can be found in Appendix E Residential Site Visit Findings.

For additional details, see Section 3.1.1 Gross Impact.

6.3.2 Net Impact Evaluation

Section 4.3.2 summarizes the net savings approach.

6.4 Evaluation Findings

6.4.1 Gross Impact Findings

After reviewing the tracking data and inputs for savings calculations, the Evaluator provided verified ex-post savings per AR TRM v10.0 Protocols. The savings from the measures below were verified, and matched, to the calculations provided by CLEAResult.

The ex post annual and lifetime energy saving impacts are summarized in Table 6-7 and Table 6-9.

TABLE 6-7 AOG WEATHERIZATION ANNUAL SAVINGS SUMMARY

Measure	Number of Measures	Number of Premises	Ex-Ante Energy Savings (Therms)	Ex-Post Energy Savings (Therms)	Realization Rate (Therms)
Air Infiltration	328	328	49,726	52,502	105.6%
Assessment	567	569	0	0	100.0%
Ceiling Insulation	359	359	47,784	47,775	100.0%
Duct Sealing	354	318	116,819	112,965	96.7%
Faucet Aerator	108	81	181	180	99.1%
Health & Safety	639	235	0	0	100.0%
LED Lamp (Standard)	210	24	0	-18	100.0%
Low-Flow Showerhead	51	51	647	641	99.2%
Total	**2,616**	**1,965**	**215,157**	**214,046**	**99.5%**
Sums may differ due to rounding.					

TABLE 6-8 AOG WEATHERIZATION LIFETIME SAVINGS SUMMARY

Measure	Ex-Post Energy Savings (kWh)	EUL	Ex-Post Gross Lifetime (kWh)	Ex-Post Net Lifetime (kWh)
Air Infiltration	52,502	20	1,050,032	1,026,197
Assessment	0	1	0	0
Ceiling Insulation	47,775	30	1,433,246	1,400,711
Duct Sealing	112,965	20	2,259,308	2,208,022
Faucet Aerator	180	10	1,798	1,757
Health & Safety	0	1	0	0
LED Lamp (Standard)	-18	12.5	-220	-215
Low-Flow Showerhead	641	10	6,415	6,269
Total	**214,046**	**22**	**4,750,579**	**4,642,740**
Sums may differ due to rounding.				

6.4.1.1.1 DISCUSSION OF REALIZATION RATES

Overall, the Evaluator did not find major discrepancies in the ex-post natural gas savings calculations. The slightly lower / higher realization rates are due to the in-service rates (ISRs) that were found through site visit verification work and the historical ISRs found through literature reviews and past site visit results. For additional details regarding the applied measure-level ISRs, see Section 3.1.1.6.2.

6.4.2 Net Impact Findings

This section summarizes the results of the evaluation of net impacts.

Details on the methods and values used to estimate net savings are presented in Section 3.1.2.1.

6.4.2.1 Net Impacts by Pathway

The table below summarizes the net impacts by pathway for the AOG Weatherization Program.

TABLE 6-9 SUMMARY OF NET IMPACTS FOR THE RESIDENTIAL SOLUTIONS PROGRAM

Measure	Energy Savings (Therms)	Lifetime Energy Savings (Therms)	Net-to-Gross (NTG)
Air Infiltration	51,310	1,026,197	97.7%
Assessment	0	0	100.0%
Ceiling Insulation	46,690	1,400,711	97.7%
Duct Sealing	110,401	2,208,022	97.7%
Faucet Aerator	176	1,757	97.7%
Health & Safety	0	0	100.0%
LED Lamp (Standard)	-17	-215	97.7%
Low-Flow Showerhead	627	6,269	97.7%
Total	**209,187**	**4,642,740**	**97.7%**
Sums may differ due to rounding.			

6.4.3 Non-Energy Benefits Findings

Protocol L of the AR TRM v10.0 states that EM&V of demand-side management (DSM) programs in Arkansas must account for NEBs resulting from each program. Specifically, the categories of NEBs that are to be calculated for each DSM program are as follows:

- Benefits of electricity, natural gas, and liquid propane energy savings (i.e., other fuels);
- Benefits of public water and wastewater savings; and
- Benefits of avoided and deferred equipment replacement costs.

As discussed below, the NEBs applicable to the AOG Weatherization Program are avoided replacement cost, propane, electricity energy savings and demand savings, and water savings. Section 3.1.3 discusses the methods used to calculate the NEBs.

Measures with zero entries are included to ensure consistency of table structure and to demonstrate that no measures or potential energy and non-energy impacts were omitted.

6.4.3.1 NEB Summary

The tables below summarize the Residential Solutions Program NEBs.

TABLE 6-10 SUMMARY OF AOG WEATHERIZATION PROGRAM EX-POST GROSS NEB BY MEASURE TYPE

Measure	Ex-Post Gross Electricity (kWh)	Ex-Post Gross Electricity Peak (kW)	Ex-Post Gross Water (Gallons)	Ex-Post Gross ARC ($)	Ex-Post Gross DRC ($)
Air Infiltration	43,235	32.98	0	$0	$0
Assessment	0	0.00	0	$0	$0
Ceiling Insulation	139,021	96.08	0	$0	$0
Duct Sealing	200,574	120.55	0	$0	$0
Faucet Aerator	0	0.00	45,305	$0	$0
Health & Safety	0	0.00	0	$0	$0
LED Lamp (Standard)	1,762	0.26	0	$541	$0
Low-Flow Showerhead	0	0.00	154,405	$0	$0
Total	**384,592**	**249.87**	**199,711**	**$541**	**$0**
Sums may differ due to rounding.					

TABLE 6-11 SUMMARY OF AOG WEATHERIZATION PROGRAM EX-POST NET NEB BY MEASURE TYPE

Measure	Ex-Post Gross Electricity (kWh)	Ex-Post Gross Electricity Peak (kW)	Ex-Post Gross Water (Gallons)	Ex-Post Gross ARC ($)	Ex-Post Gross DRC ($)
Air Infiltration	42,254	32.23	0	$0	$0
Assessment	0	0.00	0	$0	$0
Ceiling Insulation	135,865	93.90	0	$0	$0
Duct Sealing	202,708	117.82	0	$0	$0
Faucet Aerator	0	0.00	44,277	$0	$0
Health & Safety	0	0.00	0	$0	$0
LED Lamp (Standard)	1,722	0.25	0	$529	$0
Low-Flow Showerhead	0	0.00	150,900	$0	$0
Total	**382,549**	**244.20**	**195,177**	**$529**	**$0**
Sums may differ due to rounding.					

TABLE 6-12 SUMMARY OF AOG WEATHERIZATION NPV OF NEBS

Measure	NPV kWh ($)	NPV kW ($)	NPV Water ($)	NPV ARC ($)	NPV DRC ($)
Air Infiltration	$24,684	$58,265	$0	$0	$0
Assessment	$0	$0	$0	$0	$0
Ceiling Insulation	$102,169	$218,490	$0	$0	$0
Duct Sealing	$114,512	$212,979	$0	$0	$0
Faucet Aerator	$0	$0	$4,444	$0	$0
Health & Safety	$0	$0	$0	$0	$0
LED Lamp (Standard)	$674	$309	$0	$529	$0
Low-Flow Showerhead	$0	$0	$15,147	$0	$0
Total	**$242,040**	**$490,043**	**$19,592**	**$529**	**$0**
Sums may differ due to rounding.					

6.4.4 Process Evaluation Findings

The Evaluator completed a limited process evaluation of the AOG Weatherization Program. Findings from the interviews with program staff are summarized in Section 6.2. The following sections present the required CWA metrics.

6.4.4.1 Required CWA Metrics

The following section summarizes the required metrics for the AOG Weatherization Program, part of AOG's implementation of the CWA Program.

Table 6-13 CWA Required Process Evaluation Metrics – AOG Weatherization Program

Metric	Value
Program Name	AOG Weatherization Program
CWA Implementation	Yes
Total Audits Completed	569
Total Submitted Projects	630 in 690 homes
Conversion Rate	111%
Measures installed per-project	1.8
Ex-Post Therm Savings per-project	263
Cost per participant	No customer co-pay. AOG paid $1,564/home
Percent of contractors promoting program	100%

Note: Some measures may be installed in a different program year than the audit. In these cases, measures completed after the audit year are counted separately, which can reduce the number of measures reflected per project for the audit year.

Customers in the AOG Weatherization Program may receive safety measures and program contractors follow BPI protocols for safety testing of combustion appliances.

TABLE 6-14 AOG WEATHERIZATION ALIGNMENT WITH CWA REQUIREMENTS

Requirement	Alignment with Requirement	Percent of Participants Receiving
Includes Applicable DI Measures	Yes	15.7%
Aerators	Yes	11.7%
Showerheads	Yes	7.4%
Efficient lighting	Yes	3.5%
Advanced power strips	Yes	0.0%
Prequalifies homes based on year of construction or energy costs	Yes, the customer must have had a bill in the last twelve months that exceeded ten cents per square foot, or the home's age is 10 years or greater.	100.0%
TRC is used to assess program cost-effectiveness	Yes	N/A
Measures screened using SIR or comparable metric	Yes	N/A
Includes Core No Cost Measures	Yes	91.3%
Audit	Yes	82.5%
Ceiling insulation	Yes	52.0%

Duct sealing	Yes	46.1%
Air infiltration reduction	Yes	47.5%
Safety testing and/or measures	Yes	33.8%
Offers other utility measures	Yes	1.2%
Contractors are certified BPI Building Analyst or RESNET HERS Rater	Yes	N/A

6.4.5 Protocol A Database Review

The tracking system in the database conforms reasonably well to the tracking system protocol developed for use in Arkansas. The table below shows a summary of how well the program tracking systems meets the components of the protocol.

TABLE 6-15: AOG WEATHERIZATION PROTOCOL A SUMMARY

Category	Field	Status	Description of Issue(s)
Participating Customer Information	Unique customer identifier, such as account number	-	Account numbers are not included in the program data to limit the distribution of personally identifiable information. However the Evaluator notes that the information is available upon request.
	Customer contact information – name, mailing address, telephone number	✓	Name, mailing address, and phone numbers are provided in the tracking data.
	Date/s of major customer milestones such as rebate application date, approval date, rebate processing date, etc.	-	Only installation date is included in the program tracking data.
Measure-Specific Information	Measure Group (Equipment Type)	✓	Equipment type for aerators and showerheads is provided.
	Equipment Fuel/Energy Source	-	Heating type is not explicitly reported in tracking data
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	×	This is not provided in the tracking data.
	Equipment Useful Life	×	This is not provided in the tracking data.
	Measure Name – Text Description	✓	
	Measure Name – Numerical Code	-	
	Serial Number	-	
	Reported age of equipment replaced	-	Reported age of equipment is not needed for ex-post energy calculations.
	Reported measure type of equipment replaced	✓	
	Other inputs necessary for the use and compliance with the TRM	✓	

Vendor-Specific Information	Name and Contact Information for Contractor	-	Contractor company name is present only, however, the Evaluator notes that additional trade ally information is readily available upon request.
	Contractor Type	✓	
	Date of Installation	✓	
	Cost of the installed equipment	✓	
	Efficiency level of the installed equipment	-	
Program Tracking Information	Date of the initial program contact/rebate information	-	
	Date of rebate/incentive paid	✓	
	Incentive amount paid to-date	✓	
	Incentive amounts remaining	-	
	Application Status (i.e., number of applications approved, pending, or denied)	✓	
	Reason and reason code for application denial	✓	
Program Costs	Overall program budgets	-	Not applicable to the AOGWP tracking data.
	Program expenditures to-date	-	
	Incentive Costs	-	
	Administrative Costs	-	
	Marketing/Outreach Costs	-	
	Evaluation Costs	-	
Marketing and Outreach Activities	Advertising and marketing spending levels	-	Not applicable to the AOGWP tracking data.
	Media schedules	-	
	Summary of number of community events/outreach activities	-	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	-	

6.5 Key Findings and Recommendations

Overall, the AOGWP performed well, achieving 107.9% of its net therms goal. The program achieved 99.5% of its expected therms savings. The Evaluator did not find discrepancies in ex-ante estimations. All differences in verified therms are attributed to the field verification findings.

Program staff reported no substantive changes to the design or operations of the AOG Weatherization Program during the program year. Processes for contractor management, lead assignment, documentation requirements, and intake were described as consistent with prior years.

Staff from both interviews emphasized that the system used by trade allies to submit project information had remained unchanged for “the last couple years.” The implementer continued assigning leads daily, conducting processing and QA reviews, and managing coordination with OG&E for dual-fuel homes using the same approach as in prior periods.

The only requirement described as a recent adjustment was the 2024 adoption of a BPI Building Analyst Professional (BPIP) certification requirement, where each contractor team must include at least one

certified staff member. This requirement was described as having begun the previous year rather than a change introduced during the current program year.

Staff did note the addition of an insulation-only contractor to support capacity.

7 Low-Income Program

7.1 Summary

The tables below report ex-ante gross, ex-post gross, ex-post net energy savings (therms) (both annual and lifetime), participation, incentive spend, and ex-post net NEBs, by pathway and measure, where applicable.

TABLE 7-1 LOW-INCOME PROGRAM ENERGY SAVINGS (THERMS)

Measure	Ex- Ante Gross Savings (Therms)	Realization Rate (Therms)	Ex-Post Gross Savings (Therms)	NTG Ratio	Ex-Post Net Savings (Therms)
Air Infiltration	10,673	105.0%	11,204	100.0%	11,204
Assessment	0	100.0%	0	100.0%	0
Ceiling Insulation	10,024	99.7%	9,997	100.0%	9,997
Duct Sealing	21,593	100.5%	21,692	100.0%	21,692
Faucet Aerator	5	99.1%	5	100.0%	5
Health & Safety	0	100.0%	0	100.0%	0
LED Lamp (Standard)	0	100.0%	-11	100.0%	-11
Total	**42,295**	**101.4%**	**42,887**	**100.0%**	**42,887**
Sums may differ due to rounding.					

TABLE 7-2 LOW-INCOME PROGRAM LIFETIME ENERGY SAVINGS (THERMS)

Measure	EUL	Ex Post Gross Lifetime Energy Savings (Therms)	Ex Post Net Lifetime Energy Savings (Therms)
Air Infiltration	20	224,083	224,083
Assessment	1	0	0
Ceiling Insulation	30	299,902	299,902
Duct Sealing	20	433,839	433,839
Faucet Aerator	10	48	48
Health & Safety	1	0	0
LED Lamp (Standard)	12.5	-132	-132
Total	**22**	**957,740**	**957,740**
Sums may differ due to rounding.			

TABLE 7-3 LOW-INCOME PROGRAM COUNT OF MEASURES AND INCENTIVE SPEND

Measure	Count of Participants	Sum of Measures	Incentive Spend ($)
Air Infiltration	60	61	$22,135
Assessment	102	102	$19,200
Ceiling Insulation	66	66	$76,087
Duct Sealing	53	59	$15,576
Faucet Aerator	1	2	$10
Health & Safety	86	227	$28,892
LED Lamp (Standard)	13	126	$630
Total	**381**	**643**	**$162,530**
Sums may differ due to rounding.			

TABLE 7-4 LOW-INCOME PROGRAM EX-POST NET NEB

Pathway / Measure	Ex-Post Net ARCs ($)	Ex-Post Net DRCs ($)	Ex-Post Net Electricity (kWh)	Ex-Post Net Electricity Demand (kW)	Ex-Post Net Water Savings (gallons)
Air Infiltration	$0	$0	9,449	7.15	0
Assessment	$0	$0	0	0.00	0
Ceiling Insulation	$0	$0	30,237	24.45	0
Duct Sealing	$0	$0	41,001	24.80	0
Faucet Aerator	$0	$0	0	0.00	1,187
Health & Safety	$0	$0	0	0.00	0
LED Lamp (Standard)	$325	$0	1,057	0.16	0
Total	**$325**	**$0**	**81,743**	**56.55**	**1,187**
Sums may differ due to rounding.					

7.2 Low-Income Program Description

The Low-Income Program is designed to comply with Act 1102 and operates as an extension of the Consistent Weatherization Approach (CWA). The program targets customers who meet the income eligibility requirements of the Low-Income Home Energy Assistance Program (LIHEAP).

The program provides in-home energy assessments, direct installation of low-cost measures, and pre-qualification for building envelope improvements. Direct install measures include faucet aerators and low-flow showerheads. Eligible weatherization measures include air infiltration improvements, duct sealing, and ceiling insulation.

In addition, the program allows up to $2,500 per participating residence (split between AOG and OG&E) to address health and safety conditions necessary to complete weatherization work. Health and safety funds may be used for measures such as carbon monoxide detectors, smoke detectors, and other required upgrades.

The AOG Weatherization Program and the Low-Income Weatherization Program follow similar implementation processes but differ in eligibility requirements, measure offerings, and incentive levels.

The standard weatherization program is available to all AOG customers in Arkansas and does not include income restrictions or health and safety measures.

Incentive caps also differ between the two programs. Standard weatherization projects are capped at approximately $2,500 per home, while low-income projects allow incentives of up to $3,800 per home. The higher cap reflects the inclusion of additional health and safety measures available only to low-income participants, such as smoke detectors, carbon monoxide detectors, venting improvements, dryer vent pipes, and gas line capping when needed.

Aside from these differences, both programs follow the same project implementation process. Contractors complete air sealing, duct sealing, insulation, and direct install measures, submit required documentation through the program portal, and are subject to consistent quality assurance and lead assignment procedures across both programs.

Low-Income Program's historical performance is summarized in Table 7-5.

TABLE 7-5 LOW-INCOME PROGRAM HISTORICAL PERFORMANCE AGAINST GOALS

Program Year	Budget			Net Therms		
	Spent	Allocated	% Spent	Ex-Post	Goal	% Achieved
2020	$69,830	$79,689	88%	13,951	10,088	138%
2021	$61,679	$80,003	77%	13,102	10,088	130%
2022	$86,957	$81,342	107%	14,311	10,088	142%
2023	$89,713	$89,742	100%	11,778	10,088	117%
2024	$251,076	$256,435	98%	41,372	40,630	102%
2025	$236,146	$256,675	92%	42,887	40,630	106%

7.3 Evaluation Approach

The sections below outline the evaluation approaches for the Low-Income Program.

7.3.1 Gross Impact Evaluation

The following sections outline the impact evaluation approach for the Low-Income Program. For equipment and retrofits incentivized through the Low-Income Program, calculation methodologies were performed as described in the AR TRM v10.0. 3.1.1 identifies the sections in the AR TRM v10.0 that were used for verification of measure-level savings.

The gross impact evaluation effort included the following:

- **Desk Reviews.** The Evaluator utilized the AR TRM v10.0 values in assessing ex-post gross energy savings (therms) and NEBs. In addition to the AR TRM v10.0, the Evaluator also examined the Excel workbook used by the third-party implementor (CLEAResult) to assess savings by measure. The workbook utilizes AR TRM v10.0 savings algorithms with contractor inputs to calculate savings based on the measure and input parameters. The Evaluator verified the factor tables for each measure to ensure the values were appropriate.

- **Data Tracking Review**: For all pathways, project data from CLEAResult was reviewed to ensure that tracking systems followed Protocol A, B1 and B2 of the AR TRM v10.0.
- **Site Visits.** The Evaluator performed verification site visits for the Low-Income Program for projects in PY2025. In total, the Evaluator completed 13 site visits. Additional details can be found in Appendix E Residential Site Visit Findings.

For additional details, see Section 3.1.1 Gross Impact.

7.3.2 Net Impact Evaluation

Section 3.1.2 summarizes the net savings approach. Because the Low-Income Program targets low-income customers, a net-to-gross ratio of 100.0% was applied to program savings.

7.4 Evaluation Findings

7.4.1 Gross Impact Findings

After reviewing the tracking data and inputs for savings calculations, the Evaluator provided verified ex-post savings per AR TRM v10.0 Protocols. The savings from the measures below were verified, and matched, to the calculations provided by CLEAResult.

The ex-post annual and lifetime energy saving impacts are summarized in Table 4-7 and Table 4-8.

TABLE 7-6 LOW-INCOME PROGRAM ANNUAL SAVINGS SUMMARY

Measure	Number of Measures	Number of Premises	Ex-Ante Energy Savings (Therms)	Ex-Post Energy Savings (Therms)	Realization Rate (Therms)
Air Infiltration	61	60	10,673	11,204	105.0%
Assessment	102	102	0	0	100.0%
Ceiling Insulation	66	66	10,024	9,997	99.7%
Duct Sealing	59	53	21,593	21,692	100.5%
Faucet Aerator	2	1	5	5	99.1%
Health & Safety	227	86	0	0	100.0%
LED Lamp (Standard)	126	13	0	-11	100.0%
Total	**643**	**381**	**42,295**	**42,887**	**101.4%**
Sums may differ due to rounding.					

TABLE 7-7 LOW-INCOME PROGRAM SAVINGS SUMMARY

Measure	Ex-Post Energy Savings (Therms)	EUL	Ex-Post Gross Lifetime (Therms)	Ex-Post Net Lifetime (Therms)
Air Infiltration	11,204	20	224,083	224,083
Assessment	0	1	0	0
Ceiling Insulation	9,997	30	299,902	299,902
Duct Sealing	21,692	20	433,839	433,839
Faucet Aerator	5	10	48	48
Health & Safety	0	1	0	0
LED Lamp (Standard)	-11	12.5	-132	-132
Total	**42,887**	**22**	**957,740**	**957,740**
Sums may differ due to rounding.				

7.4.1.1.1 DISCUSSION OF REALIZATION RATES

Overall, the Evaluator did not find major discrepancies in the ex-post natural gas savings calculations. The slightly lower / higher realization rates are due to the in-service rates (ISRs) that were found through site visit verification work and the historical ISRs found through literature reviews and past site visit results. For additional details regarding the applied measure-level ISRs, see Section 3.1.1.6.2.

7.4.2 Net Impact Findings

This section summarizes the results of the evaluation of net impacts.

A net-to-gross ratio of 100.0% was used to estimate the net impacts of Low-Income Program.

7.4.2.1 Net Impacts by Pathway

Table 7-8 summarizes the net impacts for the Low-Income Program.

TABLE 7-8 SUMMARY OF NET IMPACTS FOR THE LOW-INCOME PROGRAM

Measure	Net Annual Energy Savings (Therms)	Net Lifetime Energy Savings (Therms)	Net-to-Gross (NTG)
Air Infiltration	11,204	224,083	100.0%
Assessment	0	0	100.0%
Ceiling Insulation	9,997	299,902	100.0%
Duct Sealing	21,692	433,839	100.0%
Faucet Aerator	5	48	100.0%
Health & Safety	0	0	100.0%
LED Lamp (Standard)	-11	-132	100.0%
Total	**42,887**	**957,740**	**100.0%**
Sums may differ due to rounding.			

7.4.3 Non-Energy Benefits Findings

Protocol L of the AR TRM v10.0 states that EM&V of demand-side management (DSM) programs in Arkansas must account for NEBs resulting from each program. Specifically, the categories of NEBs that are to be calculated for each DSM program are as follows:

- Benefits of electricity, natural gas, and liquid propane energy savings (i.e., other fuels);
- Benefits of public water and wastewater savings; and
- Benefits of avoided and deferred equipment replacement costs.

Section 3.1.3 discusses the methods used to calculate the NEBs.

Measures with zero entries are included to ensure consistency of table structure and to demonstrate that no measures or potential energy and non-energy impacts were omitted.

7.4.3.1 NEB Summary

The tables below summarize the Low-Income NEBs.

TABLE 7-9 SUMMARY OF LOW-INCOME EX-POST GROSS NEB BY MEASURE TYPE

Measure	Ex-Post Gross Electricity (kWh)	Ex-Post Gross Electricity Peak (kW)	Ex-Post Gross Water (Gallons)	Ex-Post Gross ARC ($)	Ex-Post Gross DRC ($)
Air Infiltration	9,449	7.15	0	$0	$0
Assessment	0	0.00	0	$0	$0
Ceiling Insulation	30,237	24.45	0	$0	$0
Duct Sealing	41,001	24.80	0	$0	$0
Faucet Aerator	0	0.00	1,187	$0	$0
Health & Safety	0	0.00	0	$0	$0
LED Lamp (Standard)	1,057	0.16	0	$325	$0
Total	**81,743**	**56.55**	**1,187**	**$325**	**$0**
Sums may differ due to rounding.					

TABLE 7-10 SUMMARY OF LOW-INCOME EX-POST NET NEB BY MEASURE TYPE

Measure	Ex-Post Net Electricity (kWh)	Ex-Post Net Electricity Peak (kW)	Ex-Post Net Water (Gallons)	Ex-Post Net ARC ($)	Ex-Post Net DRC ($)
Air Infiltration	9,449	7.15	0	$0	$0
Assessment	0	0.00	0	$0	$0
Ceiling Insulation	30,237	24.45	0	$0	$0
Duct Sealing	41,001	24.80	0	$0	$0
Faucet Aerator	0	0.00	1,187	$0	$0
Health & Safety	0	0.00	0	$0	$0
LED Lamp (Standard)	1,057	0.16	0	$325	$0
Total	**81,743**	**56.55**	**1,187**	**$325**	**$0**
Sums may differ due to rounding.					

TABLE 7-11 SUMMARY OF LOW-INCOME PROGRAM NPV OF NEB

Measure	NPV kWh ($)	NPV kW ($)	NPV Water ($)	NPV ARC ($)	NPV DRC ($)
Air Infiltration	$5,520	$12,929	$0	$0	$0
Assessment	$0	$0	$0	$0	$0
Ceiling Insulation	$23,221	$58,096	$0	$0	$0
Duct Sealing	$23,952	$44,825	$0	$0	$0
Faucet Aerator	$0	$0	$119	$0	$0
Health & Safety	$0	$0	$0	$0	$0
LED Lamp (Standard)	$414	$190	$0	$325	$0
Total	**$53,107**	**$116,039**	**$119**	**$325**	**$0**
Sums may differ due to rounding.					

7.4.4 Process Evaluation Findings

The Evaluator completed a limited process evaluation of the Low-Income Program. Findings from the interviews with program staff are summarized in Section 7.2. The following sections present the required CWA metrics.

7.4.4.1 Required Participant Demographics and CWA Metrics

7.4.4.1.1 PARTICIPANT DEMOGRAPHICS

The following table summarizes the Act 1102 metrics summarized from the program tracking data.

TABLE 7-12 SHARE OF HOUSEHOLDS 65+ AND LIHEAP ELIGIBLE TRACKING DATA METRICS

Program	Age 65+	LIHEAP Eligible	Age 65+ and LIHEAP Eligible
Low-Income	86.6%	37.3%	23.9%

7.4.4.2 Consistent Weatherization Approach Required Metrics

This section presents the required metrics for the Low-Income Program.

Table 7-13 CWA Required Process Evaluation Metrics – Low-Income Program

Metric	Value
Pathway Name	Low-Income Program
CWA Implementation	Yes
Total Audits Completed	102
Total Submitted Projects	111 in 134 homes
Conversion Rate	109%
Measures installed per-project	1.62
Ex-Post Therm Savings per-project	284
Cost per participant	No customer co-pay. AOG paid $1,564/home
Percent of contractors promoting program	100%

Note: Some measures, may be installed in a different program year than the audit. In these cases, measures completed after the audit year are counted separately, which can reduce the number of measures reflected per project for the audit year.

TABLE 7-14 LOW-INCOME HOME ALIGNMENT WITH CWA REQUIREMENTS

Requirement	Alignment with Requirement	Percent of Participants Receiving
Includes Applicable DI Measures	Yes	10.4%
Aerators	Yes	0.7%
Showerheads	Yes	0.0%
Efficient lighting	Yes	9.7%
Advanced power strips	Yes	0.0%
Prequalifies homes based on year of construction or energy costs	Yes, the customer must have had a bill in the last twelve months that exceeded ten cents per square foot, or the home's age is 10 years or greater.	100.0%
TRC is used to assess program cost-effectiveness	Yes	N/A
Measures screened using SIR or comparable metric	Yes	N/A

Includes Core No Cost Measures	Yes	82.8%
Audit	Yes	76.1%
Ceiling insulation	Yes	49.3%
Duct sealing	Yes	39.6%
Air infiltration reduction	Yes	44.8%
Safety testing and/or measures	Yes	62.7%
Offers other utility measures	Yes	1.5%
Contractors are certified BPI Building Analyst or RESNET HERS Rater	Yes	N/A

The table below summarizes the health and safety spending.

TABLE 7-15 LOW-INCOME HEALTH AND SAFETY SPEND

IQWP H&S Measures	Count of Participants	Count of Participants Receiving	Total Quantity	Energy Savings (Therms)	Incentive
H&S Total	134	84	227	0	$28,892

7.4.5 Protocol A Database Review

The tracking system in the database conforms reasonably well to the tracking system protocol developed for use in Arkansas. The table below shows a summary of how well the program tracking systems meet the components of the protocol.

TABLE 7-16 LOW-INCOME PROTOCOL A SUMMARY

Category	Field	Status	Description of Issue(s)
Participating Customer Information	Unique customer identifier, such as account number	-	Account numbers are not included in the program data to limit the distribution of personally identifiable information.
	Customer contact information – name, mailing address, telephone number	✓	
	Date/s of major customer milestones such as rebate application date, approval date, rebate processing date, etc.	✓	
Measure-Specific Information	Measure Group (Equipment Type)	✓	
	Equipment Fuel/Energy Source	-	Heating type is not explicitly reported in the program tracking data. However, it is assumed heating fuel is gas.
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	×	This is not provided in the tracking data.

	Equipment Useful Life	×	This is not provided in the tracking data.
	Measure Name – Text Description	✓	
	Measure Name – Numerical Code	N/A	
	Serial Number	N/A	
	Reported age of equipment replaced	N/A	
	Reported measure type of equipment replaced	✓	
	Other inputs necessary for the use and compliance with the TRM	✓	
Vendor-Specific Information	Name and Contact Information for Contractor	✓	
	Contractor Type	✓	
	Date of Installation	✓	
	Cost of the installed equipment	×	
	Efficiency level of the installed equipment	✓	
Program Tracking Information	Date of the initial program contact/rebate information	×	
	Date of rebate/incentive paid	✓	
	Incentive amount paid to-date	✓	
	Incentive amounts remaining	✓	
	Application Status (i.e., number of applications approved, pending, or denied)	✓	
	Reason and reason code for application denial	×	
Program Costs	Overall program budgets	-	Not applicable to the LIPP tracking data.
	Program expenditures to-date	-	
	Incentive Costs	-	
	Administrative Costs	-	
	Marketing/Outreach Costs	-	
	Evaluation Costs	-	
Marketing and Outreach Activities	Advertising and marketing spending levels	-	Not applicable to the LIPP tracking data.
	Media schedules	-	
	Summary of number of community events/outreach activities	-	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	-	

7.5 Key Findings and Recommendations

Below are the key findings and recommendations for the PY2025 evaluation of the Low-Income Weatherization Program.

Overall, the LIPP performed well, achieving 105.6% of its net therms goal. The program achieved 99.5% of its expected therms savings. The Evaluator did not find discrepancies in ex-ante estimations. All differences in verified therms are attributed to the field verification findings.

As with the AOG Weatherization Program, program staff did not report any significant changes in the program design or delivery process. The low-income program continued to allow additional health and safety measures compared to the standard pathway, but staff did not identify any updates to these

offerings during the year. Staff also reported no changes to lead intake, contractor roles, documentation requirements, or coordination between AOG and CLEAResult.

APPENDICES

List of appendices:

Appendix A – Program Surveys;

Appendix B – Cost-effectiveness Analysis;

Appendix C – Survey-based Free-ridership Results;

Appendix D – C&I Site-level Reports; and

Appendix E – Residential Site Visit Findings.

Appendix A Program Surveys

A.1 Commercial and Industrial Solutions Program – Prescriptive Programs Participant Survey

2. Thank you for taking this survey to tell us about your company/organization's experience with [UTILITY]'s energy efficiency program. Your feedback is very important to us and will help us improve programs for customers like you. This survey should take about 10 minutes. Your responses are confidential and will be used for research purposes only. If you have questions about how we treat collected data, please see ADM's privacy policy at https://www.admenergy.com/privacy.

Upon completion of the survey, we will collect your email address to send a $10 electronic gift card as a token of our thanks.

Once you have entered a response for each question, use the arrow at the bottom right of the screen to get to the next question.

3. We would like to confirm that your organization received an incentive in [YEAR] for completing a [PROJECT_DESCRIPTION] through [UTILITY]'s [PATHWAY_NAME] Program at [LOCATION].

Is that correct?

1. Yes

2. No [Terminate]

98. Not sure [Terminate]

Awareness

4. How did you first learn about [UTILITY]'s [PATHWAY_NAME] Program incentives for efficient equipment or upgrades?

1. From a [UTILITY] Account Representative or Customer Service Representative

2. From a contractor

3. Friends or colleagues

4. From [UTILITY]'s website

5. Social media post

6. Through an internet search (e.g., online search engine)

7. Through an internet advertisement

8. Through a program sponsored workshop

96. Other (Please specify). [OPEN-ENDED]

98. Not sure

Motivation

5. Which factors were most important in your decision to invest in an energy efficiency project at your organization? (Please select all that apply).

[MULTI-SELECT]

1. Potential to save money on utility bills

2. Potential to save energy

3. Potential to reduce maintenance costs

4. Availability of a financial incentive

5. Availability of a facility assessment

6. Need to replace old but still working equipment

7. Need to replace broken equipment

8. Opportunity to adopt newer technology

9. Desire to protect the environment

10. Organizational carbon reduction or environmental goals

11. Recommendation from a [UTILITY] program contact

12. Recommendation from a contractor or trade ally

13. Recommendation from a family member, friend, or colleague

14. Part of a larger remodeling or renovation effort

98. Don't know

Program Experiences

6. The next few questions are about your experience with participating in the program.

Did you receive any technical services through the program that helped you identify or select equipment? This may have included a facility assessment completed by program staff or a participating contractor.

1. Yes

2. No

98. Not sure

7. Did you work on the incentive application(s)?

1. Yes

2. No

98. Not sure

[ASK IF Q7= 1]

8. How easy was the overall application process to receive your incentive?

1. Very easy

2. Somewhat easy

3. Neither easy nor difficult

4. Somewhat difficult

5. Very difficult

98. Not sure

[ASK IF Q8 > 3]

9. What did you find difficult about the application process? [OPEN-ENDED]

[ASK IF CONTRACTOR = 0]

10. Did you work with a contractor to install the [PATHWAY_NAME] Program?

1. Yes

2. No

98. Don't know

[ASK IF CONTRACTOR = 1 or Q10 = 1]

11. How did you select the contractor who you worked with through the [PATHWAY_NAME] Program?

1. It was a contractor I've worked with before

2. Word of mouth or recommendation from someone I know

3. I used the [UTILITY] program website

4. The contractor cold-called or contacted me

5. I found the contractor on my own

12. Did you encounter any of the following challenges while completing the [PROJECT_DESCRIPTION]?

[MULTI-SELECT and Randomize order of 2 – 8]

1. Did not have any challenges [MAKE ANSWER EXCLUSIVE]

2. Difficulty understanding equipment eligibility

3. Difficulty finding a trade ally or contractor to complete the project

4. Lack of internal support within my company

5. Confusion about who to contact for information about the program

6. Difficulty understanding the incentive amount

7. Difficulty getting the equipment you installed

8. Difficulty with the contractor that installed the equipment

96. Other challenges. Please specify: [OPEN-ENDED]

98. Not sure [MAKE ANSWER EXCLUSIVE]

[Display if Q11=8]

13. Describe the difficulty you had with the contractor that installed the equipment. [OPEN-ENDED]

[ASK IF Q11=2-96 is selected]

14. What could [UTILITY] have done to help your organization overcome the challenges you faced on this project? (Please select all that apply).

[Multiselect]

1. Provided higher incentives

2. More technical/engineering support

3. Improve application process

4. Make it clearer who to go to for assistance with the application

5. Shorten the pre-approval times

6. Pay the incentives more quickly

7. Provide more information on contractors

8. Nothing else was needed [MAKE ANSWER EXCLUSIVE]

96. Something else (Please describe). [OPEN-ENDED]

Barriers

15. When considering improvements to increase commercial and industrial energy efficiency, what are the most significant challenges that your organization faces? (Please select all that apply).

[MULTI-SELECT]

1. No challenges or barriers [MAKE ANSWER EXCLUSIVE]

2. High initial cost

3. Understanding potential areas for improvement/lack of technical knowledge

4. Funding competition with other investments/improvements

5. Long payback period/return on investment

6. Lack of awareness about available incentives for energy efficient equipment

7. Lack of corporate support for energy efficiency investments

8. Lack of staff time dedicated to energy efficiency upgrades

9. Don’t own building

96. Other (Please specify). [OPEN-ENDED]

98. Not sure [MAKE ANSWER EXCLUSIVE]

Program Satisfaction

16. How satisfied are you with [UTILITY]’s [PATHWAY_NAME] program overall? Would you say you are…

1. Very satisfied

2. Somewhat satisfied

3. Neither satisfied nor dissatisfied

4. Somewhat dissatisfied

5. Very dissatisfied

17. Can you briefly describe why you gave the program that satisfaction rating? [OPEN-ENDED]

18. How satisfied are you with [UTILITY] overall as your organization's utility service provider? Would you say you are…

1. Very satisfied

2. Somewhat satisfied

3. Neither satisfied nor dissatisfied

4. Somewhat dissatisfied

5. Very dissatisfied

Free-Ridership

MEASURE 1

19. Not including the project that your organization received an incentive for in [YEAR], has your organization completed any significant energy efficiency projects in the last three years?

1. Yes

2. No

98. Not sure

[Ask Q19 IF Q18 = 1]

20. Did you complete any of those projects without receiving a program incentive?

1. Yes

2. No

98. Not sure

[Ask Q20 IF Q18 = 1]

21. In the last three years, did your organization or business complete any energy efficiency projects like the [MEASURE1] project you completed at [LOCATION]? Please consider projects completed at this facility or at another facility operated by your organization.

1. Yes

2. No

98. Not sure

22. Did you have previous experience with the [PATHWAY_NAME] Program prior to [IMPLEMENTING1] the [MEASURE1] in [YEAR]?

1. Yes

2. No

98. Not sure

[Ask Q22 IF Q21= 1]

23. How important was your previous experience with the program in making your decision to [IMPLEMENT1] the [MEASURE1] at your facility? Would you say that it was…

1. Very important

2. Somewhat important

3. Only slightly important

4. Not at all important

98. Not sure

24. Did a [PATHWAY_NAME] Program representative or other [UTILITY] representative recommend that you [IMPLEMENT1] the [MEASURE1] at your facility?

1. Yes

2. No

98. Not sure

[Ask Q24 IF Q6 = 1]

25. Was the [MEASURE1] recommended through technical support or the facility assessment that you received?

1. Yes

2. No

98. Not sure

26. Did you have plans to [IMPLEMENT1] the [MEASURE1] at the facility before deciding to participate in the [PATHWAY_NAME] Program?

1. Yes

2. No

98. Not sure

27. Would you have completed the [MEASURE1] project even if you had not participated in the program?

1. Yes

2. No

98. Not sure

[Ask Q27 IF Q6 = 1 OR Q24=1]

28. If the [PATHWAY_NAME1] Program representative had not recommended [IMPLEMENTING1] the [MEASURE1], how likely is it that you would have [IMPLEMENTED1] it anyway? Would you say that you…

1. Definitely would have

2. Probably would have

3. Probably would not have

4. Definitely would not have

98. Not sure

29. Would you have been financially able to [IMPLEMENT1] the [MEASURE1] at your facility if the incentives from the [PATHWAY_NAME1] Program were not available?

1. Yes

2. No

98. Not sure

[Ask Q29 IF Q28 = 2]

30. To confirm, your organization would NOT have allocated the funds to complete a similar energy saving project if the program incentive was not available. Is that correct?

1. Yes, that is correct.

2. No, that is not correct.

98. Not sure

[Ask Q30 IF Q29 = 2]

31. In your own words, can you tell me what your organization would have likely done if the financial incentive was not available from the program? [OPEN-ENDED]

32. Did the program incentive help the [MEASURE1] project receive approval from your organization?

1. Yes

2. No

98. Not sure

33. If the incentive from the [PATHWAY_NAME] Program had not been available, how likely is it that you would have [IMPLEMENTED1] the [MEASURE1] at your facility anyway? Would you say that you…

1 Definitely would have

2 Probably would have

3 Probably would not have

4 Definitely would not have

98. Not sure

34. Did you [IMPLEMENT1] more [MEASURE1] or complete a bigger project than you otherwise would have without the program?

1. Yes

2. No

98. Not sure

[Ask Q34 IF ENERGY_USING1 = 1]

35. Did you choose equipment that was more energy efficient than you would have chosen had you not participated in the program?

1. Yes
2. No
98. Not sure

[Ask Q35 IF Q34 =1]

36. What type of equipment, if any, would you have installed if you had not participated in the program? [OPEN-ENDED]

37. Did you [IMPLEMENT1] the [MEASURE1] earlier than you otherwise would have without the program?

1. Yes
2. No
98. Not sure

[Ask Q37 IF Q36 = 1]

38. When would you otherwise have [IMPLEMENTED1] the [MEASURE1]? Would you have done it …

1. within 6 months
2. 7 months to 1 year
3. more than 1 year up to 2 years
4. more than 2 years up to 3 years
5. more than 3 years up to 5 years
6. More than 5 years
98. Not sure

MEASURE 2 [DISPLAY BLOCK IF SECOND_MEASURE = 1]

39. The next few questions are about the [MEASURE2] that our records say you also implemented.

In the last three years, did your organization or business complete any energy efficiency projects like the [MEASURE2] project completed at [LOCATION]? Please consider projects completed at this facility or at another facility operated by your organization.

1. Yes

2. No

98. Not sure

[Ask IF Q38= 1]

40. How important was your previous experience with the program in making your decision to [IMPLEMENT2] the [MEASURE2] at your facility? Would you say that it was…

1. Very important

2. Somewhat important

3. Only slightly important

4. Not at all important

98. Not sure

41. Did a [PATHWAY_NAME] Program representative or other [UTILITY] representative recommend that you [IMPLEMENT2] the [MEASURE2] at your facility?

1. Yes

2. No

98. Not sure

[Ask IF Q40 = 1]

42. Was the [MEASURE2] recommended through the technical support or facility assessment that you received?

1. Yes

2. No

98. Not sure

43. Did you have plans to [IMPLEMENT2] the [MEASURE2] at the facility before deciding to participate in the [PATHWAY_NAME] Program?

1. Yes

2. No

98. Not sure

44. Would you have completed the [MEASURE2] project even if you had not participated in the program?

1. Yes
2. No
98. Not sure

[Ask IF Q40= 1 OR Q41=1]

45. If the [PATHWAY_NAME] Program representative had not recommended [IMPLEMENTING2] the [MEASURE2], how likely is it that you would have [IMPLEMENTED2] it anyway? Would you say that you…

1. Definitely would have
2. Probably would have
3. Probably would not have
4. Definitely would not have
98. Not sure

46. Would you have been financially able to [IMPLEMENT2] the [MEASURE2] at your facility if the incentives from the [PATHWAY_NAME2] Program were not available?

1. Yes
2. No
98. Not sure

[Ask IF Q45 = 2]

47. To confirm, your organization would NOT have allocated the funds to complete a similar energy saving project if the program incentive was not available. Is that correct?

1. Yes, that is correct.
2. No, that is not correct.
98. Not sure

[Ask IF Q46= 2]

48. In your own words, can you tell me what your organization would have likely done if the financial incentive was not available from the program? [OPEN-ENDED]

49. Did the program incentive help the [MEASURE2] project receive approval from your organization?

1. Yes
2. No
98. Not sure

50. If the incentive from the [PATHWAY_NAME] Program had not been available, how likely is it that you would have [IMPLEMENTED2] the [MEASURE2] at your facility anyway? Would you say that you…

1 Definitely would have
2 Probably would have
3 Probably would not have
4 Definitely would not have
98. Not sure

51. Did you [IMPLEMENT2] more units of [MEASURE2] or complete a bigger project than you otherwise would have without the program?

1. Yes
2. No
98. Not sure

[Ask IF ENERGY_USING2 = 1]

52. Did you choose [MEASURE2B] equipment that was more energy efficient than you would have chosen had you not participated in the program?

1. Yes
2. No
98. Not sure

[Ask IF Q51 =1]

53. What type of equipment, if any, would you have installed if you had not participated in the program? [OPEN-ENDED]

54. Did you [IMPLEMENT2] the [MEASURE2] earlier than you otherwise would have without the program?

1. Yes
2. No
98. Not sure

[Ask IF Q53 = 1]

55. When would you otherwise have [IMPLEMENTED2] the [MEASURE2]? Would you have done it …

1. within 6 months
2. 7 months to 1 year
3. more than 1 year up to 2 years
4. more than 2 years up to 3 years
5. more than 3 years up to 5 years
6. More than 5 years
98. Not sure

Spillover

56. Since completing your [UTILITY] project, have you installed any other energy-efficient equipment that saves natural gas at a site served by [UTILITY]?

1. Yes
2. No [Skip to Firmographics]
98. Not sure

[Display if Q55 = 1]

57. Did you install any of that equipment without getting a rebate, free installation, or other discount through a [UTILITY] program?

1. Yes
2. No [Skip to Firmographics]

98. Not sure

[Display if Q56 = 1]

58. What additional energy efficient equipment have you installed without getting a rebate, free installation, or other discount through a [UTILITY] program?

[MULTISELECT]

1. Natural gas boiler cut-out controls
2. Vent dampers on natural gas furnaces or boilers
3. Natural gas boiler reset controls
4. Natural gas boiler tune-up
5. Efficient burner on a natural gas boiler
6. Door weather-stripping to prevent air leakage
7. Low-flow faucet aerators
8. Water heater jackets on natural gas water heaters
9. Water heater pipe insulation
10. Low-flow showerheads
11. Commercial conveyor ovens
12. Combination ovens
13. Commercial fryers
14. Commercial steam cookers
15. Commercial underfired broilers
16. Commercial conveyor broilers
17. Commercial kitchen demand ventilation controls
18. Low-flow pre-rinse spray valves
19. Didn't implement any measures [Skip to Firmographics]

96. Something else [OPEN-ENDED]

98. Not sure [Skip to Firmographics]

[Display if Q56 = 1]

59. Which of the following best describes why you decided to install this equipment without getting a program incentive?

[MULTI SELECT RANDOMIZE ORDER, BUT FIX OTHER AND NOT SURE]

1. Didn't know whether equipment qualified for financial incentives
2. Equipment did not qualify for financial incentives
3. Too much paperwork for the financial incentive application
4. Financial incentive was insufficient
5. Didn't have time to complete paperwork for financial incentive application
6. Didn't know about financial incentives until after equipment was purchased
7. We did receive an incentive [MAKE ANSWER EXCLUSIVE] [Skip to Firmographics]

96. Other (Please specify). [OPEN-ENDED]

98. Not sure [MAKE ANSWER EXCLUSIVE]

[Display if Q57 = 1, Natural gas boiler cut-out controls]

60. What is the total BTU/hour capacity of all boilers where cut-out controls were installed? [OPEN-ENDED]

[Display if Q57 = 2, Vent dampers installed on natural gas furnace or boiler]

61. What is the total BTU/hour capacity of all furnaces or boilers where vent dampers were installed? [OPEN-ENDED]

[Display if Q57 = 3, Natural gas boiler reset controls]

62. What is the total BTU/hour capacity of all boilers where reset controls were installed? [OPEN-ENDED]

[Display if Q57 = 4, Natural gas boiler tune-up]

63. What is the total BTU/hour capacity of all boilers that received a tune-up? [OPEN-ENDED]

[Display if Q57 = 5, Installed more efficient burner on a boiler]

64. What is the total BTU/hour capacity of the boilers where a more efficient burner was installed? [OPEN-ENDED]

[Display if Q57 = 5, Installed more efficient burner on a boiler]

65. What is the nameplate efficiency of each boiler, or the average if more than one?

[Open-ended response, e.g., % efficiency or AFUE]

[Display if Q57 = 6, Door weather-stripping to prevent air leakage]

66. How many total linear feet of door sweeps or weather-stripping did you install? [OPEN-ENDED]

[Display if Q57 = 6, Door weather-stripping to prevent air leakage]

67. What was the average gap width (in inches) before installation? [OPEN-ENDED]

[Display if Q57 = 7, Low flow faucet aerators]

68. How many low-flow faucet aerators did you install? [OPEN-ENDED]

[Display if Q57 = 8, Water heater jackets]

69. On how many water heaters did you install jackets? [OPEN-ENDED]

[Display if Q57 = 9, Water heater pipe insulation]

70. How many feet of pipe insulation did you install on water heater pipes? [OPEN-ENDED]

[Display if Q57 = 10, Low flow showerheads]

71. How many low-flow showerheads did you install? [OPEN-ENDED]

[Display if Q57 = 10, Low flow showerheads]

72. In what type of building were they installed?

1. Hospital/Nursing Home

2. Hospitality (e.g., hotel, motel)

3. Commercial (e.g., office, retail)

4. Fitness Center

5. School

96. Other (Please describe). [OPEN-ENDED]

[Display if Q57 = 11, Commercial conveyor oven]

73. What type(s) of conveyor ovens did you install? (Select all that apply).

[MULTI-SELECT]

1. Single Rack

2. Double Rack

[Display if Q57 = 11, Commercial conveyor oven]

74. How many single rack commercial conveyor ovens did you install? [OPEN-ENDED]

[Display if Q57 = 11, Commercial conveyor oven]

75. How many double rack commercial conveyor ovens did you install? [OPEN-ENDED]

[Display if Q57 = 12, Combination ovens]

76. How many combination ovens did you install? [OPEN-ENDED]

[Display if Q57 = 13, Commercial fryers]

77. How many commercial fryers did you install? [OPEN-ENDED]

[Display if Q57 = 14, Commercial steam cookers]

78. How many commercial steam cookers did you install in each of the following pan sizes?

[Enter a number for each. Enter 0 if none.]

1. 3-pan cookers

2. 4-pan cookers

3. 5-pan cookers

4. 6-pan cookers

5. Larger than 6-pan cookers

98. Not sure of pan sizes

[Display if Q57 = 15, Commercial underfired broilers]

79. How many underfired broilers did you install? [OPEN-ENDED]

[Display if Q57 = 15, Commercial underfired broilers]

80. What is the length of each broiler in feet?

1. 1 foot

2. 2 feet

3. 3 feet

4. 4 feet

5. 5 feet

6. 6 feet

98. Don't know

[Display if Q57 = 15, Commercial underfired broilers]

81. How many underfired broilers did you install in each length?

[Enter a number for each. Enter 0 if none.]

1. 1-foot broilers

2. 2-foot broilers

3. 3-foot broilers

4. 4-foot broilers

5. 5-foot broilers

6. 6-foot broilers

98. Not sure of lengths

[Display if Q57 = 16, Commercial conveyor broilers]

82. How many commercial conveyor broilers did you install? [OPEN-ENDED]

[Display if Q57 = 17, Commercial kitchen demand ventilation controls]

83. What is the total horsepower (HP) of the fans controlled by the demand ventilation system? [OPEN-ENDED]

[Display if Q57 = 17, Commercial kitchen demand ventilation controls]

84. In what type of building were the controls installed?

1. Hotel
2. 24-Hour Restaurant
3. Casual Dining
4. Fast Food
5. Prison
6. University Dining
7. School (includes summer sessions)
8. School (no summer sessions)

[Display if Q57 = 18, Low-flow pre-rinse spray valves]

85. How many low-flow pre-rinse spray valves did you install? [OPEN-ENDED]

ATTRIBUTION QUESTIONS [DISPLAY IF EQUIPMENT IS SELECTED]

[Loop and Merge using Q57 response. The table below displays the merge fields to set up]

Response Option	Merge Field 1	Merge Field 2	Merge Field 3
Natural gas boiler cut-out controls	install the boiler cut-out control(s)	installed the boiler cut-out control(s)	installing the boiler cut-out control(s)
Vent dampers on natural gas furnaces or boilers	install the vent damper(s)	installed the vent damper(s)	installing the vent damper(s)
Natural gas boiler reset controls	install the boiler reset control(s)	installed the boiler reset control(s)	installing the boiler reset control(s)
Natural gas boiler tune-up	complete the boiler tune-up(s)	completed the boiler tune-up(s)	completing the boiler tune-up(s)
Efficient burner on a natural gas boiler	install the efficient burner(s)	installed the efficient burner(s)	installing the efficient burner(s)
Door weather-stripping to prevent air leakage	install the door weather-stripping	installed the door weather-stripping	installing the door weather-stripping
Low-flow faucet aerators	install the low-flow faucet aerator(s)	installed the low-flow faucet aerator(s)	installing the low-flow faucet aerator(s)

Water heater jackets on natural gas water heaters	install the water heater jacket(s)	installed the water heater jacket(s)	installing the water heater jacket(s)
Water heater pipe insulation	install the water heater pipe insulation	installed the water heater pipe insulation	installing the water heater pipe insulation
Low-flow showerheads	install the low-flow showerhead(s)	installed the low-flow showerhead(s)	installing the low-flow showerhead(s)
Commercial conveyor ovens	install the conveyor oven(s)	installed the conveyor oven(s)	installing the conveyor oven(s)
Combination ovens	install the combination oven(s)	installed the combination oven(s)	installing the combination oven(s)
Commercial fryers	install the fryer(s)	installed the fryer(s)	installing the fryer(s)
Commercial steam cookers	install the steam cooker(s)	installed the steam cooker(s)	installing the steam cooker(s)
Commercial underfired broilers	install the underfired broiler(s)	installed the underfired broiler(s)	installing the underfired broiler(s)
Commercial conveyor broilers	install the conveyor broiler(s)	installed the conveyor broiler(s)	installing the conveyor broiler(s)
Commercial kitchen demand ventilation controls	install the kitchen demand ventilation control(s)	installed the kitchen demand ventilation control(s)	installing the kitchen demand ventilation control(s)
Low-flow pre-rinse spray valves	install the pre-rinse spray valve(s)	installed the pre-rinse spray valve(s)	installing the pre-rinse spray valve(s)
Something else	install the other equipment you installed	installed the other equipment you installed	installing the other equipment you installed
Didn't implement any measures	Didn't implement any measures	Didn't implement any measures	Didn't implement any measures

[Ask Q85 if Q56 = 1]

86. How important was your experience with the program in your decision to [Merge Field1]?

[SCALE 0 "Not at all important" - 10 "Very important", 98 = Not sure]

[Ask Q86 if Q56 = 1]

87. If you had NOT participated in the program, how likely is it that your organization would have [Merge Field 2]?

[SCALE 0 “Not at all likely” - 10 “Extremely likely”, 98 = Not sure]

[Ask Q87 if [Q85=0,1,2,3 AND Q86=0,1,2,3]

OR IF [Q85=8,9,10 AND Q86=8,9,10]

88. You scored the importance of your program experience to your decision to [Merge Field 1] with [Q85 RESPONSE] out of 10 possible points. You ALSO scored the likelihood of [Merge Field 3] if your organization had not participated in the program with [Q86 RESPONSE] out of 10 possible points.

Can you please explain the role the program made in your decision to implement this measure? [OPEN-ENDED]

Firmographics

89. Which best describes your facility where you installed the rebated equipment? Would you say that this facility is…

1. Your company’s only location

2. One of several locations owned by your company

3.The headquarters location of a company with several locations

98. Not sure

99. Prefer not to state

90. Does your company rent or own and occupy, or own and rent the facility to someone else at this location?

1. Rent

2. Own and occupy

3. Own and rent to someone else

98. Not sure

99. Prefer not to state

91. How would you describe the building type for the [LOCATION] facility?

1. College / University

2. Grocery or Convenience Store

3. Hotel / Motel
4. Industrial / Manufacturing
5. K-12 School
6. Medical / Healthcare
7. Office
8. Religious Worship
9. Restaurant
10. Retail
11. Warehouse
98. Not sure
99. Prefer not to state

92. How long have you been in business at this location?

1. Less than 1 year
2. 1 – 2 years
3. More than 2 years to 5 years
4. More than 5 years to 10 years
5. More than 10 years
98. Not sure
99. Prefer not to state

93. Do you have any other comments that you would like to relay to [UTILITY] about energy efficiency in the commercial and industrial sector or about their programs? [OPEN-ENDED]

94. Thank you for taking the time today to complete this survey. As stated previously, we will be sending you a $10 electronic gift card as a thank you for your response. The email address we have on file for you is [EMAIL], is this information correct?

1. Yes, please send my electronic gift card to the above email address
2. No, please send my electronic gift card to the following email address [OPEN-ENDED]
3. No, I do not wish to receive a gift card

A.4 Commercial and Industrial Solutions Program – C&I Solutions Direct Install Participant Survey

2. Thank you for taking this survey to tell us about your company/organization's knowledge and awareness of [UTILITY]'s [PROGRAM_DESC] Program. Your feedback is very important to us and will help us improve programs for customers like you. This survey should take about 10 minutes. Your responses are confidential and will be used for research purposes only. If you have questions about how we treat collected data, please see ADM's privacy policy at https://www.admenergy.com/privacy.

Upon completion of the survey, we will collect your email address to send a $10 electronic gift card as a token of our thanks.

Once you have entered a response for each question, use the arrow at the bottom right of the screen to get to the next question.

3. How did you FIRST learn about [UTILITY]'s program for direct installation measures?

1. From a(n) [UTILITY] Account Representative or Customer Service Representative
2. From a(n) [UTILITY] program representative
3. From a Trade Ally/contractor/equipment vendor/ energy consultant
4. Friends or colleagues
5. From [UTILITY]'s website
6. Social media post
7. Through an internet search (e.g., online search engine)
8. Through an internet advertisement
9. Through a program sponsored workshop
96. Other (please explain). [OPEN-ENDED]
98. I don't know

Awareness: DI Measures

4. Our records show the following equipment was installed at [Location].

For each item, please tell us if that is correct.: [MATRIX OPTIONS: Yes=1, No=2, I don't know=98]

1. Weather-stripping [Display if WEATHERSTRIPPING=1]
2. Low-flow faucet aerators [Display if AERATOR=1]
3. Low-flow showerheads [Display if SHOWER=1]

4. Overhead door weather-stripping [Display if OVERHEADWEATHERSTRIPPING=1]

5. Pre-rinse spray valves (PRSVs) [Display if SPRAYVALVE=1]

6. Steam traps [Display if STEAMTRAP=1]

7. DrySmart Controls [Display if DRYSMART=1]

[Display if any in Q4 = 1]

5. Did you remove any of that equipment? [MATRIX OPTIONS: Yes=1, No=2, I don't know=98]

[CARRY FORWARD STATEMENTS FROM Q4]

[Display if any in Q5 = 1]

6. Why did you remove the equipment? Please select all that apply. [MULTI-SELECT] [MATRIX OPTIONS: They were no longer working properly=1, I purchased new items that I liked better=2, I liked my old items better, so I reinstalled them=3, I performed some remodeling or maintenance that required the removal of these items=4, Other=96, I don't know=98]

[CARRY FORWARD STATEMENTS FROM Q5 = 1]

Free-Ridership

Measure 1

7. Before participating in the [UTILITY] program, had you ever installed any [DI_MEASURE1] at your facility?

1. Yes

2. No

98. I don't know

8. Before participating in the [UTILITY] program, did you have plans to install the [DI_MEASURE1] at your facility?

1. Yes

2. No

98. I don't know

[Display if Q8 = 1]

9. When would you have installed the [DI_MEASURE1] if it wasn't installed through the program?

1. Within 6 months
2. 7 months to 1 year
3. More than 1 year
4. Never
98. I don't know

10. Prior to this project, did your organization participate in any [UTILITY] energy efficiency programs?

1. Yes
2. No
98. I don't know

[Display if Q10 = 1]

11. How important was previous experience with [UTILITY] programs in making your decision to install the [DI_MEASURE1]?

1. Not at all important
2. Slightly important
3. Somewhat important
4. Very important
5. Did not have previous experience with the program
98. I don't know

12. If the [UTILITY] program had not recommended installing the [DI_MEASURE1], how likely is it that you would have installed it anyway?

1. Definitely would not have installed
2. Probably would not have installed
3. Probably would have installed
4. Definitely would have installed
98. I don't know

13. If it was not provided by the program, would your organization have been financially able to install the [DI_MEASURE1]?

1. Yes
2. No
98. I don't know

14. If the program had not installed the [DI_MEASURE1], how likely is it that you would have installed it on your own?

1. Definitely would not have installed
2. Probably would not have installed
3. Probably would have installed
4. Definitely would have installed
98. I don't know

Measure 2 [Display section if DI_MEASURE2 <> empty]

15. Before participating in the [UTILITY] program, had you ever installed any [DI_MEASURE2] at your facility?

1. Yes
2. No
98. I don't know

16. Before participating in the [UTILITY] program, did you have plans to install the [DI_MEASURE2] at your facility?

1. Yes
2. No
98. I don't know

[Display if Q16= 1]

17. When would you have installed the [DI_MEASURE2] if it wasn't installed through the program?

1. Within 6 months
2. 7 months to 1 year

3. More than 1 year

4. Never

98. I don't know

18. Prior to this project, did your organization participate in any [UTILITY] energy efficiency programs?

1. Yes

2. No

98. I don't know

[Display if Q18= 1]

19. How important was previous experience with [UTILITY] programs in making your decision to install the [DI_MEASURE2]?

1. Not at all important

2. Slightly important

3. Somewhat important

4. Very important

5. Did not have previous experience with the program

98. I don't know

20. If the [UTILITY] program had not recommended installing the [DI_MEASURE2], how likely is it that you would have installed it anyway?

1. Definitely would not have installed

2. Probably would not have installed

3. Probably would have installed

4. Definitely would have installed

98. I don't know

21. If it was not provided by the program, would your organization have been financially able to install the [DI_MEASURE2]?

1. Yes

2. No

98. I don't know

22. If the program had not installed the [DI_MEASURE2], how likely is it that you would have installed it on your own?

1. Definitely would not have installed
2. Probably would not have installed
3. Probably would have installed
4. Definitely would have installed
98. I don't know

Customer Satisfaction

23. How easy was it to schedule the installation?

1. Very easy
2. Somewhat easy
3. Difficult
4. Very difficult
98. Not applicable

[Display if Q23= 3 or 4]

24. What was difficult about scheduling the installation? [OPEN-ENDED]

25. How would you rate the professionalism of the installer(s)?

1. Excellent
2. Good
3. Fair
4. Poor
98. Not applicable

[Display if Q25 = 4]

26. Why do you give the installer that rating? [OPEN-ENDED]

27. Was the work area left clean after the installation?

1. Yes

2. No

98. I don't know

28. Did a program representative mention or promote any of the incentives for additional energy efficiency improvements that [UTILITY] offers?

1. Yes

2. No

98. I don't know

29. On a scale of 1-5, where 1 is “very dissatisfied” and “5” is “very satisfied”, how satisfied are you with:

[Scale: 1 = Very dissatisfied 2= Somewhat dissatisfied 3= Neither satisfied nor dissatisfied 4. Somewhat satisfied 5. Very satisfied, 98 = I don't know/Not applicable]

a) The installation of the [ALL_MEASURES]

b) The steps you had to take to get through the program

c) The amount of time it took to have the [ALL_MEASURES] installed

d) The program overall

e) [UTILITY] as your natural gas service provider

[Display if any in Q29 < 3]

30. Please describe the ways in which you were not satisfied with the aspects of the program mentioned above? [OPEN-ENDED]

31. Would you say that your participation in the [UTILITY] Program has:

1. Greatly decreased your satisfaction with [UTILITY]

2. Somewhat decreased your satisfaction with [UTILITY]

3. Did not affect your satisfaction with [UTILITY]

4. Somewhat increased your satisfaction with [UTILITY]

5. Greatly increased your satisfaction with [UTILITY]

32. How likely is it that you would recommend the [PROGRAM_DESC] Program to a friend or colleague?

[Scale: 0 (Not at all likely) – 10 (Extremely likely)]

33. Why do you give it that rating? [OPEN-ENDED]

34. Do you have any suggestions for improving the program? [OPEN-ENDED]

Firmographics

35. Which best describes your facility at [LOCATION]? Would you say the facility is:

1. Your company's only location
2. One of several locations owned by your company
3. The headquarter location of a company with several locations
4. I don't know
99. Prefer not to answer

36. Does your company rent or own and occupy, or own and rent the facility to someone else at this location?

1. Rent
2. Own and occupy
3. Own and rent to someone else
98. I don't know
99. Prefer not to answer

37. Which of the following best describes how your organization is billed for natural gas used at this location?

1. We are billed directly by [UTILITY] for the natural gas we use
2. We are NOT billed directly by [UTILITY] for the natural gas we use. Our natural gas bill is handled by another part of our company or a third party service provider

3. We are NOT billed directly by [UTILITY] for the natural gas we use. The cost for our natural gas is included in our rent/lease

98. I don't know

99. Prefer not to answer

38. What type of business is at this location?

1. College / University

2. Grocery or convenience store

3. Hotel/Motel

4. Industrial/Manufacturing

5. K-12 School

6. Medical / healthcare

7. Office

8. Religious worship

9. Restaurant

10. Retail

11. Warehouse

12. Other (Specify) [OPEN-ENDED]

98. I don't know

99. Prefer not to answer

Closing

[Display if Mode = Email]

39. Thank you for taking the time today to complete this survey. As stated previously, we will be sending you a $10 electronic gift card as a thank you for your responses. The email address we have on file for you is [EMAIL], is this information correct?

1. Yes, please send my electronic gift card to the above email address

2. No, please send my electronic gift card to the following email address [OPEN-ENDED]

3. No, I do not wish to receive a gift card

[Display if Mode = Phone]

40. Thank you for taking the time today to complete this survey. As stated previously, we will be sending you a $10 electronic gift card as a thank you for your responses.

Please provide an email address to send this card too. [OPEN-ENDED]

Appendix B Cost-Effectiveness Analysis

B.1 Overview

The Evaluator estimated the cost-effectiveness for the overall energy efficiency and demand response portfolio of programs, based on PY2025 costs and savings estimates provided by AOG and their third-party implementer, CLEAResult. This appendix provides the cost-effectiveness results, as well as a brief overview of the approach taken by the Evaluator. The portfolio and energy efficiency and demand response programs pass all the cost-effectiveness tests except the RIM test. The table below presents the cost-effectiveness results for the portfolio.

TABLE B-0-1 PY2024 COST-EFFECTIVENESS RESULTS

Program	TRC	UCT	RIM	PCT	TRC Net Benefits
Commercial & Industrial Solutions Program	1.69	1.87	0.52	5.15	$407,138
Equipment Rebate	1.39	1.00	0.39	2.04	$166,676
AOG Weatherization	1.70	2.20	0.50	1.87	$1,309,747
Low-Income Program	2.84	2.13	0.50	3.63	$435,369
Energy Efficiency Arkansas (EEA)	0.00	0.00	0.00	0.00	$0
Regulatory	0.00	0.00	0.00	0.00	-$70,868
Total	**1.71**	**1.84**	**0.49**	**2.34**	**$2,248,063**
Sums may differ due to rounding.					

B.2 Approach

The California Standard Practice Model was used as a guideline for the calculations, along with guidance from the AR TRM v10.0. The cost-effectiveness analysis methods that were used in this analysis are among the set of standard methods used in this industry and include the Utility Cost Test (UCT)[11], Total Resource Cost Test (TRC), Ratepayer Impact Measure Test (RIM), and Participant Cost Test (PCT). All tests weigh monetized benefits against costs. These monetized amounts are presented as Net Present Value (NPV) evaluated over the lifespan of the measure. The benefits and costs differ for each test based on the perspective of the test. The definitions below are taken from the California Standard Practice Manual.

The TRC measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's costs.

The UCT measures the net costs of a demand-side management program as a resource option based on the costs incurred by the program administrator (including incentive costs) and excluding any net costs incurred by the participant. The benefits are similar to the TRC benefits. Costs are defined more narrowly.

The PCT is the measure of the quantifiable benefits and costs to the customer due to participation in a program. Since many customers do not base their decision to participate in a program entirely on

11 The UCT is also referred to as the Program Administrator Cost Test (PACT).

quantifiable variables, this test cannot be a complete measure of the benefits and costs of a program to a customer.

The RIM test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. Rates will go down if the change in revenues from the program is greater than the change in utility costs. Conversely, rates or bills would go up if revenues collected after program implementation are less than the total costs incurred by the utility in implementing the program. This test indicates the direction and magnitude of the expected change in customer bills or rate levels.

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 are shown in the table below.[12]

TABLE B-0-2 QUESTIONS ADDRESSED BY THE VARIOUS COST TESTS

Cost Test	Questions Addressed
Participant Cost Test (PCT)	▪ Is it worth it to the customer to install energy efficiency?
	▪ Is it likely that the customer wants to participate in a utility program that promotes energy efficiency?
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?
Utility Cost Test (UCT)	▪ Do total utility costs increase or decrease?
	▪ What is the change in total customer bills required to keep the utility whole?
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 all of the benefits greater than all of 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?

Overall, the results of all four cost-effectiveness tests provide a more comprehensive picture than the use of any one test alone. The TRC cost test addresses whether energy efficiency is cost-effective overall. The PCT, UCT, and RIM address whether the selection of measures and design of the program are balanced from the perspective of the participants, utilities, and non-participants. The scope of the benefit and cost components included in each test are summarized in the table below.[13]

[12] https://www.epa.gov/energy/understanding-cost-effectiveness-energy-efficiency-programs

[13] *Ibid*.

TABLE B-0-3 BENEFITS AND COSTS INCLUDED IN EACH COST-EFFECTIVENESS TEST

Test	Benefits	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
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, transmission, and distribution	▪ Program overhead costs ▪ Utility/program administrator incentive 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 ▪ Additional resource savings ▪ Monetized non-energy benefits as outlined by the TRM v9.0	▪ Program overhead costs ▪ Program installation costs ▪ Incremental measure 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 ▪ Lost revenue due to reduced energy bills ▪ Utility/program administrator installation costs

B.3 Non-Energy Benefits

In Arkansas, the IEM, in collaboration with AOG and the other investor-owned utilities (IOU) and other stakeholders through the Parties Working Collaboratively (PWC), have developed a uniform set of benefits to be associated with measures implemented in the portfolio. These Non-Energy Benefits (NEB) are an addition to programs under the authorization of Arkansas TRM v10.0 Volume 1, Protocol L. After reviewing the guidance from the PWC, the Arkansas Public Service Commission (Commission) issued Order No. 30 on December 10, 2015, which provided direction and guidance regarding the inclusion of NEBs in the AR TRM V10.0, as follows.14

14 See the AR TRM v10.0, Protocol L.

"The Commission therefore orders and directs that the following three categories of NEBs be consistently and transparently accounted for in all applications of the TRC test, as it is applied to measures, programs, and portfolios:

- *benefits of electricity, natural gas, and propane energy savings (i.e., other fuels);*
- *benefits of public water and wastewater savings; and*
- *benefits of avoided and deferred equipment replacement costs as conditioned herein."*

In response to the Commission Order for NEBs outlined above, the Evaluator complied with Protocol in the AR TRM v10.0, which encompasses NEBs:

- Protocol L1: Non-Energy Benefits for Electricity, Natural gas, and Liquid Propane ("other fuels")
- Protocol L2: Non-Energy Benefits for Water Savings
- Protocol L3: Non-Energy Benefits of Avoided and Deferred Equipment Replacement Costs.

This recommended approach has been developed jointly by the IEM and the PWC for each category as directed by the Commission. Below is a summary of the NEBs that were calculated in each program.

- BSP: captured natural gas (Therms),water savings (gallons) and ARC; and
- HSP: captured natural gas (Therms), propane savings (gallons), water savings (gallons) and ARC.

Methodologies and measure-level results for each NEB are found in each of the body of the report.

B.4 Cost of Carbon

The Evaluator incorporated the cost of carbon in the cost benefit analysis, a low ($0/CO2 price per ton), medium ($15/CO2 price per ton), and high value ($30/CO2 price per ton).15

The Evaluator utilized the 'Carbon_pricing_calcs_FINAL' calculator; the IEM-developed Excel work is identified as Exhibit A; Order 48, Docket 13-002-U.16

The specifics of this ruling included the following:

> "*Each utility may use its individual discretion in determining the carbon cost pricing assumptions in its EE cost-effectiveness testing, subject to the approval of the Commission in its process for the approval of EE plans in each three-year planning cycle, but the Commission directs that the PWC to propose a consistent mechanism for illustrating the rate and bill impacts of modeling low, medium, and high carbon cost scenarios on the cost-effectiveness of its EE programs. The results of scenarios should be included in future annual SARP reports, including the Annual Reports and Excel Workbooks*."17

15 *Ibid.*

16 *Ibid*

17 *Ibid.*

The selected region was SPSO (SPP South), the cent per energy savings (kWh) is found in the table below.

TABLE B-0-4 UTILITY-SPECIFIC LOW, MEDIUM AND HIGH VALUES

Scenario	CO2 Price per ton	¢ / kWh
Per dollar for calculations	per $	0.080
Low case	$0	0.000
Middle case	$15	1.100
High case	$30	2.300

However, the Evaluator performed the cost-effectiveness testing assuming a cost of carbon of $0 for the Low, Medium, and High scenarios. This is consistent with the PY2024 evaluation.

Results of this scenario are provided in the following tables.

TABLE B-0-5 TOTAL NET BENEFITS BY COST TEST

Program	TRC Benefits	UCT Benefits	RIM Benefits	PCT Benefits
Commercial & Industrial Solutions Program	$407,138	$436,314	$348,899	$894,512
Equipment Rebate	$166,676	-$102	-$14,340	$339,228
AOG Weatherization	$1,309,747	$1,320,692	$557,544	$1,315,241
Low-Income Program	$435,369	$265,778	$265,778	$427,114
Energy Efficiency Arkansas (EEA)	$0	$0	$0	$0
Regulatory	-$70,868	-$70,868	-$70,868	$0
Total	**$2,248,063**	**$1,951,814**	**$1,087,014**	**$2,976,095**
Sums may differ due to rounding.				

TABLE B-0-6 TOTAL COSTS BY COST TEST

Program	TRC Costs	UCT Costs	RIM Costs	PCT Costs
Commercial & Industrial Solutions Program	$589,940	$502,524	$1,815,288	$215,753
Equipment Rebate	$422,501	$410,113	$1,038,338	$326,201
AOG Weatherization	$1,866,184	$1,103,037	$4,833,537	$1,512,321
Low-Income	$236,146	$236,146	$1,008,686	$162,530
Energy Efficiency Arkansas (EEA)	$0	$0	$0	$0
Regulatory	$70,868	$70,868	$70,868	$0
Total	**$3,185,638**	**$2,322,688**	**$8,766,717**	**$2,216,804**
Sums may differ due to rounding.				

TABLE B-0-7 SUMMARY OF COST TEST FOR PORTFOLIO

Program	TRC	UCT	RIM	PCT	TRC Net Benefits
Commercial & Industrial Solutions Program	1.69	1.87	0.52	5.15	$407,138
Equipment Rebate	1.39	1.00	0.39	2.04	$166,676
AOG Weatherization	1.70	2.20	0.50	1.87	$1,309,747
Low-Income Program	2.84	2.13	0.50	3.63	$435,369
Energy Efficiency Arkansas (EEA)	0.00	0.00	0.00	0.00	$0
Regulatory	0.00	0.00	0.00	0.00	-$70,868
Total	**1.71**	**1.84**	**0.49**	**2.34**	**$2,248,063**
Sums may differ due to rounding.					

B.5 Marginal Line Losses

The Evaluator, in partnership with AOG, incorporated marginal line losses into the cost effectiveness analysis.

B.6 Economic Inputs for Cost-effectiveness Analysis

The Evaluator used the economic inputs provided by AOG for the cost benefit analysis, this included avoided costs that were estimated using the Real Economic Carrying Charge (RECC) approach. The rates utilized for avoided water and avoided propane use were from Protocol L in the AR TRM v10.0.

The Evaluator used the discount rates provided by AOG to perform the cost benefit analysis, and these values align with the rates used in the PY2024 to PY2026 Plan. The evaluated net energy savings (kWh) and demand reductions (kW) values utilized in the cost benefit analysis include a line loss factor, those values are in the table below. Additionally, the table below outlines the discount rates, escalation rate and avoided costs used in the cost-effectiveness analysis.

TABLE B-0-8 ECONOMIC INPUTS FOR COST EFFECTIVENESS ANALYSIS

Discount Rates	
Utility (TRC)	5.12%
Utility (UCT)	5.12%
Utility (RIM)	6.18%
Societal (SCT)	4.06%
Participant (PCT)	13.22%
Cost of Carbon	
Low Scenario (CO2 price per ton)	$0.00
Medium Scenario (CO2 price per ton)	$0.00
High Scenario (CO2 price per ton)	$0.00
Line Losses	
Line Losses (demand)	8.37%
Line Losses (energy)	8.37%
Line Losses (therm)	2.69%
Escalation Rates	
Escalation rate - Electricity	2.00%
Escalation rate - Gas	1.92%
Avoided Costs	
Avoided Energy ($/kWh)	$0.0351
Avoided Demand ($/kW)	$109.39
Avoided Natural Gas ($/therm)	$0.7015
Avoided Water ($/gallon)	$0.0097
Avoided Propane ($/gallon)	$2.5080

Appendix C Survey-Based Free-Ridership Results

This section presents tables of responses to the free-ridership results survey questions. The results are presented for each of the following survey instruments:

- C&I Solutions Prescriptive Rebates
- C&I Solutions Direct Install

Questions are tabulated based on the responses used in the NTG analysis. This may include responses dropped because the questions were skipped by the respondent as well as questions repeated because the respondent was asked about multiple measures. As a result, the counts of responses presented in the following tables may not equal the number of survey responses.

C.1 Commercial and Industrial Solutions Program – Prescriptive Rebates (Multi-utility Results)

Would you have been financially able to install the equipment or measures without the financial incentive from the Program?	Percent (n = 7)
Yes	85.7%
No	0.0%
Don't know	14.3%
To confirm, your organization would NOT have allocated the funds to complete a similar energy saving project if the program incentive was not available. Is that correct?	**Percent (n = 0)**
Yes	N/A
No	N/A
Don't know	N/A
Did you have plans to install the measure before participating in the program?	**Percent (n = 8)**
Yes	87.5%
No	12.5%
Don't know	0.0%
Would you have completed the project even if you had not participated in the program?	**Percent (n = 8)**
Yes	75.0%
No	12.5%
Don't know	12.5%
If the incentive from the Program had not been available, how likely is it that you would have installed [Equipment/Measure] anyway?	**Percent (n = 7)**
Definitely would have	28.6%
Probably would have	42.9%
Probably would not have	14.3%
Definitely would not have	0.0%
Don’t know	14.3%
Did you choose equipment that was more energy efficient than you would have chosen had you not participated in the program? [SKIP, IF MEASURE = CONTROLS]	**Percent (n = 7)**
Yes	14.3%
No	85.7%

Don't know	0.0%
How important was previous experience with the Program in making your decision to install [Equipment/Measure]?	**Percent (n = 6)**
Very important	50.0%
Somewhat important	50.0%
Only slightly important	0.0%
Not at all important	0.0%
Don’t know	0.0%
If the Program representative had not recommended implementing the [Equipment/Measure], how likely is it that you would have implemented it anyway?	**Percent (n = 0)**
Definitely would have	N/A
Probably would have	N/A
Probably would not have	N/A
Definitely would not have	N/A
Don’t know	N/A
Not including the project that your organization received an incentive for in [YEAR], has your organization completed any significant energy efficiency projects in the last three years?	**Percent (n = 8)**
Yes	75.0%
No	25.0%
Don't know	0.0%
Did you complete any of those projects without receiving a program incentive or rebate?	**Percent (n = 6)**
Yes	33.3%
No	33.3%
Don't know	33.3%
In the last three years, did you complete any energy efficiency projects similar to the [MEASURE] project implemented at the facility located at [LOCATION]?	**Percent (n = 6)**
Yes	83.3%
No	16.7%
Don't know	0.0%
Did you install the [MEASURE1] earlier than you otherwise would have without the program?	**Percent (n = 7)**
Yes	28.6%
No	57.1%
Don't know	14.3%
In the last three years, did you complete any energy efficiency projects similar to the [MEASURE] project implemented at the facility located at [LOCATION]?	**Percent (n = 2)**
within 6 months	50.0%
7 months to 1 year	50.0%
more than 1 year up to 2 years	0.0%
more than 2 years up to 3 years	0.0%
more than 3 years up to 5 years	0.0%
More than 5 years	0.0%
Don’t know	0.0%

C.2 Commercial and Industrial Solutions Program – C&I Solutions Direct Install (Multi-utility Results)

If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	Percent (n = 12)
Yes	16.7%
No	75.0%
I don't know	8.3%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 12)**
Yes	16.7%
No	83.3%
I don't know	0.0%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 2)**
Within 6 months	0.0%
7 months to 1 year	0.0%
More than 1 year	50.0%
Never	0.0%
I don't know	50.0%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 3)**
Not at all important	66.7%
Slightly important	0.0%
Somewhat important	0.0%
Very important	33.3%
Did not have previous experience with the program	0.0%
I don't know	0.0%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 12)**
Definitely would not have installed	50.0%
Probably would not have installed	25.0%
Probably would have installed	25.0%
Definitely would have installed	0.0%
I don't know	0.0%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 12)**
Yes	33.3%
No	33.3%
I don't know	33.3%
If it was not provided by the program, would your organization have been financially able to install the [Field-DI_MEASURE1]?	**Percent (n = 8)**
Definitely would not have installed	37.5%
Probably would not have installed	25.0%
Probably would have installed	37.5%
Definitely would have installed	0.0%
I don't know	0.0%

Appendix D C&I Site Level Reports

EA-0002450403

Program	C&I Solutions
Project ID	EA-0002450403
Facility SIC Code	8062 - General Medical and Surgical Hospitals
Measures	Retrofit Commissioning
Annual Consumption	83,523 therms

Project Description

This participant is a medical facility that received incentives from Arkansas Oklahoma Gas Utilities for implementing the following:

- ECM #1: Retrofit Commissioning

Savings will come from more effectively using and managing the facility's HVAC systems, thus reducing natural gas consumption. The ex-ante claimed savings for this project are 65,014 therms.

Measurement and Verification Effort

ADM performed a desk review of project documentation supplied by the implementer to verify energy conservation measures. The M&V effort for this project follows the guidelines of the 2022 International Performance Measurement and Verification Protocol (IPMVP) Option C – Whole Facility.

Savings Calculations and Parameters

Evaluator used a whole-building approach to perform regression and analysis based on TMY3 Weather Data and monthly usage (CCF). The ex-ante monthly usage and heating degree days were used to generate a linear formula for estimating ex post consumption. The following tables show the relevant HVAC parameters required for annual energy savings.

HVAC Linear Formula Parameters

Month	Heating Degree Days	Pre-usage (CCF)	Post-Usage (CCF)
1	257	26,811	11,422
2	213	23,469	10,198
3	109	15,575	7,305
4	50	11,125	5,675
5	15	8,465	4,700
6	0	7,324	4,282
7	0	7,308	4,276
8	0	7,321	4,281

9	4	7,638	4,397
10	40	10,353	5,392
11	92	14,289	6,834
12	199	22,419	9,813

Calculations for the annual therm savings use the following equation:

$$Annual\ \ therms\ Savings = \ Consumption_{pre} - Consumption_{post}$$

Where:

Consumption$_{pre}$ = energy consumption prior to the completed project (CCF)

Consumption$_{post}$ = energy consumption after project completion (CCF)

Measure Life

Estimated Useful Life for Respective Measures

Measure	EUL
Retrofit Commissioning	5 years

Results

This project was approved for a 2 year close out plan. The calculated ex post savings for PY2025 are shown in the summary table below.

Verified Gross Savings/Realization Rates

Measure	Expected Annual therms Savings	Realized Annual therms Savings	Realization Rate	Lifetime therms Savings
Retrofit Commissioning	65,014	65,014	100%	325,071
TOTAL	**65,014**	**65,014**	**100%**	**325,071**

Measure Cost, Incentive, & Payback

The Evaluator reviewed the invoices associated with this project and verified a cost of $76,867. Measure payback is summarized in the table below.

Cost, Incentive, and Payback

Measure	Annual Therm Savings	Cost per Therm	Annual Energy Cost Savings	Incremental Cost	Base Incentive	Adjusted Incentive	Payback w/ Incentive	Payback w/o Incentive
Retrofit Commissioning	65,014	$0.76	$50,124	$76,867	-	$37,522	0.8	1.5

EA-0006107545

Program	C&I Solutions
Project ID	EA-0006107545
Facility SIC Code	6029 – Commercial Banks, NEC
Measures	Smart Thermostat
Annual Consumption	N/A

Project Description

This participant is a large office building that received incentives from Arkansas Oklahoma Gas Utilities for implementing the following:

- ECM #1: Smart Thermostats

This included the installation of smart thermostats and associated and occupied/unoccupied temperatures settings which generate savings by reducing load during unoccupied periods. The ex-ante claimed savings for this project are 3,774 therms.

Measurement and Verification Effort

ADM performed a desk review of project documentation supplied by the implementer to verify energy conservation measures. The M&V effort for this project follows the guidelines of the 2022 International Performance Measurement and Verification Protocol (IPMVP) Option A - Retrofit Isolation: Key Parameter Measurement using a bin analysis and associated engineering equations.

Savings Calculations and Parameters

Saving calculation methods consisted of a work paper that CLEAResult provided containing approved methodologies for savings calculations. Methodology includes utilizing a bin analysis based on typical meteorological year 3 (TMY3) data based on general building schedules. The following information and assumptions were gathered from site specific documentation and from CLEAResult work paper.

- Temperature heating setpoints
- Combustion efficiency
- TMY3 based on Fort Smith Regional Airport

Parameters used in these calculations can be seen in the table below:

Smart Thermostat Parameters

Building Type	Heating Area (sqft.)	Total Required Supply Airflow (CFM)	Balance Temp (°F)	Heating Load at Balance Temp (%)	Heating System Efficiency (%)
Large Office	34,218	2,053	65	0%	80%

Measure Life

Estimated Useful Life for Respective Measures

Measure	EUL
Smart Thermostat	11 years

Results

Verified Gross Savings/Realization Rates

Measure	Expected Annual therms Savings	Realized Annual therms Savings	Realization Rate	Lifetime therms Savings
Smart Thermostat	3,774	3,774	100%	18,870
TOTAL	**3,774**	**3,774**	**100%**	**18,870**

Measure Cost, Incentive, & Payback

The Evaluator reviewed the invoices associated with this project and verified a cost of $9,537. Measure payback is summarized in the table below.

Cost, Incentive, and Payback

Measure	Annual Therm Savings	Cost per Therm	Annual Energy Cost Savings	Incremental Cost	Base Incentive	Adjusted Incentive	Payback w/ Incentive	Payback w/o Incentive
Boiler Installation	3,774	$0.887	$3,347	$9,537	-	$3,397	1.8	2.8

EA-0005406060

Program	C&I Solutions
Project ID	EA-0005406060
Facility SIC Code	5251 – Hardware Stores
Measures	Demand Control Ventilation
Annual Consumption	N/A

Project Description

This participant is a retail facility that received incentives from Arkansas Oklahoma Gas Utilities for implementing the following:

- ECM #1: Demand Control Ventilation

Savings will come from optimizing ventilation rates based on associated occupied/unoccupied temperatures settings. The ex-ante claimed savings for this project are 8,667 therms.

Measurement and Verification Effort

ADM performed a desk review of project documentation supplied by the implementer to verify energy conservation measures. The M&V effort for this project follows the guidelines of the 2022 International Performance Measurement and Verification Protocol (IPMVP) Option A - Retrofit Isolation: Key Parameter Measurement.

Savings Calculations and Parameters

Energy savings methodology includes utilizing a bin analysis based on typical meteorological year 3 (TMY3) data based on general building schedules. The following information and assumptions were gathered from site specific documentation:

- Baseline temperature heating setpoints
- Post installation occupied and unoccupied heating setpoints
- Typical full loads are 80% of all heating capacity
- Combustion Efficiency

Measure Life

Estimated Useful Life for Respective Measures

Measure	EUL
Demand Control Ventilation	10 years

Results

Verified Gross Savings/Realization Rates

Measure	Expected Annual therms Savings	Realized Annual therms Savings	Realization Rate	Lifetime therms Savings
Demand Control Ventilation	8,667	8,667	100%	130,005
TOTAL	**8,667**	**8,667**	**100%**	**130,005**

The realization rate for this project is 100%.

Measure Cost, Incentive, & Payback

The Evaluator reviewed the invoices associated with this project and verified a cost of $31,500. Measure payback is summarized in the table below.

Cost, Incentive, and Payback

Measure	Annual Therm Savings	Cost per Therm	Annual Energy Cost Savings	Incremental Cost	Base Incentive	Adjusted Incentive	Payback w/ Incentive	Payback w/o Incentive
Demand Control Ventilation	8,667	$.487	$4,220	$38,340	-	$7,800	7.2	9.1

EA-0005906951

Program	C&I Solutions
Project ID	EA-0005906951
Facility SIC Code	622110 - General Medical and Surgical Hospitals
Measures	Steam Trap Replacement
Annual Consumption	N/A

Project Description

This participant is a medical facility that received incentives from Arkansas Oklahoma Gas Utilities for implementing the following:

- ECM #1: Steam Trap Replacement

The site uses steam throughout the facility primarily for three process needs: space heating, domestic water heating, and other process heating loads such as sterilization. Savings will come from repairing the failed steam traps throughout the site's steam system. The ex-ante claimed savings for this project are 15,485 therms.

Measurement and Verification Effort

ADM performed a desk review of project documentation supplied by the implementer to verify energy conservation measures. The M&V effort for this project follows the guidelines of the 2022 International Performance Measurement and Verification Protocol (IPMVP) Option A - Retrofit Isolation: Key Parameter Measurement.

Savings Calculations and Parameters

Calculations for the annual therms savings are calculated as shown in the equation below:

$$Annual\ \ therms\ Savings = \frac{Steam\ Trap\ Discharge\ Rate \times OpHrs \times h_{fg}}{EC_{Base} \times Therm\ Conversion\ Factor}$$

Where:

Steam Trap Discharge Rate = steam loss from the system (lb/hr)

OpHrs = annual hours system is pressurized (hrs/yr)

H_{fg} = latent heat of evaporation (BTU/lb)

EC_{Base} = combustion efficiency of boiler (%), 82%

Therm Conversion Factor = 100,000 (BTU/therm)

The discharge rate (lb/hr) was calculated using Armstrong's "Steam Loss Through Failed Trap Calculator" (found here:https://www.armstronginternational.com/knowledge/resources-library/carbons/steam-loss)

Parameters used in these calculations can be seen in the tables below:

Steam Trap Parameters

Steam Trap #	Orifice Size (in.)	Inlet Pressure (psig)	Outlet Pressure (psig)	Discharge Rate (lb/hr)	Feedwater Temperature (°F)	Boiler Efficiency	Steam Enthalpy	Operating Hours
1	1/4	15	2	30.38	212	81%	1,164	8,760
2	7/64	15	2	5.82	212	81%	1,164	8,760
3	11/47	15	2	41.40	212	81%	1,164	8,760
4	3/16	15	2	26.58	212	81%	1,164	8,760
5	7/64	50	2	20.64	212	81%	1,180	8,760
6	3/16	50	2	60.65	212	81%	1,180	8,760

Measure Life

Estimated Useful Life for Respective Measures

Measure	EUL
Steam Trap Replacement	5 years

Results

Verified Gross Savings/Realization Rates

Measure	Expected Annual therms Savings	Realized Annual therms Savings	Realization Rate	Lifetime therms Savings
Steam Trap Replacements	15,485	15,485	100%	77,425
TOTAL	**15,485**	**15,485**	**100%**	**77,425**

The realization rate for this project is 100%.

Measure Cost, Incentive, & Payback

The Evaluator reviewed the invoices associated with this project and verified the cost of $10,500. Measure payback is summarized in the table below.

Cost, Incentive, and Payback

Measure	Annual Therm Savings	Cost per Therm	Annual Energy Cost Savings	Incremental Cost	Base Incentive	Adjusted Incentive	Payback w/ Incentive	Payback w/o Incentive
Steam Trap Replacements	15,485	$0.49	$15,485	$10,500	$10,500	$10,500	0.0	0.7

Appendix E Residential Site Visit Findings

This section provides an overview of discrepancies or issues encountered in site visits. The table below contains the field technician's notes for specific projects.

TABLE E-0-1 SITE VISIT FINDINGS OVERVIEW

Program	Measure	Project ID (s)	Discrepancy Type	Notes
AOGWP	Duct Sealing	EA-0004215774	CFM Test Discrepancy	"I attempted to pressurize the duct system to the target pressure of 25 Pa but was only able to reach 18 Pa. At this pressure, the system recorded a leakage rate of 843 CFM. Applying the "Can't Reach Pressure" (CRP) adjustment factor of 1.22, the corrected leakage value is 1,028 CFM. I verified the test setup multiple times to ensure accuracy. The duct system utilizes a wall chase as the return air pathway, which appears to be the primary source of leakage. This area is difficult to seal effectively, contributing to the elevated leakage rate. Additionally, the trade ally removed duct insulation to access and seal the ducts but did not reinstall the insulation upon completion. This led to condensation forming on the exposed ducts. As a result, the participant incurred costs to hire an HVAC contractor for repairs. However, some areas remain unrepaired." See Figure 0-1.
AOGWP	Health & Safety	EA-0004647968, EA-0004832797	Unable to Verify Measures	"The site was reported to have a vapor barrier, smoke detector, combination CO2/smoke detector, and bathroom exhaust fan installed. Upon inspection, none of these items were found in place. A vapor barrier and bathroom exhaust fan were present; however, the homeowner indicated that both had been installed prior to the trade ally's weatherization work."
LIPP	Duct Sealing	EA-0003273879	CFM Test Discrepancy	"I received a CFM25 test result of 204 and the trade ally reported 164. I did not spot any obvious reasons for the discrepancy. This site had multiple air returns throughout the house, and I made sure they were all covered for the test. There was mastic tape applied to the air handler and mastic on the ductwork. It was a cold day (about 28 degrees) when I ran the test which may have had some effect on the test result."
AOGWP	Duct Sealing	EA-0005589910	CFM Test Discrepancy	"During post-testing, I recorded a duct leakage result of 256 CFM25, while the

				trade ally reported 224 CFM25. The discrepancy may be attributed to the setup conditions. The air return for this duct system was located on a wall covered with wallpaper, and the return grill was relatively small. To attach the duct blaster collar, I had to apply tape directly to the wallpapered surface. Out of concern for damaging the wallpaper, I avoided pressing the tape firmly. As a result, it's likely that some air escaped around the collar during the test, contributing to the slightly elevated leakage reading." See Figure 0-2.
AOGWP	Duct Sealing	EA-0004064776, EA-0004831640	CFM Test Discrepancy	"Trade Ally did not apply mastic, or mastic tape to supply registers in the floor." See Figure 0-3.
AOGWP	Health & Safety	EA-0004475206	Unable to Verify Measure	"Vapor barrier was not identified in crawlspace. Homeowner also said there was not a vapor barrier installed."

This section provides photographic evidence of the findings provided in the table above.

FIGURE 0-1 EA-0004215774 AOWP DUCT SEALING PROJECT

FIGURE 0-2 EA-0003273879 LIPP DUCT SEALING PROJECT

FIGURE 0-3 EA-0004064776, EA-0004831640 AOGWP DUCT SEALING PROJECT