OKLAHOMA GAS and ELECTRIC COMPANY

2024 Arkansas Energy Efficiency Program Portfolio Annual Report

Section 9: Annual Reporting Requirements, and Order No. 29 in Docket No. 06-004-R.
Version 3.0 May 20, 2014

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1.0 Executive Summary

Oklahoma Gas and Electric Company ("OG&E" or "Company") hereby submits its Energy Efficiency ("EE") program portfolio Annual Report for Program Year ("PY") 2024 to the Arkansas Public Service Commission ("APSC" or "Commission") pursuant to Order No. 29 in Docket 06-004-R. This report is required to be filed annually by May 1, in accordance with Order No. 7 filed in Docket 13-002-U on May 20, 2014.

HISTORY:

OG&E began implementation of EE programs in Arkansas in December 2007 with its Quick Start program portfolio. The Quick Start Portfolio continued through December 31, 2009. That portfolio contained seven programs in total: five OG&E-administered programs and two state-administered programs. The OG&E-administered programs included the LivingWise® Student Energy Education program, the Residential Energy Audit program, the Commercial Lighting program, the Motor Replacement program, and the Compact Fluorescent Light ("CFL") program. The two state-administered programs included were the Arkansas Weatherization Program ("AWP"), and the Energy Efficiency Arkansas ("EEA") program. The CFL program was not launched with the other Quick Start programs and was ultimately discontinued. The Quick Start portfolio allowed OG&E to build a program delivery framework for its customers in the Arkansas jurisdiction.

The initial Comprehensive Energy Efficiency Program was approved on February 3, 2010 for an 18-month implementation period ending on June 30, 2011. The initial Portfolio included the continuation of the two statewide programs, AWP, and EEA, and three OG&E programs: LivingWise® Student Energy Education, Commercial Lighting, and Motor Replacement programs. The Residential Energy Audit program was renamed the Custom Energy Report ("CER") program and the new OG&E Weatherization program was introduced. The OG&E Weatherization program was established to offer weatherization for residential customers who would not otherwise qualify for the AWP.

The Comprehensive Portfolio was approved on June 30, 2011 for the remainder of PY 2011. PYs 2012 and 2013 were subsequently approved on December 30, 2011. The two statewide programs, AWP, and EEA were continued along with OG&E's Commercial Lighting program and the LivingWise® Student Energy Education program. The OG&E Weatherization program was modified to a collaborative program with Arkansas Oklahoma Gas Corporation ("AOG") to take advantage of administrative efficiencies and cost sharing. The Motor Replacement Program was incorporated into the new Commercial and Industrial Standard Offer Program ("C&I SOP"). In addition, new programs were created for both residential and non-residential customers. For residential customers, the A/C Tune-up and duct repair program, the Window Unit A/C program, and the Multi-Family program were created to provide a more diverse residential portfolio of programs. After the plan was approved, it was determined the Multi-Family program could not be implemented as designed and was discontinued. For non-residential customers, in addition to

the C&I SOP, the Commercial Tune-up program was created to inspect and tune commercial HVAC systems.

In January 2013, the APSC opened Docket 13-002-U to resolve issues related to the development and implementation of the second three-year cycle of EE programs in Arkansas. In Order No. 2 of that same Docket, the APSC approved the request of the Parties Working Collaboratively ("PWC") extending the filing date for the second three-year cycle of EE programs from June 1, 2013 to June 1, 2014. The Commission also directed that energy savings targets, budgets, and the incentive structure previously approved by the Commission shall also be used for PY 2014. The exception to this was if the Utilities sought Commission approval of proposed modifications to their EE portfolios.

OG&E reviewed its portfolio performance through 2013 and filed an application to modify its existing portfolio and enhance its ability to achieve Commission-approved targets for 2014. OG&E's interim filing proposed to modify its portfolio by discontinuing three programs, adding one new program, increasing the budget for industrial programs, and aligning its rebate structure with Commission approved targets. The three programs that were discontinued were the Residential HVAC program, the Commercial and Industrial HVAC program, and the Window Unit AC program. The new program added was the Multi-Family Direct Install program. On March 17, 2014, the Commission approved OG&E's modified portfolio.

In February 2014, the APSC issued Order No. 15, in Docket 13-002-U extending for a second year, the filing date for the second three-year cycle of programs to June 1, 2015. The extension allowed time to complete efforts to develop a collaborative weatherization program, core C&I programs, and complete a potential study. In addition, the Commission approved a target increase of 0.90 percent of 2013 kWh sales for PY 2015. To meet the increased target for 2015, OG&E filed an application to increase the budgets by 40 percent for 3 of its programs to enhance its ability to achieve the new target. On April 1, 2015, the APSC approved OG&E's budget increases for PY 2015.

In August 2015, the APSC issued Order No. 67, in Docket 07-075-TF approving OG&E's PY 2016 Portfolio of Programs. Modifications made from PY 2015 to PY 2016 include the discontinuation of the AWP program, additions to the measure mix, and resulting budget increase for the OG&E/AOG (Unified) Weatherization program.

On June 1, 2016, OG&E filed the next triennial 2017-2019 Portfolio Plan and was approved by the Commission on October 7, 2016 through Order No. 73 in docket 07-075-TF. The most significant change from the prior portfolio is the consolidation of programs into sector-specific umbrella programs offering multiple marketing channels to improve accessibility to incentive funds when one channel is performing in a more cost-effective manner than another. The Commercial Lighting and Standard Offer Programs were combined into one Commercial Energy Efficiency Program ("CEEP") with multiple marketing channels such as Schools and Government, Large C&I, and Small Business Solutions. Multi-Family Direct Install and Schools Energy Education (LivingWise®) were both combined into a Home Energy Efficiency Program ("HEEP") with additional channels such as Consumer Products, Residential Solutions, and HVAC Replacement and Tune-ups. The Consistent Weatherization Approach ("CWA"),

referred to as the OG&E/AOG (Unified) Weatherization Program ("UWP") in Annual Reports previous to Order No. 22 of Docket No. 13-002-U, and the EEA Program remained unchanged as stand-alone programs.

On March 8, 2018, OG&E filed for the inclusion of the Continuous Energy Improvement ("CEI") Pilot Program for 2018 and 2019 into the existing CEEP Program in the 2017-2019 Portfolio Plan and was approved on March 23, 2018 through Order No. 80, in Docket 07-075-TF.

On March 15, 2019, OG&E filed the next triennial 2020-2022 Portfolio Plan and was approved by the Commission on June 17, 2019 through Order No. 88 in docket 07-075-TF. To assist in addressing Act 1102 Low-Income and over age 65 customers, OG&E carved out five percent of the CWA Program funds and incorporated additional health and safety measures. A soft cap of $3,800 per home was implemented. The HEEP Program placed more emphasis on in-home assessments with direct install measures to drive participation in HVAC tune-ups and replacements to offset the reduction in lighting kWh savings. It also targeted remaining cost-effective envelope measure opportunities as it begins to move away from lighting due to the anticipated EISA baseline changes. CEI and Retro-Commissioning ("RCx") channels were added to the CEEP Program.

In October of 2021, the APSC issued Order No. 62, in Docket 13-002-U approving Program Year 2023 as a bridge year and adopted Program Years 2024-2026 as the next triennial period of EE programming. The Commission also directed that energy savings targets, budgets, and the incentive structure previously approved by the Commission for PY2022 shall also be used for PY2023. The Commission amended the current 10 percent budget flexibility provision for Program Years 2021, 2022, and 2023, allowing utilities the unilateral ability to shift up to 20 percent of any program budget, with the exception of Act 1102 pilots and programs, to another without notice, as well as reinstate the budget flexibility provision that allows utilities to increase their overall EE Portfolio budgets by up to 10 percent without formal notice, provided that the utilities reasonably anticipate that the overall Portfolio plans will remain cost effective with the 10 percent flexibility. A second EE Potential Study was also approved which will inform the 2027-2029 filing.

On August 1, 2023, OG&E filed the next triennial 2024-2026 Portfolio Plan and was approved by the Commission on November 9, 2023, through Order No. 107 in docket 07-075-TF. To continue addressing Act 1102 Low-Income and over age 65 customers, OG&E again carved out five percent of the CWA Program funds and emphasized the importance of health and safety measures. The HEEP and CWA Program goals were adjusted to ensure that as many Act 1102 customers are reached as possible. Under the HEEP Program, a Positive Energy New Home Construction channel was added. OG&E also expanded the CEEP program with the addition of commercial cooking and fleet strategic energy management programs that will offer multiple energy savings measures and targeted programs for a wider variety of commercial and industrial customers.

Table 1-1 below summarizes historical annual incremental EE savings achieved by OG&E's previous efforts:

Table 1-1 Historical Annual Incremental EE Savings Achieved

Program Year	Energy (kWh)	% Increase from Prior Year	Demand (kW)	% Increase from Prior Year
2008	2,434,738		666	
2009	5,607,951	130%	921	38%
2010	4,143,096	-26%	1,317	43%
2011	4,985,328	20%	1,520	15%
2012	7,595,741	52%	1,840	21%
2013	13,410,729	77%	2,797	52%
2014	13,794,070	3%	2,883	3%
2015	20,543,040	49%	3,115	8%
2016	23,257,181	13%	3,434	10%
2017	21,130,663	-9%	3,396	-1%
2018	22,556,832	7%	3,974	17%
2019	26,071,158	16%	4,591	16%
2020	28,050,242	8%	4,878	6%
2021	28,540,540	2%	5,479	12%
2022	28,149,987	-1%	4,806	-12%
2023	30,700,870	9%	5,697	19%
2024	31,338,220	2%	5,446	-4%

GOALS AND OBJECTIVES:

Order No. 15 in Docket 08-137-U established default energy savings target as percentage of 2010 energy sales. In 2020, the energy savings target increased to 1.20 percent of 2018 energy sales, adjusted for self-direct customers per Order No. 43 in Docket 13-002-U. For the 2024-2026 Portfolio cycle, the energy savings targets were set at 1.20 percent of 2022 energy sales, established by Order No. 68 in Docket 13-002-U.

The annual energy savings targets as a percentage of baseline sales and the corresponding filed energy savings targets and goals are shown in Table 1-2 below.

Table 1-2 Annual Energy Savings Targets and Goals

Program Year	Baseline Sales Year	Percent of Sales	Energy Savings Targets (MWh)	Filed Energy Savings Goals (MWh)
2011	2010	0.25%	6,752	6,753
2012	2010	0.50%	11,364	11,364

2013	2010	0.75%	16,844	16,844
2014	2010	0.75%	16,288	16,288
2015	2013	0.90%	18,904	19,879
2016	2014	0.90%	18,623	19,328
2017	2015	0.90%	18,058	18,063
2018	2015	0.90%	18,058	18,063
2019	2015	1.00%	20,531	20,136
2020	2018	1.20%	25,909	24,675
2021	2018	1.20%	24,555	25,200
2022	2018	1.20%	24,499	25,301
2023	2018	1.20%	24,499	25,301
2024	2022	1.20%	23,041	26,960

OG&E's filed energy savings goal for 2024 was 26,959,506 kWh. After adjusting for self-direct customers from the baseline year, the baseline target was 23,041,080 kWh. The 2024 EE portfolio actual achieved energy savings were 31,338,220 kWh.

MAJOR ACCOMPLISHMENTS:
OG&E continued its success in 2024 by exceeding both the targeted and filed energy savings goals, reaching 116% of the filed goal while spending 95% of the planned budget.

PROGRESS ACHIEVED:
The program portfolio has demonstrated continued success by consistently outperforming savings goals over the past seven years. The historical annual energy savings to goal achievements is illustrated in Table 1-3 below. Table 1-4 below depicts the growth in year over year kWh achieved savings and improved cost per kWh success.

Table 1-3 Historical Annual Energy Savings to Goal Achievement

Program Year	Energy Savings Goal (kWh)	Energy Savings Achieved (kWh)	% of Goal Achieved
2011	6,752,758	4,985,328	74%
2012	11,363,560	7,595,741	67%
2013	16,843,560	13,410,729	80%
2014	16,287,689	13,794,070	85%
2015	19,879,081	20,543,040	103%
2016	19,328,413	23,257,180	120%
2017	18,062,811	21,130,663	117%
2018	18,062,811	22,556,832	125%
2019	20,136,187	26,071,158	129%
2020	24,675,000	28,050,242	114%

2021	25,200,145	28,540,540	113%
2022	25,301,215	28,149,987	111%
2023	25,301,215	30,700,870	121%
2024	26,959,506	31,338,220	116%

Table 1-4 Historic kWh savings and costs per kWh achievement

Program Year	Energy (kWh)	Demand (kW)	Total Portfolio Costs	$/kWh	$/kW
2011	4,985,328	1,520	$2,071,159	$0.42	$1,363
2012	7,595,741	1,840	$3,149,264	$0.41	$1,712
2013	13,410,729	2,797	$3,714,378	$0.28	$1,328
2014	13,794,070	2,883	$4,547,079	$0.33	$1,577
2015	20,543,040	3,115	$6,075,144	$0.30	$1,950
2016	23,257,180	3,434	$6,362,822	$0.27	$1,853
2017	21,130,663	3,396	$6,404,252	$0.30	$1,886
2018	22,556,832	3,974	$6,940,945	$0.31	$1,747
2019	26,071,158	4,591	$7,184,464	$0.28	$1,565
2020	28,050,242	4,878	$6,866,723	$0.24	$1,408
2021	28,540,540	5,479	$6,480,491	$0.23	$1,183
2022	28,149,987	4,806	$7,391,967	$0.26	$1,538
2023	30,700,870	5,697	$8,704,948	$0.28	$1,522
2024	31,338,220	5,466	$9,239,192	$0.29	$1,691

HIGH-LEVEL RECAP:
The 2024 portfolio produced 31,338,220 kWh exceeding OG&E's savings goal. These ongoing energy savings will accumulate over the life of the EE measures. The EE portfolio recoverable expenses of $9,239,192 for 2024 were 95% of the approved annual budget of $9,745,754. Customer incentives and rebates account for 53% of the total portfolio expenses.

HIGHLIGHTS OF WELL-PERFORMING PROGRAMS:
The Commercial & Industrial program offerings demonstrated continued success in 2024 under the CEEP umbrella, achieving 120% of the planned savings goal while spending 93% of the budget. This accounted for 71% of the total Portfolio energy savings.

There are five residential channel offerings under the HEEP umbrella. The combined channels achieved 117% of the HEEP savings goal while spending 80% of the planned budget. HEEP accounted for 9% of OG&E's residential portfolio energy savings and penetrates a hard-to-reach customer segment allowing for more customers to participate and be further educated in the energy management of their home.

WHAT'S WORKING AND WHAT'S NOT:
The residential portfolio of EE programs worked well in 2024. The HEEP Program portion of the residential portfolio achieved 117% of energy savings goals while spending 80% of the total

HEEP residential filed budget. The current EM&V reports validate the impact and process success of OG&E's residential programs. The CWA achieved 105% of energy its energy savings goal while spending 105% of its budget. For the 2024 program year CLEAResult continued to implement the CWA channel. Five participating contractors returned and continued to implement weatherization measures for qualified customers. Significant improvements were made to provide additional health and safety benefits to Act 1102 participants as well.

TRAINING ACHIEVEMENTS:
OG&E provided in person and virtual educational sessions with commercial and industrial customers on the benefits of energy efficiency.

EM&V ACTIVITIES:
ADM and Associates, Inc. was selected to perform the evaluation, measurement, and verification ("EM&V") for the entire EE program portfolio for PY 2024. EM&V activities were performed in accordance with the Arkansas Technical Reference Manual ("TRM") Version 9.2. The EM&V report details the findings and are included in Appendix A of this annual report.

LONG-TERM ENERGY SAVINGS:
The current program portfolio was developed to meet the energy efficiency targets established by the APSC in Order No.68 in Docket 13-002-U. The expected kW and kWh savings delivered by this portfolio, estimated kW and kWh savings from future portfolios, and the cumulative kW and kWh savings from previous portfolios are included in the Company's load forecast. The Integrated Resource Plan incorporates this information in its planning report.

EE OVERVIEW:

The following four tables provide an overview of the EE portfolio results for PY2024:

Table 1-5 Portfolio Summary

2024 Portfolio Summary										
Net Energy Savings		Costs			Cost-Effectiveness			Goal Achievement		
Demand MW	Energy MWh	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 (%)
5	31,338	$ 9,239,192	$ (0)	$ 646,433	$ 6,464,331	1.67	1.65	1.20%	1.63%	136%

Table 1-6 Portfolio Costs by Program Summary

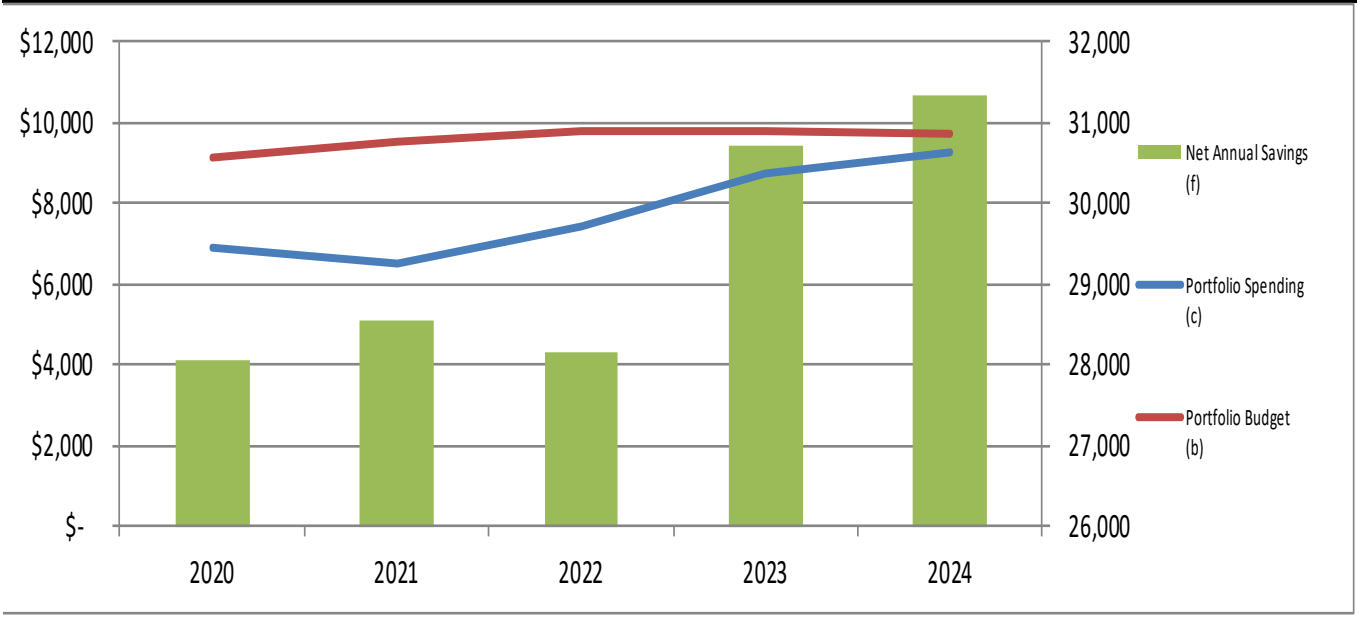
EE Portfolio Expenditures by Program					
Program Name	Target Sector	Program Type	2024 Budget ($)	2024 Actual ($)	% of Budget
Consistent Weatherization Approach_CWA	Residential	Whole Home	3,449,695	3,604,169	104%
Home Energy Efficiency Program	Residential	Other	1,213,372	972,390	80%
Commercial Energy Efficiency Program	Small Business/C&I	Custom	5,027,687	4,662,633	93%
Planning	All Classes	Other	30,000	-	0%
Regulatory	-	-	25,000	-	0%
		Total	**9,745,754**	**9,239,192**	**95%**

Table 1-7 Portfolio Costs by Type Summary

EE Portfolio Expenditure Summary by Cost Type				
Cost Type	2024 Total Expenditures			
	% of Total	Budget ($)	Actual ($)	% of Total
Planning / Design	0%	-	-	0%
Marketing & Delivery	35%	3,414,599	3,419,208	37%
Incentives / Direct Install Costs	54%	5,217,155	4,885,931	53%
EM&V	3%	295,000	297,584	3%
Administration	8%	794,000	636,469	7%
Regulatory	0%	25,000	-	0%
	100%	**9,745,754**	**9,239,192**	100%

Table 1-8 Company Statistics[1]

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) (MWh)	Net Annual Savings (e) (MWh)	% of Energy Sales (%=e/d)	Net Annual Savings (f) (MWh)	% of Energy Sales (%=f/d)
2020	$ 162,230	$ 9,132	5.6%	$ 6,867	4.2%	2,440,096	24,675	1.01%	28,050	1.15%
2021	$ 190,420	$ 9,521	5.0%	$ 6,480	3.4%	2,561,095	25,200	0.98%	28,541	1.11%
2022	$ 272,516	$ 9,768	3.6%	$ 7,392	2.7%	2,644,703	25,301	0.96%	28,150	1.06%
2023	$ 230,159	$ 9,768	4.2%	$ 8,705	3.8%	2,520,185	25,301	1.00%	30,701	1.22%
2024	$ 236,853	$ 9,746	4.1%	$ 9,239	3.9%	2,586,895	26,960	1.04%	31,338	1.21%



[1] Total annual energy sales include self-direct customer sales.

2.0 Portfolio Programs

2.1 Consistent Weatherization Approach

2.1.1 Program Description

This program in previous portfolios was referred to as the Unified Weatherization Program (UWP). It is designed to target residential customers and allow them to participate in the program with no out-of-pocket expense, and it also provides customers the opportunity to actively manage their energy costs. The program targets residential single-family homes which were built 10 or more years ago that are severely energy inefficient, or with an electricity cost per square foot of more than 10 cents. Homes that meet these criteria begin with an energy audit utilizing blower door technology on the structure to capitalize on specific weatherization techniques. The program is designed to upgrade and improve the thermal envelope of the dwelling.

OG&E serves more than 56,000 residential customers in its Arkansas service territory and has estimated there are as many as 30,000 homes in need of weatherization improvements. OG&E transitioned the management of the CWA program to CLEAResult for implementation in the 2021 program year. There are nine qualified companies that participate in serving OG&E's customers in this Program. This is an increase over the four contractors that participated in 2023. Each contractor is Building Performance Institute (BPI) certified. CLEAResult personnel arrange training sessions to maintain consistent implementation practices across the CWA. Contractors and their crews attend the sessions and receive additional education on the weatherization of homes, both online and in classrooms, for improvement in proper home weatherization techniques. OG&E views the weatherization program as a key component in its EE portfolio and continues to support its success.

Energy-saving equipment or other in-home improvements include: replacement of glass and/or doors, LEDs, return air cavity sealing, CO detectors, smoke detectors, attic insulation, air infiltration, duct sealing, water heater pipe wrap, low flow shower heads, faucet aerators, water heater jackets, and advanced power strips. Utilizing blower door and duct blaster technology, the contractors can locate and seal larger areas of air infiltration in the homes.

OG&E and AOG continue to work together with contractors to ensure program success. The partnership with AOG has proven to be a successful collaboration for the joint weatherization program. The ability to work together with other utilities is an ongoing effort to combine resources, as well as, to reach more customers in overlapping service territories.

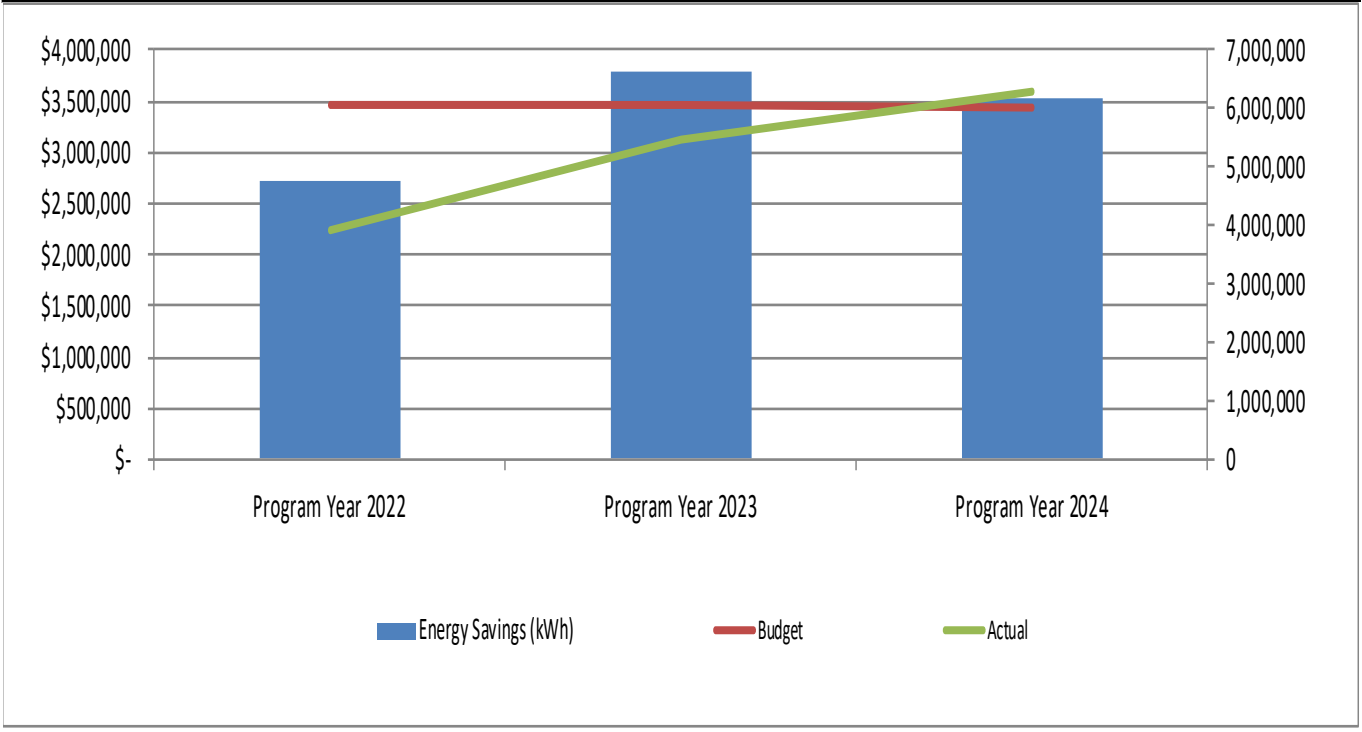
2.1.2 Program Highlights

- OG&E weatherized 1,597 homes in 2024.
- The CWA meets the requirements for the Arkansas Consistent Weatherization Approach.

2.1.3 Program Budget, Savings, and Number of Measures

Table 2-1 Consistent Weatherization Approach

Consistent Weatherization Approach_CWA												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 3,472,695	$ 2,248,115	65%	4,868,250	4,763,183	98%	1,097	1,107	101%	1,939	1,146	59%
Program Year 2023	$ 3,472,695	$ 3,112,111	90%	4,868,250	6,645,942	137%	1,097	1,700	155%	1,939	1,326	68%
Program Year 2024	**$ 3,449,695**	**$ 3,604,169**	**104%**	**5,844,211**	**6,153,155**	**105%**	**1,274**	**1,345**	**106%**	**1,287**	**1,597**	**124%**



2.1.4 Description of Participants

Participants of this program must meet the following criteria:

- The home is 10 or more years old.
- Electricity cost exceeds 10 cents per square foot.

2.1.5 Challenges and Opportunities

- OG&E has maintained a steady pace in obtaining and qualifying customers' homes in a timely manner for weatherization.
- PY2024 had a significant increase in spend for Health and Safety. While this increase is positive for the Program, it does create some budgetary constraints.
- As this program continues to mature long-term lead generation has been necessary for sustained success. There remains a concern moving forward, based on the state's requirements: if OG&E can continue to generate leads that fit the criteria as required by the state.

2.1.6 Planned or Proposed Changes to Program and Budget

- The CWA remains a standalone program in the triennial 2024-2026 portfolio. To comply with Act 1102, OG&E provides a low-income channel in the CWA. To fund this channel, 5% of the current CWA budget is carved out to address Act 1102. A soft cap will be used for installing measures with a maximum of $3,800 per home. The Act 1102 budgets and goals will also be tracked separately to ensure that these customers remain a priority.
- OG&E's budget for PY2025 is $3,546,961.

2.2 Home Energy Efficiency Program

2.2.1 Program Description

HEEP identifies and serves single and multi-family property owners or managers who seek assistance in improving the efficiency of energy-consuming systems and components. The program provides energy-saving measures at reduced or no out-of-pocket cost for residential customers through several participation channels including Residential Solutions, Schools Outreach, HVAC Replacement and Tune-up, and Consumer Product Solutions. Upgrade measures include, but are not limited to: LED light bulbs, Advanced Power Strips (APS), low-flow showerheads, low-flow faucet aerators, duct sealing, air sealing, attic insulation, wall insulation, and ENERGY STAR® rated windows and pool pumps through residential channels. The Consumer Product Solutions offering includes reduced cost merchandise at the retail point of purchase on advanced power strips, energy efficient water dispensers, bathroom ventilation fans, room air purifiers, and dehumidifiers.

The LivingWise® Schools Outreach channel targeted sixth grade students and is designed to provide an educational opportunity to learn about energy-efficient prospects in their homes. This approach includes an established curriculum that teachers use to review and educate their students regarding activities that can help them save energy. The students are given an energy efficiency kit with easy-to-install measures (e.g., LEDs, aerators, and showerheads) that they take home to have their parents or guardians help them install.

2.2.2 Program Highlights

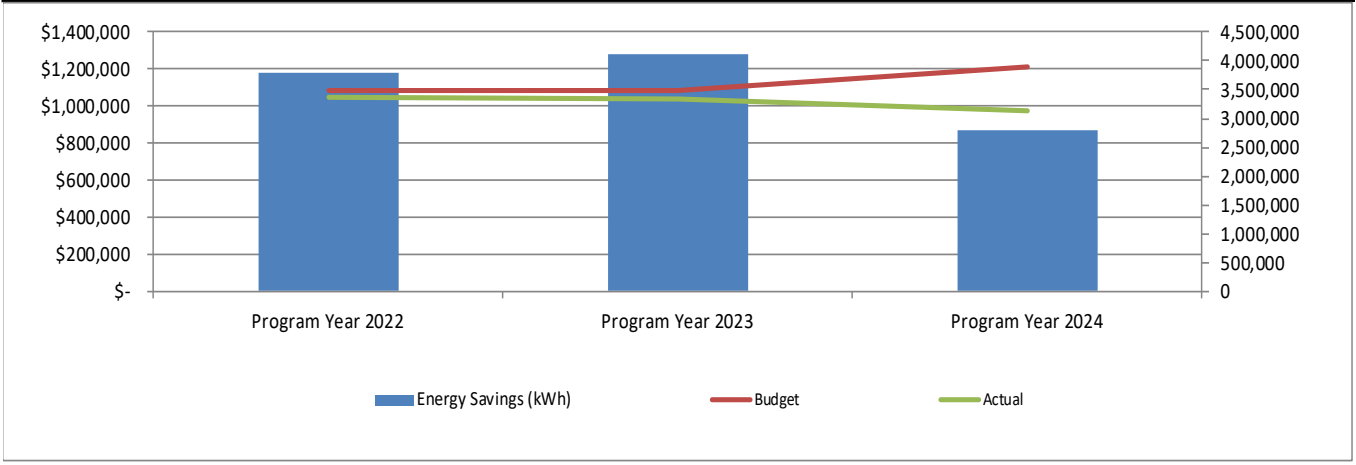
- The PY2024 program achieved 117% of the energy savings goal.
- The program reached 215 new participants in the HVAC Replacement and Tune-up channel which accounted for 406,813 ex ante gross kWh savings.
- There were 78 rebate applications submitted by residential customers in PY2024. These include 32 separate window, 1 attic insulation, 5 pool pump, and 40 smart thermostat rebates.
- The Consumer Products offering includes instant rebates for customers in select retail establishments that purchased qualified bathroom vent fans, room air purifiers, and water dispensers. The dehumidifier offering resulted in 48 customers reached resulting in 5,333 ex ante gross kWh savings. This channel also offered instant rebates on advanced power strips (APS) in select retail locations which were well received by consumers. The rebate resulted in 1,262 APS installations in homes and saved a combined 211,259 kWh. Customers took advantage of the instant rebates on 35 room air purifiers (8,244 kWh), 17 water dispensers (8,191 kWh) and 68 bathroom ventilation fans (225 kWh).

- In-home Energy Assessments enable the program to identify additional measures that participants with nontraditional dwellings qualify for that complement the CWA program. The coordinated effort between HEEP and CWA continues to allow for implementation of those identified measures.

2.2.3 Program Budget, Savings and Number of Measures

Table 2-2 Home Energy Efficiency Program Summary

Home Energy Efficiency Program												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 1,083,715	$ 1,042,982	96%	3,458,718	3,789,237	110%	614	596	97%	3,676	5,829	159%
Program Year 2023	$ 1,083,715	$ 1,036,653	96%	3,458,718	4,103,959	119%	614	786	128%	3,676	6,303	171%
Program Year 2024	**$ 1,213,372**	**$ 972,390**	**80%**	**2,397,068**	**2,807,772**	**117%**	**720**	**442**	**61%**	**7,118**	**5,932**	**83%**



2.2.4 Description of Participants

- Participants within the HEEP Program include:
  - Multi-family residence – two or more storied structures where multiple families reside in multiple units under a single, contiguous roof most often described as apartments, duplexes, triplexes, condominiums, or townhomes.
    - Participants residing in apartment complexes or other multi-family units typically rent rather than own their housing. This arrangement requires OG&E to receive permission from the owner of the properties before EE measures are installed. Because of this arrangement, multi-family customers may be considered hard-to-reach when providing education and opportunities for managing energy use.

- Single-family residence – one story structures where a single-family group resides in a standalone structure under a single contiguous roof.
  - This channel includes structures traditionally "stick-built" or with wooden framing.

- LivingWise® Student Energy Education - this channel focuses on sixth grade students in the public-school system. The kit provides several easily installed EE products for the home, allowing students and parents or guardians to have conversations about using energy efficiently. This program promotes EE education to the future homeowners, so they will understand the impacts of energy conservation and adopt a culture of energy efficiency.

2.2.5 Challenges and Opportunities

- This channel continues to see great success as the program team works with a participating contractor to provide A/C Tune-Ups in single-family homes and apartment complexes located in Fort Smith.

- The program team continues to recruit additional contractors to participate in the A/C Tune-up measures. By expanding this base, additional residential customers could be reached.

- The Positive Energy New Home Construction program launched in 2024, but the year was spent recruiting builders to participate in the Program. There are now three builders participating, and PY2025 should be very successful.

2.2.6 Planned or Proposed Changes to Program and Budget

- No planned changes to Program or Budget.

- OG&E's proposed budget for PY2025 is $1,438,883.

2.3 Commercial Energy Efficiency Program

2.3.1 CEEP Program Description

CEEP provides incentives to OG&E commercial customers in the Arkansas service territory, encouraging the installation or upgrade of more efficient equipment in energy consuming systems. The program is aligned toward commercial, industrial, public authority, schools, and small business facilities of all sizes. CEEP measures include but are not limited to; LED lighting and fixtures, compressors, variable speed fans, HVAC upgrades, weather stripping, occupancy-based technology, gaskets, strip curtains, refrigeration upgrades, and pre-rinse spray valves.

CEEP recruits and educates customers on the advantages of upgrading their energy systems through direct outreach, educational contacts, and booth displays at local vendor open houses. Many different avenues and strategies are used to encourage customers to upgrade energy consuming systems in each facility. CEEP works with lighting manufacturer representatives, conducting walkthrough audits and performing detailed, custom audits unique to the facilities. Commercial customers benefit from financial incentives, bill savings, and the energy management education the program provides.

2.3.2 Program Highlights

- The CEEP program successfully reached business customers across the service territory. 237 projects were completed in 2024.

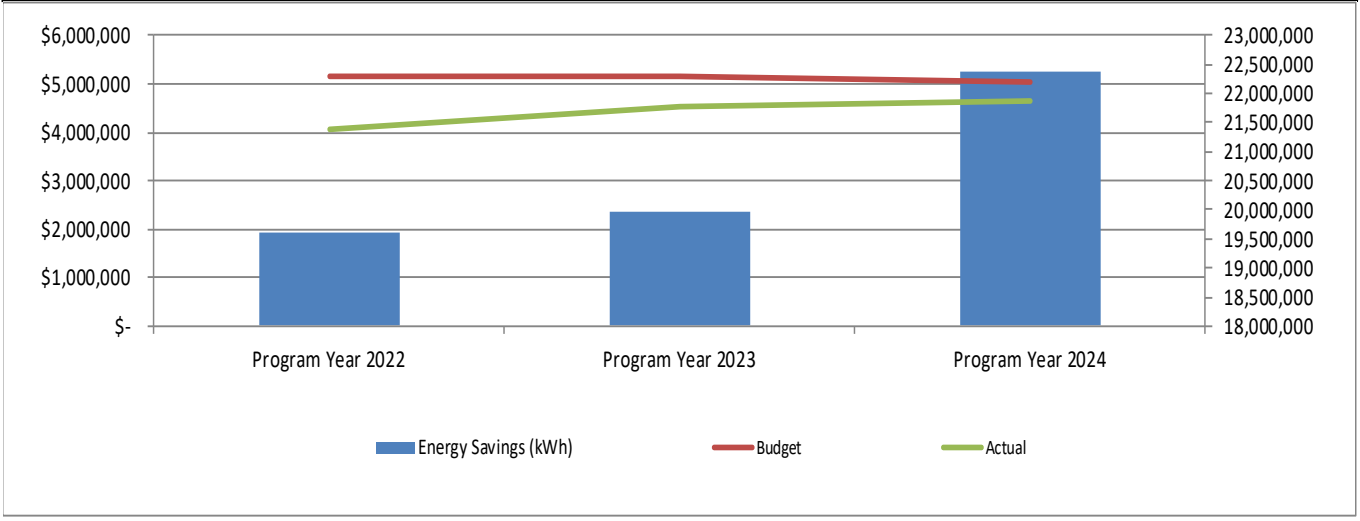
- In PY2024 the Large Commercial and Industrial channel alone completed 33 projects for a combined 10,848,181 kWh and accounted for 50% of CEEP ex ante savings. Some of the participants in this channel were Sisters of Mercy and Kay Rodgers Park with LED retrofits, VFD’s for Dick’s Sporting Goods, and Dollar Tree completed a HVAC replacement.

- CEI finished 2024 achieving 4,945,216 annual ex ante kWh savings combined through cohort participation. Butterball was the largest contributor in PY2024 with 1,095,611 kWh savings and Pernod Ricard coming closely behind with 1,199,226 kWh savings.

2.3.3 Program Budget, Savings and Number of Measures

Table 2-3 – CEEP Program Summary

Commercial Energy Efficiency Program												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 5,134,343	$ 4,078,666	79%	16,974,247	19,597,567	115%	3,312	3,103	94%	486	317	65%
Program Year 2023	$ 5,134,343	$ 4,521,235	88%	16,974,247	19,950,969	118%	3,312	3,211	97%	486	162	33%
Program Year 2024	**$ 5,027,687**	**$ 4,662,633**	**93%**	**18,718,226**	**22,377,294**	**120%**	**2,944**	**3,679**	**125%**	**290**	**237**	**82%**



2.3.4 Description of Participants

Participants in the program included large commercial, industrial, medical facilities, small business, schools, government, and lighting distributor customers.

2.3.5 Challenges and Opportunities

- The Small Business channel rebounded from a difficult year in PY2023, increasing the number of projects completed from 49 to 120 and achieving 2,217,070 annual ex ante kWh savings. This was the fourth largest channel offered through CEEP and accounted for 10% of the program ex ante savings. We anticipate this momentum to carry over into PY2025.

2.3.6 Planned or Proposed Changes to Program and Budget

- The PY2024-2026 filing included commercial cookware in the Midstream channel, and the plan is to have those measures fully implemented in PY2025.

- OG&E's proposed budget for PY2025 is $5,227,490.

3.0 Supplemental Requirements

3.1 Staffing

In 2024, OG&E had a total of 2 Full-Time Equivalents ("FTEs"); 1 FTE managing its EE programs, and EM&V and Administrative support make up the remaining FTE.

3.2 Stakeholders Activities

During 2024, the PWC members continued to be active and engaged participants in matters pertaining to energy efficiency program evaluation and related issues, as directed by Staff. In 2024, the PWC mainly discussed the proposed Potential Study as well as updates to the Technical Reference Manual ("TRM"). Topics included new measures, codes and standards, and a BeOpt Model Review.

The Parties Working Collaboratively met a total of 26 times in 2024. All but one of these meetings were online; the Technical Forum, held August 13, 2024, in Little Rock was in-person.

Table 1: Summary of PWC Activities in 2024

Date	Title	Topics
1/10/2024	**Potential Study Working Group**	1. Potential Study
1/22/2024	**Act 1102 Working Group**	1. Act 1102
2/21/2024	**Potential Study Working Group**	1. Potential Study
3/6/2024	**Potential Study Working Group**	1. Potential Study
3/20/2024	**Potential Study Working Group**	1. Potential Study
3/27/2024	**TRM**	1. Review process for major update (v10)
4/3/2024	**Potential Study Working Group**	1. Potential Study
4/10/2024	**TRM**	1. Codes and Standards 2. Energy Star Updates
4/17/2024	**Potential Study Working Group**	1. Potential Study
4/24/2024	**TRM**	1. Section 1 of Volume 2
5/1/2024	**Potential Study Working Group**	1. Potential Study
5/8/2024	**TRM**	1. New Measures
5/15/2024	**Potential Study Working Group**	1. Potential Study
5/22/2024	**TRM**	1. Weather Update
5/29/2024	**Potential Study Working Group**	1. Potential Study
7/17/2024	**TRM**	1. BeOpt Model Review
7/31/2024	**TRM**	1. Final Revisions
8/13/2024	**PWC Technical Forum**	1. In Person Technical Forum
8/14/2024	**Potential Study Working Group**	1. Potential Study

8/28/2024	**Potential Study Working Group**	1. Potential Study
9/11/2024	**Potential Study Working Group**	1. Potential Study
9/25/2024	**Potential Study Working Group**	1. Potential Study
10/9/2024	**Potential Study Working Group**	1. Potential Study
11/6/2024	**Potential Study Working Group**	1. Potential Study
12/9/2024	**Potential Study Working Group**	1. Results Presentation
12/12/2024	**Potential Study Working Group**	1. Results Presentation

3.3 Information provided to Customer to Promote EE

Please see Appendix B for samples of promotional and educational materials used in the program year.

Appendices to be added in pdf format.

4.0 EM&V Contractor Reports

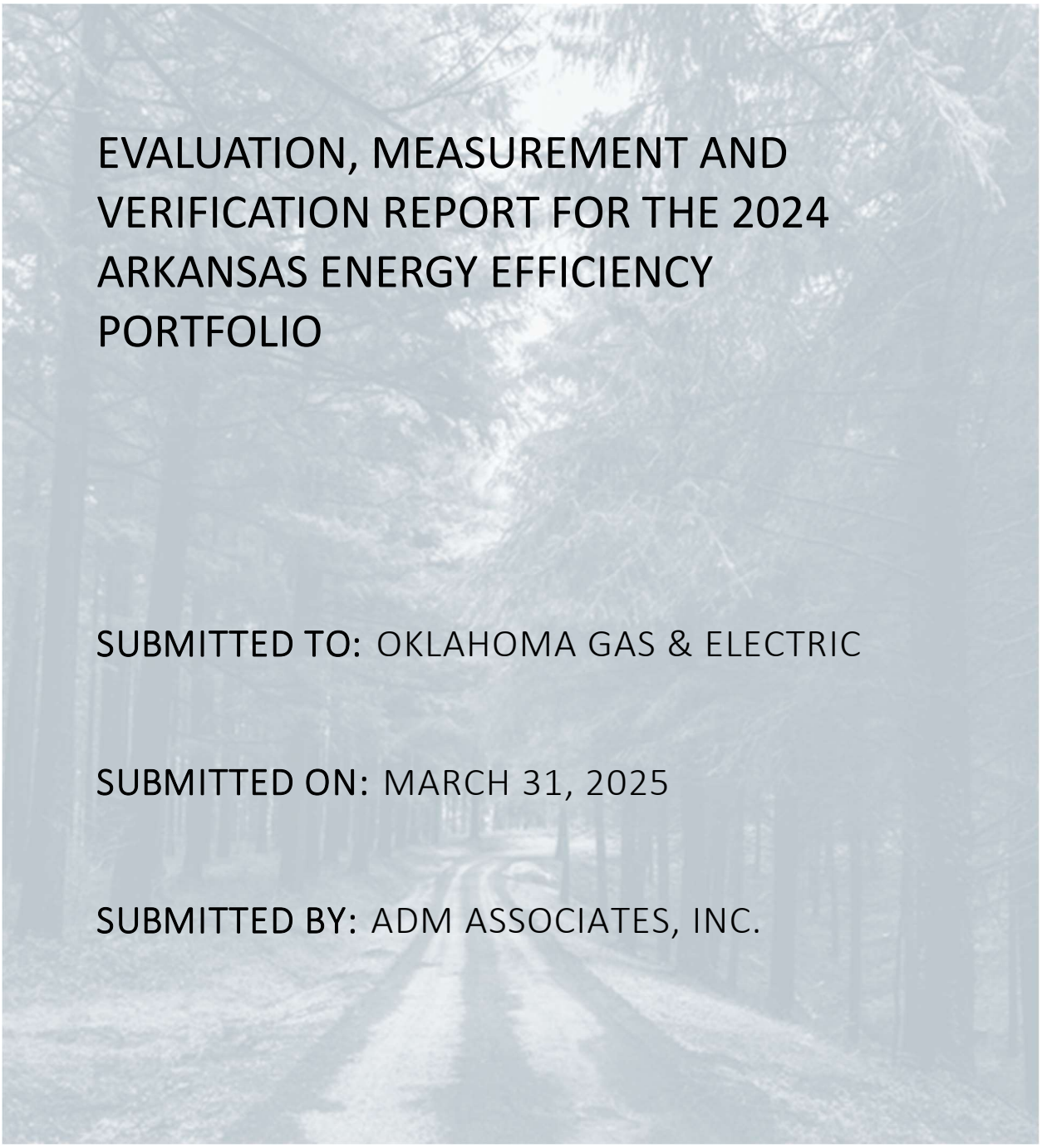
ADM & Associates, Inc. provided outcomes for the EM&V results and Cost Benefit Analysis for OG&E's PY2024 Portfolio. OG&E is providing the report in the attached exhibits.

Attachments:

- Attachment A) contains ADM's Evaluation of OG&E's Energy Efficiency Programs and Cost Benefit Analysis

Attachment A: Evaluation of OG&E's Energy Efficiency Programs and Cost Benefit Analysis

Attachment B:
Samples of OG&E Promotional and Educational Materials



EVALUATION, MEASUREMENT AND VERIFICATION REPORT FOR THE 2024 ARKANSAS ENERGY EFFICIENCY PORTFOLIO

SUBMITTED TO: OKLAHOMA GAS & ELECTRIC

SUBMITTED ON: MARCH 31, 2025

SUBMITTED BY: ADM ASSOCIATES, INC.

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Oklahoma Gas & Electric

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1.1 Acknowledgements

ADM Associates, Inc. (ADM) would like to acknowledge the many talented individuals who contributed to this evaluation, measurement, and verification (EM&V) report for the program year 2024 (PY2024).

Oklahoma Gas and Electric (OG&E) staff participated in ongoing evaluation deliverable reviews and discussions, attended regular meetings, and responded to follow-up questions, data requests and document requests. They are an ongoing partner in our evaluation efforts.

The Independent Evaluation Monitor (IEM) led by Dr. Katherine Johnson also provided guidance and input throughout the evaluation process.

We also wish to thank CLEAResult Consulting (CLEAResult) and AM Conservation Group, the implementers, and their staff for their insights and information.

Additionally, the following ADM staff supported the creation of this report.

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1.2 Acronyms and Abbreviations

Table 1-1: Commonly Used Acronyms and Abbreviations

Acronym	Term
AC	Air conditioner
AOH	Annual Operating Hours
APS	Advanced Power Strip
APSC	Arkansas Public Service Commission
SBS	Small Business Solutions
CEEP	Commercial Energy Efficiency Program
CWA	Consistent Weatherization Approach
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
EPP	Efficient Products Pathway
EUL	Estimated Useful Life
ES	ENERGY STAR®
FR	Free-rider
FVR	Field Verification Rate
GPM	Gallons per minute
H&S	Health and Safety
HDD	Heating Degree Days
HEEP	Home Energy Efficiency Program
HID	High intensity discharge
HOU	Hours of Use
HP	Heat pump
HSP	Home Solutions Program
HSPF	Heating seasonal performance factor
HVAC	Heating, Ventilation, and Air Conditioning
IEF	Interactive effects factor
IEM	Independent Evaluation Monitor
IEER	Integrated Energy Efficiency Ratio
IPLV	Integrated Part Load Value
IQ	Income Qualified

Acronym	Term
ISR	In-service rate
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light Emitting Diode
LI	Low Income
LIWx	Low Income Weatherization
M&V	Measurement and Verification
NC	New construction
NEB	Non-energy Benefit
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross
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
TRM	Technical Reference Manual
TU	Tune-up
UCT	Utility Cost Test
UWP	OG&E and AOG Unified Weatherization Program (Prior to 2020)
VFD	Variable Frequency Drive
Wx	Weatherization

1.3 Savings Types

Table 1-2: Commonly Used Savings Types

Term	Definition
Energy Savings (kWh)[1]	The change in energy (kWh) consumption that results directly from program-related actions taken by participants in a program.
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 (Natural Gas & Propane)	Other fuel savings, such as propane and natural gas, which are estimated based on dual-fuel savings that are not incentivized by both 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	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 evaluators 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 evaluators 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 V9.2 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] Definitions are from the Glossary in AR TRM V9.0, page 98.

2 Executive Summary

2.1 Introduction

OG&E provides retail electric services to 69,397 customers[2] in its Arkansas service territory that encompasses the City of Fort Smith and nearby municipalities.

OG&E filed its Arkansas 2024-2026 Energy Efficiency Program Plan (2024-2026 Plan) with the Arkansas Public Service Commission (APSC) on August 1, 2023.[3] The 2024-2026 Plan complies with Order No. 68, Docket 13-002-U which requires each electric investor-owned utility (IOU) to target savings of 1.2% of 2022 baseline sales. The 2024-2026 Plan was approved by the APSC on November 9, 2023 in Order No. 72, Docket 13-002-U and Order No. 107, Docket 07-075-TF.

The 2024-2026 Plan includes a portfolio of Energy Efficiency Programs (the portfolio) that are designed to achieve reductions in electric energy (kWh) consumption and peak demand (kW) across all of OG&E's Arkansas customer rate classes.

In accordance with APSC Rules for Conservation and Energy Efficiency Programs (C&EE Rules), OG&E engaged ADM Associates, Inc., (ADM) to conduct the evaluation, measurement, and verification (EM&V) of its portfolio. ADM staff, collectively referred to as the Evaluators, conducted EM&V for all of the programs in the 2024 portfolio. This EM&V report provides a comprehensive description of ADM's evaluation of OG&E's 2024 Arkansas programs.

2.2 Summary of OG&E's Energy Efficiency Portfolio

In 2024, OG&E offered a portfolio of three energy efficiency programs, which provided a comprehensive range of customer options focused on energy efficiency and educational options. At a high-level, OG&E designed its programs to achieve the following objectives:

- PY2024 net energy-savings goal[4] of 26,959,506 kWh and demand reduction target of 4,938 kW;[5]
- Significant energy-savings opportunities for all customers and market segments;
- Broad ratepayer benefits; and
- Comprehensiveness in seven areas (i.e., comprehensiveness factors) defined by the APSC.[6]

[2] See https://apps.apsc.arkansas.gov/olsv2/AnnualReportResults-electric.asp.

[3] The 2024-2026 Plan was filed in APSC Docket 07-075-TF.

[4] This value was based on the Commission approved target of 1.20% of 2022 sales as set forth by the APSC and includes a reduction from target to account for commercial and industrial customers opting to self-direct.

[5] These targets represent first-year net energy and demand savings at the meter.

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

In PY2024, two residential programs and one commercial and industrial (C&I) program were evaluated. The Home Energy Efficiency Program (HEEP), the Consistent Weatherization Approach (CWA) Program, and the Commercial Energy Efficiency Program (CEEP) were all existing programs at the onset of PY2024.

Additionally, the HEEP and the CEEP programs had a few changes to their respective program channel offerings. HEEP added the Positive Energy Homes (PEH) - New Construction channel, which is expected to start achieving savings in 2025. CEEP reorganized the Retro-commissioning channel and diverted channel offerings into the existing Commercial and Industrial (C&I) Solutions and into the Continuous Energy Improvement (CEI) channel. The table below shows the portfolio structure for PY2024.

Table 2-1: PY2024 OG&E Energy Efficiency Portfolio Overview

Program	Channel	Sector	PY2024 Net kWh Target[7]	PY2024 Net kW Target
Home Energy Efficiency Program ("HEEP")	Residential Solutions (RSOL)	Residential	2,397,068	720
	LivingWise® Schools Outreach			
	HVAC Replacement & Tune-up (HVAC)			
	Consumer Product Solutions (CPS)			
	Positive Energy Homes (PEH) - New Construction; savings anticipated in 2025			
Consistent Weatherization Approach ("CWA")	Consistent Weatherization Approach	Residential	5,844,211	1,274
	Low Income Pilot			
Commercial Energy Efficiency Program ("CEEP")	Commercial and Industrial (C&I) Solutions	C&I	18,718,226	2,944
	Small Business Solutions (SBS)			
	Schools and Government Entities (SAGE)			
	Midstream			
	Continuous Energy Improvement (CEI)			
Total			**26,959,506**	**4,938**
Sums may differ due to rounding.				

2.3 Overview of Program Offerings

2.3.1 Residential Programs

- **Home Energy Efficiency Program (HEEP):** This program is a multipronged residential offering designed to incentivize OG&E's Arkansas customers to reduce their energy consumption by performing energy efficient upgrades to their homes. Designed to

[7] Goal information is from the Docket 07-075-TF Doc 476, *Oklahoma Gas & Electric Company: 2024-2026 Energy Efficiency Portfolio Plan for Arkansas*, in Kathryn Brewer's Direct Exhibit KNB-1, in table 2 on page 18 of the PDF.

provide homeowners with multiple options, the proposed program combines Residential Solutions, Heating, Ventilation, and Air Conditioning (HVAC), and Consumer Products components. Providing homeowners with increased choices to participate is expected to result in increased customer engagement, greater measure adoption, and increased program savings.

- Residential Solutions (RSOL): The Residential Solutions component of the HEEP program is a market-driven approach that promotes energy efficiency by providing homeowners with low-cost in-home assessments, direct install measures, community educational outreach, and incentives on home retrofits. Incentives are provided to encourage participation and decrease the upfront costs of energy efficient upgrades.
- LivingWise® Schools Outreach provides 6th grade students an educational opportunity to learn about how they can affect the energy efficiency of their home. Teachers will work directly with the program team to obtain materials.
- HVAC Replacement & Tune-up (HVAC): The air conditioner (A/C) tune-up and HVAC replacement component of HEEP focuses on improving the efficiency of the HVAC systems of residences. It provides incentives to improve operating efficiency of the existing HVAC unit or to replace it with a higher efficiency unit, through a program-approved Trade Ally network.
- Consumer Product Solutions (CPS): The lighting and appliances component promotes the purchase of energy efficient lighting and products including, but not limited to, LED lighting. There is also a food bank component to this channel, which gives LED lighting to food banks for inclusion in their food boxes to income qualified (IQ) customers. To help customers offset a portion of the incremental cost associated with higher efficiency appliances and products, the program uses upstream, midstream, and downstream incentives.

- **Consistent Weatherization Approach (CWA):** This program aligns with the statewide Consistent Weatherization Approach (CWA) and will be delivered through approved OG&E contractors. Participation is available to all OG&E residential customers who live in single family (SF) or individually metered multi-family (MF) homes that are 10 years or older or meet the $0.10 per square foot criteria. The program focuses on educating the customer on the efficiency of their home and developing an implementation plan to provide energy upgrades that align with the customer's needs and available program offerings. Where possible, the program will align measure offerings and incentive packages with Arkansas Oklahoma Gas (AOG) Weatherization Program, for dual fuel customers. The CWA program includes a Low Income channel that was added in PY2020.

2.3.2 Commercial and Industrial (C&I) Programs

- **The Commercial Energy Efficiency Program (CEEP):** This is a portfolio-style program approach designed to address the needs of OG&E's commercial and industrial (C&I) customer base. Specifically, the program provides an umbrella for all C&I customers to participate through either prescriptive or custom channels, each of which is specialized for a particular market segment or delivery channel.
  - Large Commercial and Industrial (Large C&I): Large C&I will offer direct installation of low-cost measures and performance and custom participation paths for customers to perform energy upgrades. Technical support will also be provided to assist in project identification and development.
    - *Prescriptive:* This path provides per-unit incentives for deemed savings measures installed by qualified contractors as defined by the current TRM. HVAC tune-up and replacement projects are included in this component of the channel.
    - *Custom:* This path gives participants an opportunity to achieve their specific EE goals by proposing measures that may be outside of the scope of the current TRM. Proposed measures are evaluated for savings and costs, and an appropriate incentive amount is approved if the project is deemed cost-effective.
  - Schools & Governmental Entities (SAGE): The purpose of this channel is to assist institutional customer segments in overcoming barriers to energy efficiency that are unique to their market segment, such as conflicting organizational goals, outdated specifications, limited technical knowledge, and counterproductive energy budgeting. The program also provides benchmarking services to qualifying customers.
  - Small Business Solutions (SBS): Small Business Solutions offers direct installation of low-cost energy efficiency measures, facility walk-throughs and incentives for a suite of energy efficiency measures. This offer is targeted at business customers with peak demand less than 150kW. Direct install measures include LEDs and other low-cost lighting, low flow devices for electric water heating, HVAC upgrades, vending misers and low-cost refrigeration measures. This targeted channel is also eligible to participate in the Large C&I custom offering if the customer's needs are beyond the scope of services outlined within this outreach approach.
  - Midstream: This channel encourages customers to participate by providing point of sale (POS) discounts on selected products through local lighting distributors.

The financial incentives are paid to the lighting distributors to allow reduced costs for the end customer.

- Continuous Energy Improvement (CEI): The CEI channel provides energy conservation training to all levels of employees within a customer's organization with a focus on low or no cost savings opportunities. This channel also offers a facility-wide assessment of energy usage and provides customers with continuous energy usage monitoring and feedback.

Through its energy efficiency portfolio, OG&E also seeks to provide customers with easy program entry points, flexible options for saving energy, and ongoing support for those who want to pursue deeper energy savings or demand reduction. Refer to Table 2-2 for a list of the OG&E programs and targeted customer segments.

Table 2-2: OG&E PY2024 Energy Efficiency Portfolio Sectors Served by Program

Program	Residential	Multi-family[8]	Small Business	C&I	Institutional & Municipal	Agricultural
HEEP	X	X				
CWA	X					
CEEP			X	X	X	X

This report presents the results of the evaluation of these programs.

2.4 Evaluation Objectives

The following activities were performed through the PY2024 EM&V effort:

- Verify program tracking data and correctly apply the Arkansas Technical Reference Manual Version 9.2 (AR TRM V9.2)[9] to calculate savings and estimate PY2024 gross and net energy (kWh) and demand (kW) impacts at the high impact measure, program, and portfolio levels;
- Adjust ex-ante gross savings using the results of evaluation research, relying primarily on tracking system and engineering desk reviews/metered data analysis and achieve a minimum precision of ±10% of the gross realized savings estimate at 90% confidence;
- In consultation with the IEM, ADM estimated net-to-gross (NTG) values, which were calculated following AR TRM V9.2 Volume 1 Protocol H[10] and provided complete documentation and transparency of all evaluated savings estimates;
- Provide ongoing technical reviews and guidance to implementers and OG&E throughout the evaluation cycle and review tracking system data to assess data captured for new measure offerings following AR TRM V9.2 Volume 1 Protocol A;

[8] All multifamily are duplexes that are single-metered, with more than four (4) units.

[9] AR TRM V9.2 can be found here: https://apps.apsc.arkansas.gov/pdf/10/10-100-R_239_4.pdf

[10] See additional details in each program chapter, as well as Appendix C. Net-to-Gross Approaches and Outcomes.

- Support the calculation of portfolio Non-energy Benefits (NEBs) in accordance with AR TRM V9.2 Volume 1 Protocol L;
- Conduct EM&V research to support possible updates for the next version of the TRM, which may include information on commercial and residential envelope measures, business type lighting hours of use, etc.
- Gain an understanding of program operations, challenges and evaluation needs through OG&E and implementation contractor key staff interviews, complemented with program documentation review and monthly status meetings.
- Conduct a full process evaluation for every program once over the three-year 2024 – 2026 program cycle and assess other process evaluation needs annually, document progress in incorporating recommendations identified during the prior year evaluation; and
- Update the assessment of OG&E's success in achieving the goals and objectives established in the Commissions Comprehensiveness Checklist.[11]

2.5 Evaluation Findings

OG&E's portfolio achieved 112% of planned net energy savings (kWh) and 104% of planned net demand reduction (kW) in PY2024. In addition to verifying the savings reported by OG&E, the Evaluators calculated lifetime impacts for the programs and measures. As part of this process, in the body of the report we refer to the impacts (energy savings or peak demand reduction) accrued during the program year being evaluated (PY2024) as "first year" impacts.

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

Table 2-3 shows the OG&E goals, reported gross impacts, evaluated first year *ex-post* gross energy savings and lifetime energy savings[12] as well as performance against 2024 kWh savings goals and kW reduction targets.

[12] Lifetime impacts are the sum of energy savings over the course of the measure's estimated useful life (EUL) and the weighted average demand reduction across the lifetime of the measure divided by the EUL (in years).

Table 2-3: PY2024 OG&E Portfolio Evaluated Impacts

Impact	Metric	HEEP	CWA	CEEP	Total
Energy Savings (kWh)	Goals (Net)	2,397,068	5,844,211	18,718,226	**26,959,506**
	Ex-ante (Gross)	2,863,846	5,992,954	21,757,511	**30,614,310**
	Ex-post (Gross)	2,878,983	6,302,884	22,377,294	**31,559,161**
	Realization Rate	101%	105%	103%	**103%**
	Ex-post (Net)	2,807,772	6,153,155	22,377,294	**31,338,220**
	NTG Ratio	98%	98%	100%	**99%**
	% of Goal (Net)	117%	105%	120%	**116%**
	Lifetime (Net)	34,609,995	103,494,379	249,023,887	**387,128,261**
Annual Demand Reduction (kW)	Goals (Net)	720	1,274	2,944	**4,938**
	Ex-ante (Gross)	474	1,295	3,602	**5,371**
	Ex-post (Gross)	460	1,377	3,679	**5,516**
	Realization Rate	97%	106%	102%	**103%**
	Ex-post (Net)	442	1,345	3,679	**5,466**
	NTG Ratio	96%	98%	100%	**99%**
	% of Goal (Net)	61%	106%	125%	**111%**

The contribution to portfolio energy (kWh) savings by program is summarized in Figure 2-1.

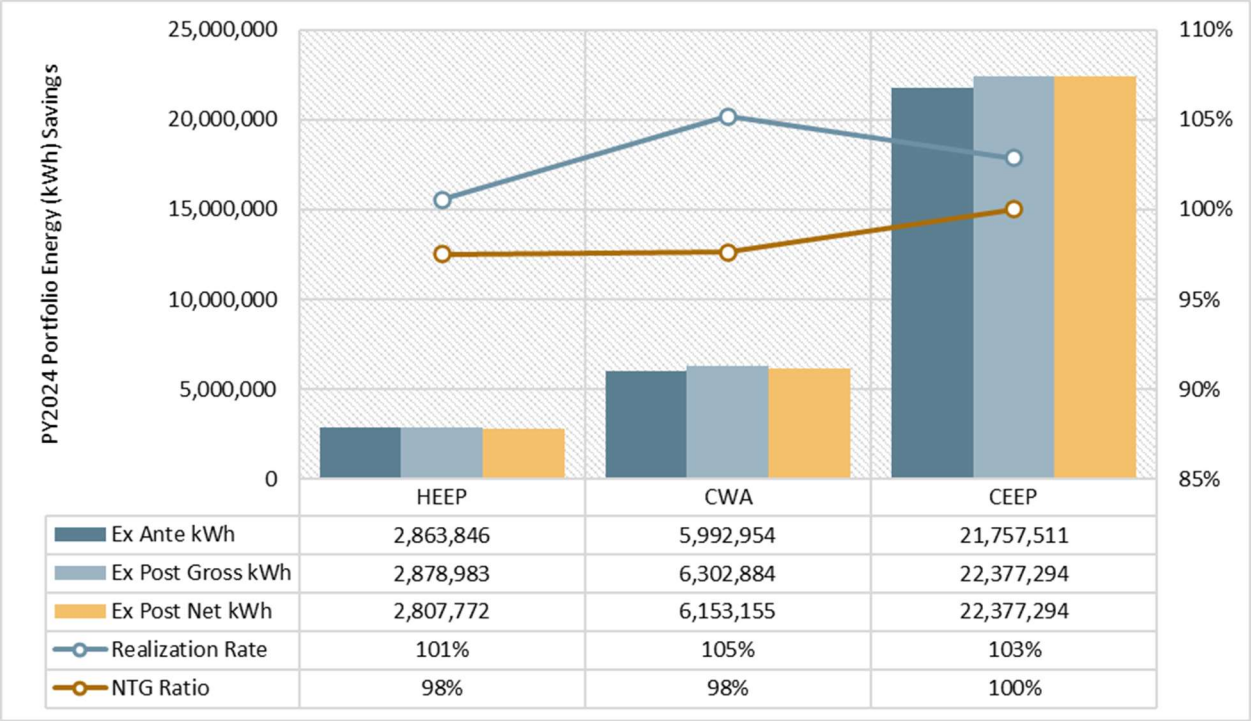


Figure 2-1: PY2024 Contribution to Portfolio Net Energy (kWh) Savings

Figure 2-2 below represents ex-p*ost* net energy savings (kWh), by end use and sector, in the PY2024 OG&E portfolio.

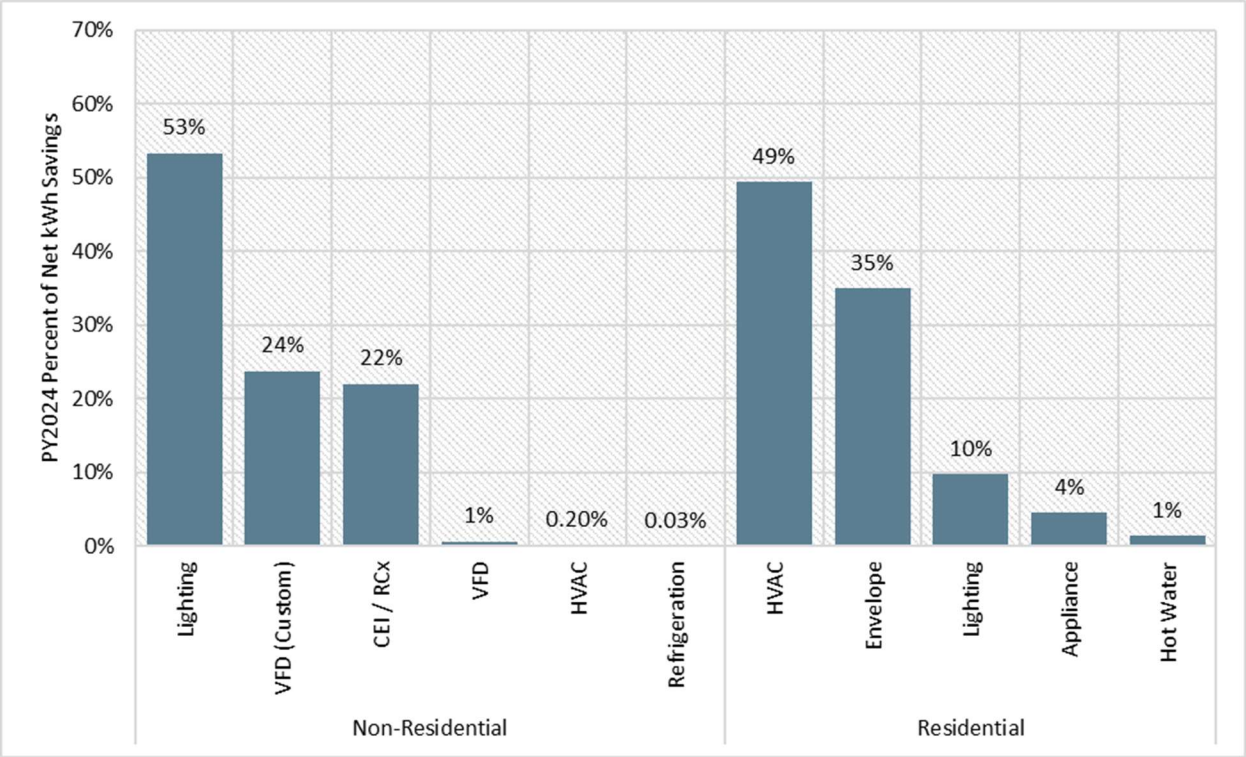


Figure 2-2: PY2024 Percentage of Ex-post Net Energy Savings (kWh) by End-Use

Each bar in Figure 2-3 shows the percentage of savings for each measure type, for each program in the residential portion of the portfolio. Aggregated across both HEEP and CWA, duct sealing (41%), air infiltration (17%), ceiling insulation (18%), and LED lamps (10%) were determined to be HIMs,[13] accounting for 86% of residential portfolio ex-post net kWh savings.

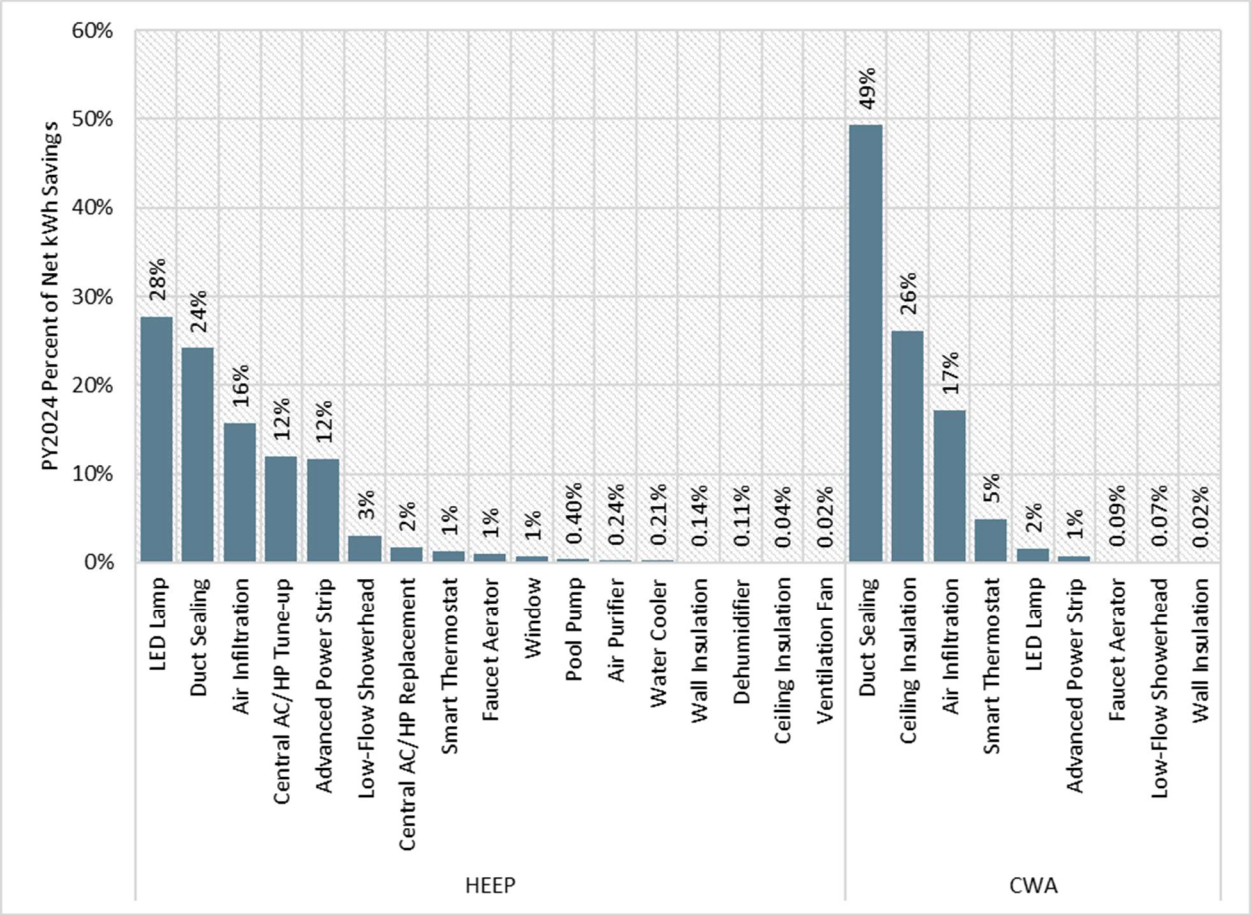


Figure 2-3: Ex-post Energy Savings (kWh), by Program by Measure - Residential Sector

Each bar in Figure 2-4 below shows the contributions to *ex-post* net energy savings (kWh) for each measure in the commercial and industrial sectors. Lighting, custom VFD, and CEI were HIMs for the commercial sector, and equal to 99% of portfolio *ex-post* net energy savings (kWh).

[13] A High Impact Measure (HIM) is an energy efficiency measure that accounts for at least 5% of total portfolio gross kilowatt hour, kilowatt, and/or therm savings in one or more of the utility's energy efficiency programs. This is per Protocol E1 of the AR TRM V9.2, page 46.

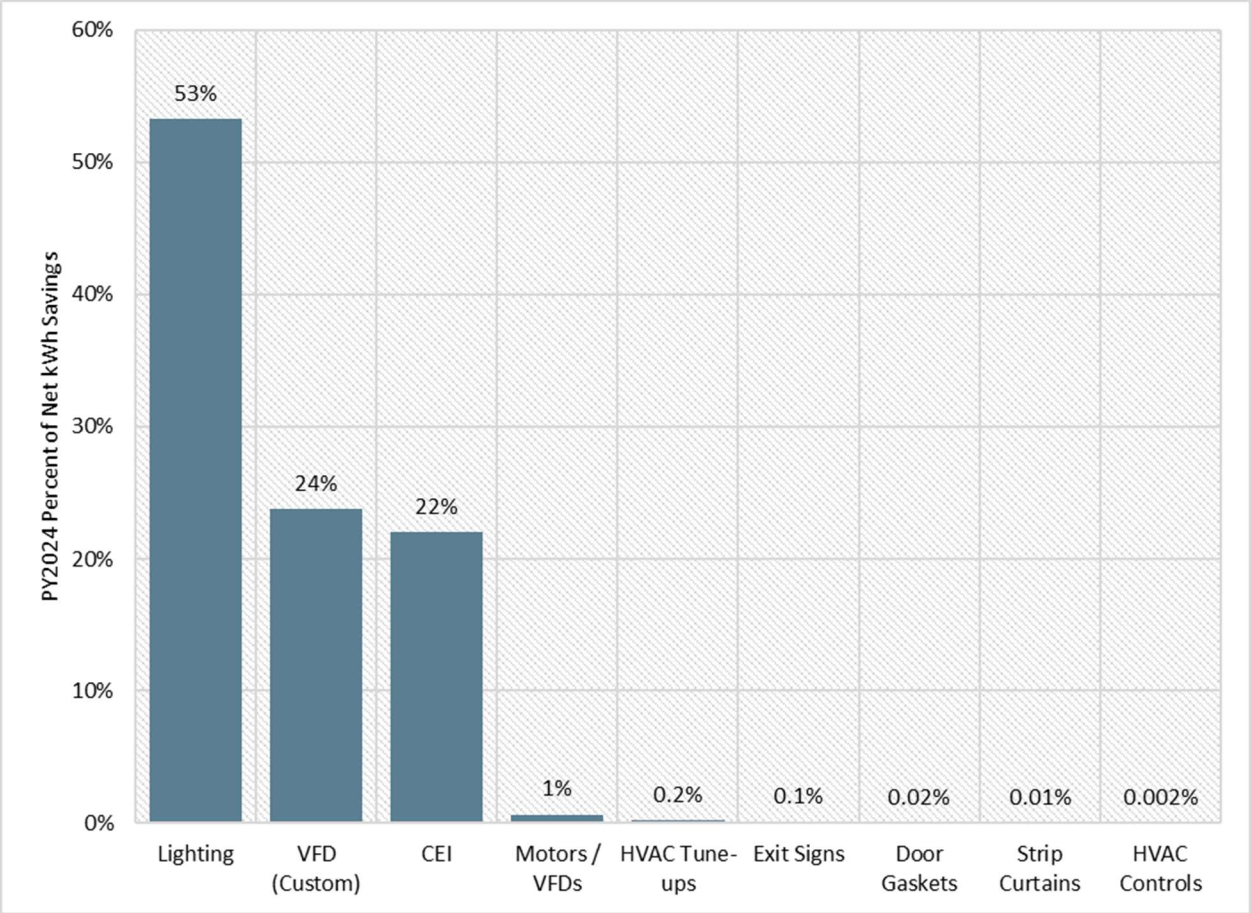


Figure 2-4: Ex-post Net Energy Savings (kWh), by Measure - C&I Sector

For the PY2024 – PY2026 triennial cycle, OG&E have decided to sunset the Energy Efficiency Arkansas "EEA" program within their Energy Efficiency Portfolio, pursuant of Order No. 65 of Docket No. 13-002-U. OG&E will continue education and awareness efforts under the proposed program offerings for the PY2024 – PY2026 triennial period.

The PY2024 budgets and actual spend are summarized in

Table 2-4 below.

Table 2-4: Summary of Budgets and Actual Spend in PY2024

Program	PY2024 Budgeted Expenditures	PY2024 Actual Expenditures	Percent of Budget Expended
HEEP	$ 1,213,372	$ 974,241	80%
CWA	$ 3,449,695	$ 3,604,169	105%
CEEP	$ 5,027,687	$ 4,662,633	93%
Regulatory	$ 25,000	$ -	0%
Planning	$ 30,000	$ -	0%
Total	**$ 9,745,754**	**$ 9,241,043**	**95%**
Sums may differ due to rounding.			

2.6 Program-level Evaluation Findings

Following a review of present program offerings and interviews with utility and third-party implementation (TPI) staff, the Evaluators found the following.

2.6.1 HEEP

Participants largely had a positive experience with the program.	Satisfaction with the program was generally high, with the highest satisfaction levels observed in interactions with OG&E staff (76.6% somewhat or very satisfied), contractor work quality (80%), and the overall program experience (83.4%). For participants that received an energy assessment, one issue noted was the length of time until the assessment was completed (17.6% were dissatisfied with this aspect).
Discrepancies were found in a handful of appliance measures in PY2024.	Measures such as dehumidifiers, bathroom ventilation fans, and water coolers, continued to have large discrepancies in realization rates due to erroneous calculation assumptions. However, the Evaluators acknowledge that program staff are aware of these discrepancies and are working on addressing the calculation errors to be implemented in PY2025, along with various TRM updates.

2.6.2 CWA

Progress has been made toward achieving Health and Safety (H&S) goals.	H&S spending per-home has increased from $243 to $436 for CWA and from $205 to $395 for Low Income CWA.
Satisfaction remains high, despite some issues with the work performed.	In PY2024, 89.8% indicated being “Satisfied” or “Very Satisfied”. However, some respondents reported dissatisfaction with the assessment experience and the issue most commonly reported, mentioned by seven respondents, with the quality of the work, the quality control, or a mess being left behind.
Trade allies were satisfied with the program but made some suggestions for improvement.	Trade allies appreciate the OG&E Weatherization Program, particularly its staff communication, quick rebate processing, and training support. However, they identified areas for improvement, including addressing technological issues with the invoice portal and mitigating funding shortages that force downtime.

2.6.3 CEEP

Facility assessments are a valuable tool for driving energy efficiency improvements.	Nearly half of respondents received an assessment, and all found the information useful. However, most respondents indicated they would not have pursued energy efficiency upgrades without a recommendation from the assessment, reinforcing its role in motivating action.

Participant satisfaction with the program is high.	The vast majority of respondents expressed strong satisfaction with the program and their contractors. While most participants found contractor interactions professional and timely, isolated issues related to response time suggest that maintaining consistency in contractor service levels is important for continued satisfaction.
Program awareness is primarily driven by word-of-mouth referrals.	Over half of respondents learned about the program through personal networks. While contractor engagement and online resources also contribute to awareness, opportunities exist to expand outreach efforts through digital marketing and direct utility communications.
Contractors play a pivotal role in program participation and energy efficiency adoption.	More than half of respondents reported that their decision to participate was influenced by contractor recommendations, underscoring the importance of contractor engagement in driving program success.
Awareness of other available incentives is limited.	Nearly half of respondents were unaware of additional OG&E energy efficiency offerings. Improved communication about these incentives, particularly through contractor engagement and targeted outreach, could increase participation and maximize energy efficiency benefits.

2.7 Progress on Previous Recommendations

In PY2023, thirteen program or portfolio level recommendations were provided to OG&E as part of the EM&V of their portfolio.

The Evaluators reviewed OG&E's response to recommendations from the PY2023 EM&V report and categorized them as follows:

1) **Completed.** The recommendation has been fully implemented.
2) **Continuing.** The recommendation has been fully implemented. However, due to the nature of the recommendation, this will be monitored throughout the next program year.
3) **In progress.** The recommendation has been accepted and will be adopted before the next program year.
4) **Under consideration.** The recommendation is still under review by program staff or implementers and no decision has been made.
5) **Reviewed and rejected.** The recommendation has been considered and subsequently rejected. This also applies to recommendations that are no longer applicable due to changes in program design or operations.

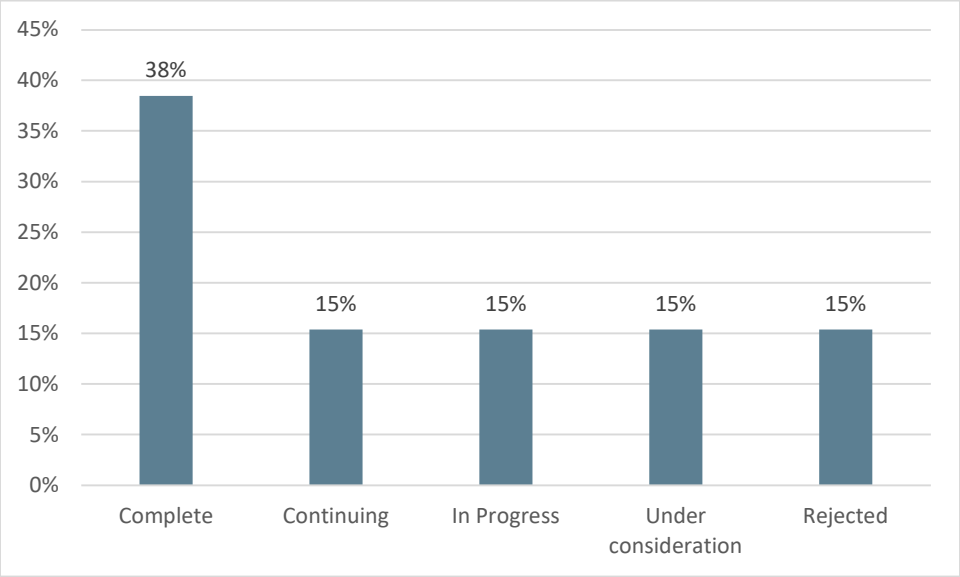


Figure 2-5: Status of PY2023 Recommendations (N = 13)

2.8 Structure of this EM&V Report

This EM&V report is structured as shown below:

- Section 1 Introduction;
- Section 2 Executive Summary;
- Section 3 General Methodology;
- Section 4 Evaluation Findings;
- Section 5 HEEP Findings;
- Section 6 CWA Findings;
- Section 7 CEEP Findings;
- Appendix A – Portfolio Cost-Effectiveness;
- Appendix B – CEEP Custom Project Site-level Reports;
- Appendix C – Net-to-Gross Approach and Outcomes; and
- Appendix D – Cost Effectiveness Inputs

3 General Methodology

3.1 Introduction

This section details general impact evaluation methods by program-type as well as data collection methods.

This section will present full descriptions of the following:

- Gross Savings Estimation;
- Sampling Methodologies;
- Free-Ridership and Spillover Determination;
- Process Evaluation Methodologies; and
- Data Collection Procedures.

The Evaluators would like to note that in several cases in this report, the summation of total savings, expenditures and other tracked metrics may be off by one due to rounding.

3.2 Glossary of Terminology

As a first step to detailing the evaluation methodologies, the Evaluators have provided a glossary of terms[14] to follow:

- **Deemed Savings** – An estimate of an energy savings or energy demand savings outcome (gross savings) for a single unit of an installed energy efficiency measure. This estimate (a) has been developed from data sources and analytical methods that are widely accepted for the measure and purpose and (b) is applicable to the situation being evaluated;
- **Free-rider** – A program participant who would have implemented the program measure or practice in the absence of the program. Free-riders can be total, partial, or deferred. However, per the Arkansas TRM V9.2 Protocol F, "participants who would have installed the equipment within one year will be considered full free riders; participants who would have installed the equipment later than one year will not be considered to be free riders (thus no partial free riders will be allowed).";
- **Gross Realization Rate** – The ratio of *Ex-post* Gross Savings and Ex-ante Gross Savings;
- **Participant** – A consumer who received a service offered through the subject efficiency program in each program year;
- **Net-to-Gross (NTG)** – A factor representing net program savings divided by gross program savings that is applied to gross program impacts, converting them into net

[14] This is in addition to sections 1.2 Acronyms and Abbreviations and 1.3 Savings Types.

program load impacts after adjustments for free ridership and spillover. (1 – Free-ridership % + Spillover %);

- **Spillover** – Reductions in energy consumption and/or demand caused by the presence of the energy efficiency program that exceeded the program-related gross savings of the participants. There can be participant and/or non-participant spillover rates depending on the rate at which participants (and non-participants) adopt energy efficiency measures or take other types of efficiency actions on their own (i.e., without an incentive being offered); and
- **Stipulated Values** – See "deemed savings.".

This glossary was drawn from several evaluation reference documents, such as the 2007 International Performance Measurement & Verification Protocol (IPMVP),[15] 2004 California Evaluation Framework,[16] 2006 Department of Energy (DOE) Energy Efficiency and Renewable Energy (EERE) Guide for Managing General Program Evaluation Studies[17] and the AR TRM V9.2.

3.3 Overview of Methods

The evaluation of the PY2024 OG&E portfolio is intended to provide:

- Net impact results;
- Gross impact results; and
- Program feedback and recommendations via a process evaluation.

In doing so, this evaluation provides verified gross savings results, recommendations for program improvement, and ensures cost-effective use of ratepayer funds. Leveraging experience and lessons learned from this impact evaluation can provide guidance to improve both the programs and portfolio in the future.

3.4 Sampling

Sampling is necessary to evaluate savings for the portfolio insomuch as verification of a census of program participants is typically cost-prohibitive. As per evaluation requirements set forth by the Independent Evaluation Monitor (IEM), samples were drawn to ensure +/- 10% precision at 90% confidence.

Programs were evaluated on one of three bases:

- Census of all participants;
- Simple random sample; or
- Stratified random sample.

[15] https://www.nrel.gov/docs/fy02osti/31505.pdf

[16] http://www.calmac.org/publications/California_Evaluation_Framework_June_2004.pdf

[17] http://energy.gov/sites/prod/files/2013/11/f4/pmguide_chapter_7.pdf

3.4.1 Census

A census of participant data was utilized for the evaluations of the CWA and the HEEP, where such reviews were feasible. All program measures were reviewed and evaluated.

3.4.2 In-Service Rates

The Evaluators conducted residential field data collection to assess the in-service rates for duct sealing, air infiltration, and ceiling insulation for the CWA program. The Evaluators also conducted field data collection to determine the in-service rates (ISRs) for various measures that were offered within the HVAC and the RSOL channels.

In cases where there were limited insights from the field data collection findings, the Evaluators performed measure literature reviews to determine stipulated or reported in-service rates found in Technical Reference Manuals or EM&V reports. The following tables show the various measure literature review results and the associated ISRs.

Additionally, in cases where there were limited or a lack of literature findings for a given measure, the Evaluators applied the literature review ISRs from similar measures. For example, dehumidifiers had few published ISRs in literature, resulting in the Evaluators applying the air purifier literature review ISR (94.2%).

Table 3-1: Advanced Power Strip Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
2023 CPS Energy TRM	CPS Energy, TX	SF Smart Strip	DI in Wx	100.0%
2022 Hawaii TRM	NA	APS	DI in SF	100.0%
IL TRM V11.0	NA	APS	DI in SF	100.0%
MO Ameren PY21 EM&V	NA	APS	DI in SF	95.0%
PY2023 EM&V Report	SWEPCO AR	APS	DI in SF	93.5%
Average ISR				**97.7%**

Table 3-2: Air Infiltration Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY2022 EM&V Report	Connecticut	Air Infiltration	TA Installed	92.0%
PY2023 EM&V Report	SWEPCO AR	Air Infiltration	TA Installed	95.4%
PY2023 EM&V Report	OG&E AR	Air Infiltration	TA Installed	98.0%
IL V11.0 TRM	NA	Air Infiltration	TA DI	100.0%
Average ISR				**96.1%**

Table 3-3: Air Purifier Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
MA 2021 eTRM	NA	Room Air Cleaners	Not Specific	97.0%
RI 2021 TRM	NA	Room Air Cleaners	Not Specific	97.0%
PY2021 EM&V Report	Entergy, AR	SF Appliances	DI in SF	78.2%
PY2021 EM&V Report	OG&E AR	Air Purifiers	Rebate	100.0%
PY2018 EM&V Report	RMP Utah	Appliances in SF	Rebate	100.0%
PY2021 EM&V Report	SWEPCO AR	Air Purifier	DI in Wx	92.9%
Average ISR				**94.2%**

Table 3-4: Ceiling Insulation Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	SF Envelope	TA Installed	100.0%
PY21 EM&V Report	Entergy, AR	MF Envelope	TA Installed	100.0%
PY18 EM&V Report	RMP Utah	Envelope Wx	TA Installed	100.0%
PY23 EM&V Report	OG&E AR	Ceiling Insulation	TA installed	97.0%
PY8 (2022) EM&V Report	SWEPCO LA	Ceiling Insulation	TA installed	100.0%
Average ISR				**99.4%**

Table 3-5: Central AC Replacement Insulation Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY11 EM&V Report	Entergy NO	AC Replacement	TA Installed	100.0%
PY21 EM&V Report	OG&E AR	AC Replacement	TA Installed	100.0%
PY21 EM&V Report	SWEPCO AR	AC Replacement	TA Installed	100.0%
2021 Rhode Island TRM	NA	Air Conditioning	TA Installed	100.0%
CT V20.0 TRM	NA	Window AC	Rebate	100.0%
Average ISR				**100.0%**

Table 3-6: Central HP Replacement Insulation Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY9 EM&V Report	SWEPCO LA	HP Replacement	TA Installed	100.0%
PY23 EM&V Report	OG&E AR	HP Replacement	TA Installed	100.0%
PY21 EM&V Report	SWEPCO AR	HP Replacement	TA Installed	100.0%
2023 Rhode Island TRM	NA	Central Heat Pump	TA Installed	100.0%
Average ISR				**100.0%**

Table 3-7: Duct Sealing Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	SWEPCO AR	Duct Sealing	TA Installed	99.7%
PY21 EM&V Report	OG&E AR	Duct Sealing	TA Installed	100.0%
PY11 EM&V Report	Entergy NO	Duct Sealing	TA Installed	94.4%
2021 Rhode Island TRM	NA	Duct Sealing	Not Specific	100.0%
Average ISR				**98.5%**

Table 3-8: Faucet Aerator Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	MF DHW	TA Installed	100.0%
IL TRM V11.0	NA	Aerator	DI ISR	93.0%
New Orleans TRM 7.0	NA	Aerator	DI ISR	98.0%
IA TRM V7.0	NA	Aerator	DI ISR	95.0%
PY23 EM&V Report	OG&E AR	Aerator	TA installed	100.0%
Average ISR				**97.2%**

Table 3-9: LED Lamp Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY9 (2023) EM&V Report	SWEPCO LA	LED Lamp	TA Installed	100.0%
2023 CPS Energy (TX) TRM	CPS Energy	LED Lamp	Not Specific	97.0%
AR TRM V9.2	NA	LED Lamp	Not Specific	97.0%
PY23 EM&V Report	OG&E AR	LED Lamp	DI in Wx	100.0%
Hawaii TRM PY2022	NA	LED Lamp	Not specific	97.0%
Average ISR				**98.2%**

Table 3-10: Low-Flow Showerhead Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	Entergy, AR	MF DHW	TA Installed	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	ENO	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	100.0%
Average ISR				**97.5%**

Table 3-11: Pool Pump Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	DTE	Pool Pump	Rebate	85.0%
PY10 EM&V Report	Entergy NO	Pool Pump	Rebate	100.0%
2021 Rhode Island TRM	NA	Pool Pump	Rebate	100.0%
Average ISR				**95.0%**

Table 3-12: School Kits – Mixed Measures Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
IL V11.0TRM	NA	Wx School Kit	Schools	58.0%
IL V11.0TRM	NA	School EE Kit	Schools	83.8%
Iowa V7.0 TRM	NA	School EE Kit	Schools	60.0%
Ameren MO PY21 TRM V2.0	NA	School EE Kit	Schools	90.0%
Average ISR				**73.0%**

Table 3-13: Smart Thermostat Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
2022 Hawaii TRM	NA	Smart thermostat	Not Specific	90.0%
PY22 EM&V Report	OG&E AR	Smart thermostat	TA Installed	100.0%
PY21 EM&V Report	SWEPCO AR	Smart thermostat	TA Installed	100.0%
2023 Rhode Island TRM	NA	Smart thermostat	Not Specific	100.0%
PY2022 EM&V Report	Black Hills, CO	Smart thermostat	Not specific	100.0%
Average ISR				**98.0%**

Table 3-14: Window Literature Review Results

Source	Utility	Measure Name	Delivery Mechanism	In-Service Rate
PY21 EM&V Report	DTE	Pool Pump	Rebate	85.0%
PY10 EM&V Report	Entergy NO	Pool Pump	Rebate	100.0%
2021 Rhode Island TRM	NA	Pool Pump	Rebate	100.0%
Average ISR				**95.0%**

3.4.3 Simple Random Sampling

For programs with relatively homogenous measures, the Evaluators conducted a simple random sample when surveying program participants. In PY2024, this applied to the CWA for site visits. The sample size for verification surveys was calculated to meet ±10% precision at 90% confidence (90/10). The sample size to meet 90/10 requirement was calculated based on the coefficient of variation of savings for program participants, defined as:

$$CV = \frac{Standard\ Deviation_x}{Mean_x}$$

Where x is the average kWh savings per participant. Without data to use as a basis for a higher value, it is typical to apply a CV of 0.5 in residential program evaluations. The resulting sample size is estimated with the following:

$$n_0 = \left(\frac{1.645 * CV}{RP}\right)^2$$

Where:

1.645 = Z score for 90% confidence interval in a normal distribution

CV = Coefficient of Variation

RP = Required Precision, 10% in this evaluation

3.4.4 Stratified Sampling

For the CEEP, Simple Random Sampling was not an effective sampling strategy. The CV values observed in business programs are typically very high because the distributions of savings are generally positively skewed. Often, a relatively small number of projects account for a high percentage of the estimated savings for the program.

Instead, we used a sample approach designed to select projects for the M&V sample that considers skewed data. With this approach, we selected several sites with large savings for the sample with certainty and then took a systematic random sample of the remaining sites. Once the certainty sites had been selected, the remaining sites were ordered according to the magnitude of their savings and then systematically random sampled. This ensured that any sample selected had some units with high savings, some with moderate savings, and some with low savings.

3.5 Impact Evaluation Activities by Program

The Evaluators used established industry-standard approaches to estimate energy savings and demand reductions at the measure, program, and portfolio levels. The Evaluators followed all applicable measure- and program-level guidelines and protocols from the AR TRM V9.2.

To evaluate gross program impacts, the Evaluators adjusted program-reported gross savings using the results of our research, relying primarily on engineering desk reviews, AR TRM V9.2 deemed savings calculation and on-site verification and metering for applicable programs. To calculate deemed savings, we verified the appropriateness of savings algorithms and values in program tracking data as compared to guidelines in the AR TRM V9.2. Where sampling was used (for surveys and site visits), we designed a sampling plan to achieve a minimum precision of ±10% at 90% confidence.

For each program and measure category, the Evaluators estimated energy savings and demand reduction by applying a verified gross savings adjustment to program-reported savings. Table 3-15 lists the impact analysis activities the Evaluators performed for the PY2024 EM&V.

Table 3-15: PY2024 Impact Evaluation Activities by Program

Program	CEEP	CWA	HEEP
Database and Document Review	X	X	X
Engineering Desk Review	X	X	X
Deemed Savings Review per the AR TRM	X	X	X
Leakage Analysis			X
Modeling	X		X
Load Data Analysis & Baseline Estimation	X		

Where applicable, more detailed engineering and econometric approaches are provided in the program chapter.

3.6 Estimation of Net Savings

Table 3-16 below summarizes the *ex-post* net savings approach used in the PY2024 evaluations. Additional details and the reasons for taking the stated approach, survey administration procedures, and weighting approaches used for developing program-level net savings impacts are discussed in the program chapters.

Table 3-16: PY2024 *Ex-post* Net Savings Approach

Program	Literature Reviews	Self-Report Surveys	Citation of Prior-Year Surveys	Econometric Model	Not Applicable
HEEP	X	X	X		
CWA			X		
CEEP		X	X		

3.6.1 Residential and C&I Programs Net Savings Estimation Methodology

The Evaluators conducted primary research in the form of participant self-report to estimate the *ex-post* net impacts of the HEEP and CEEP downstream channels and applied the downstream NTG ratio to the midstream channel. The survey battery addressing residential program free-ridership is as follows:

- Were you planning to complete the same [MEASURE] project in [YEAR] before learning about the program?
    - **IF PLANNING = "YES":** Would your budget for the planned project have accommodated the project's full cost if you had not completed the project through the program?

- If the incentive was not available from the program, would you have completed the same project or would you have done something different?
    - **IF RESPONSE = "SOMETHING DIFFERENT":** Would it have been the same level of energy efficiency, higher energy efficiency, or lower energy efficiency?
- Would you have completed the same project or one that made your home even more energy efficient within one year if the program was not available?

A respondent is a free rider if they indicate all the following:

1) They had plans to complete the same measure within one year;
2) Had a budget that could accommodate the full project cost without the program;
3) Would have done the same project or a more efficient version of the project in the absence of the program; and
4) Would have completed the same or more efficient version of the project within a year.

In PY2024, this approach was applied to:

- HEEP RES HVAC
    - Air Conditioners
    - Heat Pumps
- CEEP Large C&I, SBS, and SAGE

This approach is summarized in Figure 3-1.

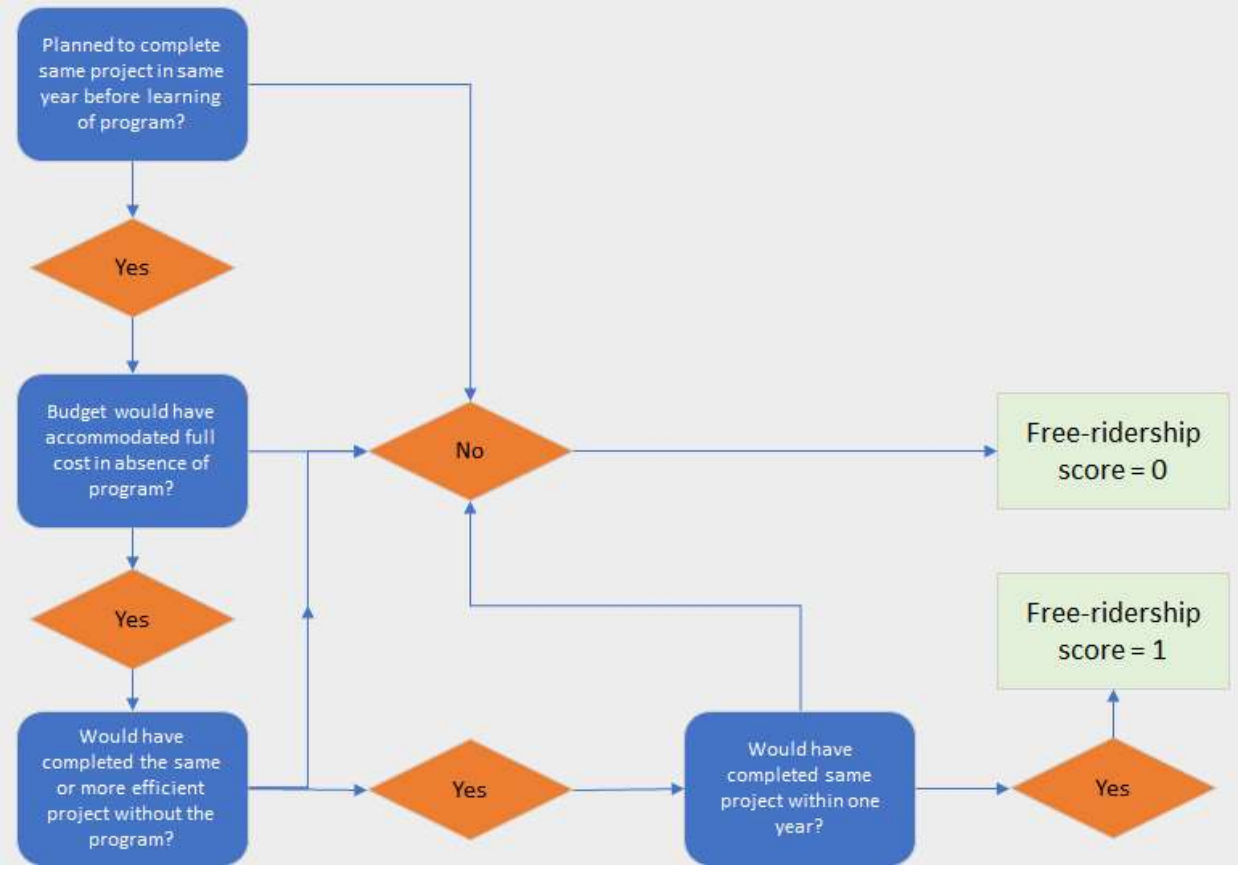


Figure 3-1: Free-ridership Flowchart

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.

To determine if the savings from the reported measures were attributable to the program, survey respondents are 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 were provided on a scale of 1 to 5 and were used to develop a spillover score as follows:

Spillover Score = Average (SO1, 6 – SO2)

Savings from measures associated with a spillover score of greater than 4 were considered attributable to the program.

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

3.7 Deviations from the AR TRM V9.2

The sections below outline where the Evaluators deviated from the AR TRM V9.2 in PY2024:

- CEEP: CoolSaver, the CLEAResult Work Paper[18] was used for these projects.
- HEEP: CoolSaver, the CLEAResult Work Paper was used for these projects.
- HEEP: Water Dispensers/Coolers; given that this measure is not in the AR TRM V9.2, the Evaluators cited the New Orleans TRM V7.0.[19]

3.8 Cost-Effectiveness Approach

The cost-effectiveness of OG&E's programs was calculated based on reported total spending, energy savings (kWh), and demand reduction (kW) for each of the energy efficiency programs. All spending estimates were provided by OG&E. The methods used to calculate cost-effectiveness are informed by the California Standard Practice Manual.[20] Additional information can be found in Appendix-a: Portfolio Cost-Effectiveness.

3.9 Non-Energy Benefit (NEB) Approach

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 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 Arkansas TRM V9.2. 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

[18] The CLEAResult CoolSaver work paper is updated annually and provided to the Evaluator by the Implementer.

[19] https://cdn.entergy-neworleans.com/userfiles/content/energy_smart/New_Orleans_TRM/New-Orleans-TRM-Version-7.pdf

[20] California Standard Practice Manuel: Economic Analysis of Demand Side Management Programs, October 2001. Available at: http://www.cpuc.ca.gov/NR/rdonlyres/004ABF9D-027C-4BE1-9AE1-CE56ADF8DADC/0/CPUC_STANDARD_PRACTICE_MANUAL.pdf

direction and guidance regarding the inclusion of Non-Energy Benefits ("NEBs") in the Technical Reference Forum (p. 21 of 21):[21]

> *"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; and*
> - *benefits of avoided and deferred equipment replacement costs as conditioned herein."*

Per this Protocol, the recommended approach to quantify the NEBs will fall within these three categories.

3.9.1 Non-Energy Benefit (NEB) Protocols

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

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

OG&E's tracking system captures inputs needed for NEB calculations based on the AR TRM V9.2 algorithm. The Evaluators review included assessing the consistency of inputs for all assumptions for each measure.

[21] Arkansas TRM V9.2, Protocol L.

3.10 Overview of Process Evaluation

The Evaluators took the following steps to determine the scope of the process evaluation for the PY2024 OG&E programs.

3.10.1 General Approach

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 Evaluators have consulted and followed TRM V9.2 Volume 1 Protocol C, to determine whether conducting a process evaluation is appropriate for a specific program in the portfolio, as well as the appropriate timing for the process evaluation.

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: TRM V9.2 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

Table 3-18 shows the criteria that would indicate that the conditions were appropriate to complete a process evaluation in PY2024.

Table 3-18: Determination of PY2024 Process Evaluation Structure and Timing

Criterion	HEEP and CWA/LI CWA					CEEP		
	RSOL	HVAC	CPS	PEH	CWA/ LI CWA	Large C&I / SAGE	SBS	SEM
Determining Appropriate Timing								
New and innovative components	No	No	No	No	No	No	No	No
Process evaluation completed during funding cycle	No	No	No	No	No	No	No	No
New vendor or implementation Trade Ally	No	No	No	No	No	No	No	No
Determining Appropriate Conditions								
Impact problems	No	No	No	No	N/A	No	No	Yes
Information/educational objectives not met	No	No	No	No	N/A	No	No	No
Participation problems	No	No	No	No	N/A	No	No	No
Operational challenges	No	No	No	No	N/A	No	No	No
Program is cost effective	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes
Negative feedback	No	No	No	No	N/A	No	No	N/A
Problems with program or low satisfaction	No	No	No	No	N/A	No	No	N/A
Level of Effort in PY2024	**Full**	**Full**	**Limited**	**Limited**	**Full**	**Limited**	**Limited**	**Limited**

4 Evaluation Findings

This chapter provides a summary of the findings and any cross-cutting evaluation activities that occurred over the course of the PY2024 EM&V effort. Specifically, this chapter includes: a summary of program and portfolio performance in PY2024; a summary of EM&V activities and expenditures in PY2024; and high-level findings that cut across programs.

4.1 Summary of Evaluation Effort

Table 4-1 summarizes the EM&V expenditures by the Evaluators, total EM&V expenditures by all parties, and total program budgets.

Table 4-1: OG&E Portfolio PY2024 EM&V Expenditures

PY2024 EM&V Expenditures	PY2024 Portfolio Expenditures	EM&V as % of Expenditures
$297,584	$9,241,043	3%
Sums may differ due to rounding.		

To facilitate a thorough evaluation, the Evaluators conducted several primary research and data collection activities, including interviews with program and implementer staff, customer surveys, property manager interviews, and Trade Ally interviews. Specific PY2024 activities by program are listed in Table 4-2.

Table 4-2: Summary of PY2024 Data Collection Efforts

Program	Channel	# Site Visits	# Surveys	# Interviews	# Staff Interviews[22]
HEEP	CPS	0	0	0	8[23]
	HVAC	12	17	0	
	RSOL	3	18	0	
	LivingWise®	0	553	0	
	PEH – NC	0	0	0	
CWA	CWA	28	53	5	
	Low Income	37	66		
CEEP	Large C&I	0	4	0	
	SBS	0	10	0	
	Midstream	0	0	0	
	SAGE	0	1	0	
	CEI	0	0	0	
Total		**80**	**722**	**5**	**8**

[22] These interviews were performed with property managers, trade allies and other market actors, such as builders.

[23] Interviews were conducted with 4 OG&E and 3 CLEAResult staff. Several staff members participate in more than one program/channel.

4.2 Summary of Cost-effectiveness Results

Table 4-3 below outlines the results from the cost-effectiveness analysis performed on the PY2024 portfolio, by program, along with the net benefits for the total resource cost (TRC) test.

Table 4-3: Cost-Effectiveness by Program, PY2024

Program	TRC	UCT	RIM	PCT	TRC Net Benefits
HEEP	1.42	1.27	0.37	7.67	$ 435,697
CWA	1.28	1.16	0.42	4.19	$ 1,001,210
CEEP	2.00	2.11	0.46	7.87	$ 5,027,424
EEA	0.00	0.00	0.00	0.00	$ -
Total	**1.67**	**1.65**	**0.44**	**6.20**	**$ 6,464,331**
Sums may differ due to rounding.					

The incorporation of NEBs into cost-effectiveness testing in Arkansas at times leads to what could be thought of as atypical results. For example, the HEEP and the CWA have a higher TRC than UCT. Under a narrower approach to TRC (without NEBs), TRC would always be lower than UCT assuming that incentives are less than or equal to incremental cost. However, with NEBs the TRC score for these programs is greater than the UCT score because the aggregate impact of the NEBs and the negative gas interaction penalty is still a benefit of greater magnitude than the difference between measure incremental costs and incentive levels.

Table 4-4: Cost Effectiveness Analysis: Economic Input Comparison

Discount Rates	PY2024
Utility (TRC)	7.17%
Utility (UCT)	7.17%
Utility (RIM)	7.17%
Societal (SCT)	3.04%
Participant (PCT)	6.00%
Line Losses	
Line Losses (demand)	8.37%
Line Losses (energy)	8.37%
Line Losses (therm)	2.69%
Escalation rate	2.00%
Avoided Costs	
Avoided Energy ($/kWh)	$ 0.03
Avoided Demand ($/kW)	$ 107
Avoided Natural Gas ($/therm)	$ 0.474
Avoided Water ($/gallon)	$ 0.0097
Avoided Propane ($/gallon)	$ 2.28

4.2.1 Cost-effectiveness Methodology

See Appendix-a: Portfolio Cost-Effectiveness of this report for additional details on the Evaluators approach.

Avoided Costs and Real Economic Carrying Charge (RECC)

The Evaluators used the economic inputs provided by OG&E for the cost benefit analysis, this included avoided costs that were estimated using the Real Economic Carrying Charge (RECC) approach.

Marginal Line Losses

The Evaluators used marginal line loss inputs provided by OG&E for the cost benefit analysis.

4.2.2 Non-Energy Benefits (NEBs)

Below is a summary of the Non-Energy Benefits (NEBs) that were calculated in each program in PY2023.

- **HEEP**: this program captured propane (LivingWise® Schools Outreach), natural gas (Residential Solutions, Consumer Products and LivingWise® Schools Outreach), water (Residential Solutions and LivingWise® Schools Outreach) and ARCs (Residential Solutions, Consumer Products and LivingWise® Schools Outreach).
- **CWA and LI pilot**: this program captured natural gas savings, propane savings, water savings and ARCs.
- **CEEP**: this program captured natural gas (Large C&I, SAGE, Midstream and Small Business Solutions) and ARCs (Large C&I, SAGE, Midstream and Small Business Solutions).

The tables below outline the potential NEBs for the PY2024 OG&E energy efficiency portfolio.

Table 4-5: PY2024 Residential NEBs by Measure[24]

Measure	Water	Other Fuel	ARCs/ DRCs	AR TRM V9.2 Section
Air Infiltration		X		2.2.9
Ceiling Insulation		X		2.2.2
Duct Sealing		X		2.1.11
LED Lamp		X	X	2.5.1; 2.5.2
Faucet Aerator	X	X		2.3.4
Low-Flow Showerhead	X	X	X	2.3.5
Wall Insulation		X		2.2.3
Window		X		2.2.7

Table 4-6: PY2024 C&I NEBs by Measure

Measure	Water	Other Fuel	ARCs/ DRCs	AR TRM V9.2Section
Commercial door air infiltration		X		3.2.11
Commercial showerheads	X			3.3.5
Faucet aerators	X			3.3.2
High intensity discharge (HID) lamps		X	X	3.6.3
Integrated ballast CFL lamps		X	X	3.6.3
Integrated ballast LED lamps		X	X	3.6.3
LEDs		X	X	3.6.3
Lighting controls		X	X	3.6.2
Low-flow pre-rinse spray valves	X		X	3.8.11
Magnetic ballast T5 or premium T8 retrofit of T12		X	X	3.6.3
Midstream: exterior fixtures		X	X	3.6.3
Midstream: interior fixtures		X	X	3.6.3
Midstream: interior lamps		X	X	3.6.3
Modular CFLs and CCFLs		X	X	3.6.3
Other linear fluorescents		X	X	3.6.3
Smart thermostats		X		N/A

NEB estimates are found in each of the program chapters within this report. There are no deferred replacement costs (DRC) estimated for the PY2024 portfolio.

[24] 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.

4.2.3 NEBs Impact

The figure below summarizes total TRC benefits by program and by category. HEEP had a slightly higher percent of net benefits from NEBs (increasing from 13% to 15%), which the Evaluators attribute to the increase in NTG values for PY2024.

The percentage of TRC benefits from NEBs for the CWA declined from 17% in PY2023 to 9% in PY2024. The Evaluators found that PY2024 homes were more likely to have electric heating.

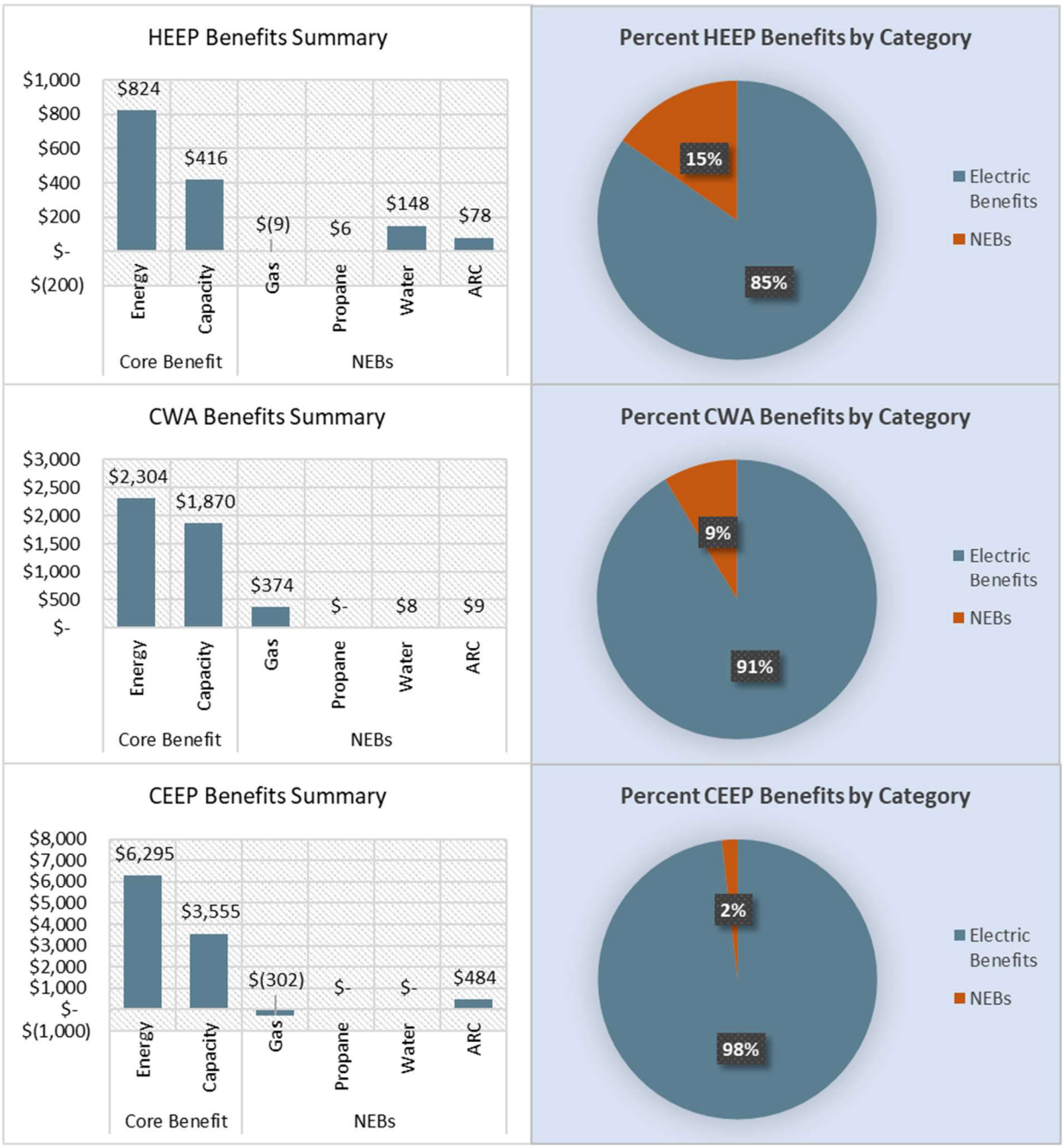


Figure 4-1: PY2024 NEBs TRC Impact – Summary by Program

4.3 Portfolio Comprehensiveness

This section outlines how the OG&E portfolio performed against the seven factors developed by the IEM and the Parties Working Collaboratively (PWC).[25]

The Evaluators reviewed the OG&E programs and portfolio to assess whether it complied with the APSC Comprehensiveness Goals. In assessing these metrics, the Evaluators score them on numerous 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; and

NA: Performance indicator is not applicable to this program.

This section will reflect the results for all programs in PY2024.

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

Whether the programs or portfolio provide, directly or through identification and coordination, the education, training, marketing, or outreach needed to address market barriers to the adoption of cost-effective energy efficiency measures.

The Evaluators reviewed Factor 1 as three separate components: 1) education, 2) training, and 3) marketing and outreach. Each component is addressed below.

The Evaluators determined that OG&E met the objectives of Factor 1.

OG&E has consistently approached customer education in a comprehensive manner.

- OG&E's programs used a range of channels to provide educational materials to their programs' target markets. The educational materials included brochures, case studies, and presentations to trade & industry groups.
- OG&E's program staff conducts outreach and education through a wide range of potential program partners, including contractors, retailers, the home builder association, and local governments.

The scoring for customer education is in Table 4-7.

[25] Docket No. 08-144-U, "Order defining "comprehensive" in the planning, approval and implementation of essential energy efficiency services," found here: http://www.apscservices.info/pdf/07/07-085-tf_183_1.pdf.

Table 4-7: Assessment of Customer Education by Program

Program	Provides Educational Materials	Outreach Through Multiple Channels	Education Targeted to Specific Market Barriers	Coordination of Education by Multiple Entities
HEEP	●	●	●	●
CWA	●	●	●	N/A
CEEP	●	●	●	●

OG&E has consistently approached training in a comprehensive manner.

Scoring for Trade Ally training is in the table below. The Evaluators reviewed each OG&E program to assess whether:

- The program is Trade Ally driven;
- If not, is it a program that could or should be Trade Ally driven;
- The program provides training classes to support their program offerings; and
- Whether the programs need Trade Ally certification.

All OG&E programs have components that are trade-ally driven. In past evaluations, all interviewed Trade Allies indicated satisfaction with the residential programs.

In PY2021, it was found that new Trade Allies in the CWA were not installing H&S measures (with fewer than 5% of participants receiving any H&S spending). This increased to 29% in PY2022, 41% in PY2023, and 63% in PY2024.

Table 4-8: Assessment of Trade Ally Training

Program	Trade Ally Training Offered	Training Requirements Adhere to Best Practices	Trade Allies Participate in Training
HEEP	●	●	●
CWA	●	●	●
CEEP	●	●	●

OG&E consistently approached marketing and outreach in a comprehensive manner.

The Evaluators reviewed the marketing and outreach strategies associated with each of the OG&E programs. These strategies were reviewed to assess whether they adequately addressed the relevant participant barriers, the extent to which Trade Allies were actively marketing the program (where appropriate), and whether the materials were correctly targeted in marketing a comprehensive approach to energy efficiency.

The scoring for marketing and outreach is in Table 4-9.

Table 4-9: Assessment of Marketing & Outreach by Program

Program	Marketing Addresses Specific Barriers	Trade Allies Promote Program	Marketing Support Provided to Trade Allies	Marketing Performed Through Diverse Channels
HEEP	●	●	●	●
CWA	●	●	●	●
CEEP	●	●	●	●

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

- OG&E programs have marketing materials that address specific barriers associated with the targeted segments or technologies.
- The program has developed Spanish-language materials and placed ads on Spanish-language radio.
- The OG&E programs are marketed through a diverse range of channels, including mass-media advertising, online advertising, and meetings and training sessions with professional organizations and trade groups.
- Trade Allies market the programs through social media, flyers, and word of mouth.

4.3.2 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 Evaluators assessed performance indicators associated with the adequacy of budget allocations, the cost per kWh saved, and whether program staff and Trade Ally support was sufficient to support program goals.

The Evaluators determined that OG&E achieved the Factor 2 objectives for all programs.

Program budgets were sufficient to implement the programs.

OG&E's energy resource acquisition cost at a portfolio level is in line with averages for utilities across the country with programs that have been run for several years.[26] Program and implementation staff reported that, overall, they had sufficient budget to cover program implementation in PY2024. Table 4-10 shows the spending and energy savings percentages for each program, along with the cost per kWh of savings.

[26] 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

Table 4-10: PY2024 Budget Allocation and Program Goal Attainment

Program	Spending (Percentage of Budget)	Energy Savings (Percentage of Goal)	Levelized ($ per kWh)
HEEP	80%	117%	$ 0.040
CWA	104%	105%	$ 0.058
CEEP	93%	120%	$ 0.029
Total[27]	**95%**	**116%**	**$ 0.037**

Scoring for Factor Two is in Table 4-11.

Table 4-11: Assessment of Budgetary, Management, and Delivery Resources

Program	Budget is Sufficient to Support Program Goals	Cost per-kWh Aligns with Program Plan	Program Has Sufficient Staffing	Program Has Sufficient Trade Ally Support
HEEP	●	●	●	●
CWA	●	●	●	●
CEEP	●	●	●	●

4.3.3 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 Evaluators identified the end-uses addressed by each program. OG&E designed programs to offer customers a range of choices. While some programs are focused on single end-use measures, OG&E offers other programs that encourage participants to capture deeper energy savings through comprehensive projects.

The Evaluators determined that OG&E continued to meet the objectives of Factor 3 in PY2024.

OG&E's programs serve a wide range of customer sectors and end-use measure categories.

- All major end uses in the AR TRM V9.2 were utilized by the residential programs.
- All major end uses are targeted in the C&I programs, and 47% of net savings are from non-lighting measures. In PY2024, CEI accounted for 22% of CEEP ex-post net savings.

The scoring for this factor is in Table 4-12.

Table 4-12: Assessment of End-uses Addressed by Program

Program	HVAC	Lighting	Hot Water	Envelope	Industrial Process	Behavioral
HEEP	●	●	●	●	N/A	N/A
CWA	●	●	●	●	N/A	N/A
CEEP	●	●	●	N/A	●	●

[27] Total is the percent of program-specific spend compared to program-specific budgets. This excludes EEA.

Presently, the OG&E portfolio covers almost all end-uses. The Evaluators found that sectors where the program offerings were not providing sufficient outreach and market transformation included:

- **Residential Behavioral.** The residential portion of the portfolio does not include any behavioral-based programs.

4.3.4 Factor Four: Comprehensively Address Customer Needs

Whether the programs and/or portfolio, to the maximum extent reasonable, comprehensively address the needs of customers at one time, to avoid cream-skimming and lost opportunities.

In assessing Factor 4, the Evaluators reviewed the extent to which OG&E offers technical support to educate customers on cost-effective, comprehensive projects and/or whether it provides incentives that encourage participants to install multiple measures and/or those with higher efficiency levels that increase project comprehensiveness.

The Evaluators found that OG&E met the Factor 4 objectives in most respects in PY2024.

OG&E provides technical support to educate customers and encourage them to install comprehensive projects.

The OG&E portfolio has programs that bundle on-site technical assistance with direct installation. The range of technical assistance varies by program. The programs have procedures for following up with customers after their participation, which includes thank-you calls or emails, and verification inspection. Marketing materials typically make attempts at cross-promotion of programs.

The majority of OG&E's programs are designed to facilitate multi-measure installations.

The OG&E portfolio has no specific requirements for installation of multiple measures. Customers are able to 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. However, there is no specific encouragement in place to incentivize comprehensive projects, as seen elsewhere in Arkansas.

The OG&E portfolio has tiered or bundled incentives for premium efficiency. For example, $100 per ton incentives for residential air conditioners below SEER 18, and $200 a ton for SEER 18 and above and higher incentives for greater air and duct sealing leakage reductions.

Table 4-13 provides an overview of the scoring for this Factor.

Table 4-13: Assessment of Project Comprehensiveness by Program

Program	Technical Assistance and/or Audits	Information Provided Comprehensive for Efficiency	Bundled Incentives for Multiple Measures	Tiered Incentives for Premium Efficiency	Trade Ally Incentives for Premium Efficiency
HEEP	●	●	○	●	●
CWA	●	●	○	●	●
CEEP	●	●	○	●	●

4.3.5 Factor Five: Targeting Market Sectors & Leveraging Opportunities

Whether such programs take advantage of opportunities to address the comprehensive needs of targeted customer sectors or to leverage non-utility program resources.

The Evaluators assessed the portfolio's ability to address customers' comprehensive needs in Factor 4, the Evaluators assessed Factor 5 by focusing specifically on OG&E's efforts to customize its approach for targeted customer sectors. The Evaluators also assessed OG&E's use of external resources to promote the program and/or to improve customers' project returns.

The Evaluators found that OG&E met the Factor 5 objectives in PY2024.

OG&E has taken a collaborative and comprehensive approach to leveraging internal and external resources and targeting customer sectors most likely to benefit from its programs.

The CWA program is jointly implemented with OG&E and AOG and is a very successful example of cross-fuel coordination. The costs are split when a home is an OG&E and AOG customer and paid in full by OG&E if they are served by another gas utility (such as a municipal or a rural co-op). AOG pays in full if the home is served by an electric utility other than OG&E.

The Evaluators also found that OG&E's programs are marketed through industry partners including professional organizations, trade groups (e.g., builder associations), and homeowner's associations.

Table 4-14 summarizes the comprehensiveness of offerings for each program.

Table 4-14: Assessment of Targeted Customer Sectors by Program

Program	Residential	Multifamily	Mobile Home	Small Commercial	Large Commercial	Industrial	Agricultural	Public Sector
HEEP	●	●	●	N/A	N/A	N/A	N/A	N/A
CWA	●	N/A	●	N/A	N/A	N/A	N/A	N/A
CEEP	N/A	N/A	N/A	●	●	●	●	●

4.3.6 Factor Six: Cost-effectiveness

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

To evaluate Factor 6 in PY2024, the Evaluators assessed three key performance indicators: 1) whether programs achieved their Plan goals, 2) NTG values, and 3) program cost-effectiveness.

Goal Achievement

The portfolio overall met 116% of its net kWh goal and 111% of its net kW goal. All programs met kWh savings goals.

Cost-Effectiveness Results and NTG

OG&E's portfolio is cost effective, as demonstrated with Total Resource Cost (TRC), Utility Cost Test[28] (UCT), and Participant Cost (PCT) test ratios greater than 1.0.

Table 4-15 presents program- and portfolio-level NTG and benefit/cost ratios for each perspective. The UCT and PCT results are particularly relevant to Comprehensiveness Factor 6, as these test results indicate that portfolio benefits exceeded its costs from the utility and customers' perspectives, respectively.

Table 4-15: Portfolio NTG and Cost Effectiveness Results

Program	Verified Net Savings (kWh)	NTG	TRC	UCT	RIM	PCT
HEEP	2,807,772	98%	1.42	1.27	0.37	7.67
CWA	6,153,155	98%	1.28	1.16	0.42	4.19
CEEP	22,377,294	100%	2.00	2.11	0.46	7.87
Portfolio	**31,338,220**	**99%**	**1.67**	**1.65**	**0.44**	**6.20**

Table 4-16 outlines the scoring for Factor Six.

Table 4-16: Assessment of Cost Effectiveness

Program	NTG Ratio	NTG Ratio Within Industry Norms	Met Net Savings Goal	Program TRC
HEEP	98%	●	●	1.42
CWA	98%	●	●	1.28
CEEP	100%	●	●	2.00

[28] The UCT is, in some cases, referred to as the Program Administrator Cost Test (PACT).

4.3.7 Factor Seven: EM&V Procedures

Whether the programs and/or portfolio have EM&V procedures adequate to support program management and improvement; the calculation of energy, demand, and revenue impacts; and resource planning decisions.

To assess Factor 7, the Evaluators reviewed performance indicators, including: 1) whether the EM&V Plan conforms to the TRM V9.2, 2) whether the Plan achieved IEM approval, 3) whether the EM&V implementer followed an articulated plan, and 4) the extent to which OG&E provided high quality and timely data and other support necessary to conduct EM&V.

Below we summarize the PY2024 EM&V procedures' compliance with each of these evaluation metrics.

- The EM&V Plan conformed to the TRM V9.2.
- The Evaluators drew extensively on the AR TRM V9.2 to calculate deemed savings. Any deviation from the TRM has been explained in corresponding sections of the program.
- The EM&V Plan was approved by the IEM.

The Evaluators prepared a comprehensive EM&V Plan for PY2024 and submitted it to OG&E and the IEM for review. The Evaluators received several comments from the IEM regarding areas for refinement or additional detail. In most cases, the IEM requested greater detail in the description of EM&V activities, and wherever possible, the Evaluators addressed these.

During the course of the Evaluation, if there were instances where the Evaluators needed to deviate from the original EM&V Plans, the Evaluators communicated the change to the IEM for their feedback and approval.

OG&E provided timely/high quality data and support for the EM&V process.

OG&E and its implementers were very responsive to the Evaluators' data requests and accessing data through CLEAResult's DSMT database was straightforward and productive.

Specific examples of collaboration provided by OG&E and its implementation contractors to support the EM&V process include:

- **Custom M&V Plans**: For C&I custom projects, the implementer provided M&V plans that were reviewed by the Evaluator prior to project implementation. Early collaboration on M&V plans and data collection activities allow the implementer and Evaluators an opportunity to achieve consensus on data requirements and calculation approaches for custom projects. This collaboration reduces risk associated with differences in ex-ante and ex-post savings for these projects.
- **Data Transfer and Data Quality**: The Evaluators found that tracking contained all required information in almost all instances and the data supported evaluation needs.

- **Some measures in HEEP had low realization rates due to use of default capacity and efficiency values**. The Evaluators found low realization rates for dehumidifiers due mostly to the use of a default size and efficiency value. Savings were adjusted after accounting for differences across units.

The Evaluators reviewed the quality of program tracking data to assess whether the data allowed for complete evaluation. Further, the Evaluators reviewed the extent to which individual savings calculations were performed using facility-specific inputs into the AR TRM V9.2 algorithms versus the use of simplifying assumptions. The scoring for Factor Seven is found in Table 4-17.

Table 4-17: 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
HEEP	●	●	●	●
CWA	●	●	●	●
CEEP	●	●	●	●

In PY2024, CWA staff performed QA/QC inspections on 10% of all sites in the program. The table below is a summary of the net present value (NPV) of all NEBs in the PY2024 OG&E portfolio.

Table 4-18: PY2024 OG&E NEB Findings Summary

Program	NPV NGS ($)	NPV LPGS ($)	NPV of Water/ WW ($)	NPV ARC ($)	Total NPV of NEBs ($)
HEEP	$ (8,718)	$ 6,037	$ 148,468	$ 78,454	$ 224,241
CWA	$ 374,013	$ -	$ 7,798	$ 8,565	$ 390,375
CEEP	$ (302,191)	$ -	$ -	$ 484,068	$ 181,877
Total	**$ 63,104**	**$ 6,037**	**$ 156,266**	**$ 571,087**	**$ 796,493**
Sums may differ due to rounding.					

5 Home Energy Efficiency Program (HEEP)

5.1 Overview of Evaluation Findings

Table 5-1: PY2024 HEEP Energy Savings Summary

Channel / Measure	Ex-ante Gross Energy Savings (kWh)	Realization Rate (kWh)	Ex-post Gross Energy Savings (kWh)	NTG (kWh)	Ex-post Net Energy Savings (kWh)
Consumer Products	**1,027,059**	**101%**	**1,036,288**	**97%**	**1,005,602**
Advanced Power Strip	211,259	99%	208,829	92%	191,566
Air Purifier	8,244	97%	8,004	85%	6,764
Dehumidifier	5,333	75%	3,977	80%	3,162
LED Lamp (Food Bank)	736,995	101%	741,553	100%	741,553
LED Lamp (Specialty)	4,655	242%	11,255	100%	11,255
LED Lamp (Standard)	8,457	121%	10,204	100%	10,204
Smart Thermostat	43,702	99%	43,265	80%	34,666
Ventilation Fan	225	365%	820	69%	566
Water Cooler	8,191	102%	8,380	70%	5,866
HVAC Replacement & Tune-up	**406,813**	**104%**	**421,495**	**91%**	**384,170**
Central AC Replacement	21,428	101%	21,595	100%	21,595
Central AC Tune-up: M&V	23,776	100%	23,761	90%	21,385
Central AC Tune-up: Modeled	141,012	100%	140,990	90%	126,891
Central HP Replacement	12,099	220%	26,648	100%	26,648
Central HP Tune-up: M&V	23,529	100%	23,541	90%	21,187
Central HP Tune-up: Modeled	184,969	100%	184,960	90%	166,464
Residential Solutions	**1,220,353**	**99%**	**1,209,349**	**100%**	**1,206,149**
Advanced Power Strip	3,279	91%	2,968	100%	2,968
Advanced Power Strip (MF)	25,555	95%	24,366	100%	24,366
Air Infiltration (MF)	433,998	102%	440,779	100%	440,779
Ceiling Insulation	1,095	100%	1,091	100%	1,091
Duct Sealing	3,034	123%	3,728	100%	3,728
Duct Sealing (MF)	691,595	98%	675,057	100%	675,057
eScore Assessment	0	N/A	0	N/A	0
Faucet Aerator (MF)	4,915	99%	4,846	100%	4,846
LED Lamp (MF) (Standard)	9,448	100%	9,487	100%	9,487
LED Lamp (Standard)	4,914	102%	5,036	100%	5,036
Low-Flow Showerhead (MF)	5,369	95%	5,088	100%	5,088
Pool Pump	14,729	99%	14,545	78%	11,345
Wall Insulation	4,077	99%	4,052	100%	4,052
Window	18,346	100%	18,305	100%	18,305
LivingWise® Schools Outreach	**209,621**	**101%**	**211,851**	**100%**	**211,851**
School Kits	209,621	101%	211,851	100%	211,851
HEEP Total	**2,863,846**	**101%**	**2,878,983**	**98%**	**2,807,772**
Sums may differ due to rounding.					

Table 5-2: PY2024 HEEP Demand Reduction Summary

Channel / Measure	Ex-ante Gross Demand Reductions (kW)	Realization Rate (kW)	Ex-post Gross Demand Reductions (kW)	NTG (kW)	Ex-post Net Demand Reductions (kW)
Consumer Products	**177**	**85%**	**151**	**98%**	**148**
Advanced Power Strip	24	99%	24	92%	22
Air Purifier	1	97%	1	85%	1
Dehumidifier	1	73%	1	80%	1
LED Lamp (Food Bank)	120	101%	121	100%	121
LED Lamp (Specialty)	1	275%	2	100%	2
LED Lamp (Standard)	1	137%	2	100%	2
Smart Thermostat	28	0%	0	N/A	0
Ventilation Fan	0.03	365%	0.10	69%	0.07
Water Cooler	1	103%	1	70%	1
HVAC Replacement & Tune-up	**155**	**107%**	**166**	**91%**	**151**
Central AC Replacement	3	341%	11	81%	11
Central AC Tune-up: M&V	14	100%	14	90%	13
Central AC Tune-up: Modeled	86	100%	86	90%	77
Central HP Replacement	1	325%	4	74%	4
Central HP Tune-up: M&V	5	100%	5	90%	5
Central HP Tune-up: Modeled	45	100%	45	90%	41
Residential Solutions	**120**	**101%**	**121**	**99%**	**120**
Advanced Power Strip	0.39	91%	0.35	100%	0.35
Advanced Power Strip (MF)	3	95%	3	100%	3
Air Infiltration (MF)	31	102%	32	100%	32
Ceiling Insulation	1	100%	1	100%	1
Duct Sealing	0.40	157%	1	100%	1
Duct Sealing (MF)	65	101%	66	100%	66
eScore Assessment	0	N/A	0	N/A	0
Faucet Aerator (MF)	1	99%	1	100%	1
LED Lamp (MF) (Standard)	2	100%	2	100%	2
LED Lamp (Standard)	1	102%	1	100%	1
Low-Flow Showerhead (MF)	1	95%	1	100%	1
Pool Pump	3	99%	3	78%	2
Wall Insulation	0.32	99%	0.32	100%	0.32
Window	12	100%	12	100%	12
LivingWise® Schools Outreach	**23**	**100%**	**23**	**100%**	**23**
School Kits	23	111%	23	100%	23
HEEP Total	**474**	**97%**	**460**	**96%**	**442**
Sums may differ due to rounding.					

Table 5-3 outlines the PY2024 HEEP ex-post gross, and net lifetime energy (kWh) savings.

Table 5-3: PY2024 HEEP Lifetime Savings Summary

Channel / Measure	EUL[29]	Ex-post Gross Lifetime Energy Savings (kWh)	Ex-post Net Lifetime Energy Savings (kWh)
Consumer Products	**12**	**12,321,010**	**12,092,699**
Advanced Power Strip	10	2,088,293	1,915,661
Air Purifier	9	72,038	60,872
Dehumidifier	12	47,722	37,939
LED Lamp (Food Bank)	12.5	9,269,418	9,269,418
LED Lamp (Specialty)	12.5	140,691	140,691
LED Lamp (Standard)	12.5	127,548	127,548
Smart Thermostat	11	475,916	471,157
Ventilation Fan	19	15,584	10,753
Water Cooler	10	83,799	58,659
HVAC Replacement & Tune-up	**6**	**2,346,414**	**2,195,440**
Central AC Replacement	19	410,299	410,299
Central AC Tune-up: M&V	3	74,960	67,464
Central AC Tune-up: Modeled	3	459,501	413,551
Central HP Replacement	16	426,373	426,373
Central HP Tune-up: M&V	6	148,115	133,304
Central HP Tune-up: Modeled	4	827,167	744,450
Residential Solutions	**15**	**18,235,346**	**18,203,348**
Advanced Power Strip	10	29,677	29,677
Advanced Power Strip (MF)	10	243,664	243,664
Air Infiltration (MF)	11	4,848,567	4,848,567
Ceiling Insulation	20	21,824	21,824
Duct Sealing	18	67,111	67,111
Duct Sealing (MF)	18	12,151,035	12,151,035
eScore Assessment	N/A	0	0
Faucet Aerator (MF)	10	48,460	48,460
LED Lamp (MF) (Standard)	12.5	118,587	118,587
LED Lamp (Standard)	12.5	62,949	62,949
Low-Flow Showerhead (MF)	10	50,876	50,876
Pool Pump	10	145,449	113,450
Wall Insulation	20	81,048	81,048
Window	20	366,101	366,101
LivingWise® Schools Outreach	**10**	**2,118,508**	**2,118,508**
School Kits	10	2,118,508	2,118,508
HEEP Total	**12**	**35,021,279**	**34,609,995**
Sums may differ due to rounding.			

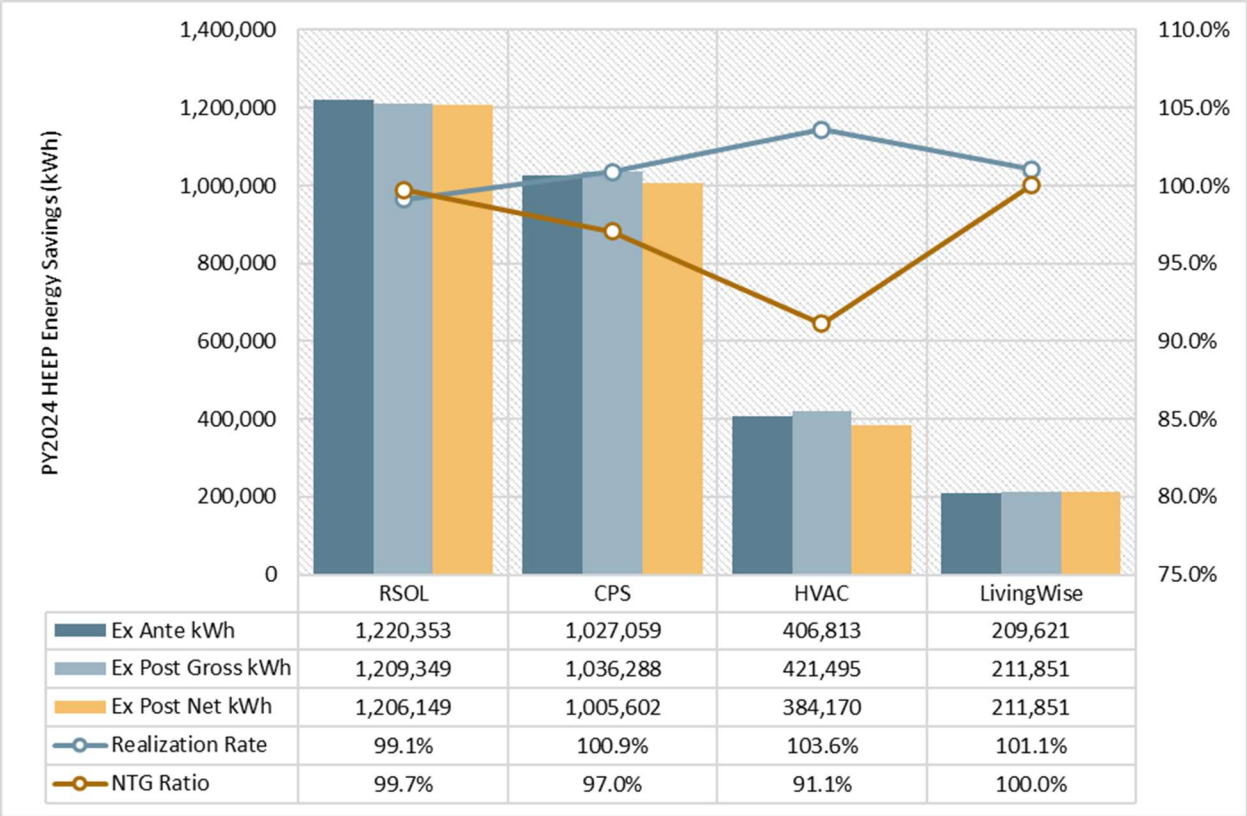
Table 5-4 outlines the NEB estimates for the PY2024 HEEP.

[29] EULs for tune-up measures sourced from CLEAResult CoolSaver workpaper.

Table 5-4: Ex-Post Net Non-Energy Benefit (NEB) Estimates for HEEP

Channel / Measure	Ex-post Net ARCs ($)	Ex-post Net Propane Savings (gal.)	Ex-post Net Natural Gas Savings (therms)	Ex-post Net Water Savings (gal.)
Consumer Products	**$ 76,996**	**0**	**(4,255)**	**0**
Advanced Power Strip	$ -	0	0	0
Air Purifier	$ -	0	0	0
Dehumidifier	$ -	0	0	0
LED Lamp (Food Bank)	$ 75,394	0	(4,816)	0
LED Lamp (Specialty)	$ 774	0	(73)	0
LED Lamp (Standard)	$ 828	0	(63)	0
Smart Thermostat	$ -	0	700	0
Ventilation Fan	$ -	0	0	0
Water Cooler	$ -	0	0	0
HVAC Replacement & Tune-up	**$ -**	**0**	**0**	**0**
Central AC Replacement	$ -	0	0	0
Central AC Tune-up: M&V	$ -	0	0	0
Central AC Tune-up: Modeled	$ -	0	0	0
Central HP Replacement	$ -	0	0	0
Central HP Tune-up: M&V	$ -	0	0	0
Central HP Tune-up: Modeled	$ -	0	0	0
Residential Solutions	**$ 1,458**	**0**	**471**	**93,896**
Advanced Power Strip	$ -	0	0	0
Advanced Power Strip (MF)	$ -	0	0	0
Air Infiltration (MF)	$ -	0	0	0
Ceiling Insulation	$ -	0	173	0
Duct Sealing	$ -	0	0	0
Duct Sealing (MF)	$ -	0	0	0
eScore Assessment	$ -	0	0	0
Faucet Aerator (MF)	$ -	0	0	47,786
LED Lamp (MF) (Standard)	$ 977	0	0	0
LED Lamp (Standard)	$ 482	0	(30)	0
Low-Flow Showerhead (MF)	$ -	0	0	46,109
Pool Pump	$ -	0	0	0
Wall Insulation	$ -	0	329	0
Window	$ -	0	0	0
LivingWise® Schools Outreach	**$ -**	**328**	**2,286**	**1,797,023**
Advanced Power Strip	$ -	0	0	0
Bathroom Aerator (1.0 GPM)	$ -	44	308	251,205
Kitchen Aerator (1.5 GPM)	$ -	26	184	149,976
Low-Flow SH (1.5 GPM)	$ -	257	1,794	1,395,842
HEEP Total	**$ 78,454**	**328**	**(1,498)**	**1,890,918**
Sums may differ due to rounding.				

Figure 5-1 summarizes the gross and net energy savings (kWh) by program channel in PY2024.



	RSOL	CPS	HVAC	LivingWise
Ex Ante kWh	1,220,353	1,027,059	406,813	209,621
Ex Post Gross kWh	1,209,349	1,036,288	421,495	211,851
Ex Post Net kWh	1,206,149	1,005,602	384,170	211,851
Realization Rate	99.1%	100.9%	103.6%	101.1%
NTG Ratio	99.7%	97.0%	91.1%	100.0%

Figure 5-1: PY2024 HEEP Energy (kWh) Savings Summary

5.2 Program Overview

The PY2024 HEEP was a multi-channel program, including Residential Solutions, LivingWise® Schools Outreach, HVAC Replacement and Tune-up, and Consumer Product Solutions. The Positive Energy Homes (PEH) - New Construction channel was introduced in HEEP for PY2024, however there was no participation or savings. PEH savings are anticipated in 2025.

5.2.1 Residential Solutions

The Residential Solutions (RSOL) channel provides direct install measures to residential customers as well as home assessments to single-family and individually metered multi-family residential customers. The program helps residents achieve electric savings by consulting with a contractor or OG&E representative, who analyzes their energy use, identify energy efficiency improvement projects, and install low-cost energy saving measures at participant homes.

Key elements of the Residential Solutions offering include:

- **Customer engagement**: A variety of customer intake channels are made available through this program including phone, email and web.

- **Contractors or OG&E representatives**: These individuals are available to participants and potential participants to provide information on the benefits and costs of energy efficient projects. They have the knowledge to discuss the potential options customers have and assist in defining the best path for them to take based on their individual situation.
- **Incentive application**: Applications are developed for customers to submit to the program for installed eligible measures. The program will conduct a QA/QC review of all applications to ensure that all required information and documentation has been provided.
- **Incentive payment**: Trade Allies receive payment directly from the program for approved applications of installed eligible equipment. Customers receive payments on a case-by-case basis if it is deemed necessary and fits within the established program guidelines.
- **Project Verification & Quality Assurance**: A detailed QA/QC protocol was established to ensure technical and programmatic compliance by participating Trade Allies.

5.2.2 LivingWise® Schools Outreach

This channel includes an outreach channel targeted at sixth grade students and was designed to provide an educational opportunity to learn about energy efficient opportunities in their home. This approach included an established teaching curriculum that teachers use to review and teach their students what activities they can do to help save energy. The students were given an energy efficiency kit with easy to install measures (e.g., advanced power strips, aerators, showerheads, etc.) that they took home to have their guardians help them install.

This channel included a survey for the students to fill out at home and return to their teacher. Teachers received the completed survey responses and submitted them to the program.

5.2.3 HVAC Replacement & Tune-up Channel (HVAC)

The HVAC Replacement and Tune-up channel (HVAC) generates energy and demand savings from residential HVAC systems through replacement of old inefficient equipment and tune-ups of existing HVAC systems. This offering uses local HVAC contractors for completion of the work.

When customers contacted the program, the project team referred them to available contractors or scheduled an appointment for them. Contractors completed the tune-up or HVAC unit replacement, as well as the data collection on system performance and the paperwork required to submit for the applicable program rebates. Once the application passed the program requirements review, it was processed, and the rebate was paid.

5.2.4 Consumer Products Solutions (CPS)

The CPS channel provides outreach and education, for which the purpose is to encourage customers to purchase efficient lighting and appliances. CPS appliances include APS, window ACs, ENERGY STAR® room air purifiers, bathroom ventilation fans, and water coolers. The

PY2024 CPS channel also distributed LEDs through food banks, who received the LEDs from CLEAResult and packed them into food boxes. The food box contains a four-pack of LEDs and OG&E program collateral that provides information on OG&E programs and energy-saving tips.

To estimate total participation in HEEP, the Evaluators assumed that total packages of LEDs sold or distributed through CPS would equal the total number of participant households. Under this assumption, 7,825 homes[30] participated in the HEEP in 2024. Table 5-5 summarizes the total households, total measures and the ex-ante gross kWh and peak kW savings, by measure.

Table 5-5: PY2024 HEEP Participation Summary by Channel

Channel	Number Participants/ Households	Total Quantity of Measures	Ex-ante Gross Energy Savings (kWh)	Ex-ante Gross Demand Reductions (kW)	Incentives
Residential Solutions	516	1,512[31]	1,220,353	120	$ 115,426
HVAC Replacement & Tune-up	215	234	406,813	155	$ 68,055
Consumer Products Solutions	4,215[32]	31,597[33]	1,027,059	177	$ 110,863
LivingWise® Schools Outreach	986	3,944	209,621	23	$ 49,734
HEEP Total	**5,932**	**37,287**	**2,863,846**	**474**	**$ 344,078**
Sums may differ due to rounding.					

Table 5-6 below outlines participation by channel, by measure.

Table 5-6: PY2024 Participation for HEEP by Measure

Channel / Measure	Households / Measures	Identified SF Participants	Identified MF Participants
Consumer Products	**4,215**	**Unknown**	**Unknown**
Advanced Power Strip	1,262	Unknown	Unknown
Air Purifier	35	Unknown	Unknown
Dehumidifier	48	Unknown	Unknown
LED Lamp (Food Bank)	29,500	Unknown	Unknown
LED Lamp (Specialty)	303	Unknown	Unknown
LED Lamp (Standard)	324	Unknown	Unknown
Smart Thermostat	40	Unknown	Unknown
Ventilation Fan	68	Unknown	Unknown
Water Cooler	17	Unknown	Unknown
HVAC	**215**	**215**	**0**
Central AC Replacement	23	23	0
Central AC Tune-up: M&V	20	20	0
Central AC Tune-up: Modeled	118	118	0
Central HP Replacement	15	15	0

[30] This includes participation estimates from the upstream portion of the CPS channel in PY2024.

[31] Excludes E-score Assessments

[32] LEDs in Consumer Products is denominated in number of packages.

[33] LEDs in Consumer Products is denominated in number of bulbs sold. This value also includes 3,564 non-LED measures.

Channel / Measure	Households / Measures	Identified SF Participants	Identified MF Participants
HVAC	**215**	**215**	**0**
Central HP Tune-up: M&V	7	7	0
Central HP Tune-up: Modeled	51	51	0
RSOL	**516**	**133**	**383**
Advanced Power Strip	12	12	0
Advanced Power Strip (MF)	102	0	102
Air Infiltration (MF)	285	0	285
Ceiling Insulation	1	1	0
Duct Sealing	1	1	0
Duct Sealing (MF)	172	0	172
eScore Assessment	98	98	0
Faucet Aerator (MF)	135	0	135
LED Lamp (MF) (Standard)	56	0	56
LED Lamp (Standard)	34	34	0
Low-Flow Showerhead (MF)	22	0	22
Pool Pump	5	5	0
Wall Insulation	1	1	0
Window	32	32	0
LivingWise	**986**	**Unknown**	**Unknown**
School Kits	986	Unknown	Unknown
HEEP Total	**5,932**	**348**	**383**

*HEEP Total reflects the number of distinct households that participated in the program, including the number of LED Lamp packages that were distributed in CPS.

5.3 Gross Impact Evaluation Approach

The Evaluators utilized the AR TRM V9.2 and New Orleans Louisiana (NOLA) TRM 7.0 values in assessing *ex-post* gross energy savings (kWh), demand reductions (kW) and NEBs from residential measures. In addition to the AR TRM V9.2 and the NOLA TRM 7.0, the Evaluators also examined the Excel workbooks used by the third-party implementation staff (CLEAResult and AM Conservation) to assess savings by measure. The workbook utilizes AR TRM V9.2 savings algorithms with Trade Ally inputs to calculate savings based on the measure and input parameters. The Evaluators verified the factor tables for each measure to ensure the values were appropriate.

5.3.1 Energy Savings Calculations

The following sections outline the impact evaluation approach for each channel in HEEP. For equipment and retrofits rebated through the PY2024 HEEP, calculation methodologies were performed as described in the AR TRM V9.2. Table 5-7 identifies the sections in the AR TRM V9.2 that were used for verification of measure-level savings.

Additionally, the NOLA TRM 7.0 was referenced for water cooler measures. The gross impact evaluation effort included the following:

- **Desk Review of Residential Calculations**: for all channels, the Evaluators utilized AR TRM V9.2 and NOLA TRM 7.0 values in assessing savings from measures in HEEP. In HVAC, for the CoolSaver measure, a CLEAResult work paper[34] was utilized to verify savings.
- **Data Tracking Review**: for all channels, project data from the third-party implementer was reviewed to ensure that tracking systems followed Protocol A, B1 and B2 of the AR TRM V9.2.
- **Survey Analysis**: for LivingWise, student/parent surveys administered by AM Conservation were reviewed to determine in-service-rates (ISRs) and NEB estimates. For CPS, RSOL and HVAC, participant surveys were used to help develop ISRs for respective channel measures.
- **Leakage Analysis**: for CPS, ADM assigned the leakage values developed in the PY2021 evaluation. There were no leakage updates for PY2024.

Table 5-7: AR TRM V9.2 Sections by Measure Type

Measure Category	Measure	TRM 9.2, Vol. 2 Subsection(s)
Appliances	Advanced Power Strip	2.6.1
	ENERGY STAR® Window	2.2.7
	ENERGY STAR® Pool Pump	2.6.2
	ENERGY STAR® Room Air Purifier	2.4.5
	ENERGY STAR® Dehumidifier	2.4.4
	Bathroom Ventilation Fan	2.1.13
	Water Dispenser (Water Cooler)	NOLA TRM 7.0 1.1.4
Domestic Hot Water	Faucet Aerator	2.3.4
	Low-Flow Showerhead	2.3.5
Envelope	Air Infiltration	2.2.9
	Ceiling Insulation	2.2.2
	Wall Insulation	2.2.3
HVAC	Duct Sealing	2.1.11
	Central AC/HP Tune-up	CLEAResult Workpaper
	Central Air Conditioner (AC) Replacement	2.1.6
	Central Heat Pump (HP) Replacement	2.1.8
	Smart Thermostat	2.1.12
	Window AC Replacement	2.1.10
Lighting	LED Lamp (Specialty)	2.5.1
	LED Lamp (Standard)	2.5.2

[34] The workpaper is titled, "2024 Measurement and Verification (M&V) Plan for CoolSaver – Option A – Retrofit Isolation: Key Parameter Measurement."

5.3.2 LivingWise® Schools Outreach

At the outset of each program year, AM Conservation calculates an average per-kit savings based on the then most current AR TRM and some assumptions about installation and NTG. AM Conservation sends electronic reports to OG&E throughout the year on the number of kits delivered to classrooms and the associated impacts. AM Conservation provides OG&E with a final report after the program year is complete that shows the number of kits delivered, as well as their final estimates of annual kWh and kW impacts for the program year.

OG&E maintains a tracking system that shows the number of participants in the program each year and recorded impacts. The data are provided by AM Conservation and transferred into the Saratoga tracking system by OG&E. OG&E uses the participation information and impact estimates provided by AM Conservation as the reported amounts for the program year. For measures rebated through the PY2024 LivingWise® Schools Outreach channel, calculation methodologies were performed as described in the AR TRM V9.2.

The Evaluators also examined the Excel workbook from the implementer (AM Conservation) to assess savings by school. The workbook utilizes AR TRM V9.2 savings algorithms to estimate per kit savings based on input parameters and was reported in adjusted gross numbers. The Evaluators verified the project savings for each kit to ensure the values were appropriate and applied those values to the number of kits that were distributed in the program for PY2024.

5.3.3 HVAC Replacement and Tune-up

The HVAC Replacement and Tune-up channel provided financial incentives to encourage residential customers to improve the efficiency of their HVAC systems. Incentives were provided for a tune-up of the system and for HVAC system replacements.

5.3.3.1 HVAC Replacement and Tune-up: HVAC Replacements

More detail can be found in AR TRM V9.2 Section 2.1.5, Section 2.1.6, and Section 2.1.8.

5.3.3.1.1 HVAC Replacement and Tune-up: AHRI Certificate Verification

The Evaluators verified the inputs on AHRI certificates for a census of central air conditioner and heat pump systems. Key parameters validated included:

- Cooling capacity;
- Heating capacity;
- SEER2, EER2, HSPF2 (when tested);
- SEER, EER, HSPF (when SEER2/EER2/HSPF2 are not tested); and

- If this was the case, the Evaluators converted the SEER, EER, and HSPF values to SEER2, EER2, and HSPF2 when relevant replacement scenarios required SEER II baselines but installed units did not have SEER II test values

- Configuration verification (package, split, mini-split).

5.3.3.2 HVAC Replacement and Tune-up: AC Tune-ups

Tune-ups were provided by a qualified technician and involve testing the performance of the unit before and after measures are implemented. Typical measures implemented as part of the tune-up procedure include air flow correction; cleaning of the indoor blower, evaporator coils, condenser coils; and correction of refrigerant charge.

Evaluation of the program is based on the CoolSaver PY2024 M&V Plan provided by CLEAResult. The evaluators examined the provided CoolSaver PY2024 M&V Plan as well as the Excel workbook containing a census of program participants to assess savings by measure. The workbook provided contains data exported from the program tracking tool. The Evaluators examined the data and recreated the overall savings calculations. Savings from AC and heat pump tune-ups were based on AR TRM V9.2 deemed equivalent full-load hours along with unit-specific capacity and deemed efficiency loss recovered due to work performed in accordance with the program.

5.3.4 Consumer Products Solutions (CPS)

5.3.4.1 Leakage

Leakage refers to cross-territory sales that occur when program discounted bulbs are installed outside of OG&E's service territory. When this occurs, the energy and demand impacts from the discounted bulbs are not being realized within the territory that paid for and claimed the savings.

The Evaluators developed estimates of leakage in the PY2021 evaluation. This activity was not repeated in PY2022, PY2023, or PY2024 as the program offering was unchanged and is intended to wind down as the EISA Phase II standards take effect. Some retailers were removed from the program in PY2023, and as a result the program-level leakage rate differs from PY2022. The same leakage rates from PY2023 were applied to PY2024.

The leakage analysis that was performed in PY2021 was as follows:

- The Evaluators developed a mapping of concentric circles (drivetimes) surrounding each participating retailer. The initial modeling assumed the "reach" of a retailer is a 60-minute drive, which is then modified by the presence of an alternative sponsoring retailer (i.e., if a customer is within a 60-minute drive of two sponsoring retailers, it is assumed they purchased from the closest one). Non-participating retailers are also

included as directly competing alternative retailers with the construction of the drive times.

- The Evaluators used 2010 Census block data from Environmental Systems Research Institute (ESRI) to determine the proportion of the population that falls within each drivetime circle (from Step 1), as well as the proportion of the population that falls within the OG&E AR territory and within the state of Arkansas. Thus, for each drivetime circle for each retail location, the Evaluators determined the proportion of the population within the OG&E AR service territory, outside of OG&E AR service territory, and outside of the state of Arkansas. In addition, per the Department of Energy (DOE) National Renewable Energy Laboratory (NREL) Uniform Methods Project (UMP): Methods for Determining Energy Savings for Specific Measures Chapter 6: Residential Lighting Evaluation Protocol[35] (referred to herein as "the UMP Protocol"), the Evaluators also define that bulbs going to another utility which also runs upstream lighting programs will not be considered leakage. The Evaluators determined the following utilities run upstream lighting programs within OG&E's drivetime areas: SWEPCO Arkansas, Entergy Arkansas, and Public Service Company of Oklahoma (PSO).
- A Random Digit Dial (RDD) survey was used to assess the shopping habits of customers within the radius of participating retailers. This was used to assess the total and maximum drivetime that Arkansas consumers accepted when shopping for products incentivized by the channel and was used in modifying the initial 60-minute drive assumption established in Step 1. An RDD survey was carried out for OG&E in 2015; the results of this survey are shown in Table 5-8 shows the drivetime survey results, shown below the two maps.
- Table 5-8. This approach uses a log transformation of the drivetimes to smooth the data and estimates the cumulative percent via a second order polynomial regression. In 2021, the Wholesale channel was split out from the Mass Merchant channel; however, a dedicated RDD survey for the Wholesale channel did not occur in 2015. The RDD survey for the Wholesale retailer channel was taken from a similar survey conducted by ADM in 2019 in Oklahoma.
- For each drive time, the propensity to drive is calculated based on the predicted cumulative percent. The propensity to drive is equal to 1 minus the predicted cumulative percent - customers with shorter drive times have a high propensity to drive (because cumulative percent from the RDD survey is lower for shorter drive times), while customers with longer drive times have lower propensity to drive (because predicted cumulative percent is higher for longer drive times). Customers

[35] Dimetrosky, Scott, Parkinson, Katie, and Lieb, Noah on behalf of the Department of Energy National Renewable Energy Laboratory. *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures Chapter 6: Residential Lighting evaluation Protocol.* October 2017.

with a propensity to drive represent the estimated population for a given drive time (i.e. estimated population willing to drive = propensity to drive (%) * total population).

- Lastly, the percentage of bulbs that leaked out of OG&E territory (but still within AR) and the percent that leaked out of state were calculated.

The analysis and creation of drivetimes was performed separately for four retailer types: Discount, Do-it-Yourself (DIY), Mass Merchant, and Wholesale. Discount retailers include stores such as Dollar Store and Dollar General. DIY includes stores such as Lowe's, Ace, and Home Depot. Mass Merchant retailers include stores such as Walmart and Target, while Wholesale includes Costco and Sam's Club.

The set of maps below provide an example of the analysis with snapshots of the geo-mapping process for the Discount retailer channel. The first map shows participating and non-participating retailer locations overlayed onto utility territories. The territory for OG&E is shown in light red. Participating stores are shown as green points while non-participating stores are shown as grey points. The second map shows the concentric drivetimes that were constructed for the Discount retailer channel to estimate leakage rates. The map is meant to illustrate how far a 60-minute drivetime extends beyond a store location and how the presence of another store affects the drivetime for other nearby stores.

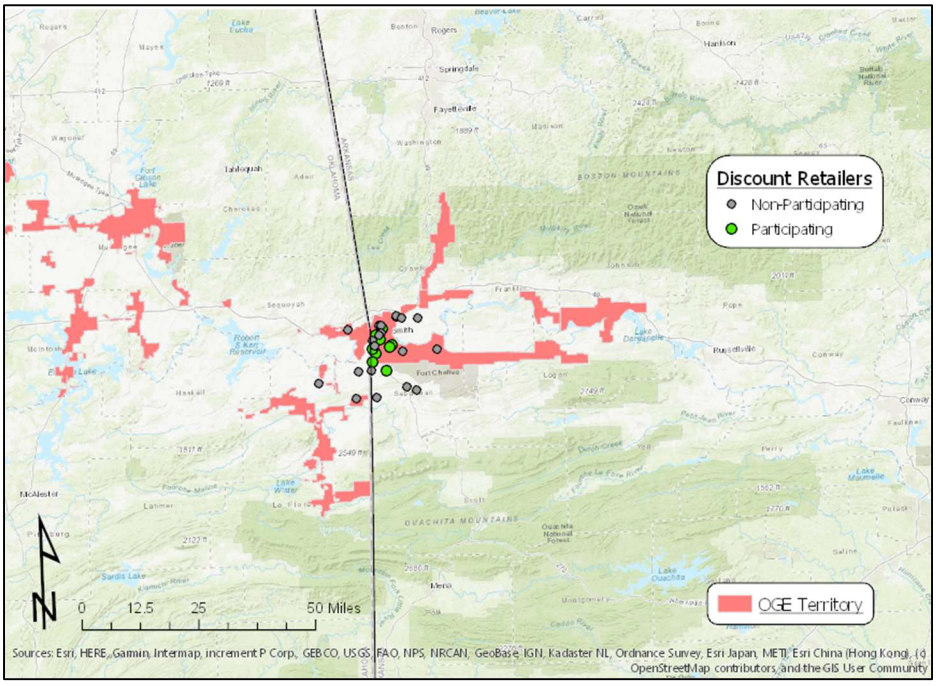


Figure 5-2: Discount Retailer Locations

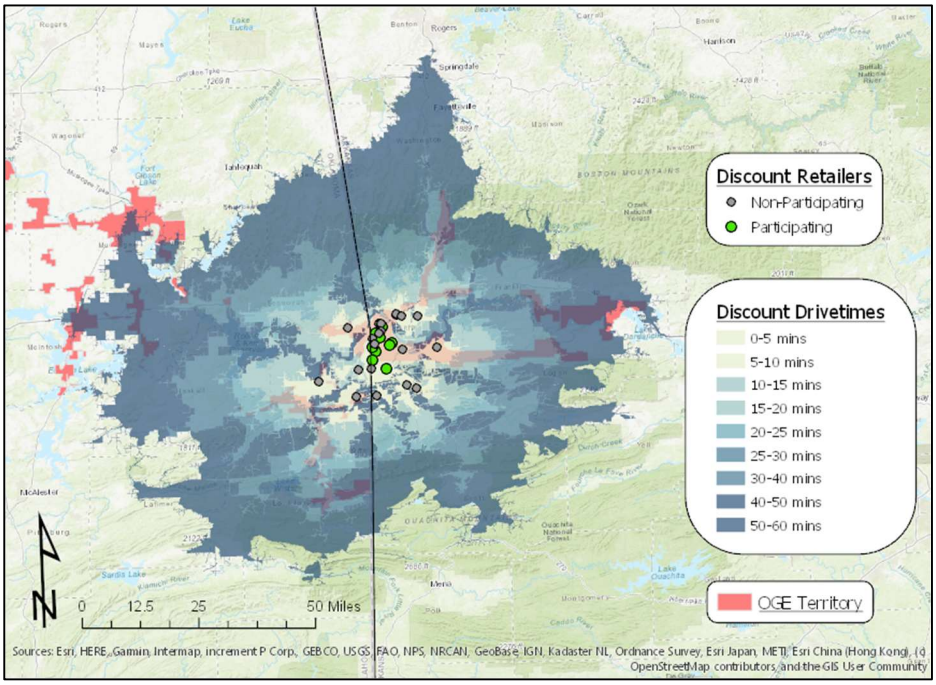


Figure 5-3: Discount Retailer Drive Times

Table 5-8 shows the drivetime survey results, shown below the two maps.

Table 5-8: Drivetime Estimates by Channel

Channel / Drive Time (minutes)	0-5	5-10	10-15	15-19	20-24	25-29	30-40	40-50	50-60	60-70
DIY	9%	15%	13%	28%	17%	6%	6%	0%	0%	7%
Discount	38%	0%	25%	13%	13%	0%	0%	13%	0%	0%
Mass Merchant	8%	22%	20%	15%	17%	3%	5%	2%	0%	7%
Wholesale	14%	16%	25%	16%	9%	5%	6%	4%	1%	4%

The overall estimated program-level leakage rate was 10%, with 23% leakage for Mass Merchant stores, 0.40% leakage for DIY stores, 0% leakage for Discount stores, and 36% for the single Wholesale store. Food banks had 16% leakage. The table below shows the estimated leakage for each participation channel in the Consumer Products channel for PY2024.

Values presented for Consumer Products are exclusive of leakage effects except where specifically noted.

Table 5-9: PY2024 Leakage Estimates

Measure / Pathway	Leakage Rate	Estimated Net Leakage for Energy Savings (kWh)	Estimated Net Leakage for Demand Savings (kW)	Estimated Net Leakage for Energy Savings (Lifetime kWh)
LEDs (Food Bank)	10%	73,237	12	915,463
LEDs (Specialty)	10%	1,112	0.2	13,895
LEDs (Standard)	10%	1,008	0.2	12,597
Total	**10%**	**75,356**	**12**	**941,955**
Sums may differ due to rounding.				

5.3.4.1.1 Cross Sector Sales Adjustments

The AR TRM V9.2 estimates that 6.7% of lighting incentivized through a residential retail markdown program will be installed in commercial facilities, and that the Annual Operating Hours (AOH) and Coincidence Factor (CF) for this lighting should align with the average values from commercial programs administered by the sponsoring utility in the same program year. The Evaluators estimated 3,149 AOH and a coincidence factor of 0.64 using a weighted average of AR TRM V9.2 deemed values for the building types found in the PY2024 CEEP Small Business Solutions channel. This has the effect of increasing annual energy savings and peak demand reduction for the 6.7% of bulbs estimated to be installed in non-residential settings. This parameter was applied to retail markdown LEDs but not to food bank LEDs.

5.3.4.1.2 Impact of EISA Backstop

The ESIA Backstop took full effect July 1, 2023, and imposed a minimum efficacy standard of 45 lumens per watt (L/W) for most categories of residential lighting. Per guidance from the IEM, the Evaluators identified retail channels which serve low income areas. The Evaluators defined a “low income area” on the census tract level as being in or within one kilometer of areas having either:

1) Having average income equaling no more than 80% of Area Median Income (AMI); or
2) Being designated as a low income/disadvantaged area in guidelines provide for Inflation Reduction Act (IRA) program eligibility.

This framework was vetted with the IEM and received approval during the 2023 calendar year.

Per instructions from the IEM, stores located in a qualifying area may use EISA Phase I baseline values (i.e., values before adoption of the 45 L/W efficacy standard). Stores outside of these zones have the 45 L/W baseline imposed for all LEDs sold on or after July 1, 2023. LEDs sold via these qualifying retail locations are also assigned 100% NTG.

Per instructions from the IEM, LEDs distributed via food banks are presumed to serve low income populations and also use EISA Phase I baselines and are assigned 100% NTG.

Based on this analysis, all lighting projects (associated with the only retailer participating) in the PY2024 CPS channel qualify as serving low income populations and thus apply the EISA Phase I baseline and receive 100% NTG.

5.3.5 Residential Solutions (RSOL)

The Evaluators performed on-site verification at a sample of RSOL homes to develop updated In-Service Rates[36] (ISRs) for most of the measure offerings in the channel. However, due to low sample size, the Evaluators opted to perform literature reviews to develop and supplement the ISRs found from field data collections.

The following table shows the ISRs that were developed and applied to RSOL projects. Literature sources can be found in Section 3.4.2.

Table 5-10: PY2024 HEEP In-Service Rates Applied

Measure	ISR	Source
Advanced Power Strip	91%	PY2024 Literature reviews
Advanced Power Strip (MF)	95%	PY2024 Literature reviews
Air Infiltration (MF)	102%	PY2024 Literature reviews
Ceiling Insulation	100%	PY2024 Literature reviews
Duct Sealing	98%	PY2024 Literature reviews
Duct Sealing (MF)	99%	PY2024 Literature reviews
Faucet Aerator (MF)	99%	PY2024 Literature reviews
LED Lamp (MF) (Standard)	97%	PY2024 Site visits; literature reviews
LED Lamp (Standard)	99%	PY2024 Site visits; literature reviews
Low-Flow Showerhead (MF)	95%	PY2024 Literature reviews
Pool Pump	99%	PY2024 Site visits; literature reviews
Wall Insulation	94%	PY2024 Literature reviews
Window	100%	PY2024 Literature reviews

5.4 Verified Savings by Measure

5.4.1 Residential Solutions (RSOL)

After reviewing the tracking data and inputs for savings calculations, the Evaluators provided verified ex-post savings per AR TRM V9.2 Protocols. The savings from the measures below were verified, and matched, to the calculations provided by CLEAResult.

[36] In prior evaluations, this parameter for duct sealing and air sealing was denoted as a "field verification rate" as the prevailing AR TRM guidelines strictly defined an "In-Service Rate" as relating to the presence or absence of rebated equipment. The Evaluators interpreted this as not being applicable to verified leakage rates associated with duct sealing or air infiltration improvements and had used a separate term ("Field Verification Rate") as a result. Based on IEM guidance, the Evaluators now apply "In-Service Rate" when describing the extent to which verified duct leakage and air infiltration rates align with ex-ante estimates.

- Advanced Power Strip;
- Air Infiltration;
- Ceiling Insulation;
- Duct Sealing;
- Faucet Aerator;
- LED Lamp (Standard and Specialty);
- Low-Flow Showerhead;
- Pool Pump;
- Wall Insulation; and
- Window.

Factors that impacted savings are listed in individual measure sections below.

5.4.2 RSOL Savings Summary

Table 5-11 presents the verified ex-post savings results of the PY2024 RSOL channel by measure.

Table 5-11: Residential Solutions Savings Summary for PY2024

Measure	Ex-ante Gross Energy Savings (kWh)	Ex-post Gross Energy Savings (kWh)	Realization Rate (kWh)	Ex-ante Gross Demand Reduction (kW)	Ex-post Gross Demand Reduction (kW)	Realization Rate (kW)
Advanced Power Strip	3,279	2,968	91%	0.39	0.35	91%
Advanced Power Strip (MF)	25,555	24,366	95%	3	3	95%
Air Infiltration (MF)	433,998	440,779	102%	31	32	102%
Ceiling Insulation	1,095	1,091	100%	1	1	100%
Duct Sealing	3,034	3,728	123%	0.40	1	157%
Duct Sealing (MF)	691,595	675,057	98%	65	66	101%
eScore Assessment	0	0	N/A	0	0	N/A
Faucet Aerator (MF)	4,915	4,846	99%	1	1	99%
LED Lamp (MF) (Standard)	9,448	9,487	100%	2	2	100%
LED Lamp (Standard)	4,914	5,036	102%	1	1	102%
Low-Flow Showerhead (MF)	5,369	5,088	95%	1	1	95%
Pool Pump	14,729	14,545	99%	3	3	99%
Wall Insulation	4,077	4,052	99%	0.32	0.32	99%
Window	18,346	18,305	100%	12	12	100%
Total	**1,220,353**	**1,209,349**	**99%**	**120**	**121**	**101%**
Sums may differ due to rounding.						

Table 5-12 outlines the verified ex-post lifetime savings for the RSOL channel by measure.

Table 5-12: Residential Solutions Lifetime Savings Summary for PY2024

Measure	EUL	Ex-post Gross Lifetime Energy Savings (kWh)
Advanced Power Strip	10	29,677
Advanced Power Strip (MF)	10	243,664
Air Infiltration (MF)	11	4,848,567
Ceiling Insulation	20	21,824
Duct Sealing	18	67,111
Duct Sealing (MF)	18	12,151,035
eScore Assessment	1	0
Faucet Aerator (MF)	10	48,460
LED Lamp (MF) (Standard)	12.5	118,587
LED Lamp (Standard)	12.5	62,949
Low-Flow Showerhead (MF)	10	50,876
Pool Pump	10	145,449
Wall Insulation	20	81,048
Window	20	366,101
Total	**15**	**18,235,346**
Sums may differ due to rounding.		

Table 5-13: Residential Solutions – Causes of Deviation in Savings by Measure

Measure	Realization Rate		Cause for Deviation in Savings
	kWh	kW	
Advanced Power Strip	91%	91%	PY2024 Literature reviews for ISRs
Advanced Power Strip (MF)	95%	95%	PY2024 Literature reviews for ISRs
Air Infiltration (MF)	102%	102%	PY2024 Literature reviews for ISRs
Ceiling Insulation	100%	100%	PY2024 Literature reviews for ISRs
Duct Sealing	123%	157%	PY2024 Literature reviews for ISRs The Evaluators were unable to recreate ex-ante estimations for this singular project with the provided data
Duct Sealing (MF)	98%	101%	PY2024 Literature reviews for ISRs
Faucet Aerator (MF)	99%	99%	PY2024 Literature reviews for ISRs
LED Lamp (MF) (Standard)	100%	100%	PY2024 Site visits; PY2024 literature reviews for ISRs; photo verification ISR
LED Lamp (Standard)	102%	102%	
Low-Flow Showerhead (MF)	95%	95%	PY2024 Literature reviews for ISRs
Pool Pump	99%	99%	PY2024 Site visits; PY2024 literature reviews for ISRs
Wall Insulation	99%	99%	PY2024 Literature reviews for ISRs
Window	100%	100%	PY2024 Literature reviews for ISRs

5.4.3 LivingWise® Schools Outreach

After reviewing the tracking data and inputs for savings calculations, the Evaluators provided verified ex-post savings per AR TRM V9.2 Protocols. The savings from the measures below were verified, and matched, to the calculations provided in PY2024.

- Kitchen Faucet Aerators (1.5 GPM);
- Bathroom Faucet Aerators (1.0 GPM);
- Low-Flow Showerheads; and
- Advanced Power Strips.

Factors that impacted savings are listed in individual measure sections below. The Evaluators verified measure-level savings per the AR TRM V9.2 guidelines and obtained results that differed from AM Conservation's calculations for the following measures.

5.4.3.1 LivingWise® Schools Outreach: Faucet Aerators & Low Flow Showerheads

Each kit included one 1.5 GPM kitchen aerator, one 1.0 GPM bathroom aerator, and one 1.5 GPM low flow showerhead and one advanced power strip. The In-Service Rates (ISRs) gathered from student surveys and literature reviews are listed below:

- Bathroom 1.0 GPM (42%)
- Kitchen 1.5 GPM (43%)
- Showerhead 1.5 GPM (46%)

Additionally, the Evaluators determined water heater percent fuel mix from the student survey responses provided by AM Conservation. The water heater percent fuel mix is shown below:

- Natural gas (30%)
- Electricity (57%)
- Propane (13%)

5.4.3.2 LivingWise® Schools Outreach: Advanced Power Strips

Each kit included one advanced power strip. The Evaluators developed an ISR from the student surveys as well as from literature reviews and found an overall ISR of 66% for advanced power strips distributed in school kits.

Additionally, the Evaluators calculated weighted deemed-savings values from the student survey responses provided by AM Conservation. Students were asked if they installed the power strip for an entertainment (TV) system, a home office system, or if the power strip was used for other types of peripheral devices. The percent of power strip use is shown below:

- Entertainment system (16%)
- Home office (14%)
- Other (70%)

The Evaluators determined the weighted deemed savings based on the deemed average savings for a Tier 1 power strip found in AR TRM 9.2 Table 180:

- 169 kWh savings per unit
- 0.02 kW reduction per unit

5.4.3.3 LivingWise® Schools Outreach Savings Summary

The table below presents the verified ex-post energy savings (kWh) results of the PY2024 LivingWise® Schools Outreach channel, by measure.

Table 5-14: PY2024 LivingWise® Schools Outreach Savings Summary

Measure	Ex-ante Gross Energy Savings (kWh)	Ex-post Gross Energy Savings (kWh)	Realization Rate (kWh)	Ex-ante Gross Demand Reduction (kW)	Ex-post Gross Demand Reduction (kW)	Realization Rate (kW)
APS	116,810	109,439	94%	13	12	93%
1.0 GPM Aerator	11,361	13,790	121%	1	1	121%
1.5 GPM Aerator	7,584	8,233	109%	1	1	109%
Showerhead	73,866	80,388	109%	8	8	109%
Total	**209,621**	**211,851**	**101%**	**23**	**23**	**100%**
Sums may differ due to rounding.						

The table below outlines the verified ex-post lifetime energy savings by measure for the LivingWise® Schools Outreach channel.

Table 5-15: PY2024 LivingWise® Schools Outreach Lifetime Savings by Measure

Measure	EUL	Ex-post Gross Lifetime Energy Savings (kWh)
Advanced Power Strip	10	1,094,391
Bathroom Aerator (1.0 GPM)	10	137,902
Kitchen Aerator (1.5 GPM)	10	82,331
Low-Flow Showerhead (1.5 GPM)	10	803,884
Total	**10**	**2,118,508**
Sums may differ due to rounding.		

5.4.4 Consumer Products

Savings for Consumer Products are summarized in Table 5-16.

Table 5-16: PY2024 Gross Savings Summary for Consumer Products

Measure	Ex-ante Gross Energy Savings (kWh)	Ex-post Gross Energy Savings (kWh)	Realization Rate (kWh)	Ex-ante Gross Demand Reductions (kW)	Ex-post Gross Demand Reductions (kW)	Realization Rate (kW)
Advanced Power Strip	211,259	208,829	99%	24	24	99%
Air Purifier	8,244	8,004	97%	1	1	97%
Dehumidifier	5,333	3,977	75%	1	1	73%
LED Lamp (Food Bank)	736,995	741,553	101%	120	121	101%
LED Lamp (Specialty)	4,655	11,255	242%	1	2	275%
LED Lamp (Standard)	8,457	10,204	121%	1	2	137%
Smart Thermostat	43,702	43,265	99%	28	0	0%
Ventilation Fan	225	820	365%	0.03	0.10	365%
Water Cooler	8,191	8,380	102%	1	1	103%
Total	**1,027,059**	**1,036,288**	**101%**	**177**	**151**	**85%**
Sums may differ due to rounding.						

Table 5-17 summarizes causes of deviation in savings by measure.

Table 5-17: CPS – Causes of Deviation in Savings by CPS Measure in PY2024

Measure	Realization Rate		Cause for Deviation in Savings
	kWh	kW	
Advanced Power Strip	99%	99%	PY2024 Literature reviews for ISRs
Air Purifier	97%	97%	PY2024 Literature reviews for ISRs
Dehumidifier	75%	73%	Ex-ante estimations assumed a handful of units to be categorized as 'ENERGY STAR Most Efficient' and thus having higher savings – the Evaluators verified efficiencies of all units and found all units to be 'ENERGY STAR Efficient', resulting in fewer savings
LED Lamp (Food Bank)	101%	101%	PY2024 Literature reviews for ISRs
LED Lamp (Specialty)	242%	275%	Incorporation of low-income baseline per IEM guidance. Incorporation of weighted commercial hours of use for 7% of LEDs, resulting in additional savings.
LED Lamp (Standard)	121%	137%	
Smart Thermostat	99%	0%	PY2024 Literature reviews for ISRs
Ventilation Fan	365%	365%	The Evaluators conducted product-specific reviews, incorporating actual CFM capacities and CFM/W efficiencies.
Water Cooler	102%	103%	The Evaluators conducted product-specific reviews to determine water cooler type. Ex-ante estimations were based on New Orleans (NO) TRM V5.0, whereas the Evaluators referenced NO TRM V7.0, resulting in slightly higher savings.

5.4.5 HVAC Replacement and Tune-up

The Evaluators performed a review of all AC and HP replacement units against the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) database to match against project tracking data and to utilize rated efficiencies in savings calculations.

Field verification was performed in PY2024 to gather nameplate information from installed sampled projects and to assess the quality of sampled HVAC tune-ups. In total, 12 homes were visited, accounting for 5 AC tune-ups, 5 HP tune-ups, and 2 central HP replacements.

In addition to referencing the AR TRM V9.2 for the evaluation of the central heat pump projects, the Evaluators reviewed the program tracking data and noted that all of the heat pump projects were considered as 'replace-on-burnout'.

The Evaluators found discrepancies in savings calculations for central AC and HP replacement projects. Ex-post savings calculations were based on heating and cooling capacities and efficiencies as defined in each system's AHRI certificate.

5.4.5.1 AHRI Certificate Review

AHRI certificates were reviewed for 19 central AC models and 12 heat pump models, accounting for all systems replaced in PY2024. In general, the Evaluators adjusted EER2 baselines to 9.8 EER2 for all units for which their respective verified SEER2 value was 15.2 or higher, per the AR TRM V9.2. This resulted in higher realized kW reductions.

Additional findings were as follows:

- Central AC Replacements
  - **There were eight projects with ex-ante claimed savings of 0 kW.** This could be due to estimated baseline / efficient EER2 values being the same. The Evaluators adjusted the baseline EER2 values to 9.8 since the verified SEER2 values were 15.2 or higher, per the AR TRM V9.2, resulting realized kW reductions.
  - **There were two projects for which the ex-ante estimations assumed 'Early Retirement'.** The Evaluators noted that the tracking data categorized all projects as 'Replace-on-Burnout', resulting in fewer savings found.
- Central HP Replacements
  - **All HP replacement project ex-ante estimations did not account for heating kWh.** It appears that the heat pump ex-ante savings were accounting for cooling kWh savings only. The Evaluators calculated both cooling and heating kWh savings, resulting in more overall savings.
  - **Five heat pumps had verified EER2 values lower than minimum baseline efficiencies.** The ex-ante estimations for kW reductions for these projects were 0

kW. The Evaluators utilized the verified EER2 efficiencies in calculations, resulting in negative values for kW reductions.

The resulting system replacement savings are summarized in Table 5-18.

Table 5-18: PY2024 HVAC Replacement Savings Summary

Measure	Ex-ante Gross kWh Savings	Ex-post Gross kWh Savings	kWh Realization Rate	Ex-ante Gross kW Savings	Ex-post Gross kW Savings	kW Realization Rate
AC Replacement	21,428	21,595	101%	3	11	341%
HP Replacement	12,099	26,648	220%	1	4	325%
Total	**33,527**	**48,243**	**144%**	**4**	**15**	**337%**
Sums may differ due to rounding.						

Recommendation: Implementation staff may consider incorporating a series of checks within program calculators to flag HVAC units for which installed unit SEER2 efficiencies are 15.2 or higher – the baseline efficiency EER2 value should be 9.8 for these units.

Tune-ups calculations matched the CoolSaver M&V Plan provided by CLEAResult for PY2024, with slight discrepancies.

Table 5-19: PY2024 Central AC & HP Tune-up Savings Summary

Tune up	Ex-ante Gross kWh Savings	Ex-post Gross kWh Savings	kWh Realization Rate	Ex-ante Gross kW Savings	Ex-post Gross kW Savings	kW Realization Rate
AC Tune-up: M&V	23,776	23,761	100%	14	14	100%
AC Tune-up: Modeled	141,012	140,990	100%	86	86	100%
HP Tune-up: M&V	23,529	23,541	100%	5	5	100%
HP Tune-up: Modeled	184,969	184,960	100%	45	45	100%
Total	**373,286**	**373,252**	**100%**	**150**	**151**	**100%**
Sums may differ due to rounding.						

Table 5-20: PY2024 HVAC Replacement & Tune-up Lifetime Savings Summary

Tune-up	Ex-post Gross Energy Savings (kWh)	Ex-post Gross kW Savings	EUL	Ex-post Gross Lifetime Energy Savings (kWh)
Central AC Replacement	21,595	11	19	410,299
Central AC Tune-up: M&V	23,761	14	3	74,960
Central AC Tune-up: Modeled	140,990	86	3	459,501
Central HP Replacement	26,648	4	16	426,373
Central HP Tune-up: M&V	23,541	5	6	148,115
Central HP Tune-up: Modeled	184,960	45	4	827,167
Total	**421,495**	**166**	**6**	**2,346,414**
Sums may differ to rounding.				

5.4.5.2 CPS LED Lamp Savings Discrepancies

There was high realization for the upstream specialty and standard LED lamps (242% and 121%, respectively). There were two line items for which the ex-ante savings estimations assumed the post-EISA (Phase II) baseline wattages for the specialty bulbs, however, the Evaluators utilized pre-EISA (Phase I) baseline wattages based on IEM guidance regarding retailers qualifying as serving low income populations. This resulted in higher realized kWh savings.

Additionally, in accordance with the residential lighting methodologies outlined in the AR TRM V9.2, the Evaluators incorporated the commercial hours of use factor, through which 6.7% of retail markdown LEDs are stipulated as installed in commercial facilities. The impacts were calculated by estimating the weighted average hours of use and coincidence factor for small business participants that installed lighting projects in the PY2024 CEEP. The weighted mix of residential and commercial hours of use and coincidence factors were applied to retail channels (standard and specialty) but not to food bank LEDs (which are presumed to be installed only in residential settings). The parameter estimates developed from this analysis are summarized in Table 5-21.

Table 5-21: PY2024 CPS LED Lamp Commercial Parameters

LED Lamp Type	Hours of Use		CF		Weight		Hours of Use	CF
	Res	Com	Res	Com	Res	Com		
LEDs (Food Bank)	792.6	-	.1	-	100%	0%	792.6	.1
LEDs (Specialty)	792.6	3,149	.1	.64	93.3%	6.7%	950	.14
LEDs (Standard)					93.3%	6.7%		

Recommendation: Implementation staff may consider incorporating non-residential impacts into retail markdown lighting by applying weighted hours of use and weighted CF values. A conservative approach is to apply the three-year average of the weighted hours and CF values the Evaluators applied in PY2022, PY2023, and PY2024:

- Weighted hours of use: 998
- Weighted CF: 0.14

5.4.5.3 CPS Dehumidifiers Savings Discrepancies

There was low realization for dehumidifiers (74%). There were 18 units for which the ex-ante savings estimates assumed that the unit was 'ENERGY STAR Most Efficient'. However, the Evaluators reviewed the unit models and determined to be standard 'ENERGY STAR Efficient', resulting in fewer realized savings.

Recommendation: Implementation staff may consider updating calculator parameters to assume the standard to be 'ENERGY STAR Efficient' for efficiency rating if time does not permit

staff to assure the appropriate standard category through the ENERGY STAR database. Update incremental cost; with the increased efficiency standard and revision to size categories, incremental cost estimates used in initial planning for this measure are likely higher than warranted, as both the base-case efficiency increasing, and the average system size decreasing correspond with lower incremental cost.

5.4.5.4 CPS Ventilation Fans Savings Discrepancies

There was a very high realization rate for ventilation fans (365%). In reviewing OGE's deemed savings estimates the Evaluators found that calculation assumed the lowest qualifying product efficiency for Energy Star units by size category. Figure 5-4 summarizes the actual product mix in comparison to baseline and minimum qualifying CFM/W ratings for Energy Star-qualifying products in PY2024 for the 10 – 89 and 90 – 200 CFM size bins (no 200 – 500 CFM units were rebated in PY2024).

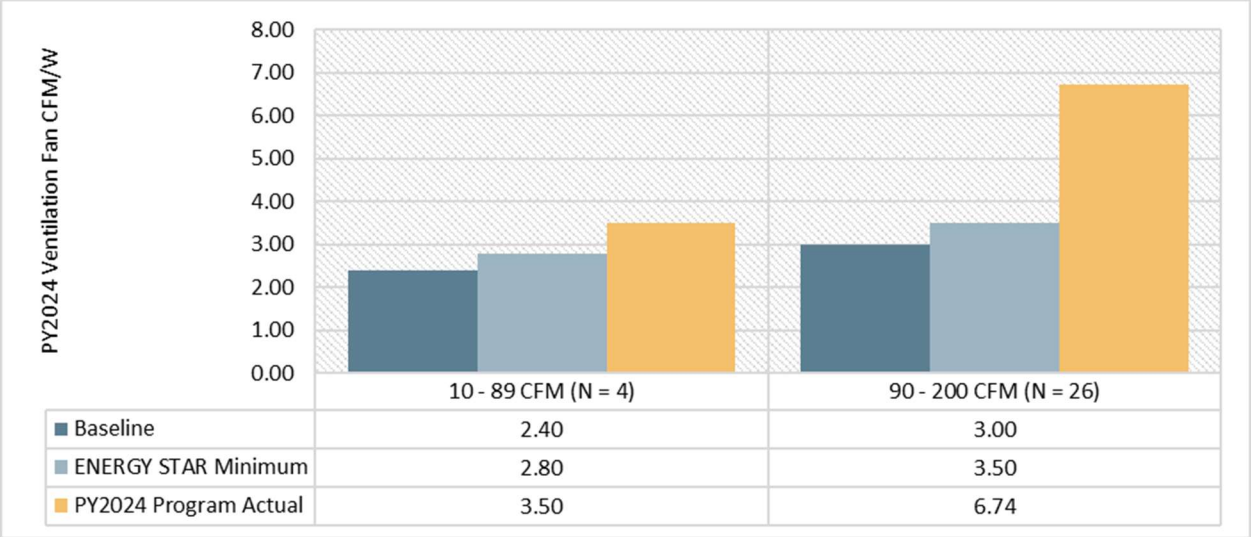


Figure 5-4: Energy Star Ventilation Fan Efficiency Levels.

When comparing the magnitude of impact of (1/baseline – 1/efficient) CFM/W for minimum qualifying Energy Star systems with that of PY2024 program-actual ENERGY STAR systems, the program-actual efficiency improvement is greater than deemed estimates by 182% for 10 – 89 CFM systems and 429% for 90 – 200 CFM systems.

The Evaluators then exampled ENERGY STAR Most Efficient systems, for which all size categories require 10 CFM/W or greater. For these systems, the Evaluators found savings were still calculated using the minimum qualifying CFM/W for Energy Star-qualifying systems. Ex post savings for these systems were found to be 370% higher than ex-ante estimations. All ventilation fans had a $25 flat incentive offer.

Program staff are aware of similar discrepancies that the Evaluators found in PY2023 and are in the process of updating system savings estimates for PY2025, along with various AR TRM updates.

5.4.5.5 CPS Savings Summary

Table 5-22: PY2024 CPS Lifetime Savings Summary

Tune-up	Ex-post Gross Energy Savings (kWh)	Ex-post Gross kW Savings	EUL	Ex-post Gross Lifetime Energy Savings (kWh)
Advanced Power Strip	208,829	24	10	2,088,293
Air Purifier	8,004	1	9	72,038
Dehumidifier	3,977	1	12	47,722
LED Lamp (Food Bank)	741,553	121	12.5	9,269,418
LED Lamp (Specialty)	11,255	2	12.5	140,691
LED Lamp (Standard)	10,204	2	12.5	127,548
Smart Thermostat	43,265	0	11	475,916
Ventilation Fan	820	0.10	19	15,584
Water Cooler	8,380	1	10	83,799
Total	**1,036,288**	**151**	**12**	**12,321,010**
Sums may differ due to rounding.				

5.5 Net Impact Evaluation Approach

The following table summarizes the approach and estimate for NTG by channel and by measure.

Table 5-23: PY2024 HEEP NTG Summary

Pathway	Measure	Free-ridership	Spillover	NTG Ratio	Source
HEEP Consumer Products	Advanced Power Strip	11%	2%	92%	Literature Review
	Air Purifier	19%	3%	85%	Literature Review
	Dehumidifier	28%	2%	80%	Literature Review
	Smart Thermostat	22%	2%	80%	Literature Review
	Ventilation Fan	34%	3%	69%	Literature Review
	Water Cooler	33%	3%	70%	Literature Review
	Upstream lighting: LI	0%	0%	100%	IEM Low Income Assignment
HEEP RSOL (Single Family)	Advanced Power Strips	0%	0%	100%	2023 Value
	Air Infiltration	0%	0%	100%	2023 Value
	Ceiling Insulation	0%	0%	100%	2023 Value
	Duct Sealing	0%	0%	100%	2023 Value
	ES Pool Pumps	22%	0%	78%	2023 Value
	ES Windows	0%	0%	100%	2023 Value
	Faucet Aerators	0%	0%	100%	2023 Value
	LEDs (Standard)	0%	0%	100%	2023 Value
	Low-Flow Showerheads	0%	0%	100%	2023 Value

Pathway	Measure	Free-ridership	Spillover	NTG Ratio	Source
	AC Replacement	0%	0%	100%	2024 Survey Responses
	HP Replacement	0%	0%	100%	2024 Survey Responses
	AC Tune up	0%	0%	90%	2023 Value
HEEP RSOL (Multifamily)	Advanced Power Strip (MF)	0%	0%	100%	2023 Value
	Air Infiltration (MF)	0%	0%	100%	2023 Value
	Duct Sealing (MF)	0%	0%	100%	2023 Value
	Faucet Aerator (MF)	0%	0%	100%	2023 Value
	LED Lamp (MF) (Standard)	0%	0%	100%	2023 Value
	Low-Flow Showerhead (MF)	0%	0%	100%	2023 Value
	AC Replacement	19%	0%	81%	Assigned PY2020 NTG Value
	HP Replacement	26%	0%	74%	Assigned PY2020 NTG Value
	AC Tune up	0%	0%	90%	2023 Value
HEEP RSOL Schools Outreach	School Kit	0%	0%	100%	Literature Review

5.6 Net Impact Evaluation Summary and Findings

Table 5-24 below summarizes free ridership (FR), spillover (SO) and NTG by channel for the PY2024 HEEP.

Table 5-24: PY2024 NTG by Channel for HEEP

HEEP Channel	Ex-post Gross Energy Savings (kWh)	FR	SO	NTG	Ex-post Net Energy Savings (kWh)
Residential Solutions	1,209,349	0.26%	0%	100%	1,206,149
HVAC Replacement & Tune-up	421,495	9%	0%	91%	384,170
Consumer Products Solutions	1,036,288	4%	1%	97%	1,005,602
LivingWise® Schools Outreach	211,851	0%	0%	100%	211,851
Total	**2,878,983**	**3%**	**0.22%**	**98%**	**2,807,772**
Sums may differ due to rounding.					

5.6.1 Residential Solutions Net Savings Results

Table 5-25 summarizes the measure-level NTG results and net savings for RSOL.

Table 5-25: PY2024 Net Savings for HEEP Residential Solutions

Measure	Ex-post Gross Energy Savings (kWh)	Ex-post Net Energy Savings (kWh)	FR	SO	NTG	Ex-post Gross Demand Reductions (kW)	Ex-post Net Demand Reductions (kW)
Advanced Power Strip	2,968	2,968	0%	0%	100%	0.35	0.35
Advanced Power Strip (MF)	24,366	24,366	0%	0%	100%	3	3
Air Infiltration (MF)	440,779	440,779	0%	0%	100%	32	32
Ceiling Insulation	1,091	1,091	0%	0%	100%	1	1
Duct Sealing	3,728	3,728	0%	0%	100%	1	1
Duct Sealing (MF)	675,057	675,057	0%	0%	100%	66	66
Faucet Aerator (MF)	4,846	4,846	0%	0%	100%	1	1
LED Lamp (MF) (Standard)	9,487	9,487	0%	0%	100%	2	2
LED Lamp (Standard)	5,036	5,036	0%	0%	100%	1	1
Low-Flow Showerhead (MF)	5,088	5,088	0%	0%	100%	1	1
Pool Pump	14,545	11,345	22%	0%	78%	3	2
Wall Insulation	4,052	4,052	0%	0%	100%	0.32	0.32
Window	18,305	18,305	0%	0%	100%	12	12
Total	**1,209,349**	**1,206,149**	**.26%**	**0%**	**100%**	**121**	**120**
Sums may differ due to rounding.							

Table 5-26 shows net lifetime kWh savings for the Residential Solutions channel by measure.

Table 5-26: PY2024 HEEP RSOL Net Lifetime Savings Summary

Measure	EUL	Ex-post Net Lifetime Energy Savings (kWh)
Advanced Power Strip	10	29,677
Advanced Power Strip (MF)	10	243,664
Air Infiltration (MF)	11	4,848,567
Ceiling Insulation	20	21,824
Duct Sealing	18	67,111
Duct Sealing (MF)	18	12,151,035
eScore Assessment	N/A	0
Faucet Aerator (MF)	10	48,460
LED Lamp (MF) (Standard)	12.5	118,587
LED Lamp (Standard)	12.5	62,949
Low-Flow Showerhead (MF)	10	50,876
Pool Pump	10	113,450
Wall Insulation	20	81,048
Window	20	366,101
Total	**15**	**18,203,348**
Sums may differ due to rounding.		

5.6.2 LivingWise® Schools Outreach Net Savings Results

Application of the IEM guidance memo resulted in 100% NTG for LivingWise® Schools Outreach. The table below outlines the net energy savings (kWh) and net demand reduction (kW) results for the LivingWise® Schools Outreach channel.

Table 5-27: PY2024 Net Energy (kWh) Savings for HEEP LivingWise® Schools Outreach

Measure	Ex-post Gross Energy Savings (kWh)	Ex-post Net Energy Savings (kWh)	NTG	Ex-post Gross Demand Reductions (kW)	Ex-post Net Demand Reductions (kW)
Advanced Power Strip	109,439	109,439	100%	12	12
Bathroom Aerator (1.0 GPM)	13,790	13,790	100%	1	1
Kitchen Aerator (1.5 GPM)	8,233	8,233	100%	1	1
Low-Flow Showerhead (1.5 GPM)	80,388	80,388	100%	8	8
Total	**211,851**	**211,851**	**100%**	**23**	**23**
Sums may differ due to rounding.					

Table 5-28 shows net lifetime energy (kWh) savings for LivingWise® Schools Outreach channel by measure.

Table 5-28: PY2024 LivingWise® Schools Outreach Net Lifetime Savings Summary

Measure	EUL	Ex-post Net Lifetime Energy Savings (kWh)
Advanced Power Strips	10	1,094,391
Bathroom Aerators (1.0 GPM)	10	137,902
Kitchen Aerators (1.5 GPM)	10	82,331
Low-Flow Showerhead (1.5 GPM)	10	803,884
Total	**10**	**2,118,508**
Sums may differ due to rounding.		

5.6.3 HVAC Replacement and Tune-up Net Savings Results

Results from the PY2019 – PY2021 survey were applied to PY2024 AC and HP replacement program participants residing in multi-family homes. PY2023 survey results were applied to all of the AC and HP tune-ups projects. In PY2024, PY2024 survey results were applied to the AC and HP replacement program participants residing in single family homes. The table below outlines the resulting NTG values applied to project types by building type.

Table 5-29: HVAC NTG Values Applied by Housing Type

Measure	Housing Type	NTG	Source
Central AC Replacement	Single Family	100%	PY2024 survey results
Central AC/HP Tune-up	Single Family	90%	PY2023 survey results
Central HP Replacement	Single Family	100%	PY2024 survey results
Central AC Replacement	Multi-Family	81%	PY2019 – PY2021 survey results
Central AC/HP Tune-up	Multi-Family	90%	PY2023 survey results
Central HP Replacement	Multi-Family	74%	PY2019 – PY2021 survey results

In PY2024, the central AC/HP replacements were all completed in single family housing. The AC/HP tune-ups were completed in a mix of housing types, but the NTG was the same across all tune-ups. Table 5-30 below shows net results by measure within the HVAC channel.

Table 5-30: PY2024 Net Savings Summary for HVAC Channel

Measure	Ex-post Gross Energy Savings (kWh)	Ex-post Net Energy Savings (kWh)	NTG	Ex-post Gross Demand Reductions (kW)	Ex-post Net Demand Reductions (kW)
Central AC Replacement	21,595	21,595	100%	11	11
Central AC Tune-up: M&V	23,761	21,385	90%	14	13
Central AC Tune-up: Modeled	140,990	126,891	90%	86	77
Central HP Replacement	26,648	26,648	100%	4	4
Central HP Tune-up: M&V	23,541	21,187	90%	5	5
Central HP Tune-up: Modeled	184,960	166,464	90%	45	41
Total	**421,495**	**384,170**	**91%**	**166**	**151**
Sums may differ due to rounding.					

The table below outlines the net lifetime energy (kWh) savings for the HVAC Replacement and Tune-up channel.

Table 5-31: PY2024 Net Lifetime Energy Savings for HVAC Channel

Measure	EUL	Ex-post Net Lifetime Energy Savings (kWh)
Central AC Replacement	19	410,299
Central AC Tune-up: M&V	3	67,464
Central AC Tune-up: Modeled	3	413,551
Central HP Replacement	16	426,373
Central HP Tune-up: M&V	6	133,304
Central HP Tune-up: Modeled	4	744,450
Total	**6**	**2,195,440**
Sums may differ due to rounding.		

5.6.4 Consumer Products Net Savings Results

The Evaluators adhered to IEM guidance regarding the retail sales in qualifying low-income zip codes. The guidance outlines that LED lamps distributed via food banks receive 100% NTG. Overall, the NTG ratio for CPS increased from 95% in PY2023 to 97% in PY2024. The tables below summarize the results of the net savings analysis.

Table 5-32: PY2024 Net kWh Savings for HEEP Consumer Products

Measure	Ex-ante Gross Energy Savings (kWh)	Ex-post Gross Energy Savings (kWh)	FR	SO	Ex-post Net Energy Savings (kWh)	NTG
Advanced Power Strip	211,259	208,829	11%	2%	191,566	92%
Air Purifier	8,244	8,004	19%	3%	6,764	85%
Dehumidifier	5,333	3,977	28%	2%	3,162	80%
LED Lamp (Food Bank)	736,995	741,553	0%	0%	741,553	100%
LED Lamp (Specialty)	4,655	11,255	0%	0%	11,255	100%
LED Lamp (Standard)	8,457	10,204	0%	0%	10,204	100%
Smart Thermostat	43,702	43,265	22%	2%	34,666	80%
Ventilation Fan	225	820	34%	3%	566	69%
Water Cooler	8,191	8,380	33%	3%	5,866	70%
Total	**1,027,059**	**1,036,288**	**4%**	**1%**	**1,005,602**	**97%**
Sums may differ due to rounding.						

Table 5-33: PY2024 Net kW Peak Demand Reductions for HEEP Consumer Products

Measure	Ex-ante Gross Demand Reductions (kW)	Ex-post Gross Demand Reductions (kW)	FR	SO	Ex-post Net Demand Reductions (kW)	NTG
Advanced Power Strip	24	24	11%	2%	22	92%
Air Purifier	1	1	19%	3%	1	85%
Dehumidifier	1	1	28%	2%	1	80%
LED Lamp (Food Bank)	120	121	0%	0%	121	100%
LED Lamp (Specialty)	1	2	0%	0%	2	100%
LED Lamp (Standard)	1	2	0%	0%	2	100%
Smart Thermostat	28	0	22%	2%	0	N/A
Ventilation Fan	0.03	0.10	34%	3%	0.07	69%
Water Cooler	1	1	33%	3%	1	70%
Total	**177**	**151**	**2%**	**.41%**	**148**	**98%**
Sums may differ due to rounding.						

The following table shows net lifetime energy (kWh) savings for the Consumer Products channel.

Table 5-34: PY2024 Net Lifetime Savings Summary for Consumer Products Channel

Measure	EUL	Ex-post Net Lifetime Energy Savings (kWh)
Advanced Power Strip	10	1,915,661
Air Purifier	9	60,872
Dehumidifier	12	37,939
LED Lamp (Food Bank)	12.5	9,269,418
LED Lamp (Specialty)	12.5	140,691
LED Lamp (Standard)	12.5	127,548
Smart Thermostat	11	471,157
Ventilation Fan	19	10,753
Water Cooler	10	58,659
Total	**12**	**12,092,699**
Sums may differ due to rounding.		

5.7 Non-Energy Benefits (NEBs)

Protocol L of the AR TRM V9.2 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 HEEP Program in PY2024 are avoided replacement costs (ARCs), propane, natural gas, and water savings. 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.

5.7.1 Natural Gas Energy Savings

In HEEP, OG&E customers can have either electric or natural gas heating. When a customer has natural gas heating, OG&E can claim the natural gas therms savings as NEBs. The table below presents the *ex-post* net natural gas claimable as NEBs. The natural gas savings estimated in HEEP were all from channels where there are no gas utility partners as there are in the CWA. The natural gas penalties presented for Consumer Products are inclusive of leakage effects.

Table 5-35: Natural Gas Savings (NGS) by Measure, for HEEP in PY2024

Measure	Ex-post NGS (Therms)	Ex-post Net NGS (Therms)	Ex-post Net Lifetime NGS (Therms)	NEB Natural Gas Savings ($)	NPV NGS ($)
Consumer Products	**(4,081)**	**(4,255)**	**(54,241)**	**$ (2,016)**	**$ (20,750)**
LED Lamp (Food Bank)	(4,816)	(4,816)	(60,203)	$ (2,282)	$ (23,049)
LED Lamp (Specialty)	(73)	(73)	(914)	$ (35)	$ (350)
LED Lamp (Standard)	(66)	(66)	(828)	$ (31)	$ (317)
Smart Thermostat	874	700	7,705	$ 332	$ 2,966
RSOL	**471**	**471**	**9,646**	**$ 223**	**$ 3,032**
Ceiling Insulation	173	173	3,450	$ 82	$ 1,093
LED Lamp (Standard)	(30)	(30)	(379)	$ (14)	$ (145)
Wall Insulation	329	329	6,575	$ 156	$ 2,084
LivingWise®	**2,286**	**2,286**	**22,860**	**$ 1,083**	**$ 9,000**
Bathroom Aerator (1.0 GPM)	308	308	3,078	$ 146	$ 1,212
Kitchen Aerator (1.5 GPM)	184	184	1,838	$ 87	$ 724
Low-Flow Showerhead (1.5 GPM)	1,794	1,794	17,944	$ 850	$ 7,064
Total	**(1,325)**	**(1,498)**	**(21,735)**	**$ (710)**	**$ (8,718)**

Natural gas savings were estimated as follows:

- **Consumer Products**: the project data provided heating type, which was used to determine if the project qualified for natural gas savings.
- **Residential Solutions**: the project data provided heating type, which was used to determine if the project qualified for natural gas savings.
- **LivingWise® Schools Outreach**: participant survey responses provided by AM Conservation were used to estimate natural gas savings.

5.7.2 Propane Savings

The table below presents the ex-post net propane savings claimable as NEBs. Propane was only identified in the surveys delivered to LivingWise® Schools Outreach participants.

Table 5-36: Propane Savings by Measure, for HEEP in PY2024

Channel	Measure	Ex-post Gross LPG Savings (gallons)	Ex-post Net LPG Savings (gallons)	LPG Benefit ($)	NPV LPGS ($)
LivingWise® Schools Outreach	Kitchen Aerator	26	26	$ 101	$ 813
	Bathroom Aerator	44	44	$ 60	$ 485
	Showerhead	257	257	$ 586	$ 4,739
Total		**328**	**328**	**$ 747**	**$ 6,037**
Sums may differ due to rounding.					

5.7.3 Water Savings

The Evaluators applied AR TRM V9.2 Volume 1, Section II, Protocol L1 to calculate water savings from faucet aerators and low-flow showerheads.

Table 5-37: Total Marginal Water Rates

Customer Class	AR TRM V9.2 PY2023 Value		
	Water Rates (per 1,000 gallons)	Sewage Rates (per 1,000 gallons)	Marginal Water Rates (per 1,000 gallons)
Residential	$4.09	$5.75	$9.84
Commercial	$3.71	$5.86	$9.57
Average Cost ($/Gallon)	**$3.90**	**$5.81**	**$9.71**

In PY2024, the water saving measures implemented through the HEEP included faucet aerators and low-flow showerheads. Program tracking data included flow rates, and the Evaluators applied these flow rates to the AR TRM V9.2 algorithms for faucet aerators and showerheads to calculate annual gallons of water saved. Table 5-38 below presents the estimates for HEEP.

Table 5-38: Water Savings by Measure Type for HEEP in PY2024

Channel	Measure	Ex-post Gross Water/WW Savings (gallons)	Ex-post Net Water/ WW Savings (gallons)	NEB Water/ WW Benefit ($)	NPV Water/ WW ($)
RSOL	Aerators	47,786	47,786	$ 368	$ 3,752
RSOL	Showerheads	46,109	46,109	$ 355	$ 3,620
LivingWise® Schools Outreach	Bathroom Aerator	251,205	251,205	$ 1,934	$ 19,724
	Kitchen Aerator	149,976	149,976	$ 1,155	$ 11,776
	Showerheads	1,395,842	1,395,842	$ 10,748	$ 109,597
Total		**1,890,918**	**1,890,918**	**$ 14,560**	**$ 148,468**
Sums may differ due to rounding.					

5.7.4 Avoided and Deferred Replacement Costs

To calculate avoided replacement costs (ARCs) and incremental costs for LEDs in OG&E's HEEP, the AR TRM V9.2 Protocol L calculator was used with the following assumptions:

1) Replacement-on-burnout for all bulbs; and
2) 12.5 EUL for all LEDs, per AR TRM V9.2.

LED costs were sourced from OG&E program tracking data where available. For direct installed LEDs, the Evaluators assumed that the incentive was equal to the total cost of equipment and

labor. In cases where project cost was not available and the project was not direct install, the Evaluators cited costs from IL TRM v9.0 Volume 3.[37]

There were no deferred replacement costs (DRC) estimated in the PY2024 HEEP. Table 5-39 below shows the ARC benefits for the PY2024 HEEP.

Table 5-39: Avoided Replacement Costs (ARCs) by Measure, for HEEP in PY2024

Channel	Measure	Ex-post Gross ARCs ($)	Ex-post Net ARC ($)	NPV of ARC ($)
Consumer Products	LED Lamp (Food Bank)	$ 75,394	$ 75,394	$ 75,394
	LED Lamp (Specialty)	$ 774	$ 774	$ 774
	LED Lamp (Standard)	$ 828	$ 828	$ 828
RSOL	LED Lamp (MF) (Standard)	$ 977	$ 977	$ 977
	LED Lamp (Standard)	$ 482	$ 482	$ 482
Total		**$ 78,454**	**$ 78,454**	**$ 78,454**
Sums may differ due to rounding.				

5.7.5 NEBs Summary

The table below summarizes the net present value (NPV) of NEBs attributable to HEEP, including natural gas savings, water savings, propane, and avoided replacement cost. There were no deferred replacement costs (DRCs) in the PY2024 HEEP. There were no NEBs identified in the HVAC Replacement & Tune-up channel.

Table 5-40: PY2024 HEEP Non-Energy Benefits (NEBs) Summary

Channel	Measure	NPV NGS ($)	NPV LPGS ($)	NPV Water/ WW ($)	NPV ARC ($)	Total NPV ($)
Consumer Products	LEDs (Food Bank)	$ (23,049)	$ -	$ -	$ 75,394	$ 52,345
	LEDs (Specialty)	$ (350)	$ -	$ -	$ 774	$ 425
	LEDs (Standard)	$ (317)	$ -	$ -	$ 828	$ 511
	Smart Thermostats	$ 2,966	$ -	$ -	$ -	$ 2,966
LivingWise® Schools Outreach	Bathroom Aerator	$ 1,212	$ 813	$ 19,724	$ -	$ 21,748
	Kitchen Aerator	$ 724	$ 485	$ 11,776	$ -	$ 12,984
	Showerheads	$ 7,064	$ 4,739	$ 109,597	$ -	$ 121,400
RSOL	Ceiling Insulation	$ 1,093	$ -	$ -	$ -	$ 1,093
	Faucet Aerator (MF)	$ -	$ -	$ 3,752	$ -	$ 3,752
	LED Lamp (MF) (Standard)	$ -	$ -	$ -	$ 977	$ 977

[37] http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/Version_9/Final/IL-TRM_Effective_010118_v9.0_Vol_3_Res_020817_Final.pdf.

	LED Lamp (Standard)	$ (145)	$ -	$ -	$ 482	$ 336
	Low-Flow Showerhead (MF)	$ -	$ -	$ 3,620	$ -	$ 3,620
	Wall Insulation	$ 2,084	$ -	$ -	$ -	$ 2,084
Total		**$ (8,718)**	**$ 6,037**	**$ 148,468**	**$ 78,454**	**$ 224,241**

5.8 Process Evaluation

The following sections present the data collection activities and results of the process evaluation.

5.8.1.1 Data Collection Activities

As part of the PY2024 evaluation of HEEP, Evaluators interviewed four OG&E and four CLEAResult staff about the residential programs. OG&E interviewees included OG&E's EMV Analyst for all AR programs, the Energy Efficiency Program Manager, the Residential Energy Efficiency Program Manager, the previous Residential Energy Efficiency Manager, and a support staff person. CLEAResult interviewees included the Field Manager, Program Portfolio Manager, Energy Engineer, and Account Manager.

Additionally, evaluators conducted surveys with HEEP program participants, collecting feedback regarding participants' experience and collecting data for NTG estimation.

Table 5-41 below summarizes the survey and interview data collection for the PY2024 program evaluation, including data collection type and number of respondents.

Table 5-41: Interview and Survey Data Collection Summary

Target	Component	Activity	n	Precision	Details
Program Staff	OG&E Program Staff	Interview: Program Manager EM&V Analyst	4	N/A	EM&V Analyst for all AR programs Energy Efficiency Program Manager Residential Energy Efficiency Program Manager Previous Residential Energy Efficiency Manager Support staff person
	CLEAResult Staff	Interview: Program Manager	4	N/A	Field Manager Program Portfolio Manager Energy Engineer Account Manager
Program Participants	RSOL & HVAC Pathways	Surveys	30	±15.0%	This survey was conducted on a sample of residents who participated in HEEP

The next sections present the results and key findings from the process evaluation activities. These findings are based upon interviews with utility staff, implementation staff, and surveys

with participating customers. The findings presented pertain to program communications and marketing, program delivery, participant energy efficiency awareness and behaviors, and customer characteristics.

5.8.1.2 OG&E and CLEAResult Staff Interview Findings

Evaluators interviewed four OG&E and four CLEAResult staff about the residential programs. OG&E interviewees included OG&E's EMV Analyst for all AR programs, the Energy Efficiency Program Manager, the Residential Energy Efficiency Program Manager, the previous Residential Energy Efficiency Manager, and support staff. CLEAResult interviewees included the Field Manager, Program Portfolio Manager, Energy Engineer, and Account Manager.

Program and implementation staff indicated that the HEEP program had a successful PY2024. No major changes were made to the single-family homes, HVAC, schools, nor multi-family channels.

5.8.1.3 Home Energy Efficiency Programming (HEEP) Survey

Evaluators surveyed customers who participated in OG&E's Residential Solutions Program to gather feedback about customers' engagement with and experience of the program. Tracking data included 469 customers across the residential program. Customers were contacted by phone or email up to four times. 50 participants responded to the survey; 20 responses were removed for not passing the screening or not finishing the survey. The following summary includes data from the 30 respondents who completed the survey; 6.4% of participants contacted.

Program Awareness and Engagement

Respondents received incentives for a variety of measures, most commonly HVAC equipment (Table 5-42).

Table 5-42: Equipment installed (n = 22)

Measure	n
HVAC	10
Direct Install Measures	3
Weatherization Measures	3
Windows	3
Smart Thermostat	2
Pool Pump	1

Respondents first learned about the Residential Solutions Program through word of mouth (25%), an OG&E bill insert or mailer (22.5%), the OG&E website (12.5%), or a contractor (12.5%). Respondents were most interested in the program to save money, save energy, and improve the comfort of their home (Figure 5-5).

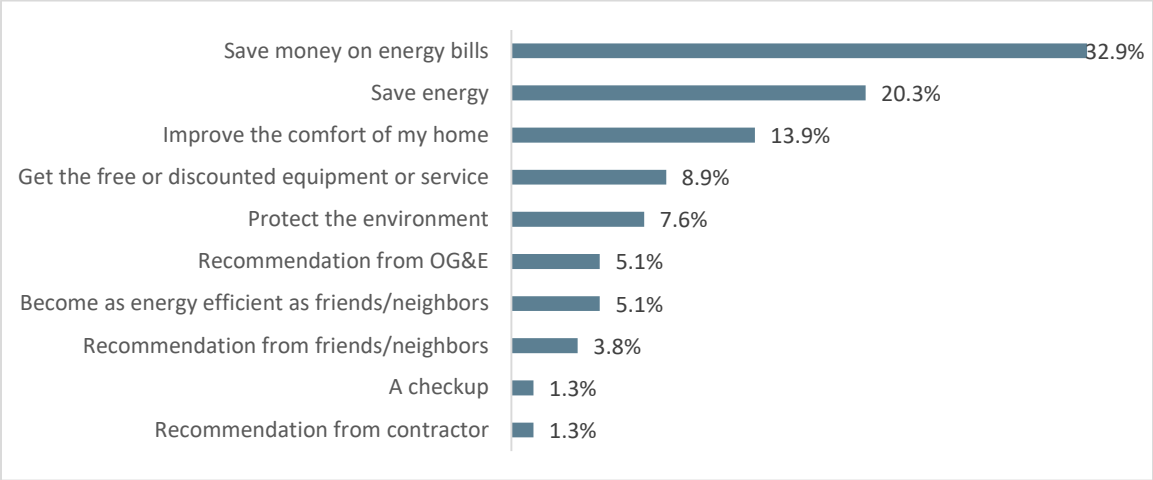


Figure 5-5: Participation Reasons (n = 79)

Over half of the respondents received a home energy assessment as part of the program (56.7%).

Most of the respondents who received an assessment noted that the energy assessor discussed the findings and recommendations with them (76.5%).

While many of the respondents who received an assessment were satisfied with it (Figure 5-6), some noted dissatisfaction with the amount of time between scheduling and completing the assessment (17.6% dissatisfied), the time it took to complete the assessment (11.8%), the professionalism of the assessor (5.9%), and the assessment overall (5.9%). The issues raised by respondents were: expecting to have burnt-out light bulbs replaced with LED light bulbs, a tenant reported not receiving feedback on the assessment findings, a lack of communication about when the assessment would happen after requesting it (they said it took 6 months to hear from the program), and that no savings opportunities were discovered.

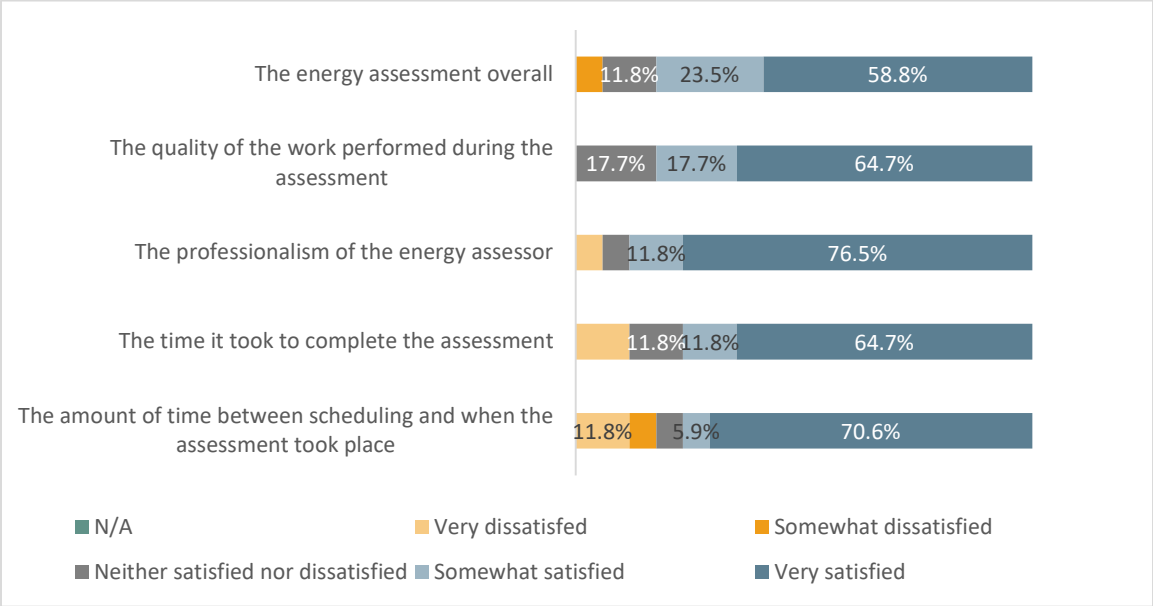


Figure 5-6: Energy Assessment (n = 17)

Respondents who received incentives for HVAC equipment explained that they selected the model for its features (30.0%), the price (30.0%), the ENERGY STAR label (20.0%), and contractor recommendation (20.0%). Most of the HVAC incentive respondents did not have any difficulty finding an efficient HVAC that qualified for an incentive (70.0%) and generally reported that it took less than two weeks for the equipment to be installed. One respondent stated that it took a long time to have the equipment delivered and that it took more than a month to have the equipment delivered.

The three respondents who received incentives for windows chose the model of window based on contractor recommendation, the windows' features and the windows' price. None of these respondents had issues finding efficient windows that qualified for the incentives, and all indicated they would have bought the same windows had they not received an incentive. Respondents waited anywhere from three to four weeks to more than a month to get their new windows. All window respondents were very satisfied with their new windows.

Program Satisfaction

Overall, participants were satisfied with the program (Figure 5-7). The majority of participants were satisfied with various aspects of the program, with the highest satisfaction levels observed in interactions with OG&E staff (76.6% somewhat or very satisfied), contractor work quality (80%), and the overall program experience (83.4%).

While most participants reported satisfaction with the equipment performance (76.7%) and home comfort improvements (65.5%), some noted neutral or lower satisfaction levels. The greatest area of mixed feedback was utility bill savings, where 27.6% remained neutral, and 17.2% were somewhat or very dissatisfied. However, 55.2% still reported being somewhat or very satisfied with savings.

The application process was rated favorably, with 69% of participants reporting satisfaction with it. No respondents reported being completely dissatisfied with interactions with OG&E staff or contractors.

Satisfaction with OG&E as a service provider was particularly strong, with 90% expressing positive sentiment. More than half of respondents also noted that their participation in the program either somewhat or greatly increased their satisfaction with OG&E (60%).

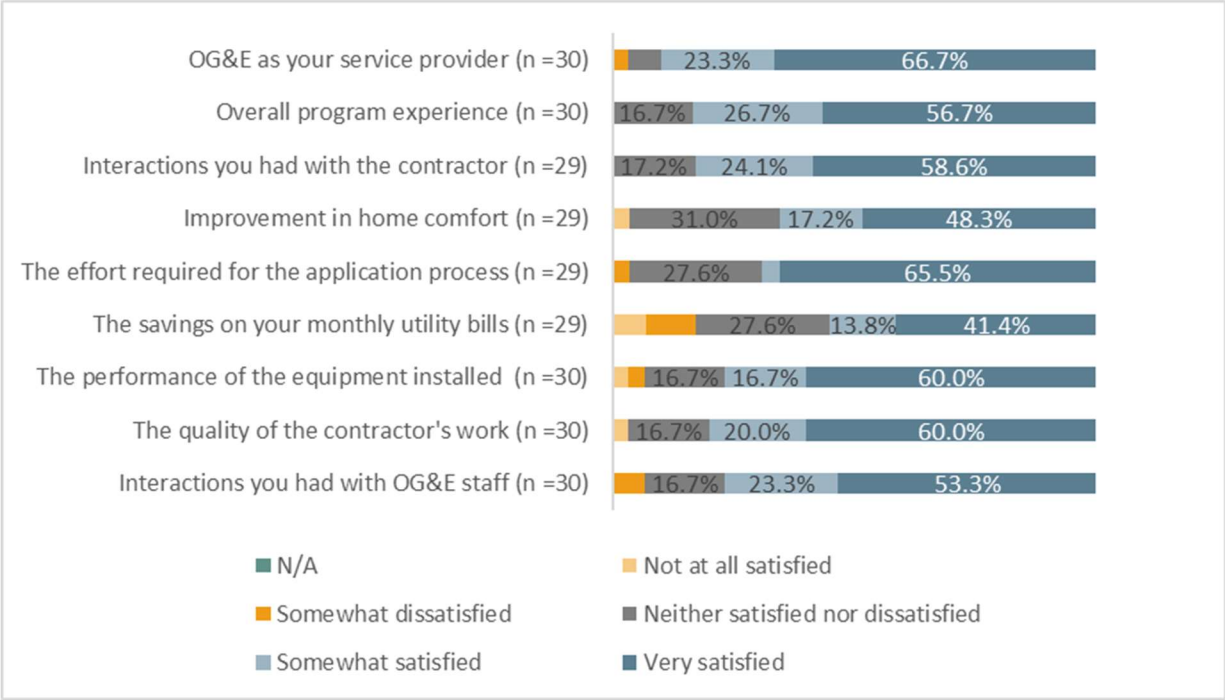


Figure 5-7: Program Satisfaction

Respondents noted that they were very likely to recommend the OG&E residential program to their friends, relatives, colleagues and neighbors (72.4%).

Demographics

Table 5-43 describes respondents' demographic characteristics.

Table 5-43: Demographics (n = 30)

Demographic Characteristic	%	n
Home Ownership (n = 30)		
Rent	16.7%	5
Own	0.0%	0
Own but rent to someone else	6.7%	2
Prefer not to answer	76.7%	23
Building Age (n = 30)		
Before 1960	10%	3
1960 to 1969	7%	2

Demographic Characteristic	%	n
1970 to 1979	7%	8
1980 to 1989	17%	2
1990 to 1999	13%	5
2000 to 2009	0%	4
2010 or later	10%	0
Don't know	10%	3
Prefer not to answer	27%	3
Building Size (n = 30)		
Less than 1,000 square feet	6.7%	2
1,000 to 1,999 square feet	43.3%	13
2,000 to 2,999 square feet	23.3%	7
3,000 to 3,999 square feet	6.7%	2
4,000 square feet or more	6.7%	2
Don't know	3.3%	1
Prefer not to answer	10.0%	3
Home Type (n = 30)		
Single-family home	80.0%	24
Manufactured or mobile home	0.0%	0
Duplex or townhome	6.7%	2
Apartment or condominium	6.7%	2
Other please specify	0.0%	0
Prefer not to answer	6.7%	2
Space Heating Fuel (n = 30)		
Natural gas	60.0%	18
Electricity	30.0%	9
Propane	0.0%	0
Don't heat the home	3.3%	1
Other	0.0%	0
Don't know	0.0%	0
Prefer not to answer	6.7%	2
Water Heating Fuel (n = 30)		
Natural gas heater	60.0%	18
Electric water heater	26.7%	8
Other please specify	0.0%	0
Don't know	3.3%	1
Prefer not to answer	10.0%	3
Household Size (n = 30)		
1 person	20.0%	6
2 people	36.7%	11
3 people	13.3%	4

Demographic Characteristic	%	n
4 people	10.0%	3
5 people	6.7%	2
6 people	0.0%	0
7 people	0.0%	0
8+ people	0.0%	0
Prefer not to answer	13.3%	4
Education Level (n = 30)		
Some high school, no diploma	0.0%	0
High school graduate, diploma or the equivalent	13.3%	4
Some college credit, no degree	16.7%	5
Trade/technical/vocational training	6.7%	2
Associates degree	16.7%	5
Bachelor's degree	16.7%	5
Master's degree	10.0%	3
Professional degree	0.0%	0
Doctorate degree	3.3%	1
Prefer not to answer	16.7%	5
Air Conditioning (n = 30)		
Central AC	80.0%	24
Heat pump	6.7%	2
Mini split (ductless heat pump)	3.3%	1
Wall or window mounted air conditioning unit	0.0%	0
Don't use air conditioning	0.0%	0
Other please specify	3.3%	1
Don't know	0.0%	0
Prefer not to answer	6.7%	2
Heating Equipment Type (n = 30)		
Heat pump	23.3%	7
Central forced air	60.0%	18
Built-in baseboard heater	0.0%	0
Built-in wall heater	3.3%	1
Portable heater	0.0%	0
Other please describe	6.7%	2
Don't know	0.0%	0
Prefer not to answer	6.7%	2
Household Income (n = 30)		
At or Below 200% FPL	23.3%	7

5.9 Protocol A: Tracking Data Review

The table below summarizes the Evaluators' findings after reviewing the program tracking data.

Table 5-44: PY2024 OG&E HEEP 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	✓	
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	X	Incremental cost not shown in tracking data
	Equipment Useful Life	-	Result varies by pathway. EUL present in RSOL. Field is present but blank for CPS, LivingWise, HVAC.
	Measure Name – Text Description	✓	
	Measure Name – Numerical Code	N/A	
	Serial Number	✓	
	Reported age of equipment replaced	X	
	Reported measure type of equipment replaced	✓	
	Other inputs necessary for the use and compliance with the TRM	✓	Some low-volume measures have defaults rather than equipment-specific efficiencies used (such as bathroom ventilation fan CFM) but overall, key parameters present for measures encompassing > 98% of program savings.
Vendor-Specific Information	Name and Contact Information for Contractor	✓	
	Contractor Type	✓	
	Date of Installation	✓	
	Cost of the installed equipment	-	Provided for direct installation measures. Missing for customer-purchased measures.
	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	✓	
	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 Evaluators.
	Media schedules	N/A	
	Summary of number of community events/outreach activities	✓	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	✓	

5.10 Progress on PY2023 Evaluation Recommendations

The table below summarizes response from OG&E and CLEAResult to PY2023 recommendations for HEEP.

Table 5-45: Status of Recommendations from PY2023 Evaluation

2023 Recommendations	Status	Comment
Dehumidifiers: Update parameters to align with TRM V9.2 for PY2024 (values are unchanged from the TRM V9.1 applicable to PY2023). Apply deemed savings based on three size categories specified in the TRM, which align with updated ENERGY STAR guidelines. Update incremental cost; with the increased efficiency standard and revised size categories, incremental cost estimates used in initial planning for this measure are likely higher than warranted, as the base-case efficiency increase plus average system size decrease correspond with lower incremental cost.	Complete	This work is underway and will be implemented in PY2025 along with TRM updates.
Smart Thermostats: Refine data collection and ex-ante savings estimation as follows: 1. Ensure that all ex-ante estimates assign 0 kW peak demand impact, in alignment with AR TRM requirements. 2. If requiring a customer rebate application, include required fields for home square footage and heating system type. 3. If rebate is point-of-sale, use default values for heating system	Complete	This work is underway and will be implemented in PY2025 along with TRM updates.

weights as found in this evaluation, sourced from tracking data for the PY2023 CWA: a. Gas: 60% b. Electric Resistance: 24% c. Heat Pump: 16% Combined with a TRM default value of 1,484 square feet, this yields savings of: a. 592 kWh b. 0 kW c. 49 therms		
Bathroom Ventilation Fans: Update deemed savings by product category to reflect observed actual efficiencies: - 10-89 CFM: 4.88 CFM/W - 90-200 CFM: 6.52 CFM/W Maintain the current conservative assumption for 201-500 CFM systems until sufficient participation occurs to develop a market-specific average efficiency rating. Develop a separate savings estimate for Energy Star Most Efficient systems, using 10 CFM/W.	Continuing	This work is underway and will be implemented in PY2025 along with TRM updates.
Window ACs: Remove RAF value from kW calculations. The RAF is intended to align hours of use with habitual/irregular use associated with window ACs. The AR TRM 9.1 specifies that RAF only occurs during kWh savings estimation, as including RAF in kW would implicitly set peak coincidence at .87 CF * .49 RAF = .43.	Complete	Software systems have been corrected to reflect this change.
Energy Assessments: Ensure that respondents who receive a program-funded Energy Assessment receive a written report summarizing assessment findings, including in cases where no qualifying measures are identified. 89% of survey respondents that received a written report were “very satisfied” with their assessment overall, compared to 25% of respondents that did not receive a written report, irrespective of whether a respondent received DI measures.	Complete	All in home assessment participants receive a written report that summarized the findings.
Duct Sealing: Examine duct sealing tracking data calculations and ensure that peak coincidence is not applied twice. The gross realization rate found from tracking review (independent of field data collection findings) aligns with the correction of double-application of the 0.87 coincidence factor.	Complete	Software systems have been corrected to reflect this change.
Central AC/HP Replacement: Apply SEER-SEER2, EER-EER2, and HSPF-HSPF2 conversion factors when estimating the efficiency of legacy systems that have not received updated performance testing.	Continuing	CLEAResult has been doing it this way and complies with new TRM 10 guidance.
Reincorporate LEDs into school kits during program years in which the IEM Guidance Memo supports alternative baselines for LEDs. In anticipation of the EISA backstop, OG&E and their implementers removed LEDs from LivingWise School Kits. However, guidance from the IEM supported the use of a pre-EISA backstop baseline and 100% NTG for LEDs targeted to qualifying groups, including those distributed via K-12 school kits. OG&E and CLEAResult should include LEDs in the LivingWise School Kits so long as this guidance memo is in effect.	Under consideration	

5.10.1 Conclusions

Participants largely had a positive experience with the program.	Satisfaction with the program was generally high, with the highest satisfaction levels observed in interactions with OG&E staff (76.6% somewhat or very satisfied), contractor work quality (80%), and the overall program experience (83.4%). For participants that received an energy assessment, one issue noted was the length of time until the assessment was completed (17.6% were dissatisfied with this aspect).
Discrepancies were found in a handful of appliance measures in PY2024.	Measures such as dehumidifiers, bathroom ventilation fans, and water coolers, continued to have large discrepancies in realization rates due to erroneous calculation assumptions. However, the Evaluators acknowledge that program staff are aware of these discrepancies and are working on addressing the calculation errors to be implemented in PY2025, along with various TRM updates.

5.10.2 Recommendations

Consumer Products:	**LED Lamps (Retail Markdown):** Implementation staff may consider incorporating non-residential impacts into retail markdown lighting by applying weighted hours of use and weighted CF values from relevant Small Business Solutions participating building types. A conservative approach is to apply the three-year average of the weighted hours and CF values the Evaluators applied in PY2022, PY2023, and PY2024: 1. Average weighted hours of use: 998 2. Average weighted CF: .14
Residential Solutions	**Energy Assessments:** Maintain communication with customers who sign up for an energy assessment. Some respondents reported concerns about wait times, so providing regular updates on their status in the queue may enhance participants' experiences.
HVAC Replacement & Tune-up	**Central AC/HP Replacement:** Implementation staff may consider incorporating a series of checks within program calculators to flag HVAC units for which installed unit SEER2 efficiencies are 15.2 or higher – the baseline efficiency EER2 value should be 9.8 for these units.

6 Consistent Weatherization Approach (CWA) Program

6.1 Overview of Evaluation Findings

Table 6-1 through Table 6-4 outline ex-ante and ex-post energy (kWh) savings and demand (kW) reductions by measure for the CWA and Low Income channels.

Table 6-1: PY2024 Gross Electric Energy Savings Summary by Measure – CWA

Measure	Ex-ante Annual Energy Savings (kWh)	Ex-post Gross Annual Savings (kWh)	Realization Rate (kWh)
Advanced Power Strip	30,012	29,747	99%
Air Infiltration	579,590	600,704	104%
Assessment	0	0	N/A
Ceiling Insulation	1,018,209	1,003,596	99%
Duct Sealing	1,759,305	1,860,503	106%
Faucet Aerator	3,049	3,543	116%
Health & Safety	0	0	N/A
LED Lamp (Specialty)	11,594	11,763	101%
LED Lamp (Standard)	28,257	28,605	101%
Low-Flow Showerhead	2,917	3,069	105%
Smart Thermostat	143,429	200,672	140%
Wall Insulation	1,031	1,025	99%
Total	**3,577,394**	**3,743,227**	**105%**
Sums may differ due to rounding.			

Table 6-2: PY2024 Gross Electric Energy Savings Summary by Measure – Low Income

Measure	Ex-ante Annual Energy Savings (kWh)	Ex-post Gross Annual Savings (kWh)	Realization Rate (kWh)
Advanced Power Strip	20,428	18,467	90%
Air Infiltration	470,857	482,704	103%
Assessment	0	0	N/A
Ceiling Insulation	638,665	646,815	101%
Duct Sealing	1,157,958	1,245,963	108%
Faucet Aerator	1,781	1,902	107%
Health & Safety	0	0	N/A
LED Lamp (Specialty)	12,409	11,651	94%
LED Lamp (Standard)	41,909	43,522	104%
Low-Flow Showerhead	1,364	1,525	112%
Smart Thermostat	70,189	107,106	153%
Total	**2,415,560**	**2,559,657**	**106%**
Sums may differ due to rounding.			

Table 6-3: PY2024 Gross Electric Demand Savings Summary by Measure – CWA

Measure	Ex-ante Annual Demand Savings (kW)	Ex-post Gross Demand Savings (kW)	Realization Rate (kW)
Advanced Power Strip	4	4	99%
Air Infiltration	114	119	104%
Assessment	0	0	N/A
Ceiling Insulation	266	267	100%
Duct Sealing	361	403	112%
Faucet Aerator	0.32	0.37	116%
Health & Safety	0	0	N/A
LED Lamp (Specialty)	2	2	102%
LED Lamp (Standard)	4	5	102%
Low-Flow Showerhead	0.30	0.32	105%
Smart Thermostat	0	0	N/A
Wall Insulation	0.08	0.08	99%
Total	**753**	**800**	**106%**
Sums may differ due to rounding.			

Table 6-4: PY2024 Gross Electric Demand Savings Summary by Measure – Low Income

Measure	Ex-ante Annual Demand Savings (kW)	Ex-post Gross Demand Savings (kW)	Realization Rate (kW)
Advanced Power Strip	2	2	90%
Air Infiltration	94	98	104%
Assessment	0	0	N/A
Ceiling Insulation	183	188	103%
Duct Sealing	254	280	110%
Faucet Aerator	0.19	0.20	107%
Health & Safety	0	0	N/A
LED Lamp (Specialty)	2	2	95%
LED Lamp (Standard)	7	7	104%
Low-Flow Showerhead	0.14	0.16	112%
Smart Thermostat	0	0	N/A
Total	**542**	**577**	**106%**
Sums may differ due to rounding.			

Table 6-5 and Table 6-6 outline the verified ex-post natural gas savings (therms) claimed by OG&E, by measure, for the PY2024 CWA and Low Income channels, respectively. Therms savings were assigned when gas heat was indicated but no gas incentive was shown for the address in program tracking data. Tracking data included values for all projects indicating whether the premise had received incentives from OG&E, AOG, or both.

Additionally, the Evaluators reviewed addresses that appeared in OG&E CWA and AOG CWA tracking data to perform a fuzzy lookup to flag addresses that are similar across both programs.

If an OG&E address was found in AOG tracking data, then the OG&E projects associated with the address were not eligible for natural gas savings as a non-energy benefit (NEB). 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.

Table 6-5: PY2024 Gross Therms Savings Summary by Measure – CWA

Measure	Ex-post Annual Therms Savings
Advanced Power Strip	0
Air Infiltration	14,837
Assessment	0
Ceiling Insulation	2,174
Duct Sealing	36,284
Faucet Aerator	0
Health & Safety	0
LED Lamp (Specialty)	(10)
LED Lamp (Standard)	(43)
Low-Flow Showerhead	0
Smart Thermostat	1,560
Wall Insulation	0
Total	**54,803**
Sums may differ due to rounding.	

Table 6-6: PY2024 Gross Therms Savings Summary by Measure – Low Income

Measure	Ex-post Annual Therms Savings
Advanced Power Strip	0
Air Infiltration	4,302
Assessment	0
Ceiling Insulation	1,039
Duct Sealing	9,862
Faucet Aerator	0
Health & Safety	0
LED Lamp (Specialty)	(79)
LED Lamp (Standard)	(311)
Low-Flow Showerhead	0
Smart Thermostat	1,323
Total	**16,136**
Sums may differ due to rounding.	

Table 6-7 and Table 6-8 outline the EUL and *ex-post* lifetime energy (kWh) savings by measure for the PY2024 CWA and Low Income channels.

Table 6-7: PY2024 Gross Lifetime Savings Summary by Measure – CWA

Measure	EUL	Ex-post Gross Lifetime kWh Savings
Advanced Power Strip	10	297,470
Air Infiltration	11	6,607,749
Assessment	1	0
Ceiling Insulation	20	20,071,914
Duct Sealing	18	33,489,058
Faucet Aerator	10	35,427
Health & Safety	1	0
LED Lamp (Specialty)	12.5	147,041
LED Lamp (Standard)	12.5	357,563
Low-Flow Showerhead	10	30,686
Smart Thermostat	11	2,207,391
Wall Insulation	20	20,496
Total	**17**	**63,264,796**
Sums may differ due to rounding.		

Table 6-8: PY2024 Gross Lifetime Savings Summary by Measure – Low Income

Measure	EUL	Ex-post Gross Lifetime kWh Savings
Advanced Power Strip	10	184,665
Air Infiltration	11	5,309,748
Assessment	1	0
Ceiling Insulation	20	12,936,309
Duct Sealing	18	22,427,336
Faucet Aerator	10	19,022
Health & Safety	1	0
LED Lamp (Specialty)	12.5	145,639
LED Lamp (Standard)	12.5	544,031
Low-Flow Showerhead	10	15,252
Smart Thermostat	11	1,178,171
Total	**17**	**42,760,175**
Sums may differ due to rounding.		

Table 6-9 presents the net savings summary, by channel, for the PY2024 CWA. The overall program NTG ratio is 96% for CWA and 100% for Low Income.

Table 6-9: Ex-post Net Savings Summary

Program Channel	# Homes	Ex-post Net Annual kWh Savings	Ex-post Net kW Savings	Ex-post Net Lifetime kWh Savings	NTG Ratio
CWA	968	3,593,498	768	60,734,204	96%
Low Income	629	2,559,657	577	42,760,175	100%
Total	**1,597**	**6,153,155**	**1,345**	**103,494,379**	**98%**
Sums may differ due to rounding.					

Figure 6-1 summarizes the overall performance for the CWA per channel.

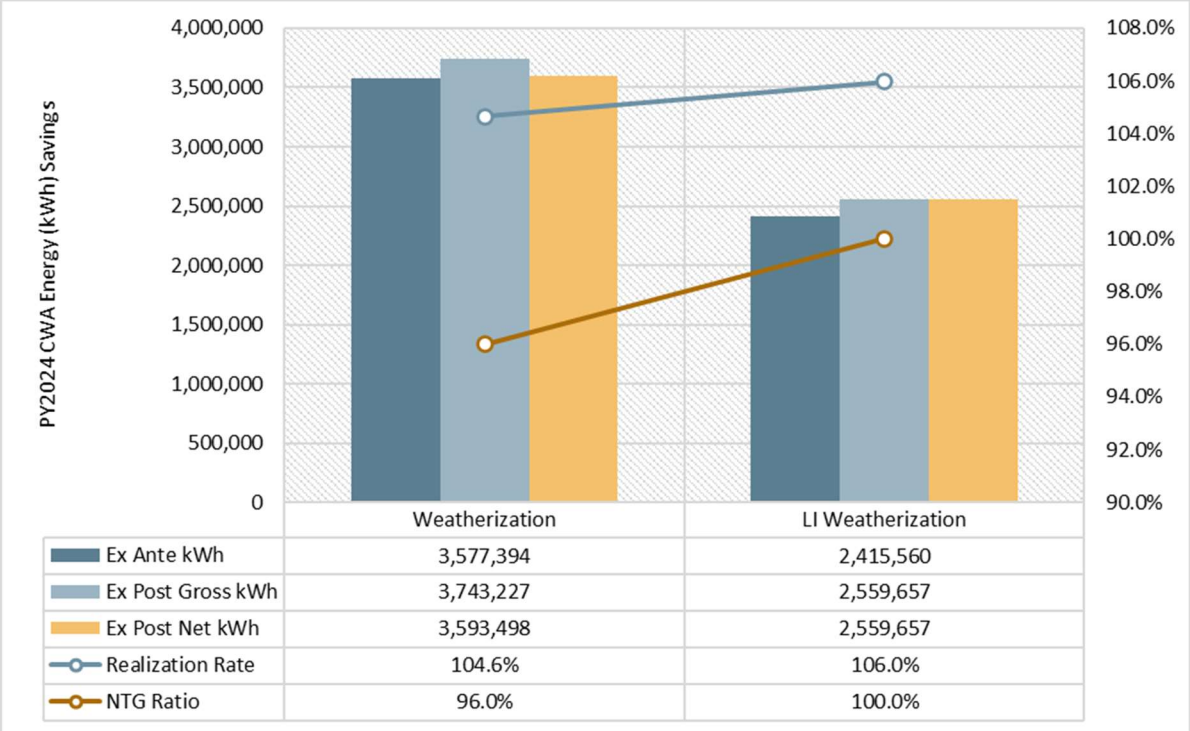


Figure 6-1: Overall PY2024 CWA Energy Savings (kWh) Performance

Figure 6-2 and Figure 6-3 summarize the PY2024 gross and net energy savings (kWh) by program channel, by measure. Additionally, Figure 6-4 and Figure 6-5 summarize the PY2024 gross and net demand savings (kW) by program channel, by measure.

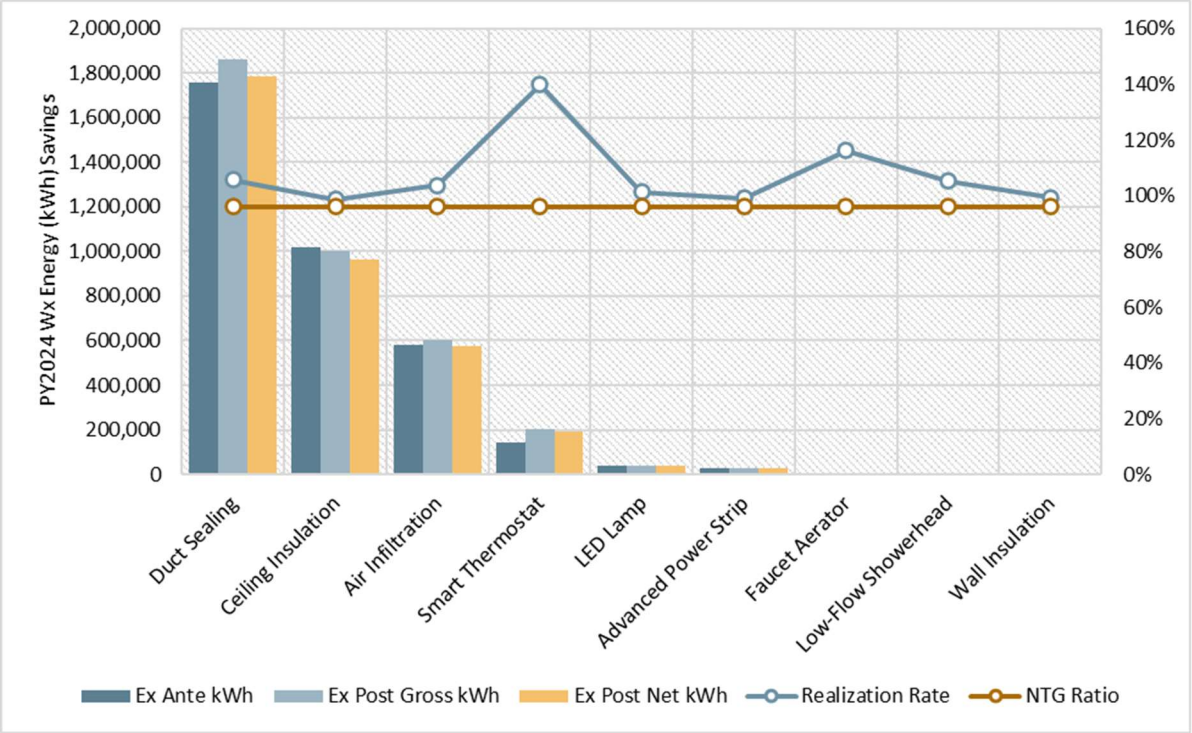


Figure 6-2: CWA Energy Savings (kWh) Summary

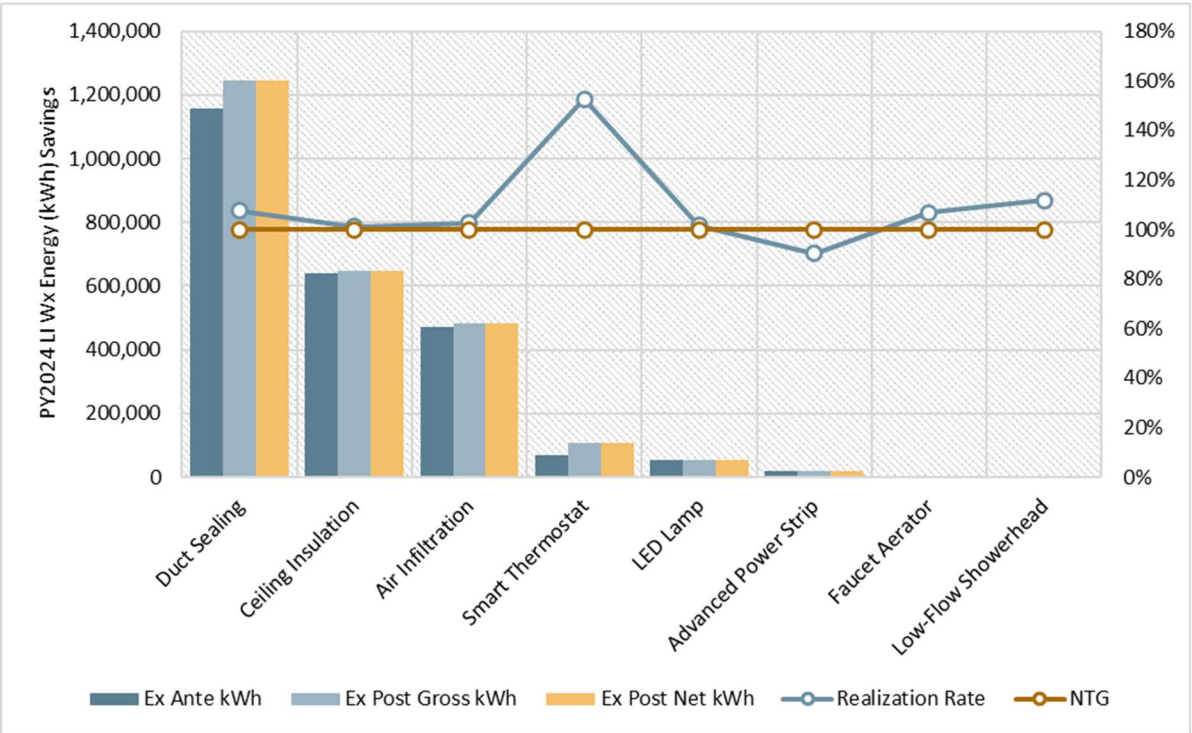


Figure 6-3: Low Income Energy Savings (kWh) Summary

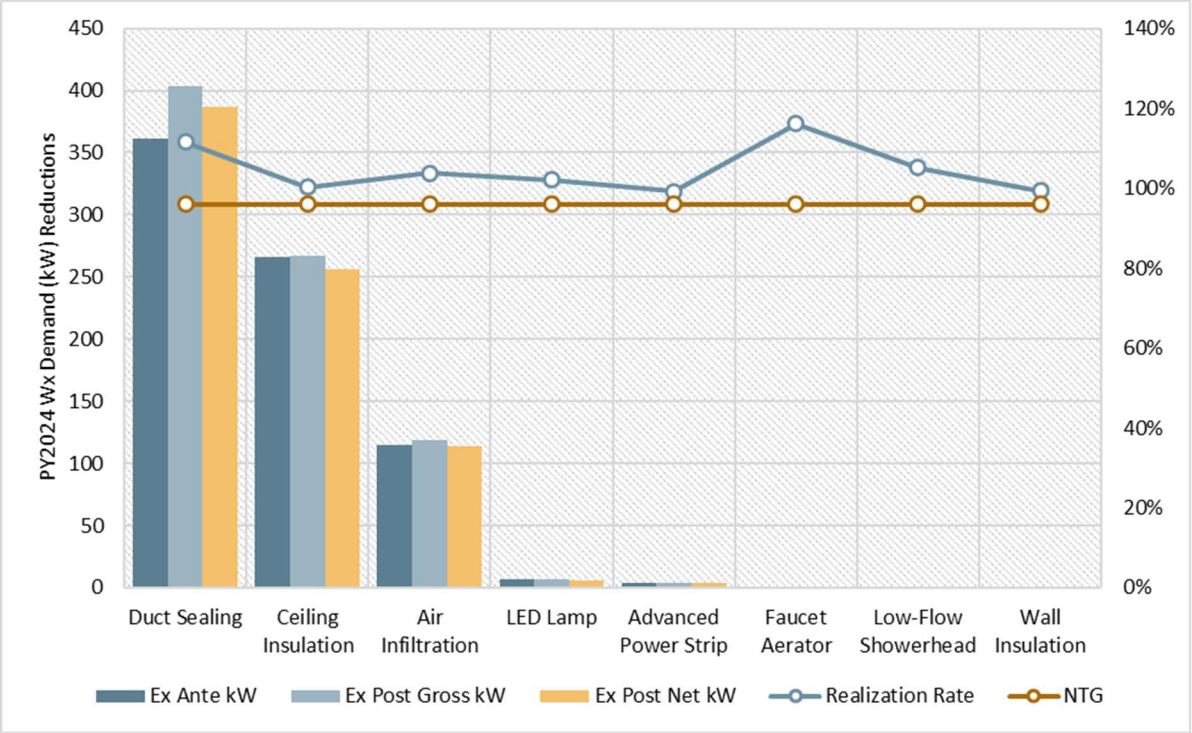


Figure 6-4: CWA Demand Reduction (kW) Summary

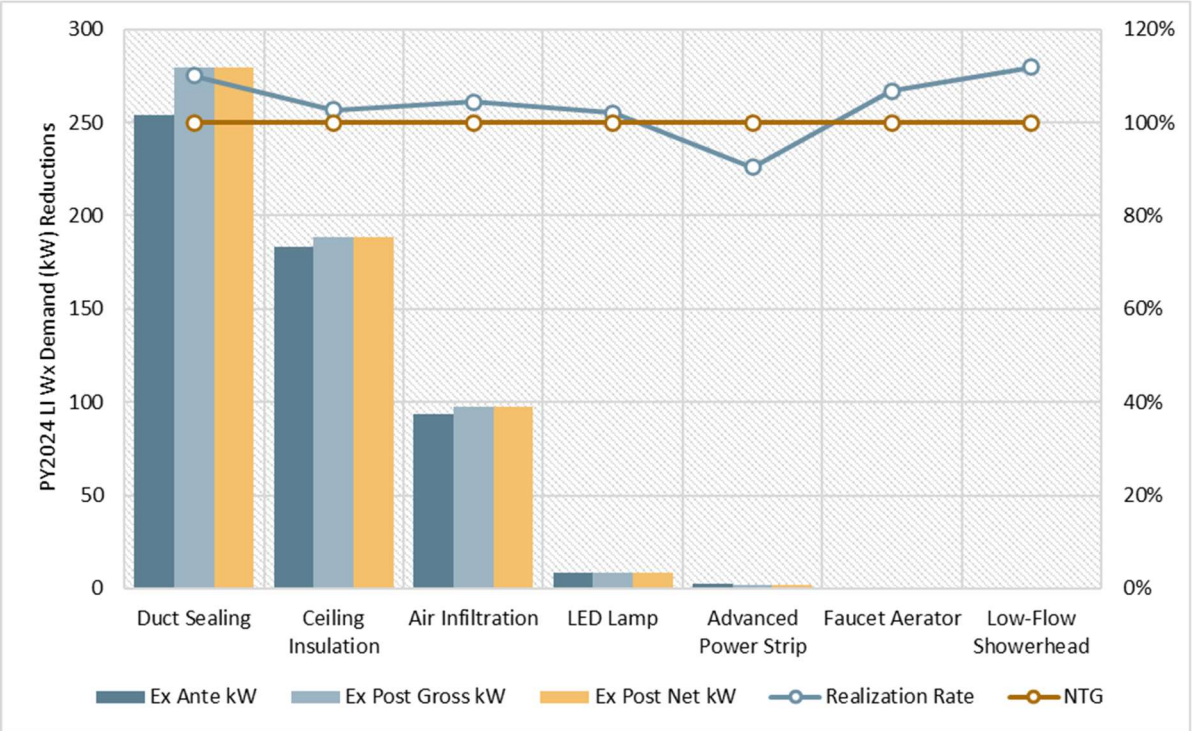


Figure 6-5: Low Income Demand Reduction (kW) Summary

Table 6-10 and Table 6-11 present the total participants, measures, and incentives by program channel.

Table 6-10: PY2024 Measures and Incentives Summary - CWA

Measure	Total Participants	Total Measures	Total Incentives
Advanced Power Strip	112	119	$ 3,570
Air Infiltration	539	539	$ 82,071
Assessment	945	960	$ 224,400
Ceiling Insulation	661	684	$ 704,319
Duct Sealing	548	574	$ 130,022
Faucet Aerator	40	75	$ 300
Health & Safety	439	924	$ 253,280
LED Lamp (Specialty)	60	370	$ 2,006
LED Lamp (Standard)	185	1,086	$ 5,430
Low-Flow Showerhead	10	10	$ 120
Smart Thermostat	186	404	$ 101,000
Wall Insulation	1	1	$ 420
Total	**968**	**5,746**	**$ 1,506,939**
Total participants is the count of unique installation numbers to represent households. Sums may differ due to rounding.			

Table 6-11: PY2024 Measures and Incentives Summary – Low Income

Measure	Total Participants	Total Measures	Total Incentives
Advanced Power Strip	74	81	$ 2,430
Air Infiltration	380	380	$ 64,159
Assessment	607	610	$ 137,850
Ceiling Insulation	348	358	$ 384,975
Duct Sealing	331	342	$ 84,202
Faucet Aerator	25	40	$ 160
Health & Safety	400	923	$ 154,939
LED Lamp (Specialty)	63	402	$ 2,235
LED Lamp (Standard)	194	1,599	$ 7,995
Low-Flow Showerhead	5	5	$ 60
Smart Thermostat	109	240	$ 60,000
Total	**629**	**4,980**	**$ 899,005**
Total participants is the count of unique installation numbers to represent households. Sums may differ due to rounding.			

6.2 Program Overview

The CWA, administered by CLEAResult under contract to OG&E, provides energy audits and whole house retrofit services to OG&E residential customers. The program is administered with significant coordination with AOG due to their high level of overlap in their service territory.

The program is designed to use both gas utility and electric utility funds to provide in-home audit and energy efficient measures at no additional cost to customers.

The CWA was developed by the Parties Working Collaboratively (PWC) Weatherization Collaborative comprised of Arkansas IOUs and other stakeholders to provide a consistent and comprehensive weatherization offering across the state of Arkansas. The former OG&E/AOG Weatherization Program designed and implemented by OG&E and AOG was the model for the rest of the state's IOUs CWA programs.

The IOUs are responsible for delivering the Program. Each IOU has a separate program budget and may use its own Building Performance Institute (BPI) or Residential Energy Services Network (RESNET) certified contractors or trained private contractors. Each IOU must follow the guidelines of the statewide approach when delivering weatherization services but is able to supplement the Program with complementary program elements such as additional measure offerings. While all IOUs are required to offer weatherization services under the CWA framework, each IOU offers its own iteration of the framework and may or may not deliver weatherization through a joint utility offering. OG&E's CWA is an example of a joint utility offering, where OG&E and AOG are the joint sponsors and share the costs of weatherizing participant homes.

The program targets energy-inefficient homes by requiring that participating residences must either be at least 10 years old or have a minimum energy usage cost per square foot of ten cents for electricity based on the customer's highest bill in the past 12 months.

The program is designed to facilitate the installation of a wide range of cost-effective weatherization measures that have been approved as "core measures" to be provided under the CWA framework, including:

- Ceiling Insulation;
- Air Infiltration;
- Duct Sealing;
- Advanced Power Strips;
- LEDs;
- Low-Flow Shower Heads; and
- Faucet Aerators.

Though not required by CWA rules, OG&E does provide H&S measures to CWA participants.

Measures are selected for individual homes through a contractor assessment which identifies a list of cost-effective improvements. The program contracts with four installation contractors who perform the weatherization and measure implementation services. After the measures are installed, CLEAResult staff members perform post-inspections on a sample of homes to verify that all measures have been properly implemented.

Beginning in PY2020, the program included the Low Income channel per requirements outlined in Act 1102. Act 1102 programs target low income and elderly (age 65+) customers and are intended to provide enhanced H&S improvements along with the energy efficiency improvements included under the CWA.

In PY2024, the CWA channel treated 968 and the Low Income channel treated 629 homes, increased from 860 and 466 in PY2023, respectively. Participants received in-home energy assessments, and the same suite of measures offered in the CWA, together with H&S improvements.

6.2.1 Consistent Weatherization Approach Metrics

Table 6-12 summarizes the CWA metrics for the core CWA program offering and Table 6-13 summarizes the alignment with CWA requirements. Table 6-14 and Table 6-15 provide the summaries for the low income CWA program.

Table 6-12: CWA Metrics for the PY2024 Evaluation

Metric	Value
Program name	Consistent Weatherization Approach Program
CWA implementation	The CWA is implemented using a third-party contractor (CLEAResult) with a network of pre-approved trade allies that market the program. The program coordinates with AOG.
Total audits completed	943
Total submitted projects	972
Conversion rate	99%
Measures installed per-project	3.83
Cost per participant	No customer co-pay. OG&E paid $1,550/home
Percent of contractors promoting program (seven contractors)	100%

Table 6-13: CWA Alignment with CWA Requirements

Requirement	Alignment with Requirement	Percent of Participants Receiving
Includes Applicable DI Measures	Yes	40.7%
Aerators	Yes	4.4%
Showerheads	Yes	1.2%
Efficient lighting	Yes	21.0%
Smart strips	Yes	11.5%
Smart thermostats	NA	19.1%
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%

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	100.0%
Audit (walk through)	Yes	97.0%
Audit (virtual)		N/A
Ceiling insulation	Yes	67.5%
Duct sealing	Yes	56.3%
Air infiltration reduction	Yes	55.1%
Safety testing and/or measures	Yes	44.9%
Offers other utility measures	Yes	N/A
Contractors are certified BPI Building Analyst or RESNET HERS Rater	Yes, for duct sealing, air infiltration, and assessments. Insulation requires Arkansas Home Improvement Specialty License.	N/A

Table 6-14: CWA Metrics for the PY2024 Evaluation – Low Income

Metric	Value
Program name	Low Income Consistent Weatherization Approach Program
CWA implementation	The CWA is implemented using a third-party contractor (CLEAResult) with a network of pre-approved trade allies that market the program. The program coordinates with AOG.
Total audits completed	607
Total submitted projects	631 (24 projects completed without assessment during program year)
Conversion rate	100%
Measures installed per-project	3.96
Cost per participant	No customer co-pay. OG&E paid $1,425/home
Percent of contractors promoting program (5 contractors)	100%

Table 6-15: CWA Low Income Alignment with CWA Requirements

Requirement	Alignment with Requirement	Percent of Participants Receiving
Includes Applicable DI Measures	Yes	50.6%
Aerators	Yes	4.9%
Showerheads	Yes	1.6%
Efficient lighting	Yes	33.6%
Smart strips	Yes	11.7%
Smart thermostats	NA	17.1%

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%
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	100.0%
Audit (walk through)	Yes	96.2%
Audit (virtual)		N/A
Ceiling insulation	Yes	55.2%
Duct sealing	Yes	52.5%
Air infiltration reduction	Yes	60.2%
Safety testing and/or measures	Yes	62.6%
Offers other utility measures	Yes	N/A
Contractors are certified BPI Building Analyst or RESNET HERS Rater	Yes, for duct sealing, air infiltration, and assessments. Insulation requires Arkansas Home Improvement Specialty License.	N/A

6.2.2 Act 1102 Participant Demographic Metrics

Table 6-16 summarizes the Act 1102 demographic metrics.

Table 6-16: ACT 1102 Metrics

Pathway	Age 65+	LIHEAP Eligible
CWA	0.00%	0.00%
Low-Income CWA	66.67%	66.98%

6.3 Gross Impact Evaluation Approach

This section presents the methodologies for, and key findings from, the gross impact evaluation of the PY2024 program. For measures implemented in PY2024, savings verification was performed according to methodologies described in AR TRM V9.2. For savings verification involving lighting and NEBs, methodologies described in AR TRM V9.2 were performed. Table 6-17 identifies the sections in the AR TRM V9.2 that were used for verification of measure-level savings under the CWA.

Table 6-17: AR TRM V9.2 Sections by Measure

Measure Type	AR TRM V9.2 Section
Advanced Power Strip	2.6.1
Air Infiltration	2.2.9
Ceiling Insulation	2.2.2
Duct Sealing	2.1.11
Faucet Aerator	2.3.4
LED Lamp (Specialty)	2.5.1
LED Lamp (Standard)	2.5.2
Low-Flow Showerhead	2.3.5
Smart Thermostat	2.1.12
Wall Insulation	2.2.3

6.4 Field Verification Rates

The Evaluators conducted field verification at 65 homes in the CWA. This sample comprised:

- 28 CWA homes
- 37 LIWx homes

Figure 6-6 summarizes the measures that were sampled by channel.

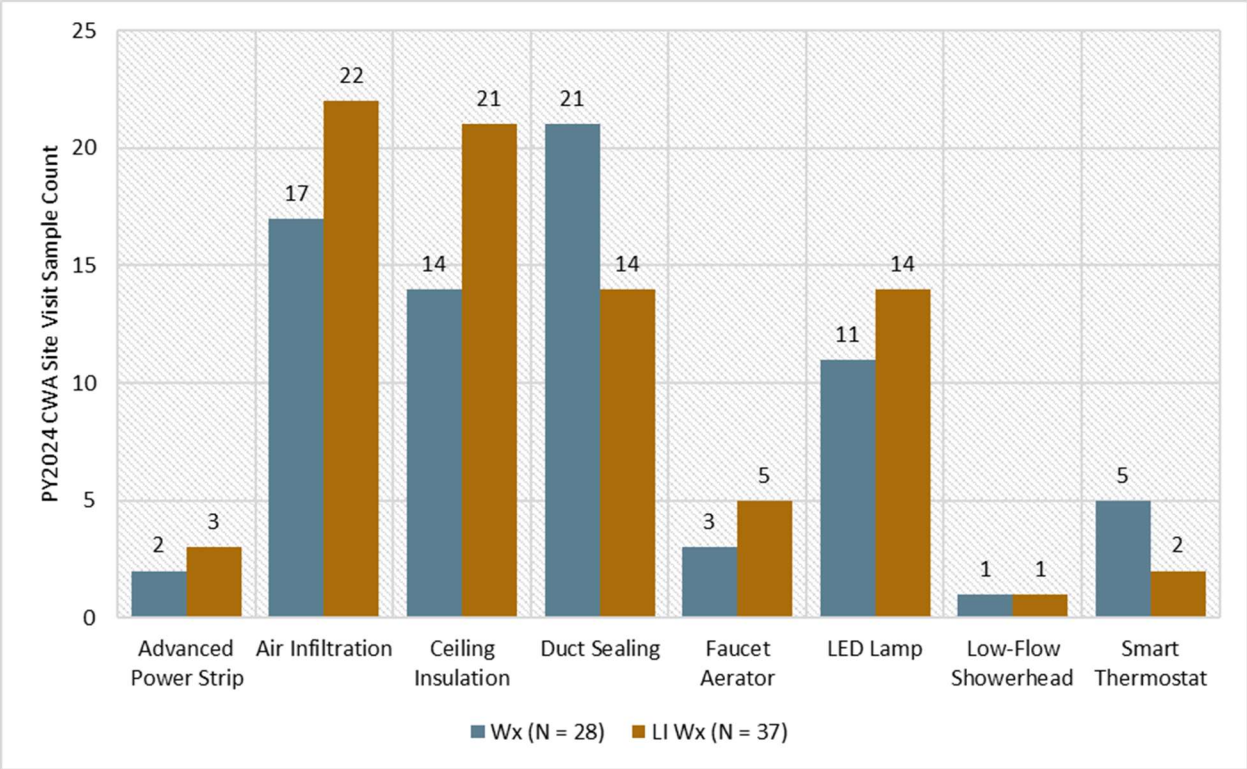


Figure 6-6: PY2024 Measures Sampled by Program Channel

6.4.1 Duct Sealing

The Evaluators performed duct blasting in 21 CWA homes and 14 Low Income homes. The following figures show the visualized differences between the expected CFM25 post leakage and the verified CFM25 post leakage.

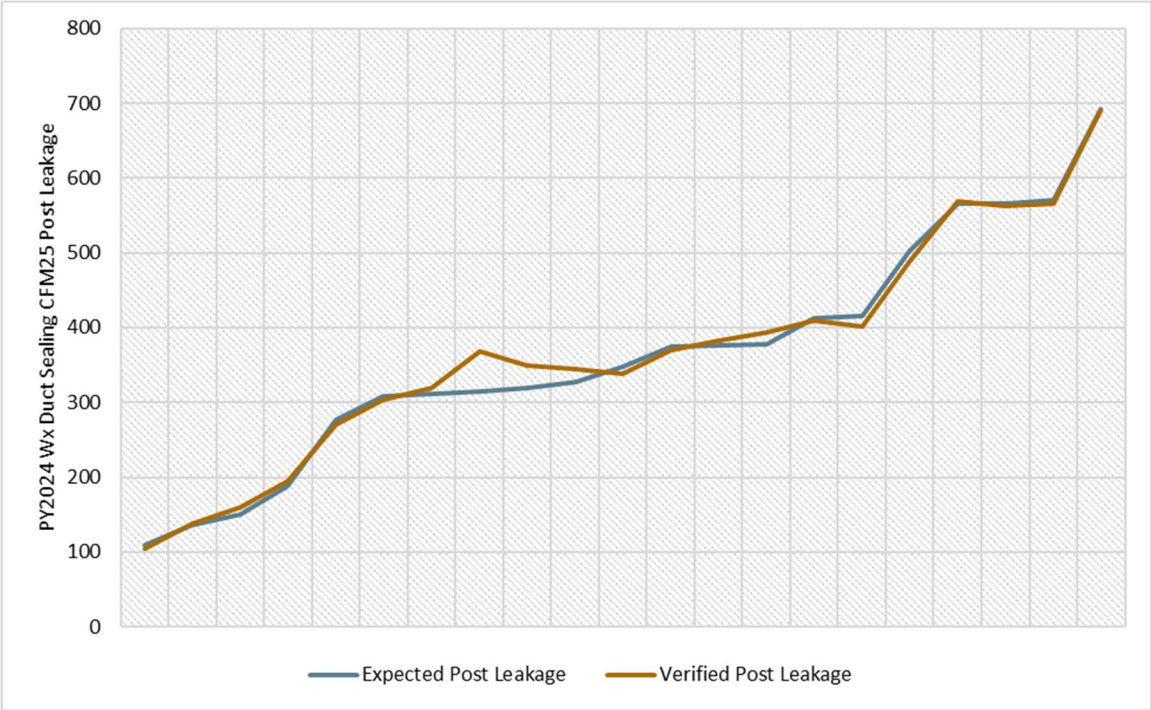


Figure 6-7: PY2024 CWA Duct Sealing Field Data Collection Results (n = 21)

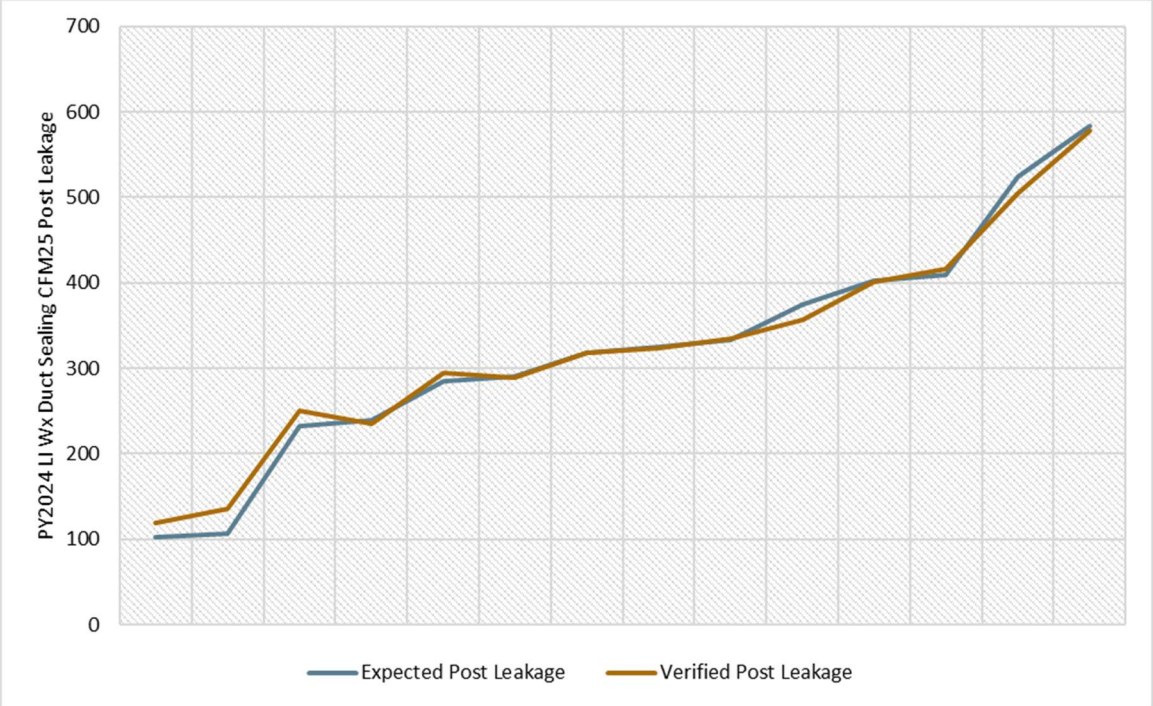


Figure 6-8: PY2024 Low Income Duct Sealing Field Data Collection Results (n = 14)

6.4.2 Air Infiltration

The Evaluators performed blower door testing in 17 CWA homes and 22 Low Income homes. The following figures show the visualized differences between the expected CFM50 post leakage and the verified CFM50 post leakage.

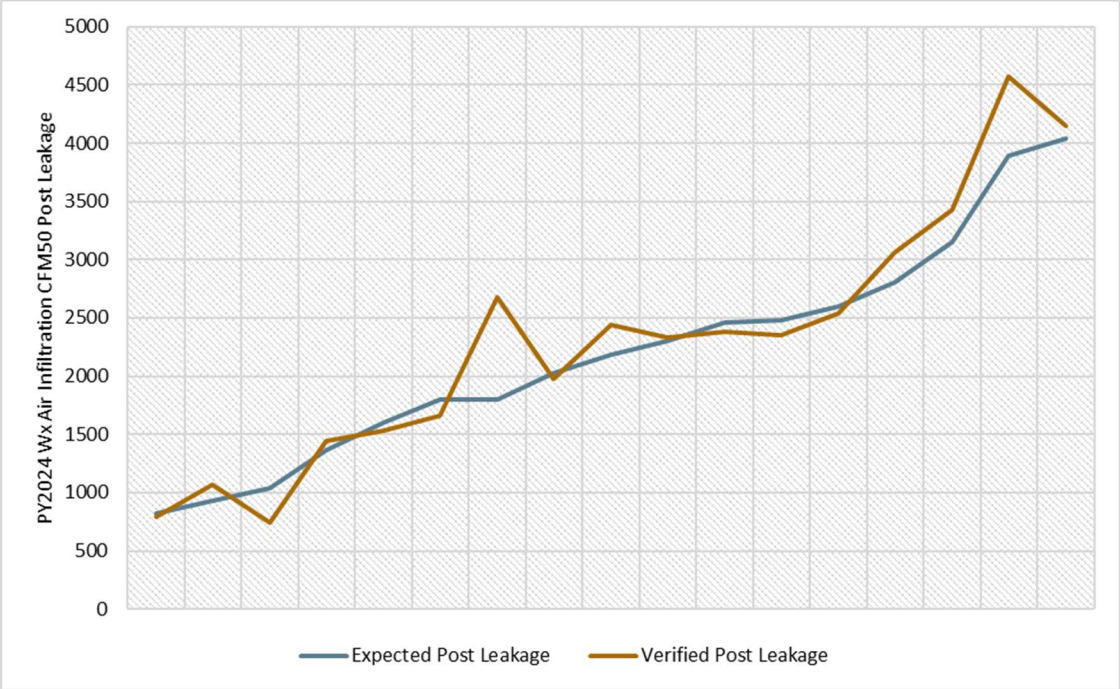


Figure 6-9: PY2024 CWA Air Infiltration Field Data Collection Results (n = 17)

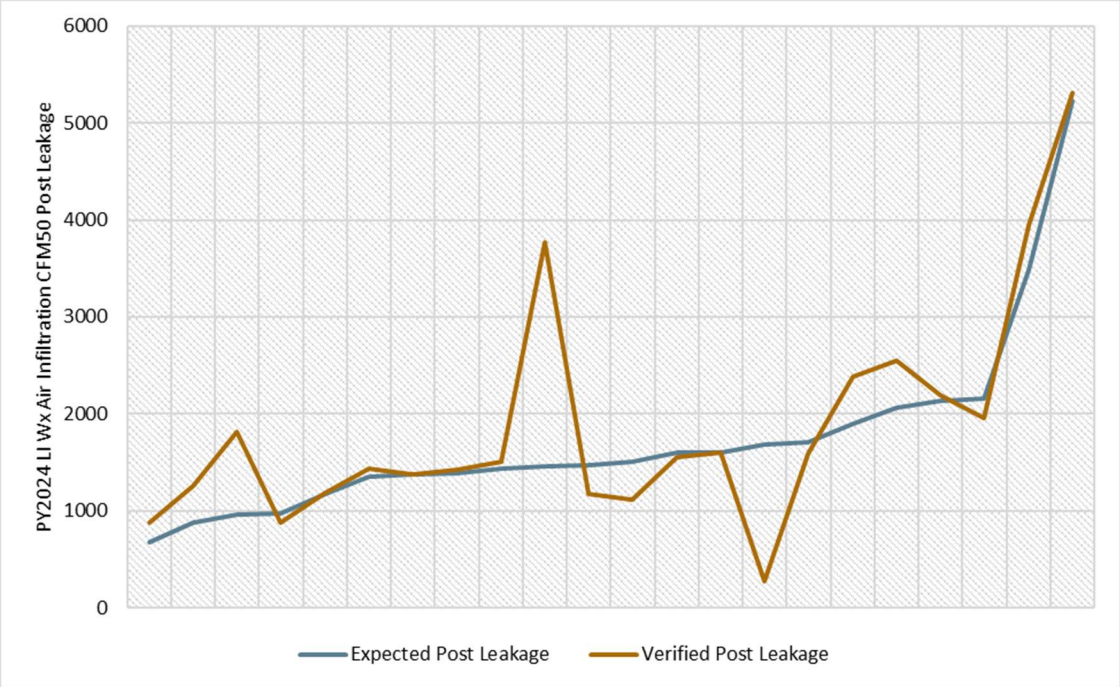


Figure 6-10: PY2024 Low Income Air Infiltration Field Data Collection Results (n = 22)

6.4.3 Overall CWA Measure ISRs

The ISRs for all CWA measures are summarized by channel in Table 6-18 and Table 6-19.

Table 6-18: CWA ISRs Applied in PY2024

CWA Measure	ISR	Source
Advanced Power Strip	99%	PY2024 site visits; PY2024 Literature reviews
Air Infiltration	104%	PY2024 site visits; PY2024 Literature reviews
Ceiling Insulation	100%	PY2024 site visits; PY2024 Literature reviews
Duct Sealing	100%	PY2024 site visits; PY2024 Literature reviews
Faucet Aerator	99%	PY2024 site visits; PY2024 Literature reviews
LED Lamp (Specialty)	98%	PY2024 site visits; PY2024 Literature reviews; photo verification
LED Lamp (Standard)	98%	PY2024 site visits; PY2024 Literature reviews; photo verification
Low-Flow Showerhead	99%	PY2024 site visits; PY2024 Literature reviews
Smart Thermostat	99%	PY2024 Literature reviews
Wall Insulation	99%	PY2024 Literature reviews
ISR values are visually rounded		

Table 6-19: Low Income ISRs Applied in PY2024

LIWx Measure	ISR	Source
Advanced Power Strip	90%	PY2024 site visits; PY2024 Literature reviews
Air Infiltration	103%	PY2024 site visits; PY2024 Literature reviews
Ceiling Insulation	100%	PY2024 site visits; PY2024 Literature reviews
Duct Sealing	101%	PY2024 site visits; PY2024 Literature reviews
Faucet Aerator	99%	PY2024 site visits; PY2024 Literature reviews
LED Lamp (Specialty)	96%	PY2024 site visits; PY2024 Literature reviews; photo verification
LED Lamp (Standard)	96%	PY2024 site visits; PY2024 Literature reviews; photo verification
Low-Flow Showerhead	99%	PY2024 site visits; PY2024 Literature reviews
Smart Thermostat	99%	PY2024 Literature reviews
ISR values are visually rounded		

6.5 Net Impact Evaluation Approach

The net impact approaches by measure group can be found in Section 5.5.

6.5.1 Low Income Net-to-Gross

The Evaluators researched existing literature on NTG for low income programs. The Evaluators concluded from this that assigning a 100% NTG ratio would be within industry best-practices. This is cited in:

- Uniform Methods Project [38]

[38] https://www.nrel.gov/docs/fy17osti/68578.pdf

- DOE Federal Weatherization Assistance Program[39]
- California Energy Savings Assistance Program[40]

6.5.2 NTG Results

The Evaluators performed surveys in PY2023 to determine the net-to-gross ratio for the CWA program and applied a net-to-gross ratio of 100% of the LIWx component. The resulting NTG ratios were as follows:

- CWA: 96%
- LIWx: 100%

6.6 Gross Evaluation Summary and Findings

After reviewing the tracking data and inputs for savings calculations, the Evaluators provided ex-post gross savings according to protocols from the AR TRM V9.2. Table 6-20 presents the ex-post gross energy savings (kWh) achieved by program channel.

Table 6-20: PY2024 Ex-post Gross Energy Savings

Program Channel	# of homes	Ex-post Gross Peak Demand Reductions (kW)	Ex-post Gross Annual Savings (kWh)	Ex-post Gross Lifetime Savings (kWh)	Ex-post Gross Realization Rate
CWA	968	800	3,743,227	63,264,796	105%
Low Income	629	577	2,559,657	42,760,175	106%
Total	**1,597**	**1,377**	**6,302,884**	**106,024,971**	**105%**
Sums may differ due to rounding.					

Table 6-21 and Table 6-22 summarizes the PY2024 ex-post gross energy (kWh) and demand reductions (kW) by measure for OG&E.

Table 6-21: PY2024 Ex-post Gross Savings by Measure - CWA

Measure	Ex-post Gross Annual Savings (kWh)	Ex-post Gross Lifetime Savings (kWh)	Ex-post Gross Peak Demand Savings (kW)
Advanced Power Strip	29,747	297,470	4
Air Infiltration	600,704	6,607,749	119
Assessment	0	0	0
Ceiling Insulation	1,003,596	20,071,914	267

[39] https://eta.lbl.gov/news/events/2009/09/11/estimating-the-impacts-of-low-income-weatherization-assistance-using-a-random

[40] https://liob.cpuc.ca.gov/wp-content/uploads/sites/14/2020/12/ESA-Program-Impact-Evaluation-Program-Years-2015-2017-042619.pdf

Duct Sealing	1,860,503	33,489,058	403
Faucet Aerator	3,543	35,427	0.37
Health & Safety	0	0	0
LED Lamp (Specialty)	11,763	147,041	2
LED Lamp (Standard)	28,605	357,563	5
Low-Flow Showerhead	3,069	30,686	0.32
Smart Thermostat	200,672	2,207,391	0
Wall Insulation	1,025	20,496	0.08
Total	**3,743,227**	**63,264,796**	**800**
Sums may differ due to rounding.			

Table 6-22: PY2024 Ex-post Gross Savings by Measure – Low Income

Measure	Ex-post Gross Annual Savings (kWh)	Ex-post Gross Lifetime Savings (kWh)	Ex-post Gross Peak Demand Savings (kW)
Advanced Power Strip	18,467	184,665	2
Air Infiltration	482,704	5,309,748	98
Assessment	0	0	0
Ceiling Insulation	646,815	12,936,309	188
Duct Sealing	1,245,963	22,427,336	280
Faucet Aerator	1,902	19,022	0.20
Health & Safety	0	0	0
LED Lamp (Specialty)	11,651	145,639	2
LED Lamp (Standard)	43,522	544,031	7
Low-Flow Showerhead	1,525	15,252	0.16
Smart Thermostat	107,106	1,178,171	0
Total	**2,559,657**	**42,760,175**	**577**
Sums may differ due to rounding.			

6.7 Net Impact Evaluation Summary and Findings

Table 6-23 and Table 6-24 summarize ex-post net kWh and kW savings by measure and program channel.

Table 6-23: PY2024 Ex-post Net Savings by Measure - CWA

Measure	Ex-post Net Peak Demand (kW)	Ex-post Net Savings (kWh)	Ex-post Net Lifetime Savings (kWh)
Advanced Power Strip	3	28,557	285,571
Air Infiltration	114	576,676	6,343,439
Assessment	0	0	0
Ceiling Insulation	256	963,452	19,269,038
Duct Sealing	387	1,786,083	32,149,496
Faucet Aerator	0.35	3,401	34,010
Health & Safety	0	0	0

LED Lamp (Specialty)	2	11,293	141,159
LED Lamp (Standard)	4	27,461	343,261
Low-Flow Showerhead	0.31	2,946	29,459
Smart Thermostat	0	192,645	2,119,095
Wall Insulation	0.08	984	19,676
Total	**768**	**3,593,498**	**60,734,204**
Sums may differ due to rounding.			

Table 6-24: PY2024 Ex-post Net Savings by Measure – Low Income

Measure	Ex-post Net Peak Demand (kW)	Ex-post Net Savings (kWh)	Ex-post Net Lifetime Savings (kWh)
Advanced Power Strip	2	18,467	184,665
Air Infiltration	98	482,704	5,309,748
Assessment	0	0	0
Ceiling Insulation	188	646,815	12,936,309
Duct Sealing	280	1,245,963	22,427,336
Faucet Aerator	0.20	1,902	19,022
Health & Safety	0	0	0
LED Lamp (Specialty)	2	11,651	145,639
LED Lamp (Standard)	7	43,522	544,031
Low-Flow Showerhead	0.16	1,525	15,252
Smart Thermostat	0	107,106	1,178,171
Total	**577**	**2,559,657**	**42,760,175**
Sums may differ due to rounding.			

6.8 Non-Energy Benefits (NEBs)

Protocol L of the AR TRM V9.2 states that EM&V of 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 CWA in PY2024 are natural gas savings, liquid propane savings, water savings, and avoided replacement costs.

6.8.1 Natural Gas and Liquid Propane Energy Savings

In the CWA, the participating utilities are OG&E and AOG. Typically, the amount that either utility pays for a participating home depends on whether the utility is serviced by OG&E, by AOG, or by both utilities. Weatherization of a home receiving both electric service from OG&E and gas service from AOG would typically be paid for by both utility companies.

Table 6-25 and Table 6-26 present the ex-post net natural gas savings NEBs by channel.

Table 6-25: PY2024 Natural Gas (Therms) NEBs - CWA

Measure	Ex-post Gross Natural Gas Savings (therms)	Net Natural Gas Savings (therms)	Net Lifetime Natural Gas Savings (therms)	NEB Natural Gas Savings ($)	NPV NGS ($)
Air Infiltration	14,837	14,244	156,681	$ 6,748	$ 60,307
Ceiling Insulation	2,174	2,087	41,749	$ 989	$ 13,231
Duct Sealing	36,284	34,833	626,987	$ 16,503	$ 207,184
LED Lamp (Specialty)	(10)	(10)	(121)	$ (5)	$ (46)
LED Lamp (Standard)	-43	-41	-514	$ (19)	$ (197)
Smart Thermostat	1,560	1,498	16,478	$ 710	$ 6,343
Total	**54,803**	**52,611**	**841,259**	**$ 24,926**	**$ 286,821**
Sums may differ due to rounding.					

Table 6-26: PY2024 Natural Gas (Therms) NEBs – Low Income

Measure	Ex-post Gross Natural Gas Savings (therms)	Net Natural Gas Savings (therms)	Net Lifetime N. Gas Savings (therms)	NEB Natural Gas Savings ($)	NPV NGS ($)
Air Infiltration	4,302	4,302	47,322	$ 2,038	$ 18,215
Ceiling Insulation	1,039	1,039	20,775	$ 492	$ 6,584
Duct Sealing	9,862	9,862	177,516	$ 4,672	$ 58,659
LED Lamp (Specialty)	-79	-79	-989	$ (37)	$ (379)
LED Lamp (Standard)	-311	-311	-3,886	$ (147)	$ (1,488)
Smart Thermostat	1,323	1,323	14,551	$ 627	$ 5,601
Total	**16,136**	**16,136**	**255,289**	**$ 7,645**	**$ 87,192**
Sums may differ due to rounding.					

No propane savings were found in PY2024.

6.8.2 Avoided and Deferred Replacement Cost

To calculate avoided or deferred replacement costs and incremental costs for LEDs in OG&E's CWA Program, the AR TRM V9.2 Protocol L calculator was used with the following assumptions: 1) replacement-on-burnout for all bulbs and 2) EUL for LEDs is 12.5 years [1]. LED costs were sourced from OG&E program tracking data where available. For direct installed LEDs, the Evaluators assumed that the incentive was equal to the total cost of equipment and labor.

Table 6-27 shows the avoided or deferred replacement costs for LED lamps in PY2024. There were no deferred replacement costs for CWA in PY2024.

Table 6-27: Avoided Replacement Costs

Measure	Net ARC ($) CWA	Net ARC ($) Low Income	Total Net ARC ($)
LEDs (Specialty)	$ 912	$ 940	$ 1,853
LEDs (Standard)	$ 2,678	$ 4,035	$ 6,712
Total	**$ 3,590**	**$ 4,975**	**$ 8,565**
Sums may differ due to rounding.			

6.8.3 Water Savings

In PY2024, the water saving measures implemented through the CWA included faucet aerators and low flow showerheads. The program tracking data included flow rates for these measures, and the Evaluators applied these flow rates to the AR TRM V9.2 algorithms for faucet aerators and showerheads to calculate annual gallons of water saved. Additionally, measure-level ISRs were applied to the total gallons saved for each channel.

For homes receiving utility service from only one of the sponsoring utilities (OG&E or AOG), all water savings resulting from program measures were attributed to the sponsoring utility, regardless of water heater fuel type. For homes receiving utility service from both OG&E and AOG, water savings were attributed to OG&E unless there was both (1) presence of natural gas water heating and (2) an AOG rebate indicated in program tracking. For example, water savings for a home receiving electric service from OG&E and gas service from AOG would be attributed to OG&E if the home had an electric water heater and to AOG if the home had a gas water heater, if AOG paid an incentive for the project. There are some instances of AOG natural gas service but no AOG rebate payment, and in those instances, both the natural gas NEB and water impact were attributed to OG&E.

Table 6-28 summarizes marginal water and sewage rates for PY2024 specified in the AR TRM V9.2. Water impacts were monetized using the “Average Cost $/1,100 Gallons” value of $9.71.

Table 6-28: PY2024 Total Marginal Water Rates

Customer Class	AR TRM V9.2 PY2024 Value		
	Water Rates (per 1,000 gallons)	Sewage Rates (per 1,000 gallons)	Marginal Water Rates (per 1,000 gallons)
Residential	$4.09	$5.75	$9.84
Commercial	$3.71	$5.86	$9.57
Average Cost ($/1,000 Gallons)	**$3.90**	**$5.81**	**$9.71**

Table 6-29 and Table 6-30 present water savings verified water savings and monetized impacts.

Table 6-29: PY2024 Water (gallons) Savings by Measure - CWA

Measure	Ex-post Gross Water/ WW Savings (gallons)	Ex-post Net Water/ WW Savings (gallons)	Water/ WW Benefit ($)	NPV Water/WW ($)
Faucet Aerator	36,746	35,276	$ 272	$ 2,770
Low-Flow Showerhead	30,339	29,126	$ 224	$ 2,287
Total	**67,085**	**64,402**	**$ 496**	**$ 5,057**
Sums may differ due to rounding.				

Table 6-30: PY2024 Water (gallons) Savings by Measure – Low Income

Measure	Ex-post Gross Water/ WW Savings (gallons)	Ex-post Net Water/ WW Savings (gallons)	Water/ WW Benefit ($)	NPV Water/WW ($)
Faucet Aerator	19,741	19,741	$ 152	$ 1,550
Low-Flow Showerhead	15,170	15,170	$ 117	$ 1,191
Total	**34,910**	**34,910**	**$ 269**	**$ 2,741**
Sums may differ due to rounding.				

6.8.4 NEBs Summary

Table 6-31 and Table 6-32 summarizes the net present value (NPV) of NEBs attributable to OG&E for the PY2024 CWA (inclusive of all measures), including avoided and deferred replacement costs, natural gas savings, water savings, and propane savings.

Table 6-31: PY2024 CWA Non-Energy Benefits Summary

Measure	NPV NGS ($)	NPV LPGS ($)	NPV Water/ WW ($)	NPV ARC ($)	Total NEB NPV ($)
Advanced Power Strip	$ -	$ -	$ -	$ -	$ -
Air Infiltration	$ 60,307	$ -	$ -	$ -	$ 60,307
Assessment	$ -	$ -	$ -	$ -	$ -
Ceiling Insulation	$ 13,231	$ -	$ -	$ -	$ 13,231
Duct Sealing	$ 207,184	$ -	$ -	$ -	$ 207,184
Faucet Aerator	$ -	$ -	$ 2,770	$ -	$ 2,770
Health & Safety	$ -	$ -	$ -	$ -	$ -
LED Lamp (Specialty)	$ (46)	$ -	$ -	$ 912	$ 866
LED Lamp (Standard)	$ (197)	$ -	$ -	$ 2,678	$ 2,481
Low-Flow Showerhead	$ -	$ -	$ 2,827	$ -	$ 2,287
Smart Thermostat	$ 6,343	$ -	$ -	$ -	$ 6,343
Wall Insulation	$ -	$ -	$ -	$ -	$ -
Total	**$ 286,821**	**$ -**	**$ 5,057**	**$ 3,590**	**$ 295,467**
Sums may differ due to rounding.					

Table 6-32: PY2024 Low Income Non-Energy Benefits Summary

Measure	NPV NGS ($)	NPV LPGS ($)	NPV Water/ WW ($)	NPV ARC ($)	Total NEB NPV ($)
Advanced Power Strip	$ -	$ -	$ -	$ -	$ -
Air Infiltration	$ 18,215	$ -	$ -	$ -	$ 18,215
Assessment	$ -	$ -	$ -	$ -	$ -
Ceiling Insulation	$ 6,584	$ -	$ -	$ -	$ 6,584
Duct Sealing	$ 58,659	$ -	$ -	$ -	$ 58,659
Faucet Aerator	$ -	$ -	$ 1,550	$ -	$ 1,550
Health & Safety	$ -	$ -	$ -	$ -	$ -
LED Lamp (Specialty)	$ (379)	$ -	$ -	$ 940	$ 562
LED Lamp (Standard)	$ (1,488)	$ -	$ -	$ 4,035	$ 2,547
Low-Flow Showerhead	$ -	$ -	$ 1,191	$ -	$ 1,191
Smart Thermostat	$ 5,601	$ -	$ -	$ -	$ 5,601
Total	**$ 87,192**	**$ -**	**$ 2,741**	**$ 4,975**	**$ 94,908**
Sums may differ due to rounding.					

6.9 Process Evaluation Summary and Findings

The following sections present the data collection activities and results of the process evaluation.

6.9.1 Data Collection Activities

Table 6-33 below summarizes the survey and interview data collection for the PY2024 program evaluation, including data collection type and number of respondents.

Table 6-33: Interview and Survey Data Collection Summary

Target	Component	Activity	n	Precision	Details
Program Staff	OG&E Program Staff	Interview: Program Manager EM&V Analyst	4	N/A	EM&V Analyst for all AR programs Energy Efficiency Program Manager Residential Energy Efficiency Program Manager Previous Residential Energy Efficiency Manager Support staff person
	CLEAResult Staff	Interview: Program Manager	4	N/A	Field Manager Program Portfolio Manager Energy Engineer Account Manager
Program Participants	Telephone Survey	Survey	CWA: 45 LIWX: 55	±8.2%	This consisted of a satisfaction questionnaire and a series of questions related to program and energy efficiency awareness and engagement.
Trade Allies	Telephone Interview	Interview	5	N/A	The interview guide included questions about respondents' background, program tenure, program experience, and satisfaction. Five of the eight participating trade allies responded.

6.9.2 Process Results and Findings

This section presents the results and key findings from the process evaluation activities. These findings are based upon interviews with utility staff, implementation staff, surveys with participating customers, and trade ally interviews. The findings presented pertain to program communications and marketing, program delivery, participant energy efficiency awareness and behaviors, and customer characteristics.

6.9.2.1 OG&E Program Staff Interview

Program and implementation staff indicated that the biggest change to the weatherization program was the creation of an income qualified channel, separate from the standard weatherization channel. Both channels are designed the same, but income-qualified customers qualify for additional H&S measures. In previous years, income qualified customers received assistance from the standard weatherization channel; staff decided to separate the two channels to better serve the needs of high priority populations. Customers are eligible for the low-income channel based on LIHEAP guidelines.

Other changes included the addition of smart thermostats as a direct installation measure installed by the weatherization trade allies. Staff added smart thermostats to the weatherization channels to further enhance homes' efficiency.

Staff also noted that the trade ally network expanded from five trade allies in 2023 to seven in 2024, to account for additional work produced by the new income qualified channel. Program staff acknowledged that the CWA program benefits from having a consistent team of experienced trade allies. Implementation staff noted that they strive to delegate project leads across the trade allies based on trade ally availability and capacity, and that trade allies also continue to also generate their own leads.

Both program and implementation staff agree that their relationship is strong and there are no pain points between the two teams.

6.9.2.2 CWA Participant Survey

Evaluators surveyed customers who participated in OG&E's Weatherization Program to gather feedback about their awareness of and experience with the program. Tracking data included 852 customers (this total included 474 low income participants and 378 mass market participant). Customers were contacted by phone or email up to four times. 130 participants completed the survey; 30 were excluded in the analysis because they worked for OG&E or CLEAResult or they indicated that they did not participate in the weatherization program. 100 participants completed the survey and were included in the analysis (11.7% of participants contacted).

Program Awareness

Through the weatherization program, participants received a combination of direct installation measures (LEDs, faucet aerators, low flow showerheads, and advanced power strips), a home energy assessment, H&S measures, and weatherization measures (duct sealing, insulation, and air sealing). The most popular measures were home energy assessments and weatherization measures (Table 6-34).

Table 6-34: Program Equipment and Measures (n = 100)

	n
Home Energy Assessment	89
Weatherization Measures	86
H&S Measures	49
Direct Installation Measures	21

Respondents learned about the program through a variety of methods, most commonly word of mouth (19.3%), the OG&E website (16.4%), an OG&E bill insert/mailing list (14.3%), and an email from OG&E (10.0%). Respondents were most interested in participating in the program to save money (66.7%). When making improvements to their home, respondents are interested in energy efficient equipment that saves energy (41.2%) and improves the health and safety of their home (28.1%).

Respondents were interested in the energy assessment to learn how they could save money by saving energy (34.8%), make their home more comfortable (21.3%), and better understand the condition of their home (14.6%). Most respondents who received an assessment noted that their energy assessor discussed the findings of the assessment with them (98.6%).

Overall, respondents reported high satisfaction with their assessment (Figure 6-11). Moreover, respondents found that information provided in the assessment to be very or extremely useful (84.7%). However, some respondents expressed dissatisfaction with their experience with the program. Seven of the comments were related to the quality of the work performed, quality control, or that a mess had been left. Examples include:

> *Very young guys came to the house to do the work. Wasn't their house so it was sloppy in certain areas I will have to remedy.*
>
> *When the team put up coverings / sticky plastic on the return vents when they ripped off the sticky seal it took the paint off of the vent itself and also on my ceiling.*
>
> *Some of the work did not get inspected before departure*

One respondent was dissatisfied with the assessment because there were not many energy saving opportunities identified because of the condition of their home.

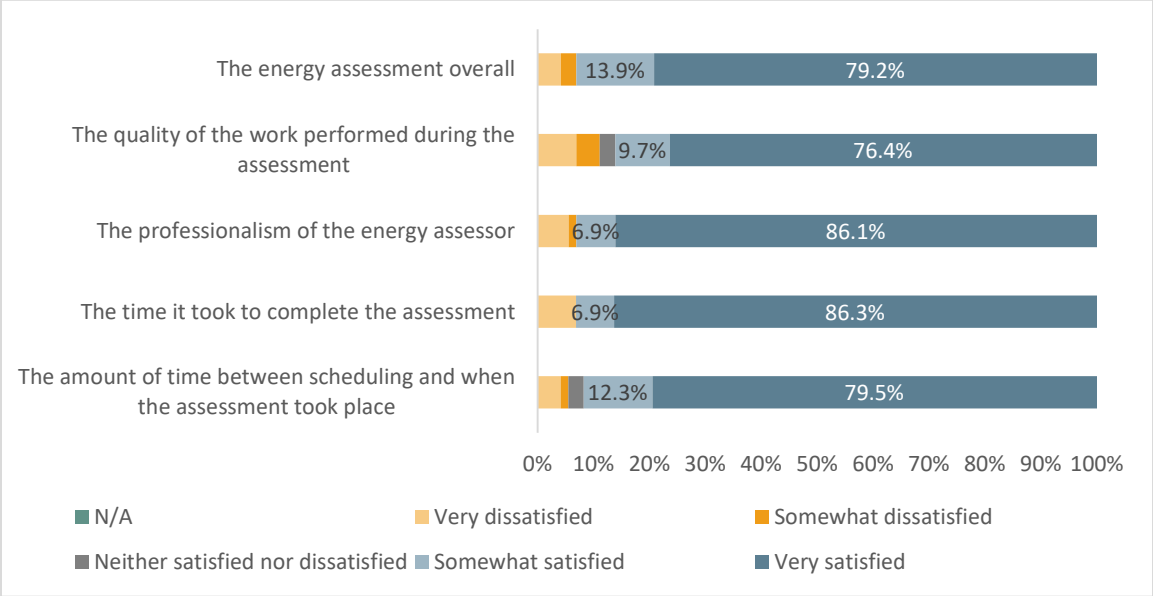


Figure 6-11: Assessment Satisfaction (n = 89)

Program Satisfaction

Participants were generally very satisfied with OG&E's Weatherization Program (Figure 6-12). The majority (78.6%) rated their overall experience positively, and high satisfaction was also reported for scheduling the home assessment (78.4%), interactions with OG&E staff (76.5%), and the usefulness of the assessment information (75.0%). Most respondents (75.0%) were very satisfied with the equipment received, though a small percentage (10.0%) expressed dissatisfaction. Satisfaction with the time it took to receive equipment was slightly lower (71.7%), with 9.1% somewhat satisfied and 9.1% dissatisfied. The energy-efficient items installed also received strong positive feedback (70.7% very satisfied), though 6% of respondents were dissatisfied.

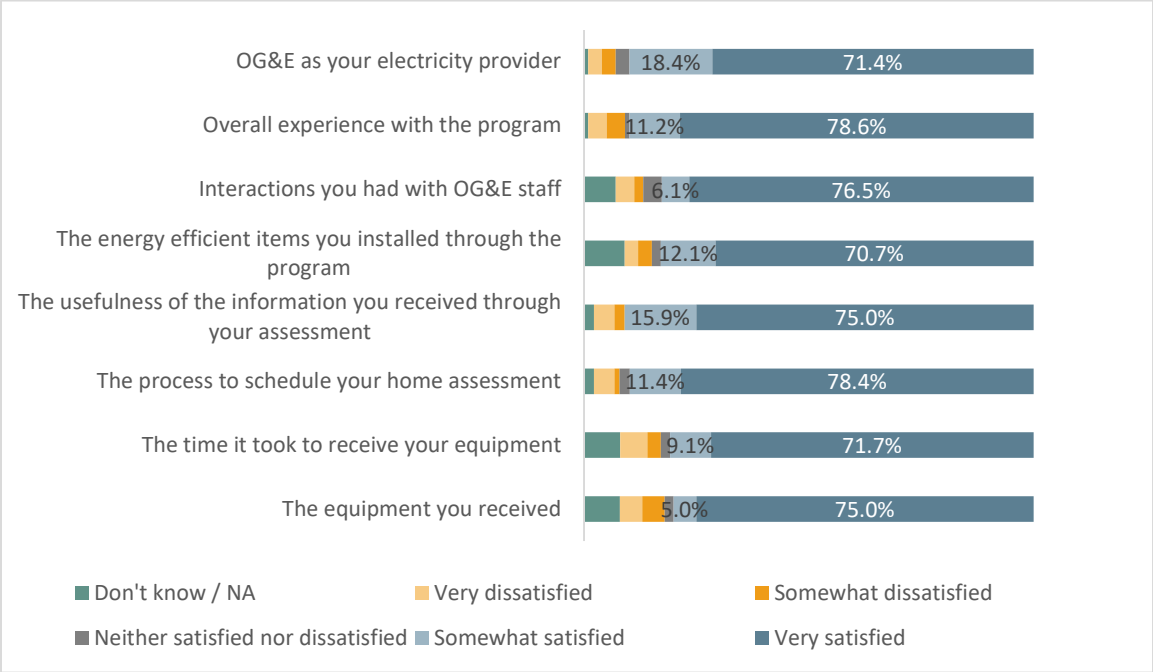


Figure 6-12: Satisfaction (n = 100)

Almost three-quarters of respondents indicated that their participation in the weatherization program increased their satisfaction with OG&E as their service provider (73.0%). Most respondents indicated they were likely to recommend the program to a friend or colleague (84.0%). At the time of survey completion, 77.0% of respondents reported they had already recommended the program to others.

Demographics

Table 6-35 provides a characterization of respondents' demographic characteristics.

Table 6-35*: Demographics (n = 100)*

Demographic Characteristic	%	n
Home Ownership (n = 100)		
Rent	15.0%	15
Own	84.0%	84
Own but rent to someone else	0.0%	0
Prefer not to answer	1.0%	1
Building Age (n = 100)		
Before 1960	22.0%	22
1960 to 1969	7.0%	7
1970 to 1979	25.0%	25
1980 to 1989	10.0%	10
1990 to 1999	9.0%	9
2000 to 2009	10.0%	10
2010 or later	10.0%	10

Don't know	7.0%	7
Prefer not to answer	0.0%	0
Building Size (n = 100)		
Less than 1,000 square feet	5.0%	5
1,000 to 1,999 square feet	64.0%	64
2,000 to 2,999 square feet	18.0%	18
3,000 to 3,999 square feet	3.0%	3
4,000 square feet or more	4.0%	4
Don't know	6.0%	6
Prefer not to answer	0.0%	0
Home Type (n = 100)		
Single-family home	94.0%	94
Manufactured or mobile home	1.0%	1
Duplex or townhome	3.0%	3
Apartment or condominium	0.0%	0
Other please specify	1.0%	1
Prefer not to answer	1.0%	1
Space Heating Fuel (n = 100)		
Natural gas	46.0%	46
Electricity	52.0%	52
Propane	1.0%	1
Don't heat the home	1.0%	1
Other	0.0%	0
Don't know	0.0%	0
Prefer not to answer	0.0%	0
Water Heating Fuel (n = 99)		
Natural gas heater	46.5%	46
Electric water heater	50.5%	50
Other please specify	1.0%	1
Don't know	2.0%	2
Prefer not to answer	0.0%	0
Household Size (n = 100)		
1 person	22.0%	22
2 people	43.0%	43
3 people	11.0%	11
4 people	15.0%	15
5 people	3.0%	3
6 people	1.0%	1
7 people	0.0%	0
8+ people	0.0%	0
Prefer not to answer	5.0%	5

Education Level (n = 100)		
Some high school, no diploma	2.0%	2
High school graduate, diploma or the equivalent	21.0%	21
Some college credit, no degree	19.0%	19
Trade/technical/vocational training	3.0%	3
Associates degree	17.0%	17
Bachelor's degree	22.0%	22
Master's degree	8.0%	8
Professional degree	0.0%	0
Doctorate degree	2.0%	2
Prefer not to answer	6.0%	6
Employment (n = 100)		
Working or attending school outside of the home	44.0%	44
Working or attending school from home	8.0%	8
Retired	29.0%	29
Unemployed	0.0%	0
On medical, disability or maternity leave	4.0%	4
Stay-at-home parent or care provider	2.0%	2
Other (please specify)	5.0%	5
Prefer not to answer	8.0%	8
Air Conditioning (n = 100)		
Central AC	77.0%	77
Heat pump	14.0%	14
Mini split (ductless heat pump)	3.0%	3
Wall or window mounted air conditioning unit	4.0%	4
Don't use air conditioning	0.0%	0
Other please specify	0.0%	0
Don't know	2.0%	2
Prefer not to answer	0.0%	0
Household Income (n = 100)		
At or Below 200% FPL	34.0%	34
Age (n = 100)		
18-24	3.0%	3
25-34	12.0%	12
35-44	19.0%	19
45-54	14.0%	14
55-64	22.0%	22
65-74	18.0%	18
75+	7.0%	7

Prefer not to answer	5.0%	5
Age 65+ (n = 100)		
Yes	23.0%	23
No	72.0%	72
Don't know	0.0%	0
Prefer not to answer	5.0%	5

6.9.2.3 CWA Trade Ally Interviews

Staff from OG&E provided evaluators contact information for eight trade allies associated with the Weatherization program who had completed projects in 2024. Evaluators contacted trade allies via email and phone calls up to three times. Five trade allies agreed to participate; one trade ally had to reschedule, one trade ally was not interested, and the other two did not respond to contact attempts.

Trade allies hold various roles across different companies, including owning energy efficiency businesses or working as contractors in heating and air conditioning, duct and air sealing, and insulation. Responding trade allies have participated in the OG&E Weatherization Program for up to four years and obtain project leads from multiple sources, such as referrals from OG&E and CLEAResult, customer word-of-mouth, social media marketing, and flyers.

Three trade allies stated that customers are primarily interested in the program for free weatherization equipment. Other motivations include reducing utility costs and improving home comfort. One trade ally mentioned that some customers initially perceive the program as too good to be true or as a gimmick.

The responding trade allies expressed gratitude for the program. Trade allies highlighted OG&E staff's communicativeness, the program's quick rebate turnaround time, and the helpful trainings that they provide.

Responding trade allies had mixed opinions regarding the range of measures that qualify for the program; although one trade ally was satisfied, other trade allies requested window-AC units and windows be added to the list of eligible measures. Multiple trade allies cited technological issues – such as invoice portal errors, tune-up application bugs, and program blackout dates – as barriers to program engagement. Moreover, two of the responding trade allies expressed frustration that the program runs out of money before the end of the year with one trade ally suggesting "reworking the budget and having a shorter downtime is a must in order to not lay people off."

The responding trade allies provided recommendations for program improvement including streamlining and simplifying the application process by requiring fewer signatures needed and merging documents with CLEAResult's other utility clients, as well as increased program marketing and pre-screen assessments.

6.9.2.4 Health and Safety Measures

Act 1102 specifies required spending on H&S improvements for qualified homes. OG&E was already including H&S measures prior to Act 1102, such as appliance combustion testing, carbon monoxide alarms, and smoke detectors.

As shown in Figure 6-13, H&S spending has increased significantly, both in absolute terms and on a per-home basis.

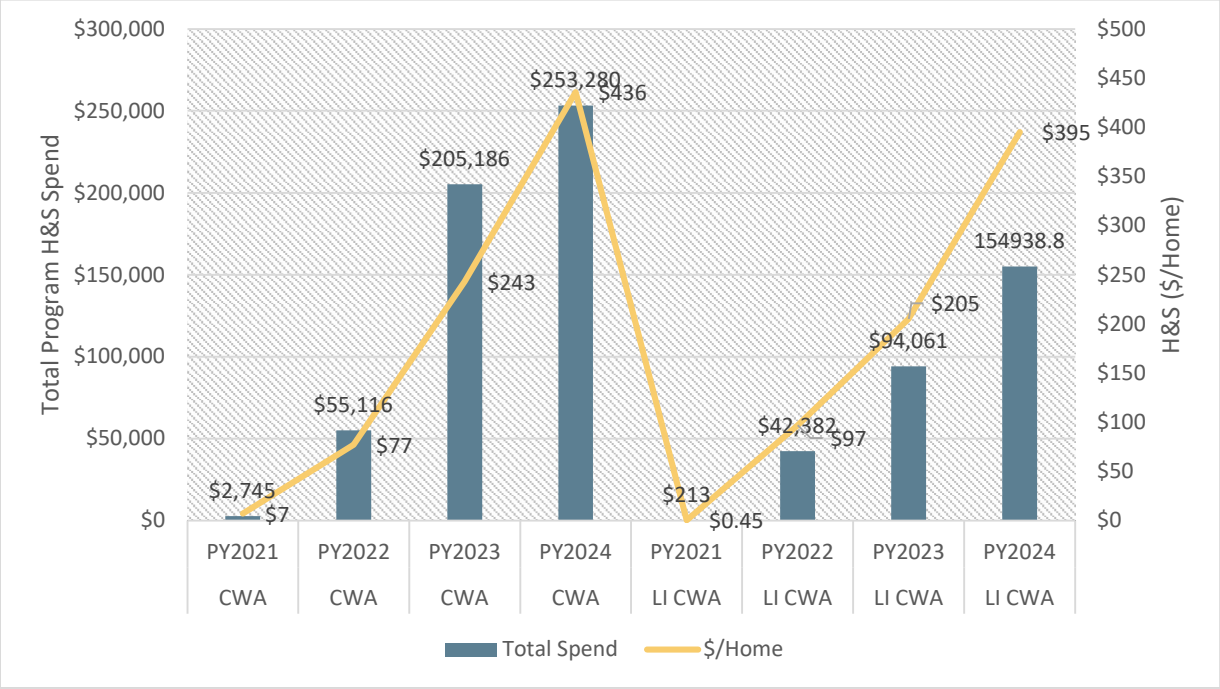


Figure 6-13: CWA H&S Spending Summary: PY2021-PY2024

H&S spending per-home has increased from $243 to $436 for CWA and from $205 to $395 for Low Income.

6.10 Protocol A: Tracking Data Review

Table 6-36 summarizes the Protocol A tracking data review for the OG&E CWA. The CLEAResult DSMT tracking database contained all required fields.

Table 6-36: OG&E CWA 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	X	The fields are present, but heating system type included entry errors.
	Equipment Quantity	✓	
	Efficiency Level	✓	
	Estimated Savings	✓	
	Estimated incremental measure cost	X	There is no designated column in tracking data for IMC.
	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	✓	
	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	✓	
	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 Evaluators.
	Media schedules	N/A	
	Summary of number of community events/outreach activities	✓	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	✓	

6.10.1 Progress on PY2023 Evaluation Recommendations

OG&E responded to the Evaluators' PY2023 recommendations. The status of these recommendations is summarized in Table 6-37.

Table 6-37: Status of Recommendations from PY2023 Evaluation

2023 Recommendations	Status	Comment
Continue efforts to improve H&S investment levels and tracking. The program made significant strides in PY2023 in terms of investment level per-home and in the quality of tracking. The Evaluators recommend that OG&E continue with these efforts.	In Progress	These efforts have continued in PY2024 and has remained a high focus in CWA. The Evaluator documented increased H&S spending in PY2024.
Emphasize messaging in support of the Low Income channel in streaming service marketing. Low Income survey respondents were significantly more likely to indicate streaming service advertisements (identified as "television ads" in verbatim responses) as their source of program awareness. Program staff should emphasize the enhanced offerings of the Low Income channel in this marketing channel.	Rejected	The current methods of marketing (Social Media, Radio, events, etc.) have provided a steady pipeline of projects for the offering
Correct heating system data quality issues. This would include the following steps: 1. Impart a pre-set dropdown menu of heating system types 2. Develop an automated data flagging mechanism when a count of unique heating system entries is > 1 for a given "contract account ID" field value.	In Progress	Put systems into place that checks for and eliminates errors in heating data reported.
Provide trade allies with a recommended project cadence to support a smoother workflow. One interviewed trade ally indicated a preference for quarterly funding releases as it would help their company maintain a smooth project workflow. If trade allies are able to regularly recruit a pipeline of projects, OG&E and CLEAResult could provide them a recommended "pace setting" to ensure that they maintain a consistent flow of projects and establish a reasonable staffing level with year-round work available.	Rejected	Trade Allies are paid as homes are completed and has no impact on the TA's ability to maintain their workflow

6.11 Conclusions

Progress has been made toward achieving H&S goals.	H&S spending per-home has increased from $243 to $436 for CWA and from $205 to $395 for Low Income CWA.
Satisfaction remains high despite some issues with the work performed.	In PY2024, 89.8% indicated being "Satisfied" or "Very Satisfied". However, some respondents reported dissatisfaction with the assessment experience and the issue most commonly reported, mentioned by seven respondents, with the quality of the work, the quality control, or a mess being left behind.

Trade allies were satisfied with the program but made some suggestions for improvement.	Trade allies appreciate the OG&E Weatherization Program, particularly its staff communication, quick rebate processing, and training support. However, they identified areas for improvement, including addressing technological issues with the invoice portal and mitigating funding shortages that force downtime.

6.12 Recommendations

Review contractor training to reinforce the importance of work quality and tidiness.	Work quality issues were noted by some of the survey respondents, and the number is sufficient to emphasize this in future contractor trainings. Addressing these issues should improve the customer experience and the reputation of the program.

7 Commercial Energy Efficiency Program (CEEP)

7.1 Evaluation Findings Overview

The verified ex-post kWh and kW savings for the PY2024 CEEP are summarized by sampling stratum in Table 7-1.

Table 7-1: Ex-ante and Ex-post Gross kWh Savings by Sampling Stratum

Stratum Name	Ex-ante Gross kWh Savings	Ex-post Gross kWh Savings	Realization Rate - kWh	Ex-ante Gross kW Savings	Ex-post Gross kW Savings	Realization Rate - kW
Large C&I 1	367,873	381,366	104%	62	64	103%
Large C&I 2	3,904,182	4,048,923	104%	767	783	102%
Large C&I 3	1,175,514	1,206,575	103%	204	209	102%
Large C&I (Certainty)	5,357,084	5,321,752	99%	634	606	96%
SBS 1	449,742	482,072	107%	83	91	110%
SBS 2	698,404	779,688	112%	131	159	121%
SBS 3	641,547	680,335	106%	104	114	110%
SBS (Certainty)	427,377	427,611	100%	86	86	100%
SAGE 1	314,033	314,073	100%	48	48	100%
SAGE 2	727,688	747,081	103%	164	160	98%
SAGE (Certainty)	453,577	464,943	103%	80	81	101%
Midstream	2,251,746	2,548,114	113%	464	504	109%
CEI	4,945,216	4,931,025	100%	751	748	100%
HVAC Tune-up	43,527	43,735	100%	24	26	108%
Total	**21,757,511**	**22,377,294**	**103%**	**3,602**	**3,679**	**102%**
Sums may differ due to rounding.						

Table 7-2 and Table 7-3 present the net kWh and kW savings summary, by program channel, for the PY2024 CEEP, respectively.

Table 7-2: CEEP Net kWh Savings Summary

Channel	Ex-ante Gross kWh Savings	Ex-post Gross kWh Savings	Realization Rate - kWh	NTG	Ex-post Net kWh Savings
Large C&I	10,848,181	11,002,351	101%	100%	11,002,351
SBS	2,217,070	2,369,707	107%	100%	2,369,707
SAGE	1,495,298	1,526,097	102%	100%	1,526,097
Midstream	2,251,746	2,548,114	113%	100%	2,548,114
CEI	4,945,216	4,931,025	100%	100%	4,931,025
Totals	**21,757,511**	**22,377,294**	**103%**	**100%**	**22,377,294**
Sums may differ due to rounding.					

Table 7-3: CEEP Net kW Savings Summary

Channel	Ex-ante Gross kW Savings	Ex-post Gross kW Savings	Realization Rate - kW	NTG	Ex-post Net kW Savings
Large C&I	1,691	1,687	100%	100%	1,687
SBS	404	450	111%	100%	450
SAGE	291	290	100%	100%	290
Midstream	464	504	109%	100%	504
CEI	751	748	100%	100%	748
Totals	**3,601**	**3,679**	**102%**	**100%**	**3,679**
Sums may differ due to rounding.					

Table 7-4 outlines the verified *ex-post* lifetime kWh savings by channel for the PY2024 CEEP.

Table 7-4: CEEP Gross and Net Lifetime Savings by Channel

Channel	Ex-post Gross Savings (kWh)	Ex-post Gross Lifetime Energy Savings (kWh)	NTG	Ex-post Net Lifetime Savings (kWh)
Large C&I	11,002,351	155,872,990	100%	155,872,990
SBS	2,369,707	35,252,558	100%	35,252,558
SAGE	1,526,097	21,231,982	100%	21,231,982
Midstream	2,548,114	31,735,332	100%	31,735,332
CEI	4,931,025	4,931,025	100%	4,931,025
Totals	**22,377,294**	**249,023,887**	**100%**	**249,023,887**
Sums may differ due to rounding.				

Additional details on the evaluation of the CEEP are provided in the following sections.

7.2 Program Overview

The CEEP provides financial incentives to all commercial and industrial (C&I) customers and includes five channels of participation. The channels are designed to maximize participation among the C&I customer base.

The program seeks to combine the provision of financial inducements with access to technical expertise to maximize program penetration across the range of potential C&I customers. The primary goal of the program is to generate energy and demand savings for large and small commercial and industrial customers through the promotion of high efficiency electric end-use products including (but not limited to): lighting, retrofit of existing equipment, and HVAC replacement. The program provides OG&E's C&I customers with flexibility in choosing how to participate, either by self-sponsoring or by working through a third-party service provider to leverage technical expertise. The program has the following additional goals:

- Increase customer awareness of applicable energy saving measures;
- Achieve customer cost savings;
- Increase the market share of commercial grade high efficiency technologies sold through market channels; and
- Increase the installation rate of high efficiency technologies in C&I facilities by businesses that would not have done so absent the program.

The program offers prescriptive incentives for electric energy efficiency equipment upgrades and improvements. Incentives are provided for qualified equipment installed as a retrofit or equipment replacement, and as new construction or major refurbishment. The program also offers incentives for custom measures that are not included in the program as prescriptive measures.

Energy savings from prescriptive measures are calculated using deemed values and savings algorithms provided in the AR TRM V9.2. Savings from custom projects are calculated using various methods, including on-site monitoring, engineering calculations, whole building energy modeling, billing data regression analysis, etc. Custom projects may use some deemed values from the TRM, but do not necessarily follow savings algorithms.

In PY2024, the CEEP was implemented with five program channels. These include:

- **Large C&I**: The Large C&I channel of CEEP offers incentives to customers with a peak demand of greater than 150 kW at a single site. Incentives are paid directly to customers who install energy efficient equipment. This channel focuses on five key areas; lighting, retrofit of existing equipment, new constructions built above minimum building code, high efficiency industrial equipment, and HVAC replacement. The Large C&I channel is the largest of the six channels offered through CEEP. In PY2024, this channel accounted

for 50% of CEEP ex-ante savings. There was one custom project in the Large C&I channel in PY2024, accounting for 50% of ex-ante channel savings.

- **Small Business Solutions (SBS)**: This channel offers incentives to customers with a peak demand of less than 150 kW at a single site, for lighting audits and equipment installation through approved Trade Allies. During PY2024 this channel accounted for 10% of program ex-ante savings. No custom projects were incentivized through this channel.
- **Schools & Governmental Entities (SAGE)**: The SAGE channel of CEEP is marketed towards public school districts, private schools, universities and colleges, and all government agencies. This channel includes financial incentives for both lighting and non-lighting measures and both prescriptive and custom projects. In PY2024 this channel accounted for 7% of ex-ante savings.
- **Midstream**: The Midstream channel of CEEP encourages customers to participate by providing point of sale (POS) discounts on selected products through local lighting distributors. Through this channel, financial incentives are paid to the lighting distributor to allow reduced costs for the end customer. Energy savings associated with the Midstream channel are calculated using custom calculations developed by the program implementer, CLEAResult. The custom calculations are based on the mix of facility types in the OG&E service territory to determine baseline lamp wattages and the distribution of facility types which allows for deemed hours from the AR TRM V9.2 to be applied to local market conditions. The combination of baseline lamp wattages blended deemed annual operating hours, and program tracking data of actual counts and wattages of lamps sold allow for custom savings calculations to be performed. This channel accounts for 10% of program ex-ante kWh savings.
- **Continuous Energy Improvement (CEI)**: Continuous Energy Improvement is a behavioral channel of CEEP that aims to engage larger customers whose goals include cost savings from low-cost to no-cost measures. The Continuous Energy Improvement Channel was the second largest channel offered through CEEP in PY2024. Five customers participated in the CEI program. The CEI channel is a 36-month behavioral program that provides energy conservation training to all levels of employees within a customer's organization with a focus on low/no cost savings opportunities. The program also offers a facility wide assessment of energy usage and provides customers with continuous energy usage monitoring. In PY2024, this channel accounted for 23% of program ex-ante savings, increased from 22% in PY2023.

CLEAResult was contracted to implement all channels of CEEP for PY2024. CLEAResult was responsible for program planning, development of marketing material, quantifying ex-ante energy savings estimates and paying appropriate incentives to customers. CLEAResult also

identified and approved Trade Allies and distributors for participation in the SBS and Midstream Lighting channels of the program. For PY2024, service providers (Trade Allies and distributors) were recruited to participate by submitting rebate applications on behalf of customers implementing qualifying energy efficiency measures.

The results of the M&V efforts for the program are intended to provide ±10% precision at the 90% confidence interval for the overall program based upon site-by-site verification activities. In PY2024, the CEEP resulted in 237 projects being implemented through the five program channels. The 237 projects are an increase compared to the 154 projects completed in PY2023. The reported performance of the program is summarized in Table 7-5.

Table 7-5: OG&E's PY2024 CEEP Program Summary

Channel	Number of Projects	Ex-ante Gross kWh Savings	Ex-ante Gross Peak kW Savings	Percent of kWh Savings
Large C&I	33	10,848,181	1,690.61	50%
SBS	120	2,217,070	404.50	10%
SAGE	9	1,495,298	291.28	7%
Midstream	67	2,251,746	464.14	10%
CEI	8	4,945,216	751.18	23%
Total	**237**	**21,757,511**	**3,601.71**	**100%**
Sums may differ due to rounding.				

As shown in Table 7-6, CEEP had participation in 6 measure categories. The lighting measure category was by far the single highest contributor to ex-ante savings, accounting for 11,270,183 kWh, 52% of the program savings. VFDs accounted for 5,491,116 kWh, 25% of the program savings.

Table 7-6: Contribution to Ex-ante Savings by Measure Type by Channel

Measure Type	CEI	SAGE	Large C&I	SBDI	Midstream	Total	% Total
Lighting	-	1,495,298	5,313,023	2,210,116	2,251,746	11,270,183	52%
VFDs	-	-	5,491,116	-	-	5,491,116	25%
CEI	4,945,216	-	-	-	-	4,945,216	23%
Door Gaskets	-	-	-	4,316	-	4,316	0.02%
HVAC	-	-	44,042	-	-	44,042	0.20%
Strip Curtains	-	-	-	2,638	-	2,638	0.01%
Total	**4,945,216**	**1,495,298**	**10,848,181**	**2,217,070**	**2,251,746**	**21,757,511**	**100%**

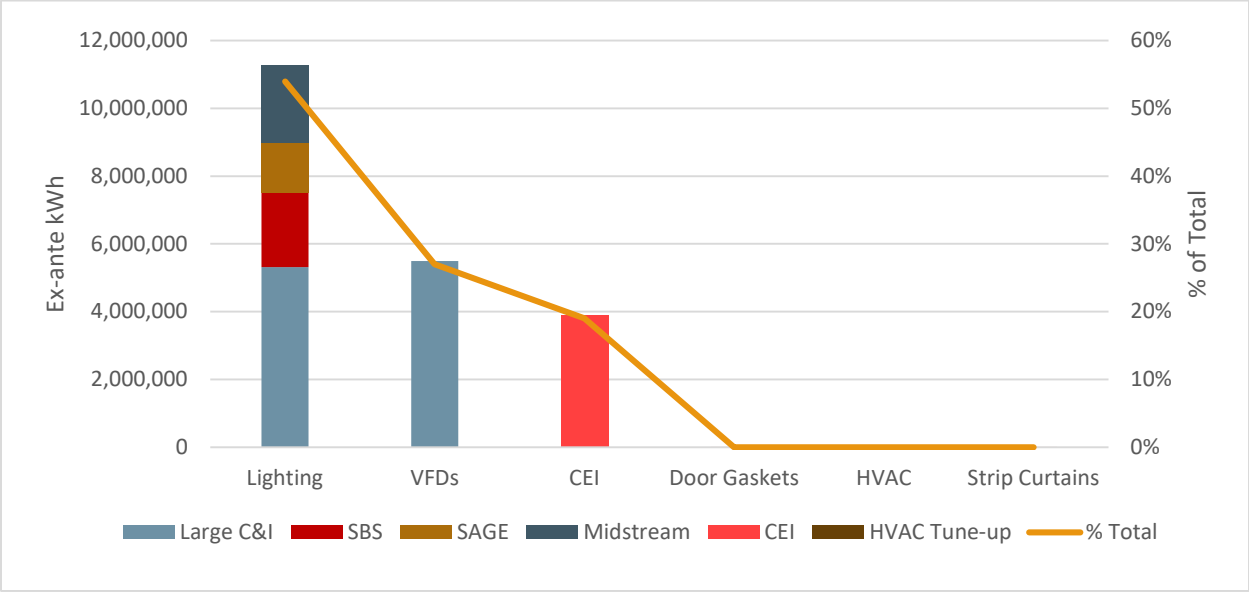


Figure 7-1: CEEP Savings by Channel

7.3 Gross Impact Evaluation Approach

The evaluation of gross energy savings and peak demand reduction from projects rebated through the CEEP can be broken down into the following steps:

- First, CLEAResult's tracking database was reviewed to determine the scope of the program and to ensure there were no duplicate entries. The tracking database was used to define a discrete set of rebated projects that made up the PY2024 program population. A random sample of projects was then drawn from the population established in the tracking system review. For the PY2024, a total of 57 projects from the Large C&I, SBS, and SAGE program channels were selected for the M&V sample. For the Midstream, Continuous Energy Improvement, and HVAC Tune-up channels, a database review resulted in a census of projects being reviewed.
- Next, a detailed desk review was conducted for each project sampled for measurement and verification. The desk review process includes a thorough examination of all project materials including invoices, equipment cut sheets, pre- and post-inspection reports, and estimated savings calculators. Additionally, the review process involved assessing the reasonableness of deemed savings values given in the AR TRM V9.2 and calculation input assumptions.
- For the Midstream channel, no on-site inspections were conducted. Instead, the Evaluators reviewed the implementation contractor's database to determine methodologies and assumptions used to determine ex-ante savings. For this channel, *ex-post* savings are determined through the database review process. A more detailed

description of the methodology used to determine *ex-post* savings for the Midstream channel is included in the following sections.

- For the CEI channel, no on-site inspections were conducted. The Evaluators conducted whole facility analysis using utility billing regression.
- For the HVAC Tune-up channel, no on-site inspections were conducted. The Evaluators conducted whole facility analysis using utility billing regression.
- Finally, after determining the *ex-post* savings impacts for each sampled project, results were extrapolated to the program population using project specific sampling weights. This allows for the estimation of program level gross *ex-post* energy (kWh) savings with a given amount of sampling precision and confidence. For the CEEP, the sample was designed to ensure ±10% or better relative precision at the 90% confidence level for kWh savings.

7.3.1 Midstream Impact Evaluation Activities

Ex-post savings from the Midstream channel were determined through a review of the database used by CLEAResult for tracking lamps and fixtures sold through the program. The Midstream channel accounted for 10% of CEEP ex-ante savings. Because of the relatively small amount of savings associated with this channel, the M&V effort was focused on a review of the ex-ante model that was used to determine savings. In PY2024, the Evaluators used the average in-service rate (ISR) from the previous years for the ex-post savings model.

The model used to determine ex-ante savings associated with the Midstream lighting channel uses several sources to determine typical baseline lamp wattage, annual operating hours (AOH), coincident factors (CF), and mix of facility types to allow for calculation of energy savings. Baseline lamp wattages were determined using data from the "2010 U.S. Lighting Market Characterization" study published by the US Department of Energy in January 2012. The results of this study allow for the determination of the number of lamps installed in specific facility types and the energy usage associated with those lamps. This study did not include LED lamps as the research was conducted in 2010 when LEDs had a lower market share.

The annual operating hours, coincidence factors, and facility types were determined using the deemed values provided in the AR TRM V9.2. The 2012 version of the "Commercial Buildings Energy Consumption Survey (CBECS)", published by the U.S. Energy Information Administration was used to determine the total floor space of commercial buildings, by facility type, in the service territory. The data from the CBECS allowed for CLEAResult to develop a weighted average AOH and CF. Combining these data with the baseline wattage data allowed the models to estimate a weighted average baseline wattage, AOH, and CF for each lamp type included in the program.

In future years, the Evaluators will employ an engineering analysis to determine the *ex-post* verified energy savings. The verified energy savings per fixture or lamp will be calculated with methods developed by the Evaluators and consistent with chapter 6 of *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures*. The calculations will use the following equations:

$$Annual\ kWh\ savings = \left(\frac{(Wbaseline\ - Wmeasure) * HOU_{annual} * HCIF}{1000}\right)$$

$$Peak\ kW\ savings = \left(\frac{(Wbaseline\ - Wmeasure) * HOU_{annual} * HCIF * CF}{1000}\right)$$

Where:

$W_{baseline}$	= baseline wattage per category determined from sales data supplied by CLEAResult and verified by the Evaluators.
$W_{measure}$	= measure wattage as determined by the average for that measure category in the current program year. This will be calculated based on Point of Sale (POS) data for each program year and will be adjusted as necessary to reflect actual lamps sold.
1000	= conversion factor for Watts per kW
HOU_{annual}	= annual hours of use, calculated using ex-ante model values
HCIF	= "Heating & Cooling Interactive-effects Factor", determined using deemed values from the appropriate version of the TRM and weighted average facility types.
CF	= Coincidence factor, a ratio between 0.0 and 1.0 that adjusts the change in connected electric load from lighting efficiency projects for electric peak demand savings. CF will be calculated using ex-ante model values.

7.4 Impact Evaluation Data Collection Activities

Data for the evaluations were collected through review of program materials, end-use metering, and interviews with participating customers and service providers. Based on program tracking data provided by CLEAResult, sample design was developed for M&V data collection. The central program database, where program activities are tracked, and project documentation is stored, was developed, and managed by CLEAResult. The verification and data collection samples were drawn to provide gross impact estimates with ±10% precision or better at the 90% confidence level for the overall program.

Desk reviews of project documentation and site visits were used to collect data for gross impact calculations, to verify measure installation, and to determine measure operating parameters.

Projects were selected for on-site inspections at random, except for those with a higher level of uncertainty (custom sites, etc.). Deemed values were used to determine *ex-post* energy savings, including equivalent full load hours for heating and cooling projects, or annual operating hours for lighting projects, the Evaluators referred to the AR TRM V9.2.

Table 7-7 below presents the sample design. The 57 projects that were sampled for measurement and verification in the Large C&I, SBS, and SAGE channels account for 74% of reported ex-ante kWh savings within these channels. With the inclusion of the census of Midstream Lighting projects and CEI that received M&V, the total program sample accounts for 83% of program ex-ante savings.

Table 7-7: CEEP Sample Design

Stratum Name	Ex-ante Gross kWh Savings	Strata Minimum (kWh)	Strata Maximum (kWh)	Population of Projects	Design Sample Size	Desk Review	Site Visit
Large C&I 1	367,873	0	100,000	7	5	5	0
Large C&I 2	3,904,182	100,000	400,000	17	7	7	0
Large C&I 3	1,175,514	400,000	1,000,000	2	2	2	0
Large C&I (Certainty)	5,357,084	1,000,000	N/A	1	1	1	0
SBS 1	449,742	0	14,000	73	17	17	0
SBS 2	698,404	14,000	40,000	32	8	8	0
SBS 3	641,547	40,000	100,000	12	5	5	0
SBS (Certainty)	427,377	100,000	N/A	3	3	3	0
SAGE 1	314,033	0	200,000	5	5	5	0
SAGE 2	727,688	200,000	300,000	3	3	3	0
SAGE (Certainty)	453,577	300,000	N/A	1	1	1	0
Midstream	2,251,746	N/A	N/A	77	77	77	0
CEI	4,945,216	N/A	N/A	5	4	4	0
HVAC Tune Up	43,527	N/A	N/A	6	6	6	0
Total	**21,757,511**			**244**	**144**	**144**	**0**
Sums may differ due to rounding.							

In addition to the desk reviews and in-depth interviews with program staff members, participant customer surveys were conducted to provide additional perspectives for the process evaluation. Table 7-8 shows the achieved sample sizes for the different types of data collection employed for this study.

Table 7-8: Sample Sizes for Data Collection Efforts

Data Collection Activity	Sample Size
On-Site M&V visits	0
Desk Review of Project Documentation	144
In-depth Interviews with Implementation Staff	0
In-depth Interviews with Program Staff	0

The achieved sampling precision for the CEEP gross impact evaluation is ±5%.

7.5 Gross Impact Evaluation Findings

The reported ex-ante savings for CEEP was 21,575,511 kWh. The Evaluators found ex-post gross savings of 22,377,294 kWh (103% gross realization). The ex-post net savings was 22,377,294 kWh which was 120% of the program's net savings goal of 18,718,226 kWh.

The PY2024 sample resulted in ex-post gross kWh estimates with ±5% relative precision at the 90% confidence interval. Ex-post gross energy savings were relatively close to the original reported values at the program level (103% gross realization rate).

The sample also resulted in ex-post gross kW estimates with ±8% relative precision at the 90% confidence interval.

7.5.1 Large C&I Gross Impact Findings

Summary

- **10,848,181 ex-ante kWh**
- **11,002,351 ex-post verified kWh (101% gross realization)**
- **1,687 ex-post verified kW (100% gross realization)**

- Program population: 27 projects
- 6 HVAC Tune-up projects
- 1 HVAC project
- 1 VFD project
- 1 Custom (VFD) project
- M&V sample: 15 projects
- Four M&V strata:
  - Certainty stratum: 99% realization
  - Large C&I 3: 103%
  - Large C&I 2: 104%
  - Large C&I 1: 104%

7.5.2 Small Business Solutions Gross Impact Findings

Summary

- **2,217,070 ex-ante kWh**
- **2,369,707 ex-post verified kWh (107% gross realization)**
- **450 ex-post verified kW (111% gross realization)**

- Program population: 120 projects
- M&V sample: 33 projects
- Four M&V strata:
  - Certainty stratum: 100% realization
  - SBS 3: 106%
  - SBS 2: 112%
  - SBS 1: 107%

7.5.3 SAGE Gross Impact Findings

Summary

- **1,495,298 ex-ante kWh**
- **1,526,097 ex-post verified kWh (102% gross realization)**
- **290 ex-post verified kW (100% gross realization)**

- Program population: 9 projects
- M&V sample: 9 projects
- Three M&V strata:
  - Certainty stratum: 103% realization
  - SBS 2: 103%
  - SBS 1: 100%

7.5.4 Midstream Gross Impact Findings

Summary

- **2,251,746 ex-ante kWh**
- **2,548,114 ex-post verified kWh (113% gross realization)**
- **504 ex-post verified kW (109% gross realization)**

- Program population: 2,324 fixtures purchased by 52 participants.
- Database review: examined data for input errors, project repeat entries.
- Assigned AOH/CF/baseline based on lamp/fixture type, and wattage based on manufacturer's / DLC specifications.

7.5.5 Continuous Energy Improvement Gross Impact Findings

Summary

- **4,945,216 ex-ante kWh**
- **4,931,025 ex-post verified kWh (100% gross realization)**
- **748 ex-post verified kW (100% gross realization)**

- Program population: 5 participants
- Census of projects analyzed in the evaluation
- Minor corrections made to models to improve model fit
- The Evaluators sampled four of the five CEI facilities which accounted for 90% of channel savings.

- Ex-post savings for the four CEI facilities ranged from 99% to 100% realization. Overall channel realization is 100% for both kWh and kW.

7.6 Net Impact Evaluation Approach

Details on the CEEP NTG approach and results can be found in Appendix A Net-to-Gross Approach and Outcomes.

7.7 Net Impact Evaluation Findings

The Evaluators conducted a new net-to-gross analysis in PY2024 for:

- Large C&I;
- SAGE; and
- Small Business Solutions.

7.7.1 Summary of Net Savings Results

Table 7-9 and Table 7-10 summarize CEEP net savings.

Table 7-9: Summary of CEEP Net Annual Energy Savings (kWh)

Channel	Ex-ante Gross kWh Savings	Ex-post Gross kWh Savings	Realization Rate - kWh	NTG	Ex-post Net kWh Savings
Large C&I	10,848,181	11,002,351	101%	100%	11,002,351
SBS	2,217,070	2,369,707	107%	100%	2,369,707
SAGE	1,495,298	1,526,097	102%	100%	1,526,097
Midstream	2,251,746	2,548,114	113%	100%	2,548,114
CEI	4,945,216	4,931,025	100%	100%	4,931,025
Totals	**21,757,511**	**22,377,294**	**103%**	**100%**	**22,377,294**
Sums may differ due to rounding.					

Table 7-10: Summary of CEEP Net Peak Demand Reductions (kW)

Channel	Ex-ante Gross kW Savings	Ex-post Gross kW Savings	Realization Rate - kW	NTG	Ex-post Net kW Savings
Large C&I	1,691	1,687	100%	100%	1,687
SBS	404	450	111%	100%	450
SAGE	291	290	100%	100%	290
Midstream	464	504	109%	100%	504
CEI	751	748	100%	100%	748
Totals	**3,602**	**3,679**	**102%**	**100%**	**3,679**
Sums may differ due to rounding.					

7.8 Non-Energy Benefits (NEBs)

Protocol L of the AR TRM V9.2 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 electric DSM program are as follows:

- Benefits of 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 CEEP Program in PY2024 are natural gas savings and avoided replacement costs (ARCs). There were no propane or water savings in PY2024.

7.8.1 Natural Gas Energy Savings

In CEEP, OG&E customers can have either electric or natural gas heating. When a customer has natural gas heating, OG&E can claim the natural gas therm savings as NEBs. Conversely, when a customer has natural gas space heating, there are negative natural gas savings from lighting retrofits associated with the heating-cooling interactive factor of lighting and HVAC. For CEEP, the primary driver of savings is lighting retrofits; as a result, the overall effect is negative NEB from natural gas. The table below presents the ex-post net natural gas that can be claimed as NEBs for cost-effectiveness purposes. There were no natural gas savings calculated for CEI.

Table 7-11: PY2024 CEEP Natural Gas (NGS) Savings by Measure

Channel	Measure	Ex-post Gross NGS (therms)	Ex-post Net NGS (therms)	Ex-post Net Lifetime NGS (therms)	NGS Benefit ($)	NPV NGS ($)
Midstream	Linear Lamp T8 LED - 4 ft & U-Bend	0	0	0	$ -	$ -
Midstream	2x2 Troffer and Linear Ambient LED	(2)	(2)	(31)	$ (1)	$ (11)
Midstream	2x4 Troffer and Linear Ambient LED	(227)	(227)	(3,111)	$ (108)	$ (1,146)
Midstream	Exterior Wall Pack/Flood >80 Watts	(333)	(333)	(4,163)	$ (158)	$ (1,592)
Midstream	Exterior Wall Pack/Flood 30-80 Watts	0	0	0	$ -	$ -
Midstream	Lowbay/Highbay LED >100 Watts	(8,947)	(8,947)	(110,652)	$ (4,239)	$ (40,408)
Midstream	Lowbay/Highbay LED 61-100 Watts	(6)	(6)	(90)	$ (3)	$ (32)
SBS	Door Gaskets	0	0	0	$ -	$ -
SBS	Exit Signs	(54)	(54)	(816)	$ (26)	$ (287)
SBS	LED Retrofit	(5,749)	(5,749)	(85,771)	$ (2,724)	$ (30,383)
SBS	Strip Curtains	0	0	0	$ -	$ -
Large C&I	Custom	0	0	0	$ -	$ -
Large C&I	HVAC and Controls	0	0	0	$ -	$ -
Large C&I	LED Retrofit	(38,730)	(38,730)	(520,099)	$ (18,350)	$(185,346)
Large C&I	Motors/VFDs	0	0	0	$ -	$ -
Large C&I	Central AC Tune-up: M&V	0	0	0	$ -	$ -
Large C&I	Central AC Tune-up: Modeled	0	0	0	$ -	$ -
SAGE	LED Retrofit	(8,526)	(8,526)	(118,619)	$ (4,039)	$ (42,985)
CEI	CEI Measure	0	0	0	$ -	$ -
CEI	CEI Core Milestone	0	0	0	$ -	$ -
Total		**(62,574)**	**(62,574)**	**(843,291)**	**$ (29,647)**	**$(302,191)**
Sums may differ due to rounding.						

The bullets below outline how the Evaluators determined if there were natural gas savings:

- **Large C&I:** natural gas savings were estimated using heating type information in the project data provided by the TPI.
- **SBS:** natural gas savings were estimated using heating type information in the project data provided by the TPI.
- **Midstream:** natural gas savings were estimated using heating type information in the project data provide by the TPI.
- **SAGE:** natural gas savings were estimated using heating type information in the project data provided by the TPI.

7.8.2 Propane Savings

When a customer has propane, OG&E can claim the savings as NEBs. There were no propane savings in PY2024 for CEEP.

7.8.3 Water Savings

When a customer installs a water saving device, OG&E can claim the water savings (gallons) as a NEBs. There were no water savings in PY2024 for CEEP.

7.8.4 Avoided and Deferred Replacement Costs

To calculate avoided replacement costs (ARC) and incremental costs for LEDs in the CEEP the AR TRM V9.2 Protocol L calculator was used.

Avoided replacement cost NEBs were calculated for lighting projects by lighting fixture and bulb type. The implementer provided detailed lamp and fixture types for all participants and the Evaluators used that data to estimate avoided replacement cost. Equipment costs were taken from program tracking where available and citing Illinois TRM V11.0[41] where not available.

The AR TRM V9.2 lists the EUL for HID as 16 years and this is longer than the EUL of common LED fixtures (15 years) which would result in no avoided replacement cost. The Evaluators reviewed the calculation used to derive the EUL in AR TRM V9.2 and recalculated the EUL because AR TRM V9.2 used the ballast lifetime to calculate EUL. The Evaluators used the lamp life of 15,000 hours for exterior HIDs and 18,000 hours for high/low bay HIDs, divide them by weighted average of 3,205 AOH (the same AOH used to calculate EUL from AR TRM V9.2). The resulting EUL for exterior HID was 4 years and high/low bay HID was 6 years. The value of the avoided replacement cost NEB was determined using a calculator provided by the IEM, which accounts for differences in EULs, changing baseline fixtures in future years (per EISA tiers), and the Net Present Value (NPV) of the avoided replacement cost.

The table below shows the ARCs for the PY2024 CEEP.

Table 7-12: PY2024 CEEP Avoided Replacement Costs (ARCs) by Measure

Channel	Measure	Ex-post Gross ARC ($)	Ex-post Net ARC ($)	NPV of ARC ($)
Large C&I	LED Fixture	$ 2,603	$ 2,603	$ 2,603
Large C&I	Exterior LEDs	$ 29	$ 29	$ 29
Large C&I	Linear LED Lamps	$ 2,741	$ 2,741	$ 2,741
Large C&I	Screw Based LED	$ 4,587	$ 4,587	$ 4,587
Large C&I	LED Exit Signs	$ 573	$ 573	$ 573
SBS	LED Fixture	$ 161,695	$ 161,695	$ 161,695
SBS	Exterior LEDs	$ 134	$ 134	$ 134

[41] https://www.ilsag.info/wp-content/uploads/IL-TRM_Effective_010123_v11.0_Vol_2_C_and_I_092222_FINAL.pdf

Channel	Measure	Ex-post Gross ARC ($)	Ex-post Net ARC ($)	NPV of ARC ($)
SBS	Linear LED Lamps	$ -	$ -	$ -
SBS	Screw Based LED	$ 50	$ 50	$ 50
SBS	LED High Bay	$ 122,941	$ 122,941	$ 122,941
SBS	LED Exit Signs	$ -	$ -	$ -
SAGE	LED Fixture	$ -	$ -	$ -
SAGE	Exterior LEDs	$ -	$ -	$ -
SAGE	Linear LED Lamps	$ 118,586	$ 118,586	$ 118,586
SAGE	Screw Based LED	$ -	$ -	$ -
SAGE	LED Exit Signs	$ -	$ -	$ -
Midstream	Linear Lamp T8 LED - 4 ft & U-Bend	$ -	$ -	$ -
Midstream	2x2 Troffer and Linear Ambient LED	$ 70,127	$ 70,127	$ 70,127
Midstream	2x4 Troffer and Linear Ambient LED	$ -	$ -	$ -
Midstream	Exterior Wall Pack/Flood >80 Watts	$ -	$ -	$ -
Total		**$ 484,068**	**$ 484,068**	**$ 484,068**
Sums may differ due to rounding.				

7.8.5 NEBs Summary

The table below summarizes the NPV of NEBs attributable to CEEP, including natural gas savings, water savings, propane, and avoided replacement cost. There were no propane savings (gallons), no water savings (gallons), and no DRCs in the PY2024 CEEP.

Table 7-13: PY2024 CEEP Non-Energy Benefits (NEBs) Summary

Channel	Measure	NPV NGS ($)	NPV ARC ($)	Total NPV ($)
Midstream	Linear Lamp T8 LED - 4 ft & U-Bend	$ -	$ 2,603	$ 2,603
Midstream	2x2 Troffer and Linear Ambient LED	$ (11)	$ 29	$ 18
Midstream	2x4 Troffer and Linear Ambient LED	$ (1,146)	$ 2,741	$ 1,595
Midstream	Exterior Wall Pack/Flood >80 Watts	$ (1,592)	$ 4,587	$ 2,995
Midstream	Exterior Wall Pack/Flood 30-80 Watts	$ -	$ 573	$ 573
Midstream	Lowbay/Highbay LED >100 Watts	$ (40,408)	$ 161,695	$ 121,287
Midstream	Lowbay/Highbay LED 61-100 Watts	$ (32)	$ 134	$ 103
SBS	Door Gaskets	$ -	$ -	$ -
SBS	Exit Signs	$ (287)	$ 50	$ (238)
SBS	LED Retrofit	$ (30,383)	$ 122,941	$ 92,558
SBS	Strip Curtains	$ -	$ -	$ -
Large C&I	VFD (Custom)	$ -	$ -	$ -
Large C&I	HVAC and Controls	$ -	$ -	$ -
Large C&I	LED Retrofit	$ (185,346)	$ 118,586	$ (66,760)
Large C&I	Motors/VFDs	$ -	$ -	$ -
Large C&I	Central AC Tune-up: M&V	$ -	$ -	$ -
Large C&I	Central AC Tune-up: Modeled	$ -	$ -	$ -
SAGE	LED Retrofit	$ (42,985)	$ 70,127	$ 27,143
CEI	CEI Measure	$ -	$ -	$ -
CEI	CEI Core Milestone	$ -	$ -	$ -
Total		**$ (302,191)**	**$ 484,068**	**$ 181,877**
Sums may differ due to rounding.				

7.9 Process Evaluation

The following sections present the data collection activities and results of the process evaluation.

7.9.1 Data Collection Activities

Table 7-14: CEEP Process Evaluation Interview and Survey Data Collection Summary

Target	Component	Activity	n	Precision	Details
Program Staff	OG&E Program Staff	Interview	4	N/A	OG&E staff interview included the Program Manager for all OG&E energy efficiency programs, an EM&V analyst, and the CEEP manager.
Program Staff	CLEAResult Program Staff	Interview	4	N/A	CLEAResult staff interviewed included the Program Manager that is responsible for overall day-to-day implementation of CEEP, as well as the Account Manager responsible for application processing and invoicing.
Program Participants	Small Business Direct Install	Participant Survey	10	±23%	Survey effort was used for NTG and process evaluation feedback.
	Large C&I	Participant Survey	4	±38%	
	School & Government	Participant Survey	1	±82%	
	CEEP Overall	Participant Survey	28	±19%	

7.9.2 Program and CLEAResult Staff Interviews

Evaluators interviewed four OG&E and four CLEAResult staff about the commercial programs. OG&E interviewees included OG&E's EMV Analyst for all AR programs, the Energy Efficiency Program Manager, the Residential Energy Efficiency Program Manager, and support staff. CLEAResult interviewees included the Field Manager, Program Portfolio Manager, Energy Engineer, and Account Manager.

Staff indicated that the Commercial Energy Efficiency Program did not experience any major changes in PY2024. Staff explained that program is performing well, with a healthy project pipeline, and they do not see a need for any programmatic changes.

7.9.3 OG&E CEEP Program Participant Surveys and Interviews

The 2024 respondent survey for the OG&E Commercial Energy Efficiency Program collected feedback on respondents' motivations, experiences, and satisfaction. The survey revealed that financial incentives and contractor support were key drivers of participation, with high satisfaction reported for both the program and installed equipment. Of the 72 customers invited to participate, 15 responded, resulting in a response rate of 20.8%.

The Evaluators pooled the responses from participants in the different CEEP channels in the discussion below.

7.9.3.1 Program Awareness

Word of mouth is the primary source of program awareness, as shown in Figure 7-2. More than half of respondents (53.3%) reported learning about the program through friends, family, colleagues, or neighbors, highlighting the influence of personal networks in driving participation.

Other sources of awareness included contractors (20.0%), who likely introduced the program while discussing energy efficiency upgrades or related services. The program website was cited by 13.3% of respondents, suggesting that online searches or direct engagement with program materials played a role in reaching potential participants. Additionally, 6.7% of respondents became aware of the program through an OG&E representative. Another 6.7% had prior experience with an OG&E residential program, demonstrating the potential for cross-program participation and customer retention.

Notably, 13.3% of respondents were unsure how they initially became aware of the program, which could indicate passive exposure through multiple channels or a lack of recollection regarding the initial touchpoint.

These findings suggest that while word-of-mouth referrals remain the dominant driver of program awareness, contractor engagement and digital outreach also contribute meaningfully to participation.

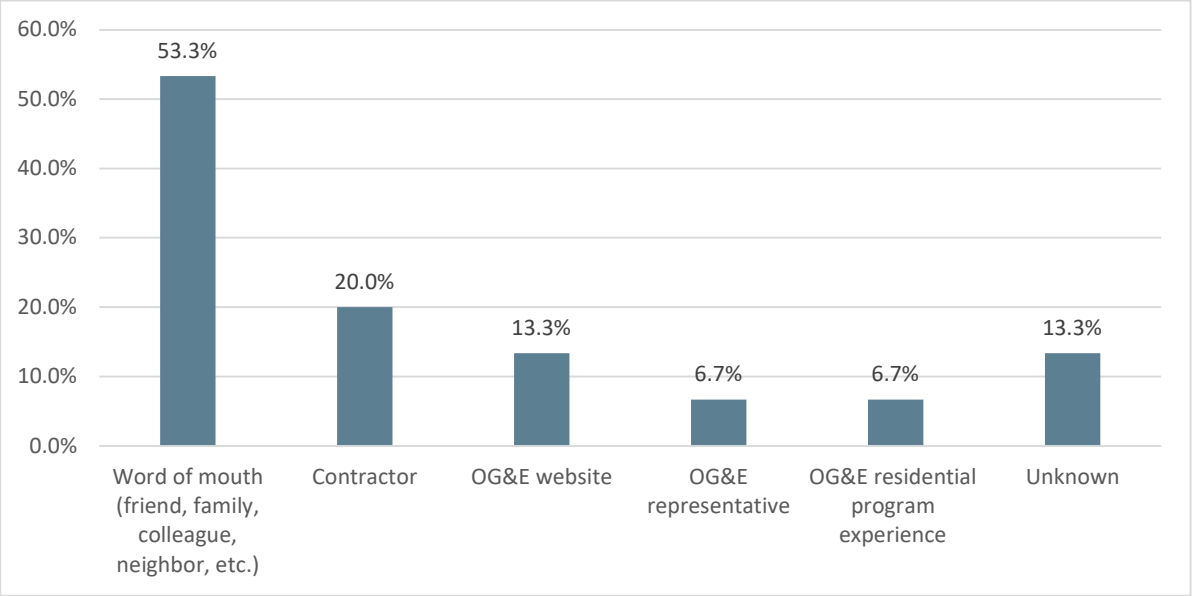


Figure 7-2: How Respondent Learned of Program (n = 15)

Awareness of other incentives is evenly split among respondents (Figure 7-3). Just over half (53.3%) of respondents indicated they were aware that OG&E offers incentives for additional energy-efficient commercial and industrial equipment and services, while 46.7% were unaware of these offerings.

This near-even split suggests an opportunity to enhance communication about the full range of incentives available. Increasing outreach efforts — particularly through program materials, contractor engagement, and direct utility communications — could help ensure that more participants are informed about additional energy-saving opportunities. Expanding awareness may also encourage greater program participation and maximize energy efficiency improvements across commercial and industrial sectors.

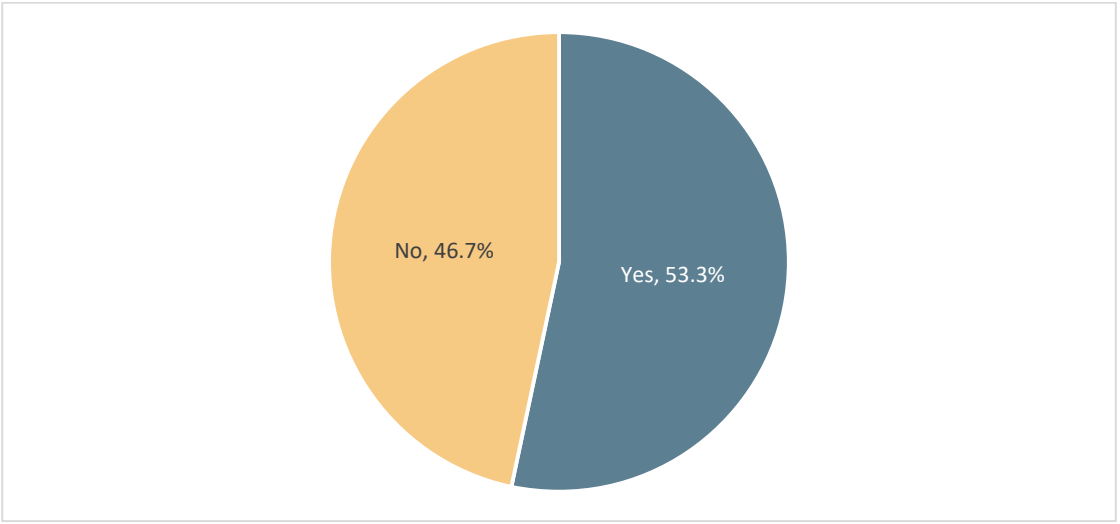


Figure 7-3: Awareness of Additional OG&E Energy Efficiency Commercial Programs Overall (n = 15)

Lighting and HVAC systems are the best-known incentives (Figure 7-4). Among respondents aware of additional incentives, 33.3% identified lighting and HVAC systems and chillers. Other incentives included lighting controls (20.0%), refrigeration equipment (13.3%), and motors, variable frequency drivers, air compressors, kitchen equipment, and windows (each 6.7%).

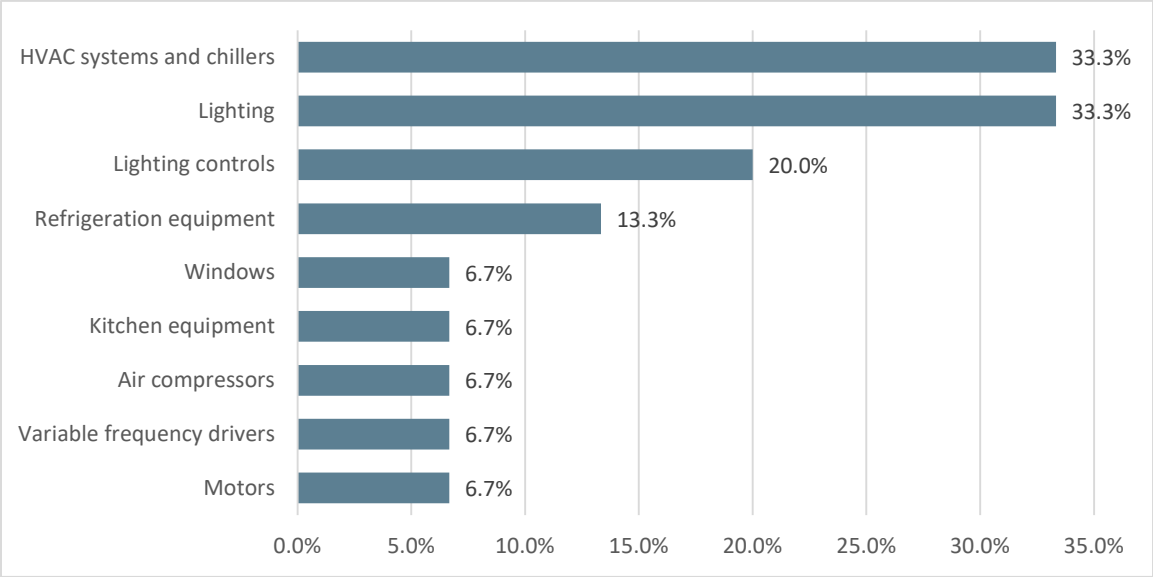


Figure 7-4: Awareness of Additional Specific OG&E Programs (n = 15)

7.9.3.2 Motivation for Participation

Saving money is the primary motivation for participation (Figure 7-5). The vast majority of respondents (86.7%) cited reducing energy costs as their main reason for enrolling in the program, underscoring the importance of financial savings as a key driver of engagement.

Beyond cost savings, 40.0% of respondents participated to improve the comfort of their business, suggesting that energy efficiency upgrades are also valued for their impact on workplace conditions. A smaller portion (13.3%) reported participating to conserve energy or protect the environment, indicating that while sustainability is a factor for some, it is not the primary motivator for most participants.

Other reasons for participation included wanting to achieve a level of energy efficiency comparable to nearby businesses (6.7%) and acting on a direct recommendation from OG&E (6.7%).

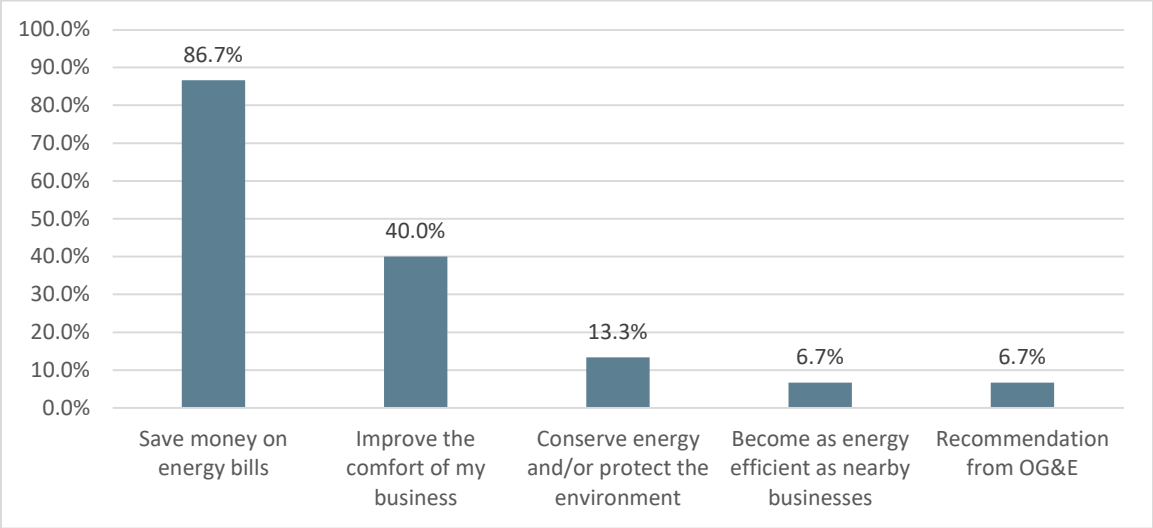


Figure 7-5: Primary Motivations for Participation (n = 15)

Contractors are key messengers for program participation and equipment adoption (Figure 7-6). Over half of respondents (53.3%) reported that their decision was driven by recommendations from contractors, highlighting the critical role these professionals play in guiding energy efficiency investments.

Other influential sources included utility marketing materials (20.0%), suggesting that OG&E's outreach efforts contribute to decision-making for a portion of participants. Additionally, recommendations from personal contacts, such as colleagues or peers, influenced another 20.0% of respondents, pointing to the role of word-of-mouth in spreading program awareness. Facility assessments also played a role, with 20.0% of respondents indicating that evaluations of their building's energy performance influenced their decision.

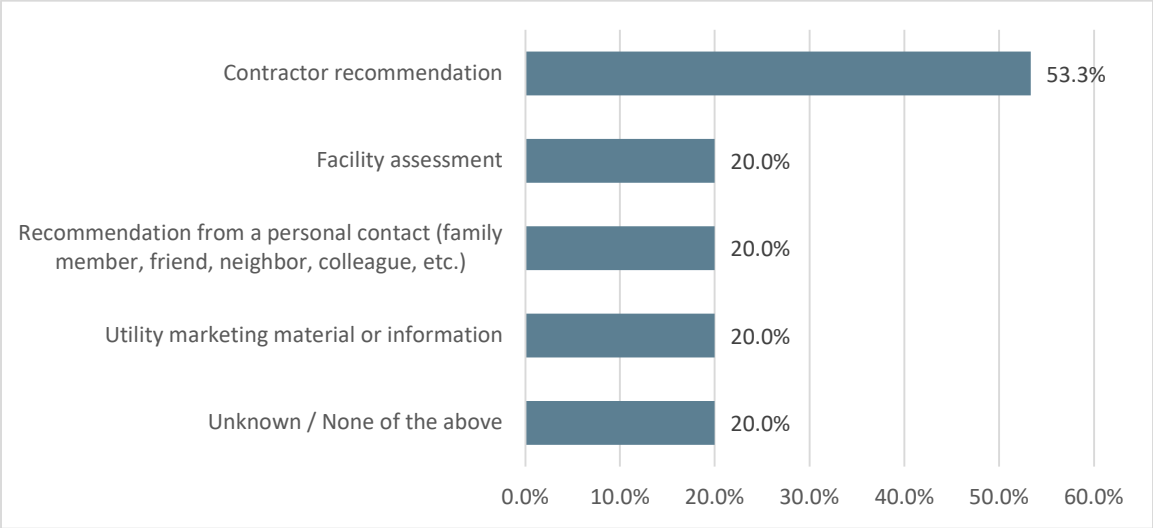


Figure 7-6: Influential Factors in Decision to Install (n = 15)

When making equipment upgrades, organizations prioritize a range of factors, with energy efficiency the most frequently cited consideration (Figure 7-7). Nearly all respondents (93.3%) cited the energy efficiency of equipment as a key factor in their decision-making.

Customer and employee comfort was also a significant concern, with 80.0% of respondents indicating it influenced their decisions.

The upfront cost of equipment was a factor for 66.7% of respondents, highlighting cost considerations as a key barrier or driver in upgrade decisions. Similarly, the payback period — how quickly the investment in new equipment is recouped through savings — was important to 53.3% of respondents, indicating that return on investment remains a key concern.

Aesthetics played a role for 53.3% of respondents, suggesting that while it is not the primary driver, the visual appeal of equipment can still influence decision-making in certain contexts.

These findings suggest that while financial considerations (upfront costs and payback periods) are important, organizations place the highest priority on energy efficiency and comfort. Program outreach efforts may benefit from emphasizing not only the cost savings but also the broader benefits of efficiency upgrades, such as improved workplace conditions and long-term operational savings.

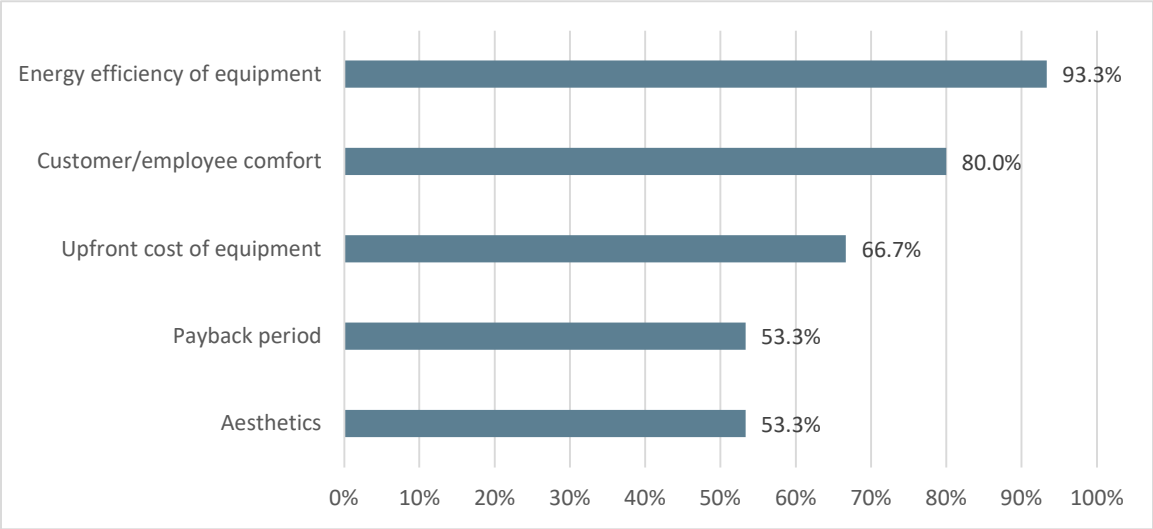


Figure 7-7: Importance of Different Factors When Deciding to Upgrade Equipment (n = 15)

Organizations face several barriers when considering energy efficiency equipment upgrades, with high upfront cost emerging as the most significant challenge (Figure 7-8). Sixty percent of respondents identified the cost of equipment as a primary obstacle, underscoring the importance of financial considerations in upgrade decisions.

Beyond cost, 26.7% of respondents cited a lack of awareness about available incentives, indicating that better communication about financial assistance and rebate programs could

help alleviate cost concerns and encourage participation – a finding that is consistent with findings presented earlier regarding participants' unawareness of other incentives.

Other challenges included a lack of technical knowledge (13.3%), which may limit decision-making confidence or the ability to assess upgrade benefits. Additionally, 6.7% of respondents pointed to the time required to complete upgrades, suggesting that process complexity or installation disruptions may be deterrents.

Some organizations also reported challenges related to maintaining a cool office environment (6.7%) and lack of corporate support for energy efficiency initiatives (6.7%), which may reflect competing business priorities or hesitation toward investing in energy-efficient solutions. A lack of dedicated staff for managing energy efficiency projects was also mentioned by 6.7% of respondents, highlighting potential resource constraints.

Interestingly, 13.3% of respondents indicated that they faced no challenges, suggesting that for some organizations, the decision to pursue energy-efficient upgrades is relatively straightforward.

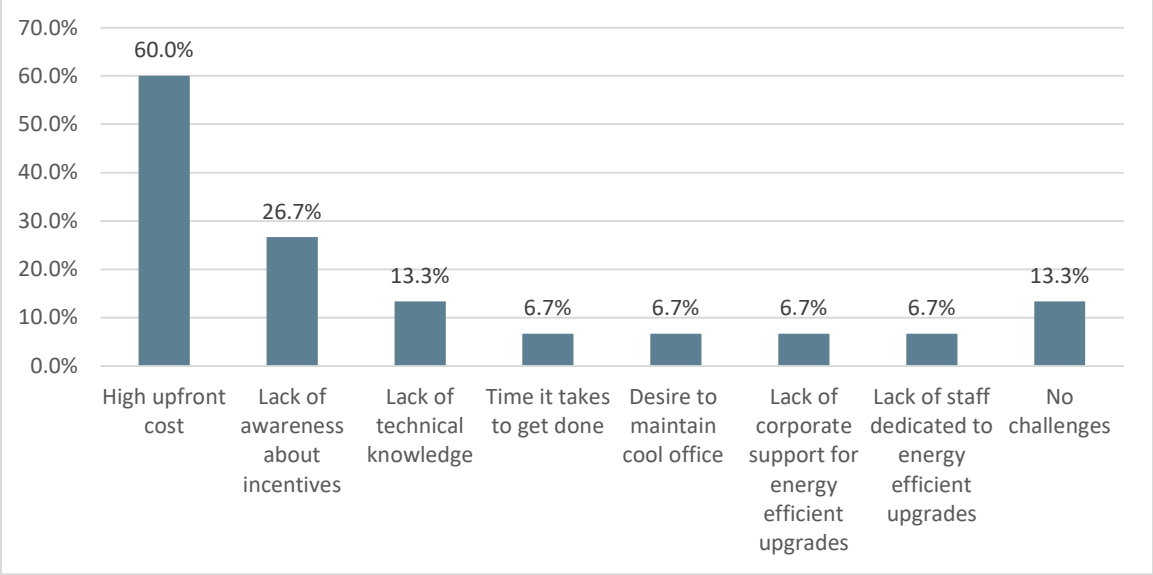


Figure 7-8: Challenges Influencing Energy Efficiency Upgrades (n = 15)

Higher incentives are the most requested support to improve the program (Figure 7-9). Nearly half of respondents (46.7%) suggested increasing incentives to help overcome challenges. Other suggestions included more technical or engineering support (13.3%), while 40.0% of respondents indicated no additional support was needed.

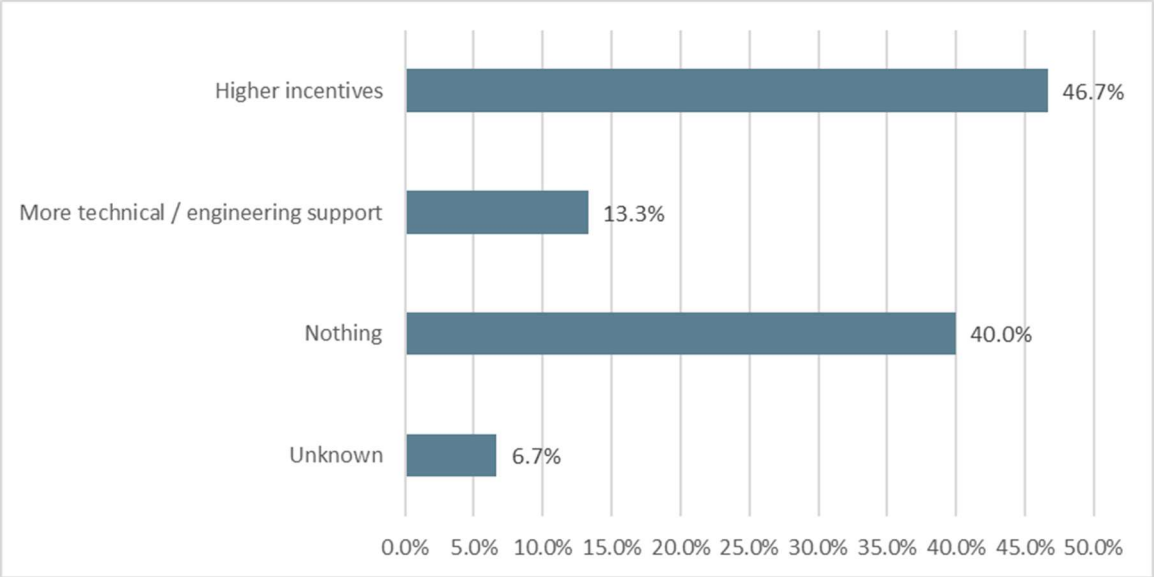


Figure 7-9: How OG&E Can Help Overcome These Challenges (n = 15)

7.9.3.3 Energy Assessment and Application Process

Nearly half of respondents received a facility assessment (Table 7-15). Among those who received an assessment, saving energy to save money was the most common reason for scheduling an assessment (45.5%).

Assessment information was highly valued. All respondents who received an assessment rated the information as either very useful (66.7%) or extremely useful (33.3%). However, if the assessment had not recommended the energy efficiency measure, most (66.7%) indicated they would not have installed it.

Table 7-15: Experience with Energy Assessment

Question	Response	%	n
Did you receive any technical services or a facility assessment through the program?			
	Yes	40.0%	6
	No	53.3%	8
	I do not know	6.7%	1
What are the main reasons you wanted to have an assessment? (n = 11)			
	Save energy to save money	45.5%	5
	Requirement to receive incentive	18.2%	2
	Make my business more comfortable	18.2%	2
	Recommended by personal contact	9.1%	1
	Wanted to understand building's systems better	9.1%	1
How useful was the information provided by the assessment? (n = 6)			
	Very useful	66.7%	4
	Extremely useful	33.3%	2

The approved OG&E contractor list is the primary resource for selecting a contractor (Figure 7-10). This suggests that OG&E efforts to maintain a group of trade allies provides a useful resource for customers.

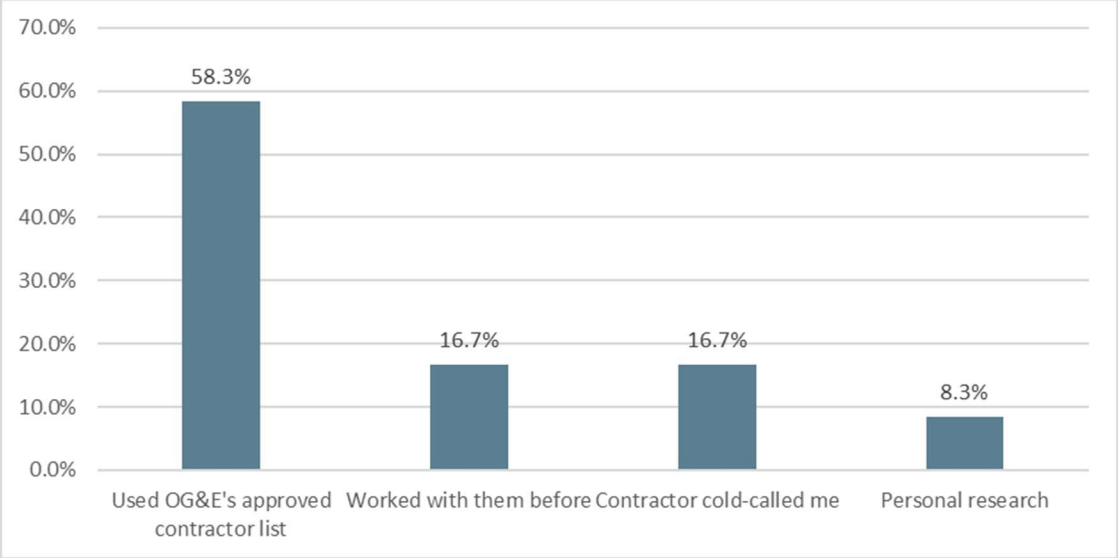


Figure 7-10: How Contractor was Selected by Respondents (n = 12)

Satisfaction with contractors is high (Figure 7-11). Eighty-three percent (83.3%) of respondents indicated that their contractors were courteous and professional, that contractors scheduled work in a reasonable amount of time, and that the time taken to complete the work was reasonable. One respondent reported issues with the time it took to schedule and complete the work.

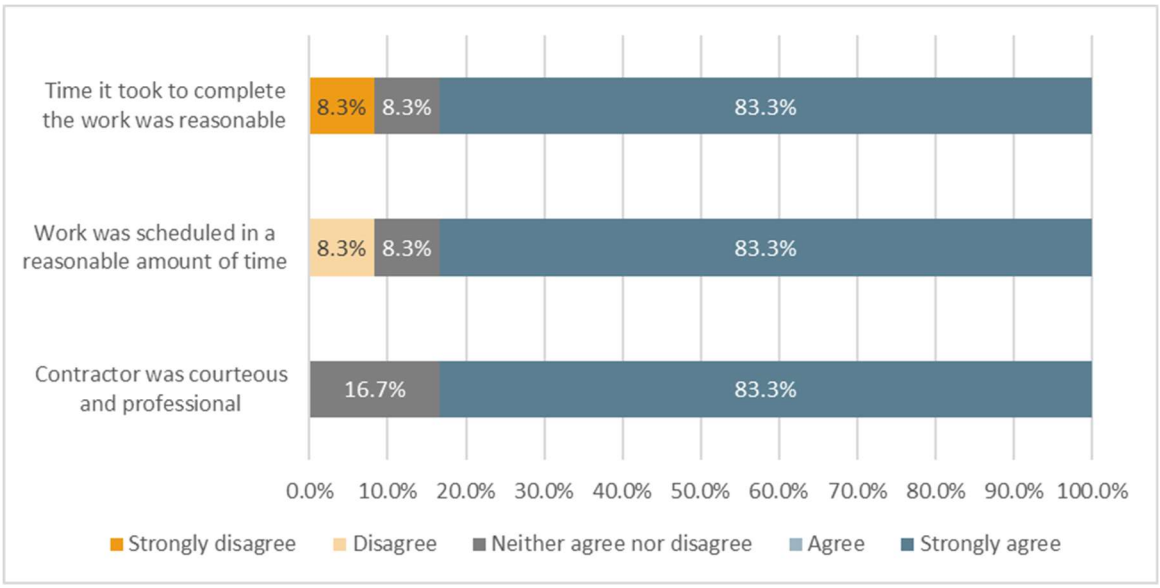


Figure 7-11: Satisfaction with Contractor (n = 12)

Few organizations reported having formal energy-related policies or objectives (Figure 7-12**).** The program's technical services can play a key role in supporting customers by providing guidance on setting clear energy savings targets, implementing purchasing policies that prioritize efficiency, and establishing carbon reduction goal. Notably, 60.0% of respondents selected "None of the above," indicating that the majority of organizations surveyed do not have designated personnel, policies, or goals related to energy management.

A small share of respondents, 6.7%, indicated that their company has defined energy savings goals, a specific policy requiring energy efficiency considerations when purchasing equipment, or carbon reduction goals. These low adoption rates suggest that energy management is often handled informally rather than through institutionalized commitments.

These findings suggest an opportunity for increased engagement in structured energy management practices. Encouraging organizations to set clear energy savings targets, implement purchasing policies that prioritize efficiency, and establish carbon reduction goals could help drive broader participation in sustainability efforts. Additionally, providing guidance on best practices and the benefits of structured energy management may help organizations transition from informal oversight to more strategic energy planning.

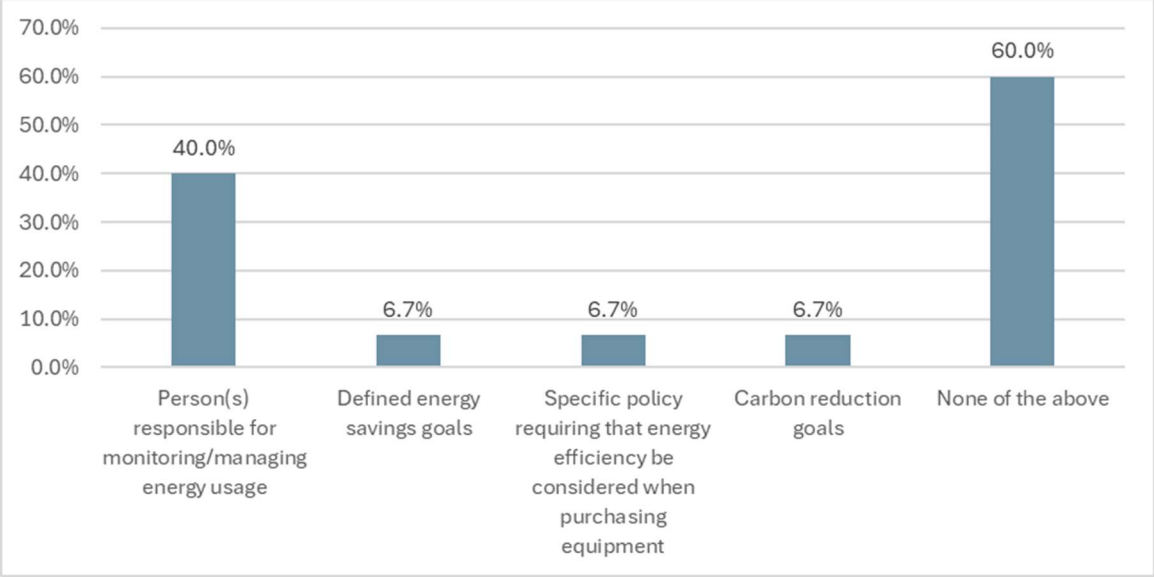


Figure 7-12: Energy Efficiency Policies/Roles at Respondents' Companies (n = 15)

7.9.3.4 Program Satisfaction

Respondents are highly satisfied with the program (Table 7-13**)**. Most respondents (86.7%) rated their overall satisfaction with the program as very satisfied, with an additional 6.7% somewhat satisfied. Specific aspects of the program received similarly high ratings. However, one respondent was dissatisfied with the program because the contractor took about six weeks to respond to their questions.

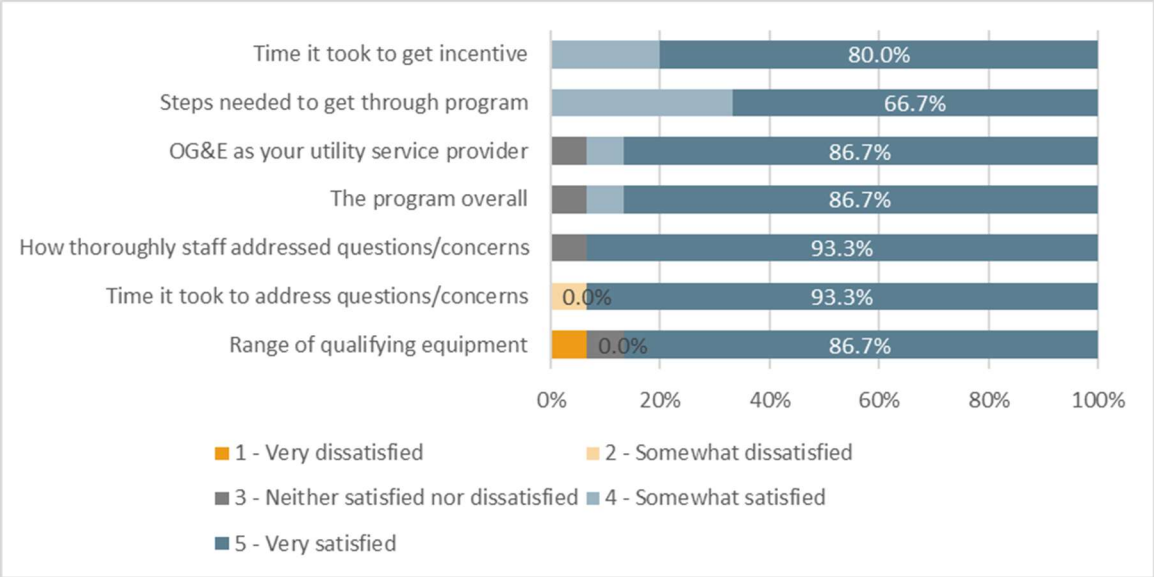


Figure 7-13: Overall Satisfaction Metric (n = 15)

7.9.3.5 Firmographics

Respondents represented a diverse range of roles, building types, and facility ownership, with most owning their facilities and directly billed by OG&E (Table 7-16).

Table 7-16: Business Firmographics (n = 15)

Firmographic Characteristic	%	n
Facility Description		
Company's only location	33.3%	5
One of several locations owned by your company	46.7%	7
The headquarter location of a company with several locations	20.0%	3
Facility Ownership Status		
Own and occupy	86.7%	13
Own and rent	6.7%	1
Rent	6.7%	1
Respondent Job / Role		
Energy management	6.7%	1
Facilities management / maintenance position	40.0%	6
Financial / administrative position	13.3%	2
Proprietor / Owner	40.0%	6
Building Type		
Industrial/manufacturing	20.0%	3
Small office	13.3%	2
Large office	6.7%	1
Gathering space	13.3%	2
Retail	46.7%	7
Billing Structure		
Billed directly by OG&E	86.7%	13
Bill handled by another part of the company or a third-party service	13.3%	2

7.10 CEEP Net-to-Gross Estimation (NTG)

This section presents preliminary net savings information for the OG&E CEEP's Large C&I, SAGE, and SBDI. Several criteria are used for determining the likelihood that a customer is a free rider. These criteria include prior plans for energy efficiency purchases, financial ability, incentive and program impact on project timing, and previous experience with energy efficiency programs and equipment. More detailed NTG methodological information can be found in Section 3.6. Scores were assigned based on measure-specific survey responses and ex-ante kWh savings associated with each project as of November 2024.

A program-level NTG score of 1.00 was assigned for the OG&E CEEP. None of the projects assessed were free riders.

Table 7-17: NTG Score by Program/Measure

Response	NTG	n
Large C&I	1.00	2
SAGE	1.00	1
HVAC Tune-Up	1.00	-
SBDI	1.00	10
CEI	1.00	-
CEEP, overall	1.00	13

ADM estimated an overall NTG score of 1.0 for the Large C&I, SAGE and SBDI Channels. All SAGE and SBDI survey respondents indicated that the CEEP had influenced their decision-making process.

The Evaluator referenced PY2023 findings for HVAC Tune-Up, CEI, and RCx-projects. Surveying was not performed in 2024 for these program components.

No spillover savings were attributable to the CEEP. None of the CEEP survey respondents noted installing additional unincentivized energy-efficient equipment.

7.11 Deviations from the AR TRM V9.2

The following are deviations from the AR TRM V9.2.

- The AR TRM V9.2 lists the EUL for HID as 16 years and this is longer than EUL of common LED fixtures (15 years) which would result in no avoided replacement cost. The Evaluators reviewed the calculation used to derive the EUL in AR TRM 9.0 and recalculated the EUL because AR TRM V9.2 used the ballast lifetime to calculate EUL. The Evaluators used the lamp life of 15,000 hours for exterior HIDs and 18,000 hours for high/low bay HIDs, divide them by weighted average of 3,205 AOH (the same AOH used to calculate EUL from AR TRM V9.2). The resulting EUL for exterior HID was 4 years and high/low bay HID was 6 years.

- Protocols for midstream lighting measures are not available in AR TRM and conventional lighting retrofit protocols cannot be used because the incentive was provided at the point of sale without a site inspection to verify preexisting fixtures. Baselines were estimated based on a market saturation study completed by the DOE. The Evaluators reviewed the proposed approach from the implementation contractor which has been approved by IEM.

7.11.1 Protocol A Tracking Data Review

Table 7-18: OG&E CEEP 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	✓	
	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	✓	
	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	✓	
	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 Evaluators.
	Media schedules	N/A	
	Summary of number of community events/outreach activities	✓	
	Other media activities – estimated impressions via mailings, television/radio; print ads.	✓	

7.11.2 Progress on PY2023 Evaluation Recommendations

OG&E responded to the Evaluators' PY2023 recommendations. The status of these recommendations is summarized in Table 7-19.

Table 7-19: Status of Recommendations from PY2023 Evaluation

2023 Recommendations	Status
Explore on-bill financing as an option for projects. This design feature would enable more businesses to participate by eliminating out-of-pocket costs and deferring upfront costs. Budgetary or financial limitations were a primary barrier to participation. Allowing on-bill financing could allow more customers to make improvements and overcome these concerns.	Under consideration

7.12 Conclusions

Facility assessments are a valuable tool for driving energy efficiency improvements.	Nearly half of respondents received an assessment, and all found the information useful. However, most respondents indicated they would not have pursued energy efficiency upgrades without a recommendation from the assessment, reinforcing its role in motivating action.
Participant satisfaction with the program is high.	The vast majority of respondents expressed strong satisfaction with the program and their contractors. While most participants found contractor interactions professional and timely, isolated issues related to response time suggest that maintaining consistency in contractor service levels is important for continued satisfaction.

Program awareness is primarily driven by word-of-mouth referrals.	Over half of respondents learned about the program through personal networks. While contractor engagement and online resources also contribute to awareness, opportunities exist to expand outreach efforts through digital marketing and direct utility communications.
Contractors play a pivotal role in program participation and energy efficiency adoption.	More than half of respondents reported that their decision to participate was influenced by contractor recommendations, underscoring the importance of contractor engagement in driving program success.
Awareness of other available incentives is limited.	Nearly half of respondents were unaware of additional OG&E energy efficiency offerings. Improved communication about these incentives, particularly through contractor engagement and targeted outreach, could increase participation and maximize energy efficiency benefits.

7.13 Recommendations

Focus on promotion of incentive awareness with participants.	Participant awareness of other incentives was somewhat limited. The program should focus on informing these participants of other incentive opportunities for the business to increase awareness of additional efficiency opportunities. Specific tactics include: ▪ Flagging participants for post project follow up to discuss other energy saving opportunities. ▪ Identifying other energy saving opportunities during post project quality control visits. ▪ Develop a follow-up email or direct mail campaign for past participants, highlighting relevant additional incentives based on their completed project type. ▪ Introduce contractor performance incentives or recognition for those who successfully refer participants to additional incentive programs. ▪ Develop marketing materials that bundle incentives into logical upgrade paths (e.g., “Lighting + HVAC: Maximize Energy Savings with These Two Incentives”).

Appendix A. Portfolio Cost-Effectiveness

Overview

The Evaluators estimated the cost-effectiveness for the overall energy efficiency and demand response portfolio of programs, based on PY2024 costs and savings estimates provided by OG&E and their third-party implementers, AM Conservation and CLEAResult. This appendix-provides the cost-effectiveness results, as well as a brief overview of the approach taken by the Evaluators. The portfolio and energy efficiency programs pass all the cost-effectiveness tests except the RIM test. The table below presents the cost-effectiveness results for the PY2024 portfolio.

Table A-1: PY2024 Cost-effectiveness Results

Program	TRC	UCT	RIM	PCT	TRC Net Benefits
HEEP	1.42	1.27	0.37	7.67	$ 435,697
CWA	1.28	1.16	0.42	4.19	$ 1,001,210
CEEP	2.00	2.11	0.46	7.87	$ 5,027,424
EEA	0.00	0.00	0.00	0.00	$ -
Total	**1.67**	**1.65**	**0.44**	**6.20**	**$ 6,464,331**

Approach

The California Standard Practice Model was used as a guideline for the calculations, along with guidance from the AR TRM V9.2. 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)[42], 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 (CSPM).

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.

[42] The UCT is also referred to as the Program Administrator Cost Test (PACT).

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 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 is 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.[43]

Table A-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?

[43] http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf

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.[44]

Table A-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 version 8.0	▪ 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

[44] Ibid.

Non-Energy Benefits

In Arkansas, the IEM, in collaboration with OG&E and the other investor-owned utilities (IOUs) 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 (NEBs) are an addition to programs under the authorization of Arkansas TRM V9.2. 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 Technical Reference Forum, as follows.[45]

> *"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, Protocol L was added to the Arkansas TRM in version 6.0, 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; and
- 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 in PY2024.

- **HEEP**: this program captured propane (LivingWise® Schools Outreach), natural gas (Residential Solutions, Consumer Products and LivingWise® Schools Outreach), water (Residential Solutions and LivingWise® Schools Outreach) and ARCs (Residential Solutions and Consumer Products).
- **CWA**: this program captured natural gas, water and ARCs.

[45] Arkansas TRM version 8.2, Protocol L

- **CEEP**: this program captured natural gas (Large C&I, SAGE, Midstream and Small Business Solutions) and ARCs (Large C&I, SAGE, Midstream and Small Business Solutions).

Methodologies and measure-level results for each NEB are found in each of the program chapters within this report.

Economic Inputs for Cost Effectiveness Analysis

The Evaluators used the economic inputs provided by OG&E for the cost benefit analysis; this included avoided costs that were estimated using the Real Economic Carrying Charge (RECC) approach.

OG&E provided marginal line losses that the Evaluators utilized in the PY2024 evaluation.

The rates utilized for avoided water and avoided propane use were from Protocol L in the Arkansas TRM V9.2.

The Evaluators used the discount rates provided by OG&E to perform the cost benefit analysis, and these values align with the rates used in the PY2020-2022 Plan (duly extended for the PY2023 bridge year). The Weighted Average Cost of Capital (WACC) was utilized for the TRC, UCT and RIM tests.

Table A-4 outlines the economic inputs used in the cost benefit analysis.

Table A-4: PY2024 Economic Inputs for Cost Effectiveness Analysis

Discount Rates	
Utility (TRC)	7.17%
Utility (UCT)	7.17%
Utility (RIM)	7.17%
Societal (SCT)	3.04%
Participant (PCT)	6.00%
Marginal Line Losses	
Line Losses (demand)	8.37%
Line Losses (energy)	8.37%
Line Losses (therm)	2.69%
Escalation rate	2.00%
Avoided Costs	
Avoided Energy ($/kWh)	$ 0.03
Avoided Demand ($/kW)	$ 107
Avoided Natural Gas ($/therm)	$ 0.474
Avoided Water ($/gallon)	$ 0.0097
Avoided Propane ($/gallon)	$ 2.28

Results

The tables below outline the results for each test, for both the programs and the portfolio as a whole. Summations may differ due to rounding.

Table A-5: PY2024 Cost-Effectiveness Results by Program

Program	TRC	UCT	RIM	PCT
HEEP	1.42	1.27	0.37	7.67
CWA	1.28	1.16	0.42	4.19
CEEP	2.00	2.11	0.46	7.87
EEA	0.00	0.00	0.00	0.00
Total	**1.67**	**1.65**	**0.44**	**6.20**

Table A-6: PY2024 Cost-Effectiveness Benefits by Program

Program	TRC Benefits	UCT Benefits	RIM Benefits	PCT Benefits
HEEP	$ 1,464,205	$ 1,239,964	$ 1,239,964	$ 3,054,438
CWA	$ 4,564,209	$ 4,173,834	$ 4,173,834	$ 9,919,626
CEEP	$ 10,031,526	$ 9,849,649	$ 9,849,649	$ 19,503,011
EEA	$ -	$ -	$ -	$ -
Total	**$ 16,059,940**	**$ 15,263,447**	**$ 15,263,447**	**$ 32,477,075**

Table A-7: PY2024 Cost-Effectiveness Costs by Program

Program	TRC Costs	UCT Costs	RIM Costs	PCT Costs
HEEP	$ 1,028,508	$ 974,241	$ 3,339,486	$ 398,345
CWA	$ 3,562,999	$ 3,604,169	$ 9,849,391	$ 2,364,773
CEEP	$ 5,004,102	$ 4,662,633	$ 21,447,694	$ 2,479,229
EEA	$ -	$ -	$ -	$ -
Total	**$ 9,595,609**	**$ 9,241,043**	**$ 34,636,571**	**$ 5,242,347**

Table A-8: PY2024 Cost-Effectiveness Net Benefits by Program

Program	TRC Net Benefits	UCT Net Benefits	RIM Net Benefits	PCT Net Benefits
HEEP	$ 435,697	$ 265,722	$ (2,099,522)	$ 2,655,093
CWA	$ 1,001,210	$ 569,665	$ (5,675,557)	$ 7,554,853
CEEP	$ 5,027,424	$ 5,187,016	$ (11,598,045)	$ 17,023,782
EEA	$ -	$ -	$ -	$ -
Total	**$ 6,464,331**	**$ 6,022,403**	**$ (19,373,124**	**$ 27,234,728**

Appendix B. CEEP Custom Project Site Reports

ADM Site Report: EA-0003281328

Executive Summary

This facility is a newly constructed manufacturing plant with fourteen (14) large industrial fans used for ventilation of manufacturing and process spaces. The motors powering these fans have been installed with VFDs to more efficiently match process-based ventilation loads. The kWh realization rate for this project is 99% and the peak coincidence kW realization rate 96%.

Project Description

This project consisted of the following installations:

- 1x 2150 HP Fan Motor w/ VFD
- 4x 200 HP Fan Motor w/ VFD
- 3x 150 HP Fan Motor w/ VFD
- 1x 125 HP Fan Motor w/ VFD
- 1x 100 HP Fan Motor w/ VFD
- 2x 60 HP Fan Motor w/ VFD
- 2x 40 HP Fan Motor w/ VFD

Measurement and Verification Effort

ADM performed a desk review to verify the operation of the installed VFDs. The implementer provided trend data of motor percent speed at 5-minute intervals covering a period of at least five (5) days for each motor. This trend data was used in conjunction with motor nameplate horsepower, motor design load factor, and standard UMP fan curves to calculate the average kW demand of each motor with damper speed control and with VFD speed control. The trend data was also used to determine the percentage of time that each motor operated, which allowed for the calculation of annual energy usage. The annual usage of each motor with and without a VFD was then compared to determine total annual energy savings.

Figure 7-14 provides an example of the calculations and trend data that were used to determine energy savings for each motor.

EXHAUST AIR MOTOR				
Nameplate HP:	2150	kW Savings	356.12	
Motor efficiency	95.8%	kWh Savings	3,119,612	
Design LF	75.0%			
Power Factor	0.97			
Drive Losses	5.0%			
Full Load kW	1294.5			
AOH	8760			
Reporting Period Run Time (Days)	22.71			
Reporting Period Length (Days)	22.71			

datetime	Motor % Speed	% CFM	%kW Damper	kW Damper	%kW VFD	kW VFD	kW Savings	On/Off	Time On (sec)
1/6/25 15:45	90.05	90.05%	102.10%	1321.7	79.55%	1083.9	237.8	1	0
1/6/25 15:50	89.35	89.35%	101.77%	1317.4	78.04%	1063.4	254.0	1	300
1/6/25 15:55	88.24	88.24%	101.22%	1310.4	75.68%	1031.2	279.1	1	300
1/6/25 16:00	87.97	87.97%	101.09%	1308.6	75.11%	1023.5	285.1	1	300
1/6/25 16:05	87.56	87.56%	100.88%	1305.8	74.27%	1012.0	293.9	1	300
1/6/25 16:10	87.40	87.40%	100.79%	1304.7	73.93%	1007.4	297.4	1	300
1/6/25 16:15	86.92	86.92%	100.54%	1301.4	72.95%	994.0	307.5	1	300
1/6/25 16:20	86.95	86.95%	100.55%	1301.7	73.01%	994.9	306.8	1	300
1/6/25 16:25	86.92	86.92%	100.54%	1301.4	72.94%	993.9	307.5	1	300
1/6/25 16:30	86.76	86.76%	100.45%	1300.3	72.61%	989.4	310.9	1	300
1/6/25 16:35	86.86	86.86%	100.51%	1301.1	72.83%	992.4	308.6	1	300
1/6/25 16:40	86.75	86.75%	100.44%	1300.2	72.59%	989.1	311.1	1	300
1/6/25 16:45	86.85	86.85%	100.50%	1301.0	72.81%	992.1	308.9	1	300
1/6/25 16:50	88.63	88.63%	101.42%	1312.9	76.50%	1042.4	270.5	1	300
1/6/25 16:55	86.98	86.98%	100.57%	1301.8	73.06%	995.6	306.3	1	300
1/6/25 17:00	87.60	87.60%	100.90%	1306.1	74.35%	1013.1	293.0	1	300
1/6/25 17:05	88.02	88.02%	101.11%	1308.9	75.22%	1024.9	284.0	1	300
1/6/25 17:10	87.96	87.96%	101.08%	1308.5	75.10%	1023.4	285.2	1	300
1/6/25 17:15	88.08	88.08%	101.15%	1309.3	75.36%	1026.8	282.5	1	300
1/6/25 17:20	88.17	88.17%	101.19%	1309.9	75.54%	1029.4	280.6	1	300
1/6/25 17:25	88.18	88.18%	101.20%	1310.0	75.56%	1029.6	280.4	1	300
1/6/25 17:30	88.24	88.24%	101.22%	1310.3	75.68%	1031.2	279.2	1	300
1/6/25 17:35	88.26	88.26%	101.23%	1310.5	75.71%	1031.7	278.8	1	300
1/6/25 17:40	88.29	88.29%	101.25%	1310.7	75.80%	1032.8	277.9	1	300
1/6/25 17:45	88.35	88.35%	101.28%	1311.1	75.92%	1034.5	276.6	1	300
1/6/25 17:50	88.20	88.20%	101.21%	1310.1	75.61%	1030.2	279.9	1	300
1/6/25 17:55	88.26	88.26%	101.24%	1310.5	75.72%	1031.8	278.7	1	300
1/6/25 18:00	88.47	88.47%	101.34%	1311.8	76.16%	1037.8	274.1	1	300
1/6/25 18:05	88.43	88.43%	101.32%	1311.6	76.08%	1036.8	274.9	1	300
1/6/25 18:10	88.54	88.54%	101.38%	1312.3	76.32%	1040.0	272.4	1	300
1/6/25 18:15	88.53	88.53%	101.37%	1312.3	76.30%	1039.7	272.6	1	300
1/6/25 18:20	88.49	88.49%	101.35%	1312.0	76.20%	1038.3	273.6	1	300
1/6/25 18:25	88.70	88.70%	101.46%	1313.3	76.65%	1044.5	268.8	1	300
1/6/25 18:30	88.71	88.71%	101.46%	1313.4	76.67%	1044.7	268.7	1	300
1/6/25 18:35	88.74	88.74%	101.48%	1313.6	76.74%	1045.7	267.9	1	300
1/6/25 18:40	88.76	88.76%	101.49%	1313.7	76.78%	1046.2	267.5	1	300
1/6/25 18:45	88.72	88.72%	101.47%	1313.5	76.69%	1045.0	268.4	1	300
1/6/25 18:50	88.88	88.88%	101.54%	1314.5	77.02%	1049.6	264.9	1	300
1/6/25 18:55	88.90	88.90%	101.55%	1314.6	77.07%	1050.1	264.5	1	300

Figure 7-14 Motor Trend Data

Figure 7-15 shows an example of the UMP fan curves used to calculate kW demand for each motor with damper speed control and with VFD speed control.

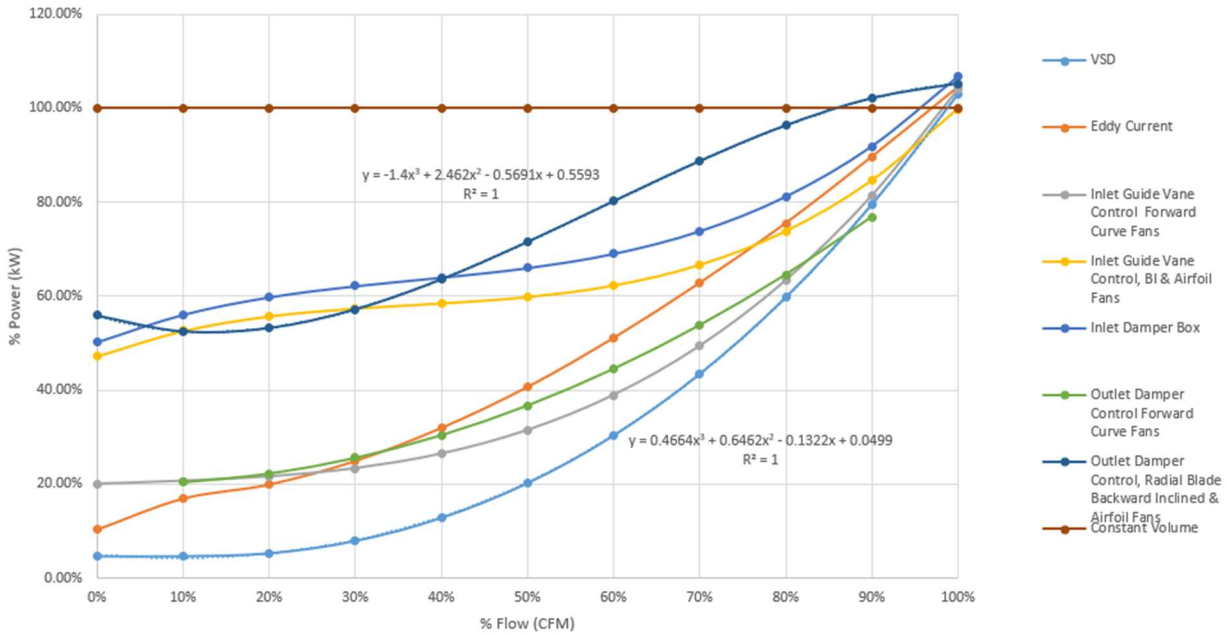


Figure 7-15 Fan Curves to Determine Demand (kW)

The following tables show the savings realized by each motor along with the variables used to perform the calculations.

Annual kW Savings

Measure	*Fan HP*	*Average Fan kW*		*AOH*	*Expected kWh Savings*	*Realized kWh Savings*	*Realization Rate*	*EUL*	*Lifetime Savings*
		No VFD	*VFD*						
Motor 1	2150	1,220	864	8760	3,257,439	3,119,612	96%	15	46,794,184
Motor 2	200	79	19	8760	498,762	525,973	105%		7,889,594
Motor 3	200	113	77	8667	316,271	306,356	97%		4,595,334
Motor 4	200	111	89	8760	215,581	192,478	89%		2,887,170
Motor 5	200	84	25	8760	492,065	516,805	105%		7,752,082
Motor 6	150	64	18	8760	378,273	396,791	105%		5,951,871
Motor 7	150	64	18	8760	378,265	396,698	105%		5,950,464
Motor 8	150	64	18	8760	378,258	396,782	105%		5,951,727
Motor 9	125	62	27	8760	294,371	303,696	103%		4,555,445
Motor 10	100	56	33	8760	203,089	203,720	100%		3,055,805
Motor 11	60	28	10	8760	152,433	158,768	104%		2,381,522
Motor 12	60	33	19	8760	122,217	122,752	100%		1,841,274
Motor 13	40	24	16	8760	74,122	72,843	98%		1,092,649
Motor 14	40	21	10	8760	95,207	97,857	103%		1,467,860
Total	**3,825**	**2,023**	**1,243**		**6,856,352**	**6,811,132**	**99%**		**102,166,983**

Peak kW Reductions

Measure	*Fan HP*	*Average Fan kW*		*Expected kW Savings*	*Realized kW Savings*	*Realization Rate*
		No VFD	*VFD*			
Motor 1	2150	1,220	864	386.7	356.1	92%
Motor 2	200	79	19	59.2	60.0	101%
Motor 3	200	113	77	38.0	35.3	93%
Motor 4	200	111	89	25.6	22.0	86%
Motor 5	200	84	25	58.4	59.0	101%
Motor 6	150	64	18	44.9	45.3	101%
Motor 7	150	64	18	44.9	45.3	101%
Motor 8	150	64	18	44.9	45.3	101%
Motor 9	125	62	27	34.9	34.7	99%
Motor 10	100	56	33	24.1	23.3	96%
Motor 11	60	28	10	18.1	18.1	100%
Motor 12	60	33	19	14.5	14.0	97%
Motor 13	40	24	16	8.8	8.3	95%
Motor 14	40	21	10	11.3	11.2	99%
Total	**3,825**	**2,023**	**1,243**	**814.33**	**777.90**	**96%**

Results

The calculated ex-post savings are shown in the summary table below.

Verified Gross Savings/Realization Rates

Metric	Expected	Measured	Realization Rate:
Coincident Peak kW:	814	778	96%
Annual kWh:	6,856,352	6,856,352	99%

The kWh realization rates for the project projects are 99% and the peak coincidence kW realization rate is 96%.

The ex-post calculator applied VFD drive losses, power factor, and unmodified AOH in its calculations of energy use. The ex-ante calculator contained these values but did not apply them in its calculations of energy use.

List of Discrepancies		
Variable	**Ex-Ante**	**Ex-Post**
AOH	AOH based on trend data was reduced by 336 hours	AOH based on trend data was not reduced
Power Factor (applied)	1.00	0.97
Drive Losses (applied)	0%	5%

Appendix C. Net-to-Gross Survey Outcomes

Consistent Weatherization Approach Survey

The PY2024 CWA survey addressed the entirety of the weatherization project in the NTG battery, rather than attempting to single out individual measures in the analysis.

Were you planning to complete the same [Field-ALL_MEASURES] project in 2024 before learning about the program?	Response (n = 56)
Yes	11%
No	89%
I don't know	0%
Would your budget for the planned project have accommodated the project's full cost if you had not completed the project through the program?	**Response (n = 6)**
Yes	67%
No	33%
I don't know	0%
If the equipment was not available from the program, would you have completed the same project or would you have done something different?	**Response (n = 56)**
Same project	16%
Something different	16%
Would not have done anything at all	32%
I don't know	36%
Would it have been the same level of energy efficiency, higher energy efficiency, or lower energy efficiency?	**Response (n = 9)**
Higher efficiency	22%
Lower efficiency	44%
I don't know	33%
Would you have completed the same project or one that made your home even more energy efficient within one year if the program was not available?	**Response (n = 56)**
Yes	27%
No	36%
I don't know	37%

CEEP Survey

Were you planning to buy the same lighting equipment before learning about the program?	Large C&I (n =2)	SBS (n =10)	SAGE (n =1)
Yes	0%	20%	100%
No	100%	80%	0%
Would your budget for the lighting equipment have accommodated the full cost of the lighting equipment if you had not received a rebate?	**Large C&I (n =2)**	**SBS (n =10)**	**SAGE (n =1)**
Yes	0%	20%	0%
No	100%	80%	100%
If the rebate was not available from the program, would you have bought the same lighting equipment or would you have done something different?	**Large C&I (n =2)**	**SBS (n =10)**	**SAGE (n =1)**
Same	0%	20%	100%
Something different	50%	10%	0%
Would not have done anything	50%	70%	0%
Would it have been the same level of energy efficiency, higher energy efficiency, or lower energy efficiency?	**Large C&I (n =2)**	**SBS (n =10)**	**SAGE (n =1)**
Same efficiency	100%	50%	100%
Higher efficiency	0%	10%	0%
Lower efficiency	0%	40%	0%
Not sure	0%	0%	0%
If the rebate program was not available, when would you have likely replaced your lighting equipment?	**Large C&I (n =2)**	**SBS (n =10)**	**SAGE (n =1)**
At the same time	0%	0%	0%
Later, but withing a year	0%	0%	100%
One to two years out	0%	20%	0%
More than two years out or never	100%	80%	0%

Appendix D. Cost-Effectiveness Inputs

OG&E Avoided Energy & Demand Values

Year	Avoided Energy Cost by Time Period ($/kWh)					Avoided Capacity Cost ($/kW)
	Summer On-Peak	Summer Off-Peak	Winter On-Peak	Winter Off-Peak	Shoulder	
2024	$0.052	$0.036	$0.034	$0.023	$0.027	$107
2025	$0.053	$0.037	$0.035	$0.023	$0.028	$109
2026	$0.054	$0.037	$0.036	$0.024	$0.028	$112
2027	$0.055	$0.038	$0.036	$0.024	$0.029	$114
2028	$0.056	$0.039	$0.037	$0.025	$0.030	$116
2029	$0.057	$0.040	$0.038	$0.025	$0.030	$118
2030	$0.058	$0.040	$0.039	$0.026	$0.031	$121
2031	$0.060	$0.041	$0.039	$0.026	$0.031	$123
2032	$0.061	$0.042	$0.040	$0.027	$0.032	$126
2033	$0.062	$0.043	$0.041	$0.027	$0.033	$128
2034	$0.063	$0.044	$0.042	$0.028	$0.033	$131
2035	$0.065	$0.045	$0.043	$0.028	$0.034	$133
2036	$0.066	$0.046	$0.043	$0.029	$0.035	$136
2037	$0.067	$0.046	$0.044	$0.029	$0.035	$139
2038	$0.069	$0.047	$0.045	$0.030	$0.036	$142
2039	$0.070	$0.048	$0.046	$0.031	$0.037	$144
2040	$0.071	$0.049	$0.047	$0.031	$0.038	$147
2041	$0.073	$0.050	$0.048	$0.032	$0.038	$150
2042	$0.074	$0.051	$0.049	$0.032	$0.039	$153
2043	$0.076	$0.052	$0.050	$0.033	$0.040	$156

OG&E Discount Rates

Test	Discount Rate
TRC	7.17%
UCT	7.17%
RIM	7.17%
PCT	6.00%

Line & Distribution Losses

Test	Value
Gas Distribution Losses	2.69%
Line Losses – Energy	8.37%
Line Losses – Demand	8.37%

OG&E NEB Values

Year	$/Therm	$/Gallon LP	$/Gallon Water
2024	$0.474	$2.278	$0.0097
2025	$0.483	$2.324	$0.0099
2026	$0.493	$2.370	$0.0101
2027	$0.503	$2.418	$0.0103
2028	$0.513	$2.466	$0.0105
2029	$0.523	$2.515	$0.0107
2030	$0.534	$2.566	$0.0109
2031	$0.544	$2.617	$0.0112
2032	$0.555	$2.669	$0.0114
2033	$0.566	$2.723	$0.0116
2034	$0.578	$2.777	$0.0118
2035	$0.589	$2.833	$0.0121
2036	$0.601	$2.889	$0.0123
2037	$0.613	$2.947	$0.0126
2038	$0.625	$3.006	$0.0128
2039	$0.638	$3.066	$0.0131
2040	$0.650	$3.128	$0.0133
2041	$0.663	$3.190	$0.0136
2042	$0.677	$3.254	$0.0139
2043	$0.690	$3.319	$0.0141

OG&E cost-effectiveness testing was performed with a cost of carbon of $0 for the Low, Medium, and High scenarios.

Commercial offerings (continued)

Commercial Midstream Instant Incentive

OG&E provides commercial customers with instant rebates on select LED lighting at participating lighting distributors.

Schools and Government Efficiency Program

From walk-through audits to benchmarking and energy master planning workshops, we provide educational and government facilities with everything you need to better inform you about your energy usage.

Continuous Energy Improvement (CEI) Program

Under the CEI Program, OG&E offers incentives for qualified commercial, industrial and school customers who partner with OG&E's consultants to help them identify and implement low-cost or no-out-of-pocket-cost energy-saving changes.

The energy-saving possibilities are endless.

With rates among the lowest in the country, OG&E will never stop finding ways to help Arkansas save energy and money.

Get started.

To learn more about all the ways OG&E can help you save energy, visit **OGE.com** or call **844-413-3065** today.

OG&E®

We Energize Life

ARKANSAS

ENERGY EFFICIENCY PROGRAMS

With a wide variety of programs, services and incentives designed to help you save energy, OG&E is your go-to source for all things efficiency.

OG&E®

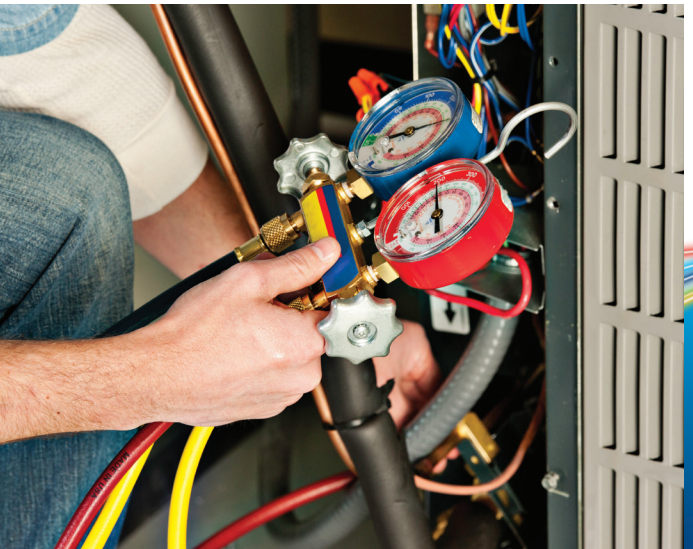
We Energize Life

Residential offerings

Residential Solutions Program
This program identifies energy-saving improvements in your home by providing a free online Home Energy Profile and walk-through In-Home Energy Assessment. The online profile takes only a few minutes and your assessment includes no-out-of-pocket-cost installations of energy-saving items.

Rebates
To offset the costs of energy efficiency improvements, OG&E offers rebates toward a number of energy efficiency improvements, including duct and air sealing, attic and wall insulation, ENERGY STAR® certified windows and pool pumps.

Multi-Family Efficiency Program
Own or live in a residential apartment or multi-family unit? OG&E offers many of the same rebates for multi-family customers, such as property assessments, air sealing, duct sealing, A/C tune-ups and more.



Consumer Products
This program offers instant in-store discounts at select retailers on ENERGY STAR certified LED lighting, advanced power strips, room A/C window units, room air purifiers, water dispensers and bathroom vent fans.

HVAC Replacement and Tune-Up
OG&E offers incentives and rebates toward qualified HVAC replacements to offset project costs and lower your energy bill as well as A/C tune-ups for no out-of-pocket cost for qualifying units.

Weatherization
This program provides energy efficiency upgrades at no additional cost to customers who own or rent a single-family home or duplex. These upgrades will help lower energy costs and increase comfort and safety in your home.

Student Energy Education LivingWise
Got a sixth grader at home? OG&E teams up with local schools to provide them with educational kits, at no additional cost, that can teach students how to save energy at home and in the classroom.

OG&E®

We Energize Life

Commercial offerings

Large Commercial & Industrial Solutions
When completed on a large scale, a few energy-saving upgrades can have an enormous impact on a business's bottom line. This program helps business owners identify the most cost-effective energy efficiency opportunities and provides incentives based on how much is saved.

Small Business Solutions
For smaller commercial facilities, qualifying energy efficient project costs could be covered up to 90 percent through the program when doing a lighting upgrade. It all starts with a free walk-through evaluation.

Ofertas comerciales (continuación)

Incentivo comercial instantáneo

OG&E ofrece a sus clientes comerciales reembolsos instantáneos en iluminación LED selecta, con los distribuidores de iluminación participantes.

Programa de eficiencia para escuelas y el gobierno

Desde inspecciones de auditoría hasta evaluaciones comparativas y talleres de planificación principal de energía, OG&E proporciona a las instituciones educativas y gubernamentales todo lo que necesitan para tener un mejor conocimiento sobre su uso de energía.

Programa de mejora energética continua (Continuous Energy Improvement)

Bajo el Programa CEI, OG&E ofrece incentivos para clientes comerciales, industriales y escolares que califiquen y se asocien con especialistas de OG&E, quienes les ayudarán a identificar e implementar Cambios de ahorro de energía de bajo costo para usted.

Las posibilidades de ahorro energético son infinitas.

Con tarifas que se encuentran entre las más bajas del país, OG&E nunca dejará de buscar formas de ayudar a Arkansas a ahorrar energía y dinero.

Comience ya.

Para conocer más sobre todas las formas en las que OG&E puede ayudarle a ahorrar energía, visite **oge.com** o llame al **844-413-3065** hoy mismo.

OG&E®

We Energize Life

ARKANSAS

PROGRAMAS DE EFICIENCIA ENERGÉTICA

Con una amplia variedad de programas, servicios e incentivos creados para ayudarle a ahorrar energía, OG&E es su mejor opción para todo lo relacionado con eficiencia energética.

OG&E®

We Energize Life

Ofertas residenciales

Programa de soluciones residenciales

Este programa identifica las mejoras para el ahorro energético en su hogar ofreciendo gratis un Reporte de Energía en el Hogar (Home Energy Profile) en línea y una visita para realizar una Evaluación Energía en el Hogar (In-Home Energy Assessment). El reporte en línea sólo tomará unos minutos y la evaluación incluye la instalación de productos de alto rendimiento sin costo de bolsillo.

Reembolsos

Para compensar los costos de las mejoras de eficiencia energética, OG&E ofrece reembolsos para una serie de mejoras de eficiencia energética, que incluyen sellado de conductos y aire, aislamiento de áticos y paredes, ventanas con certificación ENERGY STAR® y bombas de piscinas.

Programa de eficiencia multifamiliar

¿Es usted dueño o vive en un departamento residencial o en una unidad multifamiliar? OG&E ofrece la mayoría de los mismos reembolsos para clientes multifamiliares, como por ejemplo,

- Evaluaciones de la propiedad
- Sellado de ductos
- Sellado de fugas de aire
- Ajuste de aire acondicionado y mucho más.

Productos de consumo

Este programa ofrece descuentos instantáneos en tiendas seleccionadas para los productos de iluminación LED con certificación ENERGY STAR, extensiones de multi-contacto, unidades de aire acondicionado de ventana, purificadores de aire para habitaciones, dispensadores de agua y ventiladores para baños.

Reemplazo y ajuste de HVAC

OG&E ofrece incentivos y reembolsos para los reemplazos de unidades de calefacción y aire acondicionado (HVAC) que califiquen, con el fin de compensar por los costos del proyecto y reducir su factura de energía, así como ajustes de aire acondicionado sin costo de bolsillo para las unidades que califiquen.

Climatización

Este programa ofrece mejoras de eficiencia energética sin costo adicional para los clientes que sean dueños o alquilen una vivienda unifamiliar o dúplex. Estas mejoras ayudarán a reducir los costos de energía y a aumentar la comodidad y seguridad en su hogar.

Educación de energía para Estudiantes LivingWise

¿En su hogar vive algún estudiante de sexto grado? OG&E colabora con las escuelas locales para proporcionarles kits educativos, sin costo adicional, los cuales podrán enseñarles a ahorrar energía en su hogar y en el salón de clases.

Ofertas comerciales

Soluciones para empresas grandes e industriales

Cuando se realizan a gran escala, unas cuantas mejoras de ahorro energético pueden tener un enorme impacto en la economía de un negocio. Este programa ayuda a los propietarios de negocios a identificar las oportunidades de eficiencia energética más eficaces y ofrece incentivos en función del ahorro.

Soluciones para pequeños negocios

En el caso de instalaciones comerciales más pequeñas, los costos de los proyectos de eficiencia energética que califiquen podrían cubrirse hasta en un 90% a través del programa al momento de realizar una mejora al sistema de iluminación. Todo comienza con una visita para una evaluación gratuita.

OG&E'S CONTINUOUS ENERGY IMPROVEMENT PROGRAM

DAILY **ENERGY-SAVING ACTIONS**

Our schools are participating in an innovative program aimed at reducing our energy costs by incorporating energy-saving best practices into our daily routines. Your actions will add up to significant savings!

Building

- ☐ Make sure all windows and doors to the outside are closed and locked.
- ☐ Close all blinds and window coverings.
- ☐ Close all interior doors separating spaces (gyms, auditoriums and entryways).
- ☐ Report any facility damage or repairs to the facilities team.

Water

- ☐ Check all drinking fountains, faucets, showers and toilets for leaks; report any leaks to the facilities team.

Miscellaneous

- ☐ If performing major floor projects such as shampooing or waxing, do so with energy efficiency in mind, keep exterior doors shut and light only those areas that are being cleaned. Coordinate these activities with the facility maintenance departments.

Lighting & Devices

- ☐ Turn on lights only where work is taking place.
- ☐ Turn off lighting in all unoccupied areas.
- ☐ Check computer labs and make sure all computers and monitors are switched off.
- ☐ Turn off all display case lighting and hallway lighting.
- ☐ Turn off all cleaning room or janitorial closet lights when not in use.
- ☐ When the building is not occupied, make sure all interior lights are turned off except exit and emergency lighting.

Security

- ☐ Lock all secure areas.

Miscellaneous Items

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OG&E'S CONTINUOUS ENERGY IMPROVEMENT PROGRAM

DAILY **ENERGY-SAVING ACTIONS**

Our schools are participating in an innovative program aimed at reducing our energy costs by incorporating energy-saving best practices into our daily routines. Your actions will add up to significant savings!

Lighting

- ☐ Turn off walk-in cooler lights when not in use.
- ☐ Turn off all storage room and office lights when unoccupied.
- ☐ Turn off service area lights and table lights once service is complete.

Equipment

- ☐ **Turn off open-air milk coolers when not in open-air use.** Timers might be available through the maintenance department to streamline this shutdown daily, on weekends and over breaks.
- ☐ Turn off steam tables, warmers and coolers immediately after service.
- ☐ Turn off ovens and cooking equipment once cooking is complete.
- ☐ Turn off screens and POS systems.
- ☐ Consolidate cooler/freezer space and unplug any coolers not in use.
- ☐ Shut off ice machines and drain during break times or if not in use for extended periods.

Exhaust Fans

- ☐ Use exhaust fans when cooking and shut off when cooking is completed in the area.
- ☐ Report any excess air being returned to the space through the exhaust fan system. (Air should be removed by the fan and not introduced back into the space.)

Water

- ☐ Ensure that faucets are turned off when not in use and that any leaks are reported immediately.
- ☐ Ensure that dish washing equipment is on only when washing is active.

Miscellaneous Items

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STRATEGIC ENERGY MANAGEMENT + CONTINUOUS ENERGY IMPROVEMENT

BUTTERBALL CARVES UP ITS ENERGY USE

OG&E Arkansas' Continuous Energy Improvement (CEI) and Black Hills Energy Arkansas' Strategic Energy Management (SEM) programs operate on the same principle: that meaningful, long-lasting savings are best achieved through simple, everyday changes.

By providing ongoing resources, guidance and incentives throughout the year, the programs aim to ingrain energy efficiency into the culture of each participating organization.

An appetite for efficiency

Butterball Ozark's participation began with an engineering walkthrough to identify energy-saving opportunities throughout the facility. Since then, their maintenance staff has worked closely with the CEI/SEM team to prioritize and implement a series of low- and no-cost improvements.

Energy-saving opportunities included:

- Steam leak checks and repairs
- Programmable thermostats and occupancy-based temperature setbacks
- Boiler control upgrades
- Steam pressure reductions
- Alarms and signage to help keep the walk-in cooler and freezer doors closed
- Lighting occupancy sensors
- Monthly lighting checks
- Manual conveyor shutdowns when equipment is idle or off

Savings are served

After two years of ongoing improvements, the Butterball Ozark facility has seen a steady reduction in gas and electricity use—saving the company an estimated $215,253 in total energy costs. With year-over-year savings trending upward and energy-saving behaviors now firmly embedded into the staff's daily routine, Butterball Ozark has made saving energy a habit.

SAVINGS AT A GLANCE

(2022-2023)

ELECTRICITY SAVINGS

$109,539
EST. ANNUAL COST SAVINGS

1,564,845 kWh
EST. ENERGY SAVINGS

GAS SAVINGS

$105,714
EST. ANNUAL COST SAVINGS

211,429 therms
EST. ENERGY SAVINGS

CONTACT US TO GET STARTED

taylor.shepherd@clearesult.com
479-319-9277

Black Hills Energy Ready | OG&E We Energize Life

BY THE NUMBERS

ELECTRICITY SAVINGS

2022–2023 YEAR-OVER-YEAR SAVINGS

133.33% Overall improvement

Reduction in energy use: **2.4%**
Estimated energy savings: **625,863 kWh**
Estimated annual cost savings: **$43,810.41**
Estimated annual incentive: **$12,517.26**

2022 SAVINGS

Reduction in energy use: **1.8%**
Estimated energy savings: **469,491 kWh**
Estimated annual cost savings: **$32,864.37**
Estimated annual incentive: **$9,389.82**

2023 SAVINGS

Reduction in energy use: **4.2%**
Estimated energy savings: **1,095,354 kWh**
Estimated annual cost savings: **$76,674.78**
Estimated annual incentive: **$21,907.08**

GAS SAVINGS

2022–2023 YEAR-OVER-YEAR SAVINGS

118.11% Overall improvement

Reduction in energy use: **8.98%**
Estimated energy savings: **78,453.41 therms**
Estimated annual cost savings: **$39,226.70**
Estimated annual incentive: **$15,690.68**

2022 SAVINGS

Reduction in energy use: **7.61%**
Estimated energy savings: **66,487.59 therms**
Estimated annual cost savings: **$33,243.80**
Estimated annual incentive: **$13,297.52**

2023 SAVINGS

Reduction in energy use: **16.59%**
Estimated energy savings: **144,941 therms**
Estimated annual cost savings: **$72,470.50**
Estimated annual incentive: **$28,988.20**

ARKANSAS ENERGY EFFICIENCY PROGRAMS

WAYS TO SAVE AT WORK

Large commercial & industrial solutions
Let us help identify the most cost-effective improvements and incentives for your business.

Small business solutions
Qualifying small businesses can save up to 90 percent on energy-efficient lighting upgrades.

Commercial midstream instant incentive
Save instantly on select commercial LED lighting equipment from participating distributors.

Schools and Government Efficiency (SAGE)
We provide educational and government facilities with tools and guidance to reduce energy usage.

Continuous Energy Improvement (CEI)
Partner with us to identify and implement low-cost and no-upfront-cost energy improvements in your facility.

Let's get to work.

Get started at **OGE.com/ARCEEP**
or call **844-413-3065** today.

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CONTINUOUS ENERGY **IMPROVEMENT**

LEARN TO SAVE LIKE AN EXPERT

OG&E Arkansas's Continuous Energy Improvement (CEI) Program provides tools, training and technical resources that can help you reduce your organization's energy costs by up to 25 percent.

Through workshop sessions and one-on-one coaching, we'll teach you to identify and implement simple, low-cost savings opportunities across your organization. We'll also help you take advantage of incredible financial incentives offered through our Commercial Energy Efficiency Program.

CEI is built on principles of continuous improvement and organizational change, integrating cost-saving and operational excellence initiatives such as Lean and Six Sigma. CEI will help you influence your culture and engage your organization toward wise energy use and reduced energy waste.

From training to mentoring support, our team of energy experts is ready to help you save—all at no additional cost to you.

Benefits

- Energy cost savings
- Identify low-cost, energy-saving opportunities and quick payback energy projects
- Statistical energy model(s) for tracking performance and forecasting
- Network with and learn best practices from other participants
- Technical and coaching resources
- Tools and educational materials
- Umbrella support to maximize savings through OG&E programs
- Incentive bonus for low-cost savings ($0.02 per annual kWh saved)

"The OG&E CEI Program has really benefited Johnson Controls by helping us achieve our corporate continuous improvement energy goals this year. Involvement in the CEI Program, especially in the group workshops, has helped us build a strong JCI Energy Team as well as enabled us to build teamwork by inclusion of others across our plant in saving energy. After a successful first year, we look forward to partnering again with OG&E and continuing to save energy through the CEI Program."

Matt Truitt
UPG EHS Manager
Building Efficiency Johnson Controls

"The CEI Program fit perfectly with the core values of OU Medicine in the area of stewardship. The program tied in seamlessly with our sustainability efforts on campus and reinforced the use of continuous improvement methods to develop a robust energy program for our hospitals."

Joshua Ashlock, MBA, CHFM, CHC
Director of Facilities Engineering
OU Medical Center

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FIRST YEAR—WORKSHOPS AND ACTIVITIES													
Type	**Activity**	**Timing** Initiative Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Workshops	Cohort Kickoff	■											
	Engaging Your Organization in Saving Energy				■								
	Measuring and Modeling Energy Performance						■						
	Technical Forum							■					
	Sustaining Energy Savings/Report Out												■
Individual Events	Site Review/Opportunity Assessment		■										
	Review and Prioritize Opportunities—CEI Plan			■									
	Mid-Year Executive Sponsor Update						■						
	Energy-Saving Engagement Event								■				
	Energy Management Assessment										■		
Other Activities	Monthly Check-in Calls				■	■	■	■	■	■	■	■	■
	Milestones			■	■			■	■				

READY TO GET STARTED?

Contact us today at:

Richard Gregg
501-221-4011
richard.gregg@clearesult.com

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OG&E ADVANCED A/C TUNE-UP PROGRAM

SAVING ENERGY
HAS NEVER BEEN COOLER.

Want to know something cool? A state-of-the-art OG&E Advanced A/C Tune-up can improve the energy efficiency of your A/C unit by **up to 30 percent**, resulting in longer-lasting, better-working equipment with improved comfort and humidity control. We'll even cover the cost, based on the tonnage of the unit. (Additional charges may apply.)

During your tune-up, a participating contractor will:

- Measure indoor airflow and recommend adjustments if needed
- Clean outdoor condenser coils
- Inspect indoor coil and blower and clean as needed
- Test your A/C to measure its cooling output

Save up to

$400

on an OG&E Advanced A/C Tune-up.

Don't wait to start saving.
Contact us at **commercial.ar@oge.com** to schedule your OG&E Advanced A/C Tune-up today. To learn more, visit **OGE.com/ARCEEP**.

CONTACT US FOR MORE INFORMATION:

844-413-3065
commercial.ar@oge.com

OG&E® We Energize Life

ARKANSAS

OG&E COMMERCIAL
ENERGY EFFICIENCY PROGRAM MEASURE SHEET

The OG&E Commercial Energy Efficiency Program offers financial incentives when energy efficiency measures are implemented at large commercial facilities like yours. We'll provide an energy assessment at **no out-of-pocket cost** to you to help you identify and financially qualify potential energy-saving projects that could even include solutions with little or no additional cost.

To make reducing your energy costs even easier, we also offer significant incentives for each energy efficiency upgrade installed.

Incentives are available for the following measures:

- HVAC – DX Retrofit
- HVAC – DX New Construction
- Chiller Retrofit
- Chiller New Construction
- LED Lighting Retrofit
- Lighting New Construction
- Vending Misers
- Door Heater Controls
- ECM Evaporator Fan
- Electronic Defrost Controls
- Solid Door Reach-Ins
- Strip Curtains
- Night Covers
- Cooler Door Gaskets
- Lighting Controls
- Lodging Occupancy Controls
- Compressed Air
- Combined Custom Measures
- Retrocommissioning
- Variable Frequency Drives

More ways to save

CONTACT US FOR MORE INFORMATION:

844-413-3065
commercial.ar@oge.com

OG&E We Energize Life

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OG&E ARKANSAS' CORE CONTINUOUS ENERGY IMPROVEMENT INITIATIVE

Take control of your energy costs

Did you know that energy is typically one of an organization's largest operating expenses? For many, limited time and expertise can prevent optimal management of their energy consumption. That's where we step in.

Core CEI provides energy efficiency strategies, consulting advice and technical expertise at **no additional cost** to you. Core CEI changes the way people use energy within your business, which can help increase savings and create a culture of energy awareness.

What Core CEI offers:

- Identification and qualification of energy-saving opportunities for low cost or no additional cost with fast or sometimes immediate payback periods
- On-site technical analysis and assessments
- Milestone-based incentives for completing the energy scan, attending two workshops and achieving ≥ 2.5 percent annual energy savings
- Facilitated and targeted training and education for staff and occupants

Benefits of Core CEI:

- Potentially lower energy use and reduced utility costs
- Access to tailored Core CEI tools, consultants and resources.
- Improved process efficiencies, reduced maintenance and increased comfort for occupants
- Increased awareness of your energy use
- Networking with other Core CEI participants and learning best practices for energy management

Here's how it works

Core CEI was created to provide you with organizational change by integrating cost-saving initiatives such as Lean and Six Sigma. Core CEI helps your organization save energy and reduce utility costs with the help of on-call energy consultants. Plus, participants can earn incentives by attending Core CEI workshops, completing behavioral energy-saving actions and engaging in efforts that promote more savings.

Milestone	Criteria	Incentive Amount	Total Incentive
Complete energy scan	Customer agrees to participate and has completed energy scan	$500	$4,250
Attend both workshops	Customer has attended both Core CEI workshops	$500	
Annualized energy savings meet or exceed 2.5% of annual energy usage	Customer has implemented Core CEI projects ≥ 2.5% of annual energy usage	$3,250	

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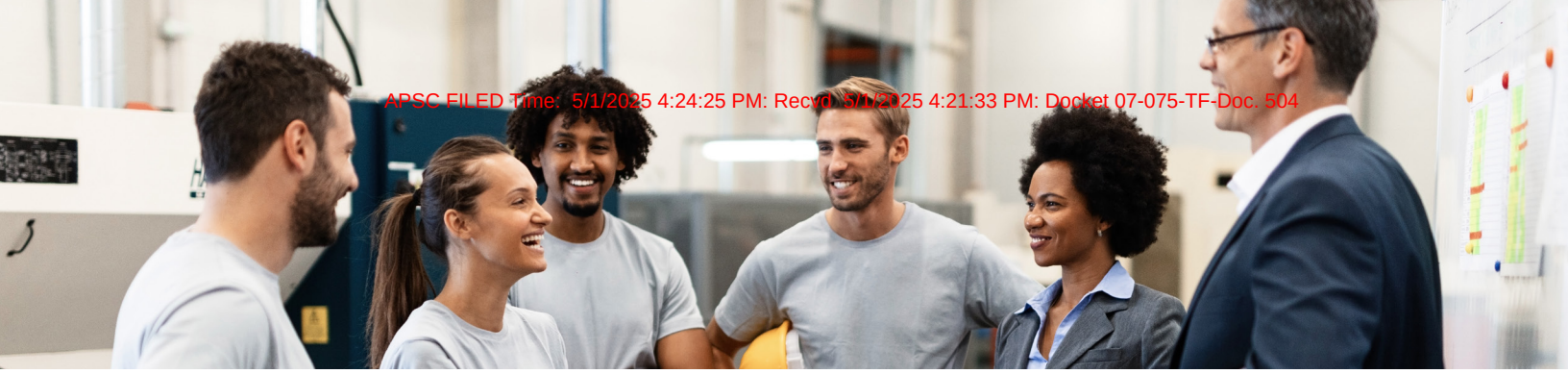

FIRST YEAR – WORKSHOPS AND ACTIVITIES

Core CEI activities	Program month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Kickoff workshop	■														
Energy scan/ opportunity register creation		■	■												
Q1 Check-in				■											
Workshop 2						■									
Q2 Check-in							■								
Q3 Check-in										■					
Q4 Check-in and project verification													■		
Incentives paid by OG&E															■

Questions?

Contact us today by scanning the QR code, calling **844-413-3065** or emailing **commercial.ar@oge.com**.

OG&E® We Energize Life

ARKANSAS

AVAILABLE **INCENTIVES**

Planning an energy efficiency project? Get with the program. Our Small Business Efficiency Program offers incentives that can cover up to 90 percent of the cost of a project.

Incentive rates:

- $0.20/kWh reduced for eligible LED lighting fixtures and tube lamp measures
- $0.20/kWh reduced for refrigeration door gaskets

ELIGIBLE **PROJECTS**

Incentives are available for a wide variety of energy efficiency projects, including:

- LED lighting upgrades* (tube lights, bulbs, fixtures)
- Occupancy sensor installations
- LED exit sign retrofits
- Refrigeration door gaskets
- Refrigeration anti-sweat heater controls
- And more!

*LED retrofits must be either DesignLights Consortium® approved or ENERGY STAR® certified to receive incentives.

Take control of your energy use—and your bottom line.

To get started, contact a program representative by email at

oge.ar.sbdi@clearesult.com

or call

844-413-3065

Products and services are provided solely by approved participating Service Providers. OG&E does not sell goods or services in its energy efficiency programs.

ARKANSAS

BIG SAVINGS FOR YOUR **SMALL BUSINESS**

SMALL **BUSINESS EFFICIENCY PROGRAM**

OG&E offers energy-efficient solutions for small business customers.

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PROGRAM **BENEFITS**

We'll provide everything you need to help your business achieve long-term energy savings, including:

- A no-out-of-pocket-cost, no-obligation lighting assessment to identify energy-saving opportunities
- Recommendations and estimates for energy savings, project costs and payback periods
- Installation of approved energy-saving equipment by a local, pre-qualified contractor
- Incentives paid directly to the contractor by the program to reduce your upfront cost

It's with programs like this one that OG&E is able to keep rates among the lowest in the country.

ELIGIBILITY

The program is open to any small commercial customers with a valid OG&E account meter and no more than 140 kW peak demand at any one facility.

Get started **today**

1. Visit **OGE.com/Business** to select a participating contractor.
2. Contact the contractor you selected and provide your customer account number to verify your eligibility.
3. The participating contractor will provide a no-out-of-pocket cost walk-through assessment of your facility.
4. Review your energy-saving proposal and sign the customer proposal to approve the recommended measures.
5. The participating contractor will install the approved measures within 60 days of receiving the signed agreement.

TYPICAL **PROJECT SCENARIO**

To give you an idea of the potential savings available through the program, below is an example of some commonly proposed retrofits. The projected savings and costs for these retrofits are on the right.

Existing interior lighting:

32 4 ft. 4-lamp fluorescent fixtures
16 60W incandescent bulbs
2 exit signs

Interior lighting retrofit:

32 4 ft. 36W LED fixtures
16 10W LEDs
2 LED exit signs

Incentives, actual savings and payback periods vary depending on the equipment installed, building characteristics, energy-use patterns, age of existing equipment, location and other parameters specific to the project.

EXAMPLE PROJECT BY THE NUMBERS

11,638 kWh
total energy savings

3.28 kW
total peak demand savings

$2,327.60
estimated incentives

$1,873.40
net cost to customer

$4,201.00
estimated project cost

1.7 years
project payback

$1,163.84
estimated annual savings

ARKANSAS

OG&E'S SCHOOLS & GOVERNMENT
EFFICIENCY PROGRAM FACT SHEET

Design
OG&E Arkansas provides incentives for energy-efficient upgrades to all educational and publicly funded facilities within our service territory. We'll help you secure the largest incentives available—which can often cover over 50 percent of the initial project costs. Free educational activities are also available to help administrative personnel identify and quantify energy efficiency opportunities.

Goals
Over the long term, we'll help your organization save money on utility bills, improve comfort and protect the environment through education, increased efficiency and responsible energy consumption.

Implementation
Program representatives will help determine what energy efficiency upgrades will work best for your facility. At your request, our building science team can perform a no-cost walkthrough of your facilities and recommend energy-saving improvements. Your facilities may also be compared to others in a benchmark study.

Recognition
Realizing energy and fiscal savings is worth celebrating. We'll help you publicize your success through a variety of media channels.

Eligibility
All publicly funded facilities located within the OG&E service territory are eligible to participate. Participation is on a first-come, first-served basis now through December 1 of the current program year, or while funds last.

More ways
to save

CONTACT US FOR MORE INFORMATION:

844-413-3065
commercial.ar@oge.com

OG&E® We Energize Life

2024 PARTICIPATING CONTRACTORS
SMALL BUSINESS

A-1 LED
Nelson Mears
501-425-1827
nelson@a1led.net

Burgess and Associates, LLC
Dane Burgess
479-650-0000
dburgess@clearnrgsolutions.com

Gasket Guy
Chris Bird
405-440-3288
chris.bird@gasketguy.com

Matlock Electric
Mark Hoskins
501-786-0563
mark@matlock-electric.com

Smart Switch
David Bryant
214-796-1140
smartswitchledsolutions@gmail.com

INSTANT REBATES FOR SMALL BUSINESS
LONG-TERM SAVINGS

LEDs	
LED Pin-Base CFL Direct Replacement Lamp	$5
LED LINEAR FIXTURES	
2x2 LED Linear Fixture	$20
2x2 LED Linear Fixture w/ Integrated Sensor	$25
2x4 LED Linear Fixture	$30
2x4 LED Linear Fixture w/ Integrated Sensor	$35
LED WALL PACK/FLOOD/POLE MOUNT	
LED Wall Pack/Flood 7 W–29 W	$20
LED Wall Pack/Flood 30 W–80 W	$50
LED Wall Pack/Flood +80 W	$80

LINEAR	
LED 8' Tube	$12
LED T8 Replacement	$3
LED T5 Replacement	$5
LED LOWBAY/HIGHBAY	
LED Lowbay/Highbay 30 W–60 W	$65
LED Lowbay/Highbay 61 W–100 W	$75
LED Lowbay/Highbay +100 W	$100
OTHER REBATES	
LED Downlight/Trim Kit	$8
Wall Sensor	$20
Ceiling Sensor	$30

DISTRIBUTOR
LOGO AREA

Sample Company Name
XXX.XXX.XXXX
samplecompanyname.com

Ask our sales staff for more details.

Contact us for more information:

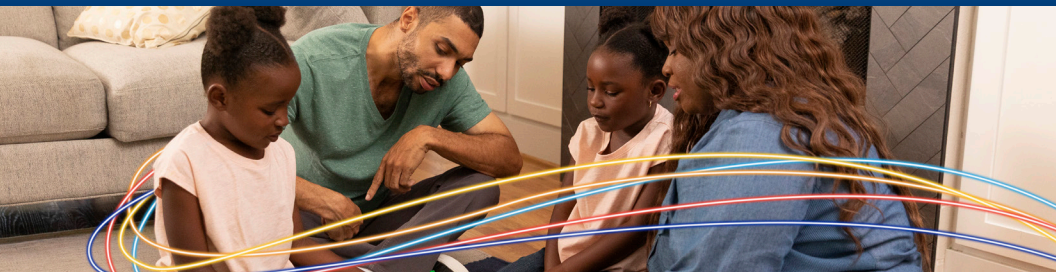
email: **ogemidstreamar@clearesult.com**
website: **OGE.com/CEEP**
phone: **844-413-3065**

Funds are limited and available on a first-come, first-served basis.

OGE® We Energize Life

ARKANSAS ENERGY EFFICIENCY PROGRAMS

WAYS TO SAVE AT HOME



Residential solutions
Uncover energy-saving opportunities with an In-Home Energy Assessment.

Rebates
Get money back on qualifying home upgrades like insulation, air sealing, windows and more.

Multi-family efficiency
Renters and multi-family property owners can receive energy-saving improvements at no added cost.

Consumer products
Save instantly on select ENERGY STAR® certified products at participating stores.

HVAC replacement and tune-up
Boost your home's HVAC efficiency with an Advanced A/C Tune-up or save on a replacement.

Weatherization
Qualified customers can receive attic insulation and other home upgrades for no out-of-pocket cost.

Student energy education LivingWise
We team up with local schools to teach students how to save energy at home and school.

Get started.

Explore more savings at **OGE.com/ARHEEP** or call **844-413-3065** today.

OGE® We Energize Life

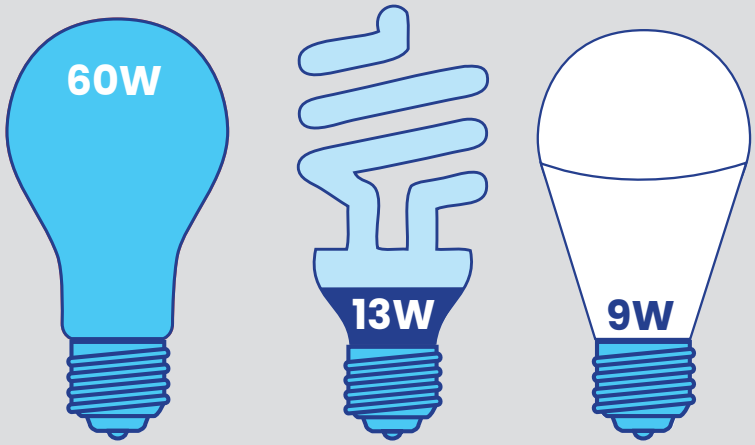
OGE.com

SHINE ON THE SAVINGS

You can have a lower energy bill and a more energy-efficient home. **It all starts with ENERGY STAR® certified LEDs.**

By replacing your traditional incandescent light bulbs with LED bulbs, you'll lower energy use and maintenance costs.

Here's an overview of how LEDs can make a difference in your home.



Watts = Energy used | Lumens = Brightness

The bright side

ENERGY STAR certified LEDs provide the same brightness (lumens) using less energy (watts). Select the light output that matches your old incandescent bulbs and enjoy the long-term savings.

How many lumens do you need?

LUMENS	450+	800+	1100+	1600+
LED	5W	9W	13W	17W
CFL	11W	13W	20W	23W
STANDARD	40W	60W	75W	100W

OG&E® We Energize Life

OGE.com

CHOOSING THE **RIGHT COLOR**

Light color is measured on the Kelvin (K) temperature scale, with a lower K number giving off a warmer, yellowish glow and a higher K providing cooler, bluer light.

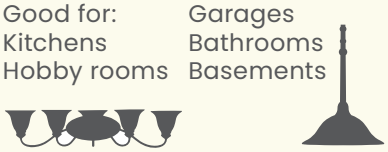
Warm white, soft white

Good for:
Living rooms
Family rooms
Bedrooms

WALL SCONCES AND LAMPS

Cool white, natural white

Good for:
Kitchens
Hobby rooms
Garages
Bathrooms
Basements

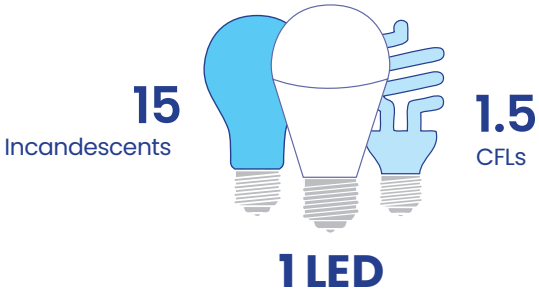


BATHROOM VANITIES AND PENDANT FIXTURES

Natural or daylight

Good for:
Reading areas
Detail-oriented activities

TRACK LIGHTING, RECESSED CANS AND OUTDOOR EXPOSED



A light that lasts

A single LED can last more than 25,000 hours, which is up to 15 times longer than an incandescent and 1.5 times longer than a CFL.

Visit **OGE.com/efficiency** to learn more about ways to lower your energy bill.

OGE® We Energize Life

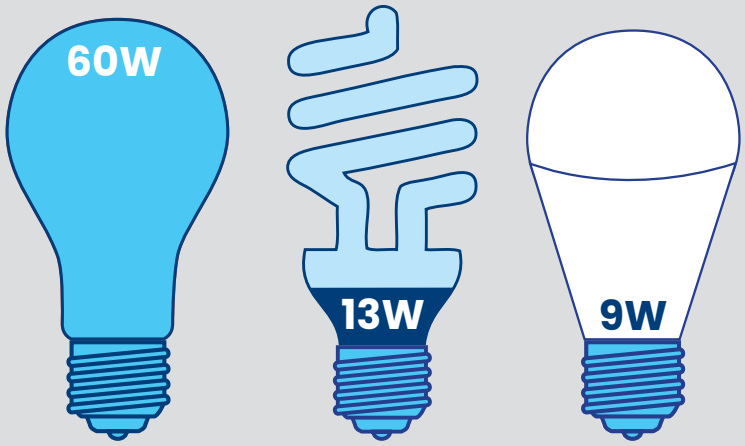
ARKANSAS

DISFRUTE LOS **AHORROS**

Usted puede tener una factura de electricidad más baja y un hogar energéticamente eficiente. **Todo comienza con los focos LED con certificación ENERGY STAR®.**

Si reemplaza los focos incandescentes de iluminación tradicional por focos LED, reducirá su consumo de energía y costos de mantenimiento.

A continuación le mostramos cómo los focos LED pueden marcar una gran diferencia en su hogar.



Vatios = Energía utilizada | Lúmenes = Brillo

El lado brillante

Los focos LED con certificación ENERGY STAR ofrecen el mismo brillo (lúmenes) utilizando menos energía (vatios). Seleccione la intensidad luminosa que corresponda a sus antiguos focos incandescentes y disfrute de los ahorros a largo plazo.

¿Cuántos lúmenes necesita?

LÚMENES	450+	800+	1100+	1600+
LED	5W	9W	13W	17W
CFL	11W	13W	20W	23W
ESTÁNDAR	40W	60W	75W	100W

OG&E® *Energía para la Vida*

OGE.com

CÓMO ELEGIR EL **COLOR ADECUADO**

El color de la luz se mide en la escala de temperatura Kelvin (K); si el número Kelvin es más bajo, producirá un brillo más cálido y con tono amarillento; y si el número Kelvin es más alto, producirá una luz más fría y con tono azulado.

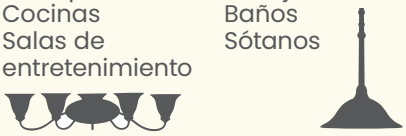
Cálida, blanca cálida

Ideal para:
Salas
Áreas de estar
Habitaciones

LÁMPARAS DE PARED Y DE MESA

Neutra, blanca fría

Ideal para:
Cocinas
Salas de entretenimiento
Garajes
Baños
Sótanos

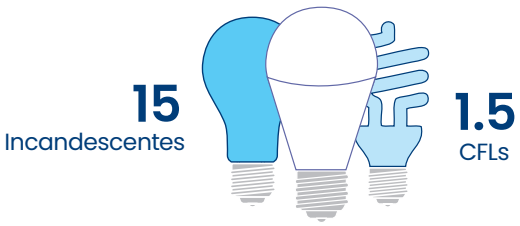


LÁMPARAS COLGANTES Y DE BAÑO

Natural o de día

Ideal para:
Áreas de lectura
Áreas para actividades específicas

LÁMPARAS DIRECCIONALES, LUCES EMPOTRADAS Y LUCES PARA EXTERIORES



Iluminación que dura más

Un solo foco LED puede durar más de 25,000 horas, es decir, hasta 15 veces más que un foco incandescente y 1.5 veces más que un foco CFL.

Visite **OGE.com/efficiency** para conocer más sobre las diferentes formas de reducir su factura de electricidad.

OGE® *Energía para la Vida*

ARKANSAS

POINT. SPRAY. **SAVE.**

ONE MORE WAY TO SAVE AT HOME, **BROUGHT TO YOU BY OG&E**

Anywhere drafts and pests can sneak in, energy can leak out. Use this complimentary spray foam to fill and seal the small, energy-wasting gaps in your home, including around windows, doors, attic hatches, dryer vents, plumbing and outlets.

Benefits of spray foam sealant:

- **Reduces energy costs**
- **Seals out drafts, moisture and pests**
- **Improves year-round comfort**
- **Long-lasting and easy to use**

Please review all directions and cautions before use.

OGE® We Energize Life

OGE.com/efficiency

ARKANSAS

APUNTAR. ROCIAR. **SALVAR.**

UNA FORMA MÁS DE AHORRAR EN CASA, **PRESENTADA POR OG&E**

En cualquier lugar donde puedan colarse corrientes de aire y plagas, la energía puede filtrarse. Use esta espuma en aerosol de cortesía para llenar y sellar los pequeños huecos que desperdician energía en su hogar, incluso alrededor de ventanas, puertas, escotillas del ático, rejillas de ventilación de secadora, plomería y tomacorrientes.

Ventanas

Puertas

Escotillas del ático

Rejillas de ventilación de secadora

Plomería

Tomacorrientes

Beneficios del sellador de espuma en aerosol:

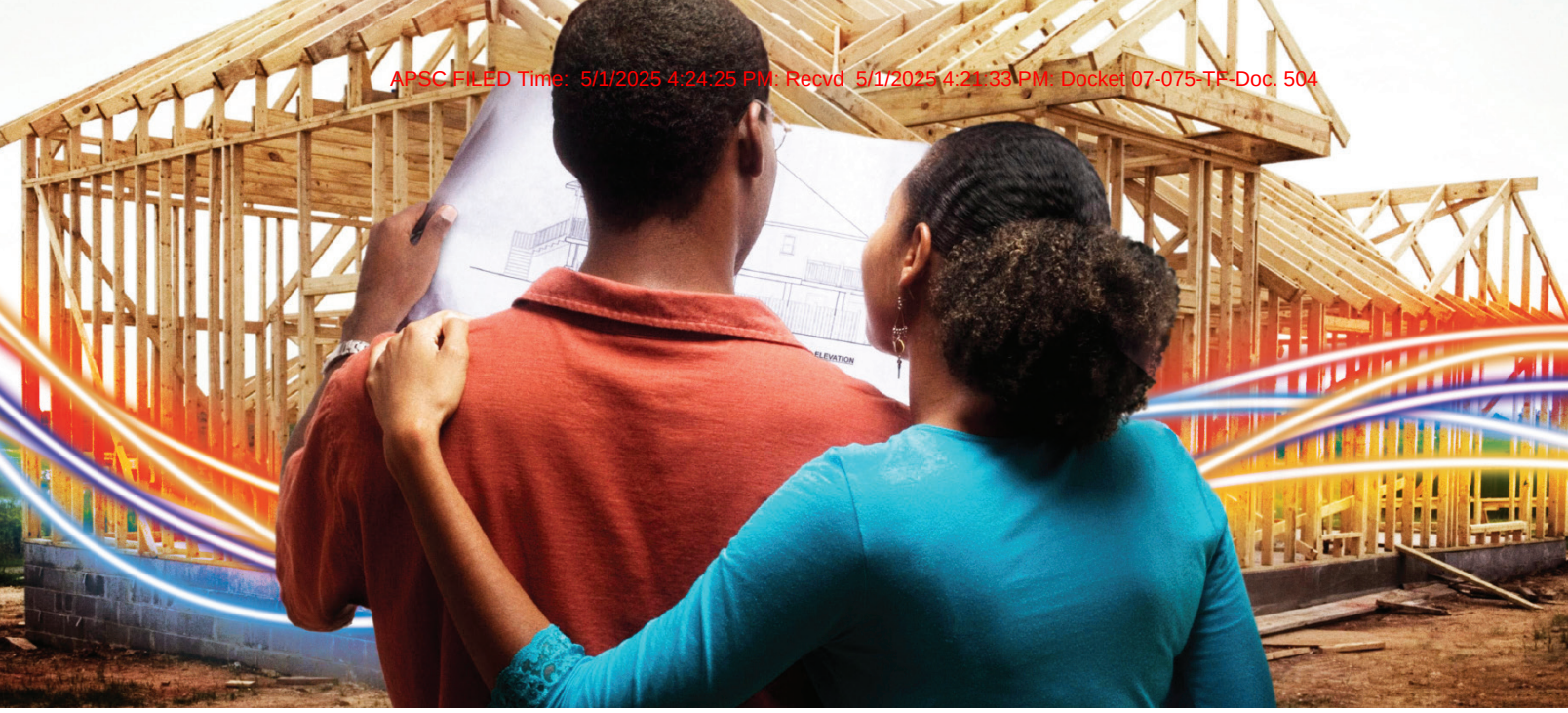
- **Reduce los costos de energía**
- **Sella las corrientes de aire, la humedad y las plagas**
- **Mejora la comodidad durante todo el año**
- **Duradero y fácil de usar**

Revise todas las instrucciones y precauciones antes de usar.

OGE® We Energize Life

OGE.com/efficiency

ARKANSAS



OG&E ***POSITIVE ENERGY® HOME***

Your perfect home shouldn't involve compromises. That's why every OG&E Positive Energy Home is built from the ground up to meet rigorous standards for energy efficiency, comfort and quality.

Participating contractors focus on four key areas to help you achieve the greatest savings and comfort:

- Improved insulation
- High-performance windows
- Airtight ducts and construction
- High-efficiency heating and cooling equipment

Open the door to a more positive future at OGE.com/PEhome.

Are you a builder interested in participating?
Contact us to learn more: **ogepositiveenergyhomes@clearesult.com**

OG&E® We Energize Life

TODAY'S HIGH: **YOUR SAVINGS**

Seize the summer with up to **$3,000** in energy-saving, comfort-enhancing home improvements—available now at no out-of-pocket cost to you.

OGE®

We Energize Life

OG&E
We Energize Life

PO Box 321
Oklahoma City, OK
73101-0321

MORE COMFORT.
ZERO OUT-OF-POCKET COSTS.

Energy savings are heating up this summer.
You may qualify for high-efficiency upgrades at no added cost, including:


ATTIC INSULATION


CAULKING


WEATHER STRIPPING


LED LIGHTING

SMART THERMOSTATS—
NEW FOR 2024!

AND MORE

Scan for details:

Call **844-413-3065** to see if your home is eligible, or visit **OGE.com/weatherization** for more information.

WEATHERIZATION **PROGRAM**

LOOKS LIKE ANOTHER **BEAUTIFUL DAY INSIDE.**

The weather **inside** is always delightful with the River Valley's Weatherization Program. Enroll today to receive energy-saving weatherization improvements at no additional cost to you.

Your home improvements may include:

- Adding attic insulation to lower energy costs and improve year-round comfort
- Air sealing, caulking and weatherstripping to reduce energy waste, allergens and outside noise
- Sealing around doors and windows to reduce drafts and save energy
- Installing LEDs to save on energy and maintenance costs

Eligibility

This program is open to current OG&E Arkansas or AOG residential customers who own or rent a single-family home, duplex, triplex or 4plex.*

**Certain limitations and state-mandated guidelines may apply. Home must be at least 10 years old. Weatherization services are available to rental properties if an eligible customer lives in the home and has approval from the property owner.*

Valued up to

$3,000

Enroll now at
OGE.com/weatherization
or contact us to get started.

844-413-3065

OGE customers:
residential.AR@oge.com

AOG customers:
aog.residential@clearesult.com

aog ENERGY FOR LIFE

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ARKANSAS

SAVE ENERGY AND LIVE **MORE COMFORTABLY**

Did you know?

OG&E Arkansas customers are eligible for **no-out-of-pocket-cost** weatherization improvements **valued up to $3,000**.*

Lower your energy costs and increase the comfort of your home with **no-out-of-pocket-cost** upgrades like:

- Attic insulation
- Air sealing, caulking and weatherstripping
- Sealing around doors and windows
- Installation of LED bulbs
- And more!

Looking for other ways to save?

Uncover personalized energy-saving opportunities with an In-Home Energy Assessment to receive advanced power strips, LED bulbs, showerheads and faucet aerators at no out-of-pocket cost to you.

Receive rebates on new ENERGY STAR® certified windows, pool pumps, HVAC systems and more. Visit **oge.com** to learn more.

Boost your home's HVAC efficiency with an Advanced A/C Tune-up or save on a replacement. Call the number below to see if your HVAC system qualifies for an A/C Tune-up.

Save instantly on select ENERGY STAR® certified products at participating stores.

To sign up for the OG&E Weatherization Program call: **844-413-3065** or visit: **OGE.com/Weatherization.**

*Certain limitations and state-mandated guidelines may apply. Home must be at least 10 years old. Weatherization services are available to rental properties if an eligible customer lives in the home and has approval from the property owner.

OG&E® We Energize Life

AHORRE ENERGÍA Y VIVA MÁS CÓMODAMENTE

¿Sabía que?

Los clientes de OG&E Arkansas son elegibles para mejoras de climatización sin costo de bolsillo, con un valor de hasta $3,000.*

Reduzca sus costos de energía y aumente la comodidad de su hogar con mejoras sin costo de bolsillo como:

- Aislamiento del ático
- Sellado del aire, calafateo y climatización
- Instalación de focos LED
- Sellado alrededor de las puertas y ventanas
- ¡Y más!

¿Buscando otras maneras de ahorrar?

Descubra oportunidades personalizadas de ahorros de energía con una Evaluación de Energía en el Hogar para recibir regletas avanzadas, focos LED, regaderas y aireadores de grifos sin costo de bolsillo alguno para usted.

Reciba reembolsos en ventanas con certificación ENERGY STAR®, bombas de piscina, sistemas HVAC y más. Visite oge.com para aprender más.

Aumente la eficiencia del equipo de HVAC en su hogar con un Ajuste Avanzado del Aire Acondicionado o ahorre con un reemplazo. Llame el número abajo para ver si su sistema HVAC califica para un ajuste del aire acondicionado.

Ahorre al instante en productos selectos con certificación ENERGY STAR en tiendas participantes.

Para inscribirse en Programa de Climatización de OG&E, llame al: 844-413-3065 o visite OGE.com/Weatherization.

*Pueden aplicar ciertas limitaciones y pautas exigidas por el estado. El hogar debe tener al menos 10 años. Los servicios de climatización están disponibles para propiedades de alquiler si un cliente elegible reside en el hogar y cuenta con aprobación del dueño de la propiedad.

OG&E® We Energize Life

HEY, NEIGHBOR!

You may qualify for **up to $3,000** in home weather-proofing services.

All incomes welcome.

Get Started

Scan the code or call **844-413-3065**.
For details, visit **OGE.com/weatherization**.

OG&E®

We Energize Life

OGE.com

¡HOLA, VECINO!

Puede calificar **para hasta $3,000** en servicios de impermeabilización del hogar.

Todos los ingresos son bienvenidos.

Comenzar

Escanee el código o llame al **844-413-3065**.
Para obtener más información, visite
OGE.com/weatherization.

OGE® We Energize Life

OGE.com

ENERGY SAVINGS IN PROGRESS

Join your neighbor and get **up to $3,000** in home upgrades at no added cost. All incomes welcome.

Get Started

Scan the code or call **844-413-3065**.
For details, visit **OGE.com/weatherization**.

OGE®

We Energize Life

OGE.com

AHORROS DE ENERGÍA
EN PROGRESO

Únase a su vecino y obtenga **hasta $3,000** en mejoras para el hogar sin costo adicional. Todos los ingresos son bienvenidos.

Comenzar

Escanee el código o llame al **844-413-3065**.
Para obtener más información, visite
OGE.com/weatherization.

OG&E®

We Energize Life

OGE.com

PARENTS

OG/E®

We Energize Life

CONGRATULATIONS!

Your child's class has been selected to participate in the exciting LivingWise Program. The program is designed to teach your child the value of water and energy and help you save money on your utility bills. This program is being provided by **Oklahoma Gas & Electric** at NO COST to you, your child's school, or the school district.

The average U.S. household pays at least $2,000 per year in utility bills and can reduce these costs with just a few simple changes. Your child will be given a kit which includes FREE high quality energy-saving and water-saving products that utilize the latest efficiency technology. This kit is valued at over $60 and will provide you with the ability to make these changes.

To participate, please do the following:

- Explore the kit with your child and discuss how the products can conserve water and energy for your family.
- Install all of the kit items. You and your child can do most of the activities in less than 15 minutes. Visit www.getwise.org to view installation videos or call 1-888-GET-WISE.
- Work with your child to answer all of the survey questions in the Take-Home Workbook.

The LivingWise® Program will be an easy and fun experience for your entire family. Not only will it allow your child the chance to be a leader in your home and community, but also your family will immediately benefit from lower utility bills. Thank you for your participation.

LET'S GET STARTED!

QUESTIONS? • 1-888-GET-WISE • www.getwise.org

PADRES

OG/E®

We Energize Life

¡FELICITACIONES!

La clase de su hijo ha sido seleccionada para participar en el fascinante Programa LivingWise. El programa está diseñado para enseñarle a su hijo el valor del agua y de la energía y para ayudarle a usted a ahorrar dinero en sus facturas de servicios públicos. Este programa lo provee **Oklahoma Gas & Electric** SIN COSTO para usted, la escuela de su hijo ni el distrito escolar.

La vivienda promedio estadounidense paga por la mínima $2,000 por año en facturas de servicios públicos y puede reducir estos costos simplemente con algunos cambios sencillos. A su hijo se le dará un kit que incluye productos GRATUITOS de alta calidad para el ahorro de agua y energía que utilizan la tecnología de ahorro más moderna. Este kit tiene un valor de más de $60 y le dará a usted la habilidad de implementar estos cambios.

Para participar, por favor haga lo siguiente:

- Explore el kit con su hijo y discuta cómo los productos pueden conservar agua y energía para su familia.
- Instale todos los artículos del kit. Usted y su hijo pueden hacer la mayoría de las actividades en menos de 15 minutos. Visite www.getwise.org para ver videos de instalación o llame al 1-888-GET-WISE.
- Trabaje con su hijo para responder todas las preguntas de la encuesta en el Libro de Trabajo para llevar a casa.

El Programa LivingWise® será una experiencia sencilla y divertida para toda su familia. No sólo le permitirá a su hijo la posibilidad de ser un líder en su hogar y en su comunidad, sino que también su familia se beneficiará inmediatamente por las facturas más bajas de los servicios públicos. Gracias por su participación.

¡COMENCEMOS!

¿PREGUNTAS? • 1-888-GET-WISE • www.getwise.org

20018 3119

STUDENT SURVEY

Fill bubble completely with black pen or pencil. Please do not copy or fold forms.

FIRST NAME _____ TEACHER _____

SCHOOL _____ DATE _____

PRE-PROGRAM QUIZ

1. Which of the following is not a fossil fuel?
   - ○ Wind
   - ○ Oil
   - ○ Coal
   - ○ Natural Gas

2. Which of the following is a renewable resource?
   - ○ Oil
   - ○ Gold
   - ○ Water
   - ○ Natural Gas

3. Saving water saves energy.
   - ○ True
   - ○ False

4. What is the unit of measure for electricity consumption?
   - ○ Therm
   - ○ Kilowatt-Hour
   - ○ Kilowatt
   - ○ Pounds

5. Energy stored within any physical thing is called ...
   - ○ Nuclear Energy
   - ○ Mechanical Energy
   - ○ Kinetic Energy
   - ○ Potential Energy

6. Which are examples of distributed generation?
   - ○ Solar panels on your home
   - ○ A wind turbine at your home
   - ○ Using fuel cells at home
   - ○ All of the above

7. Which major appliance uses the most energy?
   - ○ Dishwasher
   - ○ Refrigerator
   - ○ Clothes Dryer

8. A high-efficiency showerhead can save...
   - ○ Water
   - ○ Energy
   - ○ Both

9. An item that continues to use electricity even though its switch may be in the “off” position is called...
   - ○ Transformer
   - ○ Peak Load
   - ○ Phantom Load
   - ○ High Efficiency

10. LED Light Bulbs can reduce lighting energy use in your home by 75%.
    - ○ True
    - ○ False

HOME CHECKUP

1. How many people live in your home (including you)?
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4
   - ○ 5
   - ○ 6
   - ○ 7+

2. How is your water heated?
   (Hint: A natural gas water heater will have a gas line connected to the bottom of it where there is an “on/off” dial, and it will always have a flue, or a circular tube connected to the top of it and extending up to the roof. An electric water heater will not have a gas line attached, only a heavy duty electric cord plugged into the wall, and will not have a flue.)
   - ○ Natural Gas
   - ○ Propane
   - ○ Electricity

3. Does your home have a dishwasher?
   - ○ Yes
   - ○ No

4. How many half-bathrooms are in your home?
   (Hint: Half bathrooms are bathrooms that do not have a shower or a bathtub.)
   - ○ 0
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4+

5. How many full bathrooms are in your home?
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4
   - ○ 5+

6. Which fuel is used as the main source of energy to heat your home?
   (Your parent/guardian should know.)
   - ○ Natural Gas
   - ○ Electricity
   - ○ Heating Oil
   - ○ Wood
   - ○ Propane
   - ○ Other

7. What type of air conditioning unit do you have?
   - ○ Central Air Conditioner
   - ○ Evaporative Cooler
   - ○ Room Unit
   - ○ Don’t Have One

8. What type of home do you live in?
   - ○ Single Family Home
   - ○ Multi-Family Home/Apartment Building

9. Was your home built before 1992?
   - ○ Yes
   - ○ No

10. Is your home owned or rented?
    - ○ Owned
    - ○ Rented

20018 3119 **FILL IN EACH BUBBLE COMPLETELY**

Using a black pen or pencil, fill in the bubble completely next to the correct answer. Please do not copy or fold forms.

POST-PROGRAM QUIZ

1. Which of the following is not a fossil fuel?
   - ○ Wind
   - ○ Oil
   - ○ Coal
   - ○ Natural Gas

2. Which of the following is a renewable resource?
   - ○ Oil
   - ○ Gold
   - ○ Water
   - ○ Natural Gas

3. Saving water saves energy.
   - ○ True
   - ○ False

4. What is the unit of measure for electricity consumption?
   - ○ Therm
   - ○ Kilowatt-Hour
   - ○ Kilowatt
   - ○ Pounds

5. Energy stored within any physical thing is called ...
   - ○ Nuclear Energy
   - ○ Mechanical Energy
   - ○ Kinetic Energy
   - ○ Potential Energy

6. Which are examples of distributed generation?
   - ○ Solar panels on your home
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   - ○ Both

9. An item that continues to use electricity even though its switch may be in the “off” position is called...
   - ○ Transformer
   - ○ Peak Load
   - ○ Phantom Load
   - ○ High Efficiency

10. LED Light Bulbs can reduce lighting energy use in your home by 75%.
    - ○ True
    - ○ False

HOME ACTIVITIES

1. Did your family install the new High-Efficiency Showerhead?
   - ○ Yes
   - ○ No

2. Did your family install the new Bathroom Faucet Aerator?
   - ○ Yes
   - ○ No

3. Did your family install the new Kitchen Faucet Aerator?
   - ○ Yes
   - ○ No

4. Did your family install the first 9-watt LED Light Bulb?
   - ○ Yes
   - ○ No

5. Did your family install the second 9-watt LED Light Bulb?
   - ○ Yes
   - ○ No

6. Did your family install the Advanced Power Strip in your home?
   - ○ Yes
   - ○ No

7. If you answered “yes” to question 6, where did you install your Advanced Power Strip?
   - ○ TV System
   - ○ Computer System
   - ○ Other

8. If you answered “yes” to question 6, did you receive help from your parents to install the Advanced Power Strip?
   - ○ Yes
   - ○ No

9. Did your family raise the temperature on your refrigerator?
   - ○ Yes
   - ○ No

10. How much did your family turn down the thermostat in winter for heating?
    - ○ 1 - 2 Degrees
    - ○ 3 - 4 Degrees
    - ○ 5+ Degrees
    - ○ Didn’t Adjust Thermostat

11. How much did your family turn up the thermostat in summer for cooling?
    - ○ 1 - 2 Degrees
    - ○ 3 - 4 Degrees
    - ○ 5+ Degrees
    - ○ Didn’t Adjust Thermostat

12. Did your family lower your water heater settings?
    - ○ Yes
    - ○ No

13. Did you work with your family on this program?
    - ○ Yes
    - ○ No

14. Did your family change the way they use energy?
    - ○ Yes
    - ○ No

15. How would you rate the LivingWise Program?
    - ○ Great
    - ○ Okay
    - ○ Pretty Good
    - ○ Not So Good

OG&E®

We Energize Life

CERTIFICATE OF ACHIEVEMENT

Awarded to

_____

for making a difference in your community by successfully completing the LivingWise® Program.

Sandra Cipriani

Manager of Curriculum Development

LIVINGWISE® PROGRAM

3119

DON'T LET TIME RUN OUT

Simply return 80% of your completed surveys by **February 3, 2025**, and you'll receive a **$50.00** Mini Grant for your classroom!

And don't forget to give a wristband reward to your students when they return their completed surveys to you!

Offer open only to teachers participating in the program. Certain restrictions may apply. Good while supplies last. Offer ends February 3, 2025. 80% return rate of completed participant survey forms required for eligibility. For more information call 1-888-GET-WISE or contact us online at www.getwise.org.

LivingWise® Program Contents

Each program includes the following materials:

Student Materials

- *Student Guide*
- *Take-Home Workbook*
- *LivingWise Kit (shown below)*
- *Parent Letter/Pledge Form*
- *Student Survey Form*
- *Certificate of Achievement*
- *Unlimited Website Access*
- *Toll-Free HELP Line*
- *"OG&E" Wristband*

Teacher Materials

- *Teacher Book*
- *Step-by-Step Program Checklist*
- *Program At A Glance*
- *State Academic Standards Sheets*
- *Electricity, Water, and Natural Gas Posters*
- *Teacher Survey Form*
- *Unlimited Website Access*
- *Toll-Free HELP line*
- *Self-Addressed Postage-Paid Envelope*

LivingWise Kit*

- *High-Efficiency Showerhead*
- *Two LED Light Bulbs*
- *Kitchen Faucet Aerator*
- *Bathroom Faucet Aerator*
- *Digital Thermometer*
- *LED Night Light*
- *Advanced Power Strip*
- *Flow Rate Test Bag*
- *Parent/Guardian Program Evaluation*
- *Quick Start Guide*
- *Installation Instruction Booklet*
- *Spanish-Translated Materials*

*Actual kit items may vary.

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WELCOME

Thank you for choosing to participate! The LivingWise® Program will help your students and their families learn the importance of natural resources and immediately lower their utility bills. **Oklahoma Gas & Electric** has fully paid for and provided this program for your class.

Verify the receipt of the following Program Materials:

- Student Guides (one for each student and teacher)
- Take-Home Workbooks (one for each student and teacher)
- Teacher Book
- Student Wristbands
- Energy Saving Take Home Kits (one for each student and teacher)

Verify the receipt of the following Teacher Folder Contents:

- Introduction Letter to Parents/Guardians (yellow paper)
- Teacher Survey form (also available online)
- Student Survey forms (also available online)
- Certificate of Achievement awards
- Postage-Paid Return Envelope for Student Surveys and Teacher Survey form
- Classroom Poster(s)
- ELA, Math, and Science State Academic Standards sheets

To ensure program success and your eligibility for an eGift Card, please do the following:

- **IMPLEMENT THE PROGRAM.** The program provides flexible lessons that can be included in your current curriculum or presented independently. The materials are aligned to state academic standards to reinforce grade level topics.
- **HAVE YOUR STUDENTS INSTALL ALL OF THE PRODUCTS IN THE KIT.** Installation of the products is essential for learning how to conserve at home. The more products that are installed, the higher probability that the program will be available in future years.
- **RETURN PROGRAM RESULTS.** The responses on the Student Survey form and the Teacher Survey are used for program effectiveness and to help to determine program availability for the following year. Students also have the option to write thank-you notes to the utility provider. Return the Student Survey forms, the Teacher Survey form, and any thank-you notes in the provided postage-paid envelope.

Questions? Call 1-888-GET-WISE or visit www.getwise.org.

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LET'S BEGIN!

1. Display **Posters** in your classroom. Then, go to getwise.org, log in using your teacher code, and print the **Word Wall Vocabulary List** and display in your classroom. Teacher code login link is listed below.
2. In the *Teacher Book*, review the *Program At A Glance*. Then, view the suggested **Program Pacing Guide** located at getwise.org. Finally, determine a pace that best aligns with your class schedule and curriculum.
3. Explore getwise.org to view teacher presentations, lesson plan ideas, student activities, and other supplemental materials to guide your planning.
4. Make copies of the **Parent/Guardian Letter** to send home with the students. The letter will accompany the *Take-Home Workbook* and the **Energy Saver Kit**.
5. Administer the **Pre-Program Quiz** section of the **Student Survey** form. *The Home Checkup and Home Activities sections of this form are also in the Take-Home Workbook and will first be completed at home. Students will transfer their answers to the Student Survey form at the end of the program*. Keep the Student Survey forms until program completion.
6. Distribute the *Student Guides* and begin! Complete as much of the program that is applicable to your curriculum.
7. Distribute the Parent Letters, the *Take-Home Workbooks*, and the Kits for students to take home. Students will install the kit products, complete optional workbook activities, and complete the **Home Checkup** and **Home Activities** pages with their parent/guardian.
8. Students return *Take-Home Workbooks* to school and transfer answers from the Home Checkup and Home Activities pages to their Student Survey form. *Encourage students to answer as many questions as possible on the form, regardless of the completion of the workbook activities and/or the installation of all the products. Partial responses to these sections are acceptable!*
9. Administer the **Post-Program Quiz**. Collect the Student Survey forms, including partially completed surveys. Complete the **Teacher Survey** form included in your folder or use the QR Code listed below. Place all survey forms and any thank-you notes into the postage-paid envelope and kindly return to the provided address.
10. **Distribute Certificate of Achievement awards and Student Wristbands.**

Congratulations on the completion of the program!

Teacher Code Login:
https://enrollment.getwise.org/TeacherMaterials

Teacher Survey:
https://tinyurl.com/37d9tu2p